CA Dataquery™ for CA Datacom®

User Guide

Version 14.02

ca technologies

CA Technologies Product References

This document references the following CA products:

- CA Datacom®/DB
- CA Datacom®/AD
- CA Datacom® CICS Services
- CA Datacom® VSAM Transparency
- CA Dataquery™ for CA Datacom® (CA Dataquery)
- CA Ideal™ for CA Datacom® (CA Ideal)
- CA IPC
- CA Roscoe® Interactive Environment (CA Roscoe IE)
- CA Common Services for z/OS

Contact CA Technologies

Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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Contents

Chapter 22: Using GUIDE in DQL Mode   221

Chapter 23: Using CREATE in DQL Mode   281

Chapter 24: Creating Dialogs   335

Chapter 25: Creating and Using Terms   343

Chapter 26: Introducing the Personal Database Facility   355

Chapter 27: Displaying Personal Table Definitions   357

Chapter 28: Creating Personal Tables   363

Chapter 1: Introduction

This guide provides information needed by the conventional end user to operate CA Dataquery in SQL Mode or DQL Mode.

Disclaimer

The sample code, JCL, and reports provided in this guide are intended for use as reference aids only. No warranty of any kind is made as to the completeness or correctness of the exact samples in your specific installation environment. If you are planning to use any of the samples provided in this guide, be sure to adjust them for your site standards and use.

JCL Example Notation

This guide uses the following JCL notation.

UPPERCASE	Identifies commands, keywords, and keyword values which must be coded exactly as shown.
symbols	Symbols, such as commas, equal signs, and slashes, must be coded exactly as shown.

Do not type the following when they appear in the JCL examples. They are provided to clarify the JCL syntax.

lowercase	Identifies a value or values that you must supply.
...	Indicates the omission of one or more keywords or parameters that you must code according to the specific installation at your site.

Listing Libraries for CA Datacom Products

Guidelines to assist you in preparing your JCL are provided in this manual. The sample code provided in this document is intended for use as a reference aid only and no warranty of any kind is made as to completeness or correctness for your specific installation.

Samples for JCL and programs are provided in the install library (in z/OS, the default name for this library is CABDMAC). In z/VSE, sample PROCs are provided that allow you to make use of parameter substitution. You can copy and modify these samples for your specific requirements.

Any JOB statements should be coded to your site standards and specifications. All data set names and library names should be specified with the correct names for the installation at your site. In many examples, a REGION= or SIZE= parameter is displayed in an EXEC statement. The value displayed should be adequate in most instances, but you can adjust the value to your specific needs.

The libraries listed for searching must include the following in the order shown:

1. User libraries (*hlq*.CUSLIB) you may have defined for specially assembled and linked tables, such as DBMSTLST, DBSIDPR, DDSRTLM, DQSYSTBL, or User Requirements Tables

2. CA Datacom base libraries (*hlq*.CABDLOAD): CA Datacom/DB, CA Datacom Datadictionary, CA Dataquery, SQL

3. CA IPC libraries (*hlq*.CAVQLOAD)

4. CA Common Services for z/OS base libraries (*hlq*.CAW0LOAD)

5. Libraries for additional products, such as CA Datacom CICS Services, CA Datacom VSAM Transparency, CA Ideal, and so on

CA Dataquery users also need the following libraries and data sets for the following specific functions:

■   The z/OS data set DQOUT or the z/VSE data set DQOUTD is used only if the DQBATCH execution uses the EXPORT function.

■   In z/OS, running deferred queries with separate JCL members in batch requires, in addition to the SYSIN statement DEFER, the inclusion of a DD statement for the internal reader used by VPE. This DD statement should be:

```
//IRDR DD    SYSOUT=(A,INTRDR)
```

Chapter 2: Understanding the Purpose of CA Dataquery

CA Dataquery is a tool that accesses the most current information in a CA Datacom/DB database.   CA Dataquery not only retrieves the data, it also provides options for manipulating it, formatting it, saving it, and passing it to other users and other products. With special authorization, you can use CA Dataquery to change the data in the database.

Database Storage

A database can contain all kinds of information arranged in tables. Think of a drawer in a file cabinet as being like a table in a company database. The data in the file folder is the same as the data in one row of a database table.

In the following examples, the personnel information is in the Personnel table, with each row representing one employee. The table is made up of vertical *columns* and horizontal *rows* for storing data. The data stored at an intersection of a column and row is a *value*. For instance, there is a Last Name value, a First Name value, a Department value and a Social Security Number value for each row of the small table shown below. Notice that, to form the columns that make up the table, each row must have the columns arranged in the same order.

LAST-NAME	FIRST-NAME	DEPT	SOCIAL-SECURITY
Wilson	James	ACCT	123456789
Thomas	Arlene	ADMIN	987654321
Victor	Robert	MGMT	234567890
Smith	John	SALES	098765432

Your *query* tells CA Dataquery the name of the table and the names of the columns that have the information you want in a report.

Querying the Database

If you need to print a current list of your company's employees and their social security numbers, you can create a query to find the information in the database. Each item is kept in the PERSONNEL table. The names and social security numbers are stored on the database with other information, arranged by category.

SQL Example

You can retrieve the data you want and format it on the terminal screen or print it on a printer. The query that performs these tasks might look like this in SQL Mode:

```
SELECT LAST_NAME, FIRST_NAME, SOCIAL_SECURITY
FROM PERSONNEL
ORDER BY LAST_NAME
```

SELECT, FROM, and ORDER BY are SQL keywords. **SELECT** tells CA Dataquery what kind of data to find and print. **FROM** tells the name of the table to search and **ORDER BY** sorts the rows alphabetically by name. Other keywords are available for creating more complex queries.

DQL Example

This is how the query looks in DQL Mode:

```
FIND ALL PERSONNEL ROWS
SORT BY LAST-NAME
PRINT LAST-NAME
                   FIRST-NAME
                   SOCIAL-SECURITY
```

FIND, SORT, and PRINTG are DQL keywords. **FIND** tells which database table to read (PERSONNEL) and **SORT** arranges the rows alphabetically by name. **PRINT** specifies which values to display in columns on the report. Other keywords are available for qualifying the retrieved data, making calculations with it, and controlling how it appears in your report.

Results

The following report from either query appears as shown:

```
LAST-NAME                       FIRST-NAME SOCIAL-SECURITY
 ------------------------------  ---------  -------------
  SMITH                          JOHN       098765432
  THOMAS                         ARLENE     987654321
  VICTOR                         ROBERT     234567890
  WILSON                         JAMES      123456789
```

CA Dataquery provides a wide variety of common reporting capabilities. For instance, you can sort the information by state, city, zip code, or any category that seems logical. Or, you can retrieve only data for a certain state or city. You can rearrange the report columns or display the rows one at a time. You can even include data from additional database tables.

Chapter 3: Deciding How to Use CA Dataquery

You can choose to limit your use of the system and function as a beginner, average, or advanced user. The following sections tell you which tasks are basic, optional, and advanced.

Routine Tasks

As a CA Dataquery user, you routinely perform these tasks:

- Execute queries online
- View query output online

You can restrict your use to these tasks, if you prefer.

Optional Tasks

As a CA Dataquery user, the following tasks may be optional:

- Display information about the database
- Use all methods of query execution:
    - Execute dialogs with information you provide
    - Submit queries for batch execution
    - Export batch query results to other products
- Create queries
    - Construct basic queries using the DRAW command
    - Copy and edit queries created by others
    - Construct queries with the Main Menu functions GUIDE or CREATE
    - Maintain a private library of queries
- Use extra features of CA Dataquery for the following:
    - Create and maintain personal tables
    - Change your User Profile
    - Perform administrative functions as authorized

Advanced Tasks

As an experienced user, you may be asked to:

- Update the database

- Construct complex queries

- Construct fill-in-the-blank queries called dialogs

- Change to another mode (if used at your site)

Getting a Quick Start

You are authorized to create and maintain your own queries. However, you can use CA Dataquery effectively without ever seeing a query, much less creating one. You can choose to operate in much the same fashion as an associate user.

Use the following pages to help you use CA Dataquery at its most basic level. Even if you plan to become an expert user, you might want to begin by learning how to perform the tasks listed here first.

To use the basic functions of CA Dataquery, you can choose to limit yourself to these tasks:

Produce a report

- Use the DRAW command to create a simple query for execution.

- Select an existing query for execution.

- Specify execution method: online or batch (offline).

- Choose report specification option.

- Supply query variables if prompted.

- Supply batch execution variables if prompted.

View a report on screen

- Scroll results on screen.

- Change format of report with totals.

Display other panels

- Press appropriate PF key.

Becoming an Expert

One way to progress quickly from beginning use of CA Dataquery to expert use is to follow these steps:

Create queries

- Practice executing queries created by others.

- Practice creating and executing basic queries using the GUIDE Query Creation function.

- Copy and edit queries created by others.

Create personal tables

- Create and maintain personal tables with the Personal Database Facility or STORE command.

- Practice accessing them with your queries.

Use CA Dataquery features to learn more about queries

- Create complex queries with the GUIDE function.

- Display the queries you create with GUIDE and use the *CA Dataquery Reference Guide* to learn the meaning of each statement.

- Create queries using the DRAW command and edit them by adding other keywords.

- Use the CREATE function to create and execute basic queries, relying on Help, the syntax template and online database information for assistance.

- Write queries using the CA Dataquery Editor.

Chapter 4: Signing On and Off

Procedures for signing on and off CA Dataquery are site-specific. Because CA Dataqueryis so flexible, programs can be written at your company that may affect the way you access and exit CA Dataquery.

Signon Options

These are the CA Dataquery signon options:

- Standard signon procedure

- Site-specific signon procedure

If your site uses the standard procedure, follow these steps:

Step 1.

Get the procedure for displaying the CA Dataquery Signon panel.

Step 2.

Get your user ID (and password, if any) for CA Dataquery.

Step 3.

Follow instructions on the next pages to:

- Display the Signon panel.

- Enter signon information.

- View the Bulletin Board.

- Display the Main Menu.

- Select a CA Dataquery function.

If your company uses a site-specific signon procedure, see the CA Dataquery Administrator and:

1.

Ask for your company's signon procedure.

2.

Ask for your company's signoff procedure.

3.

Turn to to read about the first CA Dataquery panel that appears after signing on.

This manual documents only the standard CA Dataquery procedures for signon. For information about other procedures, see your CA Dataquery Administrator.

Displaying the Signon Panel

Follow these steps to display the CA Dataquery SIGNON panel.

Step 1

Establish your session.

Step 2

Clear the screen.

Step 3

Type **DQRY** in the upper-left corner of the cleared screen.

Step 4

Press Enter.

After you complete the standard signon procedure for your site, CA Dataquery displays the Signon panel. (If your site does not permit users to change their own passwords, the NEW PASSWORD field does not appear on the Signon panel.)

Signing On

Follow these steps to sign on.

Step 1

Type your user ID in the SIGNON field.

Step 2

Type your password in the PASSWORD field, if one is required.

Step 3

Press Enter.

You can also enter a command in the => field with the signon information to proceed directly to a needed panel. For an introduction to command usage, see Using Commands.

CA Dataquery displays the BULLETIN BOARD panel if one is in use at your site, or the first panel or menu for your authorization level.

Skipping the Signon Panel

To skip the CA Dataquery SIGNON panel when you establish your session follow these steps:

Step 1

Establish your session.

Step 2

Clear the screen.

Step 3

Type **DQRY your-id/your-password.**

CA Dataquery displays the BULLETIN BOARD panel if one is in use at your site, or the first panel or menu for your authorization level.

Handling a Duplicate Signon

If your user ID is in use when you try to sign on to CA Dataquery, you can continue signing on. CA Dataquery displays the following message on the signon screen: DQ196E OPERATOR ALREADY SIGNED ON AT TERMINAL: TCC ENTER "YES(Y)" TO SIGNOFF THERE AND CONTINUE

To sign off at the other terminal and use your user ID, follow these steps:

Step 1

Enter **Y** on the command line.

Step 2

Press Enter.

CA Dataquery displays the following message if you exit without terminating the duplicate signon.

```
 DQ198I - DATAQUERY SESSION NOT ESTABLISHED
```

Canceling a Signon

If you decide during the signon process not to sign on, clear the screen and type your monitor logoff command. (See Signing Off (see page 29) for instructions on signing off.)

Viewing the BULLETIN BOARD

The optional bulletin board can be used by a CA Dataquery Administrator at your site to post notices for CA Dataquery users. If messages are currently posted, the BULLETIN BOARD panel appears after you sign on to CA Dataquery. Following is a sample:

```
 =>
 PRESS THE ENTER KEY TO CONTINUE.
 -------------------------------------------------------------------------DQAZ0
 DATAQUERY: BULLETIN BOARD
 -------------------------------------------------------------------------

     1.  PLEASE DELETE QUERIES YOU NO LONGER NEED.

     2.  A NEW DIALOG HAS BEEN ADDED TO THE PUBLIC LIBRARY FOR
          CALCULATING YOUR REMAINING VACATION DAYS FOR THIS YEAR.
          THE DIALOG'S NAME IS VACATION.
```

After you read the messages, press the Enter key to display the first panel for your authorization level.

Displaying the MAIN MENU

The first panel you see after viewing the BULLETIN BOARD panel is the MAIN MENU for the mode assigned to you on your USER PROFILE panel. (Mode assignments are discussed in Changing SQL and DQL Modes.)

SQL Mode Panel

If you are set up to default to SQL Mode, you will see the following Main Menu as shown.

```
=>
CURRENT TIME 13:24:58, DATE 01/07/2003


------------------------------------------------------------------------DQZ50
DATAQUERY:  MAIN MENU - SQL MODE

ENTER THE NUMBER OF THE DESIRED FUNCTION ===>  _

 1.  DIRECTORIES                    - Lists of Queries and Tables
 2.  CREATE                         - Query, Dialog creation
 3.  GUIDE                          - Structured query creation
 4.  PDB                            - List, create and maintain personal tables
 5.  ADMINISTRATION                 - DATAQUERY system management
 6.  HELP                           - Display Help Information
 7.  OFF                            - DATAQUERY session termination
```

DQL Mode Panel

If you are set up to default to DQL Mode, you will see the following Main Menu as shown.

```
=>

------------------------------------------------------------------------DQZ60
DATAQUERY:  MAIN MENU - DQL MODE

ENTER THE NUMBER OF THE DESIRED FUNCTION ===>  _

 1.  DIRECTORIES            - Lists of Queries, Terms, Tables, and Saved Sets
 2.  CREATE                 - Query, Dialog or Term creation
 3.  GUIDE                  - Structured query creation
 4.  PDB                    - List, create and maintain personal tables
 5.  ADMINISTRATION         - DATAQUERY system management
 6.  HELP                   - Display Help Information
 7.  OFF                    - DATAQUERY session termination
```

Make selections from these menus based on what you need to do. Instructions for using the Main Menu appear in

Note: PDB only appears for those users authorized to use the feature.

Changing Your Password

At installation, CA Dataquery provides your company with the option of allowing users to change their own passwords. If your company permits, you can add a password or change it as often as you like. If you forget your password, ask your CA Dataquery Administrator to give you another one. If you are not permitted to change your own password, ask your CA Dataquery Administrator to change it for you when necessary.

Procedure

Follow these steps to change or add a password to your signon.

Step 1

Display SIGNON Panel.

Step 2

Enter User ID in SIGNON field.

Step 3

Enter current password, if any.

Step 4

Enter new password in NEW PASSWORD field.

Step 5

Press Enter.

Step 6

View BULLETIN BOARD, if any.

Step 7

Press Enter.

Step 8

View first panel for your authorization level.

Signing Off

You can exit CA Dataquery from any panel by using one of three methods. You can use the OFF command or you can retrace your steps through CA Dataquery using the <PF2> Return key to return to the Main Menu. Or, you can press Clear to redisplay the Main Menu and then select OFF.

When you exit CA Dataquery, you follow the procedure used at your site for exiting the monitor which CA Dataquery operates. See your CA Dataquery Administrator for details of your monitor logoff procedures.

You can issue the OFF command from the command line of any panel to return to the monitor welcome screen or to the screen chosen by your site if your company does not use the standard CA Dataquery signon procedure. See Using Commands for instructions on command usage.

Follow these steps to sign off:

Step 1

> Press <PF2> or Clear (on any menu or panel display).

Step 2

> View Main Menu.

Step 3

> Select OFF (from Main Menu).

Step 4

> View CA Dataquery signoff message or your site's monitor screen.

Step 5

> Type your logoff command (See your CA Dataquery Administrator).

Chapter 5: Operating CA Dataquery

Whatever your CA Dataquery authorization level, all CA Dataquery users perform the following tasks:

- Using panels and menus

- Using PF keys

- Getting Help

- Recovering from error conditions

- Responding to forced logoff

The following pages provide step-by-step instructions for performing basic operational tasks, and information about working with your CA Dataquery Administrator.

Using Menus and Panels

Every CA Dataquery menu and panel has the same basic format. Match the highlighted numbers on the sample menus and panels to their explanations in the following list.

Menu

```
  =>
 CURRENT TIME 13:24:58, DATE 01/07/2011

 ---------------------------------------------------------------------DQZ50

 DATAQUERY:  MAIN MENU

 ENTER THE NUMBER OF THE DESIRED FUNCTION ===>  _

 1.  DIRECTORIES         - Lists of Queries and Tables
 2.  CREATE              - Query, Dialog creation
 3.  GUIDE               - Structured query creation
 4.  PDB                 - List, create and maintain personal tables
 5.  ADMINISTRATION      - DATAQUERY system management
 6.  HELP                - Display Help Information
 7.  OFF                 - DATAQUERY session termination
```

Selection Panel

```
=>

 Place the = or on the desired name and press the appropriate PFkey
 -------------------------------------------------------------------DQA30
 DATAQUERY: DIRECTORY OF QUERIES                    START WITH: _____
 ------------------------------------------------------------------------
      QUERY NAME    | TYPE | CREATED  |   USED   |    DESCRIPTION
 ------------------------------------------------------------------------
    -CUST-CITY     | DIALOG | 04/06/11 | 06/10/11 | SELECT CUSTOMER
   A-GUIDED-QUERY  | QUERY  | 03/19/11 | 06/10/11 | A SAMPLE OF DQ
   A-SAMPLE-QUERY  | QUERY  | 03/19/11 | 06/11/11 | A SAMPLE PAYROLL QUERY
   CAI-CUST-ZIP    | DIALOG | 03/14/11 | 06/09/11 | SELECT CUSTOMER
   CAI-CUST-TERMS  | QUERY  | 03/12/11 | 06/04/11 | SELECT CUSTOMER
   CAI-CUST-SHIP   | DIALOG | 04/01/11 | 06/10/11 | SELECT DALLAS CUSTOMERS
   CAI-DIALO-ORDNO | DIALOG | 04/13/11 | 06/11/11 | PRINT SAMPLE DATABASE
   CAI-DISPLAY-DT  | DIALOG | 04/13/11 | 06/08/11 | DISP SAMPLE DATA BASE


 ------------------------------------------------------------------- ==>
 <PF1> HELP         <PF2>  RETURN       <PF3>  EXECUTE     <PF4>  EDIT
 <F5> NOT USED      <PF6>  DELETE       <PF7>  BACKWARD    <PF8>  FORWARD
 <PF9> SUBMIT       <PF10> EXTENDED DEF <PF11> NOT USED    <PF12> RIGHT
```

Input Panel

```
  =>

  -----------------------------------------------------------------------DQH10
  DATAQUERY:   QUERY IDENTIFICATION
  ---------------------------------------------------------------------------

  ENTER A UNIQUE NAME FOR THE NEW QUERY ==>    _____

  SELECT THE ACCESSIBILITY LEVEL FOR YOUR QUERY BY PLACING ANY CHARACTER
  NEXT TO YOUR CHOICE.

    _   PUBLIC
    X  PRIVATE

  ENTER A DESCRIPTION FOR THE NEW QUERY
    ==> _____


  ---------------------------------------------------------------------------
  <PF1> HELP          <PF2> RETURN        <PF3> NOT USED     <PF4>  CONTINUE
```

Command line

Use this line to type in one or more valid CA Dataquery commands.

Message line

Displays error messages, status information, or brief instructions.

Separator line

Displays a panel number for use in translating panels with the Language Facility or for reference when requesting help. (The Language Facility can be used by authorized personnel at your site to customize the language or terminology of any panel.)

Prefix

Preceded by a separator line, identifies the panel.

Body

Of a menu

Contains list of options and selection field for typing an option number.

Of a selection panel

Contains lists of items from which you make selections by positioning the cursor on your choices and pressing a key. Selections can be preceded by lines of operation instructions.

Of an input panel

Contains fields for entry or an Editor area for writing a query. First lines can also contain operation instructions.

PF Key menu

Displays list of valid PF keys

Using the Keyboard

The following figure shows the keys that are common to all panels and menus, with each key's function. Some keys are not found on all keyboards. Check your hardware documentation for the equivalents. If your keyboard does not have the PF keys you want to use, you can enter PF key commands to produce the equivalent results. See Using Commands for more information.

The following keys work in exactly the same ways on all CA Dataquery panels.

Clear

Return to the first selection panel.

Cursor control

Move cursor up, down, left or right.

Del or delete key

Delete the character or space at the cursor point.

Enter or Return

Accept input data and proceed to next panel.

EOF

(Erase End of Field.) Erase all characters from the cursor point to the end of the unprotected entry field.

Home

Move cursor to the first entry field.

Ins or insert key

Enter insert mode.

<PF1>

Display Help information.

<PF2>

Return to the previous panel or step unless key use is preceded by a command. Commands terminate panel processes. Pressing <PF2> after issuing a command redisplays the Main Menu.

<PF7>

Forward one page.

<PF8>

Backward one page.

Reset

Exit Insert mode.

Tab key

> Move to next field on panel.

Keyboard keys

> Type commands or field entries.

Getting Online Help

CA Dataquery provides special informational panels during display of most panels and menus. You can access these panels whenever you see <PF1> Help listed on the PF key menu at the bottom of a panel. <PF1> always displays Help information during display of any panel, even if a PF key menu is not displayed.

Follow these steps for getting online help:

Step 1

> Press <PF1>

Step 2

> View Help panels. If *More* appears, use <PF7> and <PF8> to scroll.

Step 3

> Press <PF2> to return to original panel.

Selecting a Help Topic

You see a topic Help panel like the following example when you select Help from the Main Menu or type **HELP** on the command line.

```
 =>
 Place the cursor on the desired TOPIC and press the appropriate PFkey
 ----------------------------------------------------------------------DQM10
 DATAQUERY:  LIST OF HELP TOPICS
 -------------------------------------------------------------------------------
      DATAQUERY TOPIC NAME        |      DESCRIPTION
 -------------------------------------------------------------------------------
   Accessing Repeating Fields     |   Using repeating fields in queries.
   Batch DATAQUERY Execution      |   Submitting a query for batch execution.
   Command Descriptions           |   What commands do.
   Command Syntax                 |   How commands are built.
   Database Terms                 |   Database terminology used in DATAQUERY
   DATACOM/DB and DATAQUERY       |   How DATAQUERY uses the database.
   Datadictionary                 |   How DATAQUERY uses the dictionary.
   DATAREPORTER                   |   Description and sample program.
   DIALOG Creation                |   How to create a dialog.
   DIALOG Execution               |   Using queries with variable values.
   Easy Way to Use DATAQUERY      |   Suggestions for the new user.
   Efficient Table Searches       |   Determining the most efficient retrieval
   Error Messages                 |   Types and content of error messages.
 -------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> NOT USED    <PF4> NOT USED
 <PF5> NOT USED    <PF6>  DISPLAY TEXT    <PF7> BACKWARD    <PF8> FORWARD
```

Procedure

Scroll the panel forward with <PF8> and backward with <PF7> then follow these steps:

Step 1

Move cursor to a topic.

Step 2

Press <PF6> DISPLAY TEXT.

Step 3

View panel.

Step 4

Press <PF2> Return to exit.

Results

When you select a Help topic from the topic Help panel, you see a specific Help panel as shown in the following example.

```
=>

-----------------------------------------------------------------------DQN10
DATAQUERY:  COMMAND DESCRIPTIONS TOPIC HELP PANEL - PAGE 1
-----------------------------------------------------------------------------


     Using DATAQUERY Commands

     Each panel contains a command line at the top of the screen.  This
     line is recognized by the "=>" prompt on the far left.  You may
     type DATAQUERY commands on this line to direct DATAQUERY to perform
     certain functions and bypass menu and panel selections.

     The valid commands vary depending on your authorization level and
     the panel you are on.  For example, some commands are valid only
     for a user who is authorized to perform language maintenance activities,
     and some commands are valid only while using the Editor panel.


                                                                 MORE...
-----------------------------------------------------------------------------
<PF1>  NOT USED   <PF2>  RETURN       <PF3>  NOT USED   <PF4>  NOT USED
<PF5>  NOT USED   <PF6>  NOT USED     <PF7>  BACKWARD    <PF8>  FORWARD
```

Displaying System Profile Information

When you want to know what site-specific characters are in use at your site, such as the fill character used in creating dialogs, you can select the System Profile topic from the Topic Help Menu. When you do, you see a SYSTEM PROFILE panel that displays site-specific information as shown in the following example:

```
=>
Listed below are the DATAQUERY site options and their current values
------------------------------------------------------------------------DQND0
DATAQUERY:  SYSTEM PROFILE
-------------------------------------------------------------------------


     PROFILE ITEM                    EXPLANATION
-------------------------------------------------------------------------
LITERAL MASKING CHARACTER           #   Eliminates part of value when comparing
COMMENT BEGIN CHARACTER             */  Begins a comment
COMMENT END CHARACTER               /*  Ends a comment
DECIMAL POINT CHARACTER             .   Separates decimals from whole numbers
ALTERNATE HEADING SEPARATOR         /   Separates alternate column headings
HEADING SUBSTITUTION STRING         &.& Allows heading substitution
DIALOG SYMBOL                       ?   Identifies variables in DIALOGS or PROCS
DIALOG FILL CHARACTER               ¢   Saves space for a longer variable value

NOTE:  The System Profile was set up for your site when DATAQUERY was
            installed.  See the "Special Character" topic for a further
            explanation of these system profile items.
 END OF HELP
-------------------------------------------------------------------------
<PF1>  NOT USED   <PF2>  RETURN     <PF3>  NOT USED   <PF4>  NOT USED
<PF5>  NOT USED   <PF6>  NOT USED   <PF7>  BACKWARD   <PF8>  FORWARD
```

Correcting a Mistake

If you make a mistake while using CA Dataquery, you will see a highlighted message on the message line. Access the available help according to the following steps:

Operation

Step 1

Receive error message.

Step 2

Press <PF1> HELP.

Step 3

View error message HELP information.

If you understand error message Help, press <PF2> and follow directions to correct the error.

If you do not understand error message Help, press <PF1> and read Help for the panel/menu.

If you do not understand online Help, see the documentation.

If you do not understand online Help or the documentation, contact your CA Dataquery Administrator.

Step 4

Correct error condition, if directed.

Step 5

Proceed with CA Dataquery session.

Example

Note the error message on the message line.

Step 1

Receive error message.

```
=>
DQ240E - THE CURSOR IS NOT ON A LINE THAT CAN BE USED BY THE FUNCTION
-----------------------------------------------------------------------DQA50
DATAQUERY: DIRECTORY OF QUERIES                    START WITH: _____
-----------------------------------------------------------------------------
        QUERY NAME          |   TYPE   |   USED   |     DESCRIPTION
-----------------------------------------------------------------------------
    QUERY1                  | QUERY    | 11/07/10 |
    QUERY2                  | QUERY    | 11/07/10 |
                            |          |          |
                            |          |          |
                            |          |          |
                            |          |          |
------ LAST PAGE --------------------------------------------------------
<PF1> HELP         <PF2> SIGN-OFF      <PF3> EXECUTE      <PF4> SUBMIT
<PF5> NOT USED     <PF6> NOT USED      <PF7> BACKWARD     <PF8> FORWARD
```

Step 2

Press <PF1> HELP.

When the error message appears, you can ask for error message Help. To get an expanded explanation of the message, press <PF1> HELP. The HELP PANEL FOR ERROR MESSAGE appears like the following example.

```
=>

  ----------------------------------------------------------------------DQ240
 DATAQUERY:  HELP PANEL FOR ERROR MESSAGE
 ---------------------------------------------------------------------------


   DQ240E - THE CURSOR IS NOT ON A LINE THAT CAN BE USED BY THE FUNCTION

    CAUSE:  The function that you requested via the PF key requires that the
            cursor be positioned on a line containing the object of the
            requested function.  The cursor is currently on a line that does
            not contain an object that the function can use.

    ACTION: Position the cursor on the line containing the object
            of the function and press the appropriate PF Key again.




 ---------------------------------------------------------------------------
 <PF1>  PANEL HELP  <PF2>  RETURN
```

Step 3

Press <PF1> HELP again.

If, after reading the error message Help, you want more information, you can press
<PF1> Panel Help and get helpful information. You see the following panel.

```
=>

  -------------------------------------------------------------------------DQA51
 DATAQUERY:  DIRECTORY OF QUERIES HELP PANEL - PAGE 1
 --------------------------------------------------------------------------------

     DESCRIPTION:

     The "Directory of Queries" panel displays a list of queries the
     associate user may execute.  This panel allows you to select one of the
     queries and execute it on-line or submit it for batch execution.  You
     arrived at this panel after signing on to DATAQUERY as an Associate
     User.  All Associate Users may use this panel.

     -------------------------------------------------------------------


  --------------------------------------------------------------------------------
 <PF1>  NOT USED   <PF2>  RETURN      <PF3>  NOT USED    <PF4>  NOT USED
 <PF5>  NOT USED   <PF6>  NOT USED    <PF7>  BACKWARD    <PF8>  FORWARD
```

After you read the description of the Panel Help panel, you can return to the original
panel and make an appropriate entry. Press <PF2> Return.

Step 4

Read the documentation.

If you prefer, you can look up the error message in your documentation. The reasons
and actions given match the information provided on the online Help panel.

Step 5

Call your CA Dataquery Administrator for help.

If you are unable to understand what happened after consulting the resources provided
by CA Dataquery and your documentation, get ready to ask your CA Dataquery
Administrator for help. First, make notes about what you did before the error occurred,
the error message number and text, and obtain screen prints, if possible. It would also
be a good idea to try to repeat the steps that caused the error. Not only will it help you
document your problem, but you might uncover the cause of the error.

Responding to a Forced Logoff

Your CA Dataquery Administrator can sign you off the system while you are using CA Dataquery. Normally, this happens if it becomes necessary to disable CA Dataquery. When a forced logoff occurs, you see the following message.

```
DQ193I- THIS TERMINAL HAS BEEN AUTOMATICALLY SIGNED OFF BY DATAQUERY



                     DDDDD      QQQQQ      RRRRRR      YY      YY
                     DDDDDDD    QQQQQQQ    RRRRRRR     YY      YY
```

When you see the message stating that automatic sign off has occurred, complete the sign off procedure. Follow established procedures at your site for resuming operation of CA Dataquery following a forced logoff or contact your CA Dataquery Administrator.

Sending and Receiving Messages

You can send messages to any other active CA Dataquery user with the message function. All you need is the other user's ID.

Description

Here is how a message looks when you receive one.

```
=> MSG FROM JONES
   AUTO-LOGOFF AT 10:15. PLEASE COMPLETE CURRENT TASK.
-------------------------------------------------------------------------DQA50
DATAQUERY: DIRECTORY OF QUERIES                    START WITH: _____
------------------------------------------------------------------------------
```

The message disappears the first time you press Enter after receiving it.

Operation

You can reply to messages or initiate messages on your own. All you need is the user ID of the recipient, who must be signed on when you send the message.

Position the cursor on the command line of your current panel and type the command **MSG** followed by a space, the user's ID, another space, and the message itself. The message must end at the end of the command line. Then just press Enter to send the message.

```
MSG user-id text-of-message
```

Example

To reply to the preceding message example, you might type a message that would make your panel appear as shown in the following example:

```
 => msg jones please delay logoff until 10:30.  chart in progress.
-------------------------------------------------------------------------DQA50
DATAQUERY: DIRECTORY OF QUERIES                    START WITH: _____
-------------------------------------------------------------------------------
```

Using the Main Menu Functions

DQL MAIN MENU

If you are authorized to create queries, the MAIN MENU appears after the BULLETIN BOARD when you sign on. You begin any task by making a selection from it or by issuing a command.

```
=>

-------------------------------------------------------------------------DQZ60
DATAQUERY:  MAIN MENU - DQL MODE

ENTER THE NUMBER OF THE DESIRED FUNCTION ===>  _

 1.  DIRECTORIES          - Lists of Queries, Terms, Tables, and Saved Sets
 2.  CREATE               - Query, Dialog or Term creation
 3.  GUIDE                - Structured query creation
 4.  PDB                  - List, create and maintain personal tables
 5.  ADMINISTRATION       - DATAQUERY system management
 6.  HELP                 - Display Help Information
 7.  OFF                  - DATAQUERY session termination
```

SQL MAIN MENU

```
=>
CURRENT TIME 13:24:58, DATE 01/07/2011


-----------------------------------------------------------------------DQZ50
DATAQUERY:  MAIN MENU - SQL MODE

ENTER THE NUMBER OF THE DESIRED FUNCTION ===>  _

 1.  DIRECTORIES          - Lists of Queries and Tables
 2.  CREATE               - Query, Dialog creation
 3.  GUIDE                - Structured query creation
 4.  PDB                  - List, create and maintain personal tables
 5.  ADMINISTRATION       - DATAQUERY system management
 6.  HELP                 - Display Help Information
 7.  OFF                  - DATAQUERY session termination
```

Note: PDB does not appear on this menu if you are not authorized to use the Personal Database Facility.

When you have signed on to CA Dataquery and displayed the MAIN MENU, you're ready to make a selection or enter a command. When you are familiar with CA Dataquery, you may find it easier to enter commands on the command line to proceed directly to a needed panel. See Using Commands for instructions on entering commands.

Note: For complete details on available operation commands, see the *CA Dataquery Reference Guide*.

You can perform all of the routine, optional, and advanced CA Dataquery tasks listed previously by starting with a selection from the MAIN MENU.

DIRECTORIES

Displays Directory Selection panel showing types of directories you can display.

Select a directory type (queries, dialogs, and database tables) to display.

Use the directories to maintain libraries, execute queries, copy or edit queries, display database information, or see a definition of an item on the directory.

CREATE

Access the CA Dataquery Editor to write a query or dialog.

GUIDE

Displays the GUIDE Template.

PDB

List, create, or maintain your personal tables.

ADMINISTRATION

Displays menu listing your User Profile of terminal session options and any other administrative tasks you are authorized to perform.

HELP

Displays panel listing topics you can select for additional information.

OFF

Exit CA Dataquery and return to monitor.

Procedure

To make a selection from the MAIN MENU, follow these steps:

1. View the Main Menu.

2. Select an option.

3. Type an option number in the ==> _ field or type the option name in the Command field.

4. Press Enter.

5. View the first panel for the selected option.

Selecting a Directory

CA Dataquery stores queries and dialogs created by you and other users in a *public library* that is shared by other users or in the author's *private library.* The author designates the library. Queries and dialogs can be further restricted by the CA Dataquery Administrator so that they appear in your public library only if you are authorized to use them. To select an item from a library, display a directory list for any type of item.

When you select DIRECTORIES from the CA Dataquery MAIN MENU, the DIRECTORY SELECTION panel lets you specify the kind of directory you want CA Dataquery to display. You can display directories of libraries and accessible database tables.

SQL Panel

Use the following panel to display an SQL Mode directory.

```
=>
Mark the desired Directory and press Enter.
------------------------------------------------------------------------DQAK0
DATAQUERY:  DIRECTORY SELECTION
-------------------------------------------------------------------------------

  _ Queries and Dialogs      - List queries and Dialogs accessible to you.
  _ Queries                  - List queries accessible to you.
  _ Dialogs                  - List Dialogs accessible to you.
  _ Public Queries           - List public queries.
  _ Queries                  - List queries created by user:

                                _____


  _ Tables                   - List the Tables accessible to you.
                               Start Tables Directory with Letters:

                                _____




-------------------------------------------------------------------------------
<PF1> HELP         <PF2>  RETURN
```

DQL Panel

Use the following panel to display a DQL Mode directory.

```
=>
Mark the desired Directory and press Enter.
------------------------------------------------------------------------DQA40
DATAQUERY:  DIRECTORY SELECTION
-------------------------------------------------------------------------------

  _ Queries and Terms        - List all queries and terms accessible to you.
  _ Queries Only             - List queries accessible to you.
  _ Terms Only               - List terms accessible to you.
  _ Dialogs                  - List Dialogs accessible to you.
  _ Public Queries           - List public queries.
  _ Queries and Terms        - List queries and terms created by user:

                                _____


  _ Tables                   - List the tables accessible to you.
                               Start Table Directory with Letter:

                                _____

  _ Saved Sets               - List the saved sets.




-------------------------------------------------------------------------------
<PF1> HELP        <PF2>  RETURN
```

Operation

Specify which directory you want to see by placing a character in the field preceding its name and pressing Enter. For detailed information about each directory panel and its operation, see the *CA Dataquery Reference Guide*. The following lists the directories you can display.

Queries

Public and private library of queries you can access.

Dialogs

Public and private library of dialogs you can access.

Terms

Public and private library of terms you can access. Terms are available only in DQL Mode.

Public queries

All public library queries and dialogs you can access.

Queries by user __

Public library listing of queries and dialogs created by an individual user. Shows your private queries too if you enter your own user ID.

Tables

All database tables you are authorized to access.

Saved sets

(DQL Mode only.) All saved sets of query output you can access. See Saving and Using DQL Mode Sets for detailed information.

Using a Directory

Following is a typical public query directory selected from the DIRECTORY SELECTION panel.

```
 =>
 Place the cursor on the desired name and press the appropriate PFkey
 --------------------------------------------------------------------------DQA30
 DATAQUERY: DIRECTORY OF QUERIES                    START WITH: _____
 --------------------------------------------------------------------------------
         QUERY NAME         |  TYPE   |  USED   |     DESCRIPTION
 --------------------------------------------------------------------------------
   CREATEAPPLICANT          | QUERY   |         |
   CREATEORG                | QUERY   | 09/19/10 |
   CREATESTAFF              | QUERY   | 03/13/11 |
   CREATETABLE              | QUERY   | 08/15/10 |
   DEMO                     | QUERY   | 05/01/11 | LIST EMPLOYEES, YEARS SERVICE
   DEMO_0501                | QUERY   | 05/01/11 | LIST EMPLOYEES, YEARS SERVICE
   DEMO2                    | QUERY   | 04/28/11 | LIST EMPLOYEES, YEARS SERVICE
   DROPTABLE2               | QUERY   | 10/11/10 |
   D1                       | QUERY   | 01/17/11 | LIST EMPLOYEES, YEARS SERVICE
   INSERTSTAFF              | QUERY   |         |
   SELECTTABLENAME          | QUERY   | 07/15/10 |
   TSI01002                 | QUERY   | 03/16/10 | SQL - NESTED SELECT MGRS
   TSI01009                 | QUERY   | 10/17/10 | SQL - CASES 1-93
 --------------------------------------------------------------------------------
 <PF1> HELP        <PF2> SIGN-OFF           <PF3> EXECUTE     <PF4> SUBMIT
 <PF5> NOT USED    <PF6> NOT USED           <PF7> BACKWARD    <PF8> FORWARD
 <PF9> SUBMIT      <PF10> EXTENDED DEF      <PF11> LEFT       <PF12> RIGHT
```

When you select a library directory from the DIRECTORY SELECTION panel, CA Dataquery presents the upper-left corner of the directory listing. Additional information appears to the right of the current screen. Move the information into view by pressing <PF12> RIGHT. To scroll back to the left, press <PF11> LEFT. When you scroll left and right, the panel number in the upper-right corner of the panel changes. In long listings, use the START WITH field to enter all or part of an item name to move an item to the top of the display.

See the *CA Dataquery Reference Guide* for operational instructions for each panel by number. An arrow on either or both sides of the lower division line indicates that you may scroll in the designated direction.

Example

Here is an example of the panel you see when you press <PF12> RIGHT to scroll to the right.

```
=>
 Place the cursor on the desired name and press the appropriate PFkey
 --------------------------------------------------------------------------DQAA0
DATAQUERY: DIRECTORY OF QUERIES                 START WITH: _____
 -------------------------------------------------------------------------------
      QUERY NAME    |  TYPE  | STATUS  |        AUTHOR
 -------------------------------------------------------------------------------
    CREATEAPPLICANT | QUERY  | PUBLIC  | HOLUB
    CREATEORG       | QUERY  | PUBLIC  | HOLUB
    CREATESTAFF     | QUERY  | PUBLIC  | HOLUB
    CREATETABLE     | QUERY  | PUBLIC  | WHITMAN
    DEMO            | QUERY  | PUBLIC  | DEMO
    DEMO-0501       | QUERY  | PUBLIC  | NEWMAN
    DEMO2           | QUERY  | PUBLIC  | NEWMAN
    DROPTABLE2      | QUERY  | PUBLIC  | NEWMAN
    D1              | QUERY  | PUBLIC  | KDSQL
    INSERTSTAFF     | QUERY  | PUBLIC  | HOLUB
    INSSTAFF        | QUERY  | PUBLIC  | HOLUB
    SBM-DIALOG1     | DIALOG | PUBLIC  | LITA
    SELECTTABLENAME | QUERY  | PUBLIC  | WHITMAN
 <== ---------------------------------------------------------------------- ==>
 <PF1> HELP        <PF2>  RETURN      <PF3>  EXECUTE    <PF4>  EDIT
 <PF5> NOT USED    <PF6>  DELETE      <PF7>  BACKWARD   <PF8>  FORWARD
 <PF9> SUBMIT      <PF10> EXTENDED DEF <PF11> LEFT      <PF12> RIGHT
```

Here is an example of what you see when you move the last columns into view.

```
=>
 Place the cursor on the desired name and press the appropriate PFkey
 --------------------------------------------------------------------------DQAB0
DATAQUERY: DIRECTORY OF QUERIES                 START WITH: _____
 -------------------------------------------------------------------------------
      QUERY NAME    |  TYPE  |                GROUPS
 -------------------------------------------------------------------------------
    CREATEAPPLICANT | QUERY  | SYSPROG
    CREATEORG       | QUERY  | SYSPROG
    CREATESTAFF     | QUERY  | SYSPROG
    CREATETABLE     | QUERY  | SYSPROG
    DEMO            | QUERY  |
    DEMO-0501       | QUERY  |
    DEMO2           | QUERY  |
    DROPTABLE2      | QUERY  | ADMIN
    D1              | QUERY  |
    INSERTSTAFF     | QUERY  | ADMIN
    INSSTAFF        | QUERY  | ADMIN
    SBM-DIALOG1     | DIALOG | ADMIN
    SELECTTABLENAME | QUERY  | GENERAL
 <== ----------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3>  EXECUTE    <PF4>  EDIT
 <PF5> NOT USED    <PF6>  DELETE      <PF7>  BACKWARD   <PF8>  FORWARD
 <PF9> SUBMIT      <PF10> EXTENDED DEF <PF11> LEFT      <PF12> NOT USED
```

Description The following are panel column names and their contents.

QUERY NAME

Alphabetical listing of all accessible query and dialog names.

TYPE

Specifies whether this is a query or dialog.

USED

Date this query or dialog was last accessed.

DESCRIPTION

Description of this query or dialog as entered during creation.

STATUS

Public or Private status assigned to this query or dialog.

AUTHOR

Name of the author of this query or dialog.

GROUPS

Group to which query is assigned, if any. No entry means the query is not restricted to a group.

CA Dataquery uses directory panels to allow you to perform several functions by PF key selection. The PF keys for all directories of queries and dialogs are the same. For detailed instructions on using any directory, see your *CA Dataquery Reference Guide*.

Operation

PF Key	Cursor	Result
<PF1> HELP	Any position	Help panel appears
<PF2> RETURN	Any position	Previous panel appears
<PF3> EXECUTE	Any query name	CA Dataquery executes this query or dialog
<PF4> EDIT	Any query name	Display that query, or dialog for review, copying or changing, if allowed
<PF6> DELETE	Any private query or dialog name	CA Dataquery removes that query or dialog
<PF7> BACKWARD	Any position	Display previous queries or dialogs, if any

PF Key	Cursor	Result
<PF8> FORWARD	Any position	Display more queries and dialogs, if any
<PF9> SUBMIT	Any query or dialog name	CA Dataquery displays the Batch Execution panel
<PF10> EXTENDED DEF	Any query or dialog name	CA Dataquery displays the extended attributes of the selected item
<PF11> LEFT	Any position	Scroll left
<PF12> RIGHT	Any position	Scroll right

Working with the CA Dataquery Administrator

Someone at your company should be appointed to perform CA Dataquery Administrator functions. These are the CA Dataquery Administrator tasks that concern you:

Adds and authorizes users

You must be added as a user and authorized for specific functions and modes.

Signs users off

You can be signed off the system by the CA Dataquery Administrator.

Maintains libraries

Your collection of queries and those of others are maintained by the CA Dataquery Administrator. Queries can be moved, deleted, or copied.

Implements security

Gives you access to data or restricts your access.

Maintains JCL

The CA Dataquery Administrator sets up procedures that you use if you want to execute a query offline.

Generates reports

Can report statistics on your activities and system operation.

Resolves problems

Knows your job and the system well enough to help you resolve problems in constructing a query or using the system and knows who to contact if serious system problems occur.

Overrides system defaults

If you need more system capacity to execute queries, see the CA Dataquery Administrator.

Authorizes batch execution

You must have special authorization to execute queries offline.

Authorizes use of queries that modify data

You must have special authorization and instructions from the CA Dataquery Administrator to write and use online queries that change data.

Sets print options

Can override your system defaults for printing query results. (You can override your own printer defaults with your User Profile. See Using Administrative Functions for details.)

Authorizes other administrators

Users can be authorized by the CA Dataquery Administrator to perform various administrative functions. If you are authorized, additional functions appear on your Administrative Menu. See Using Administrative Functions for more information. Also, see your CA Dataquery Administrator for operation instructions or see the *CA Dataquery User Administrator Guide*.

Obtaining Authorizations

The CA Dataquery system at your site is defined by a number of parameters which make up the System Option Table (DQOPTLST). These parameters determine how the system is used and define system wide limits on such things as:

- Terminal idle time before automatic signoff

- Maximum number of rows a query can find

- Space and system limits on processing time per query

Within the environment defined by the System Option Table, the CA Dataquery Administrator classifies people with signons as CA Dataquery Administrators, users, or associate users. Within those classifications, the CA Dataquery Administrator can define what each user is allowed to do, and can override a few of the System Option Table parameters regarding system storage allotments for individual users.

Within the individual user authorizations set up by the CA Dataquery Administrator, each user can change some personal specifications by accessing and changing the user's USER PROFILE panel.

The following list shows some administrative User Table Maintenance (DQKNO) parameters that can be applied to individual users. The CA Dataquery Administrator assigns these authorizations.

- Data Authorized (DQL Mode only)

- User designation

- Submit Allowed

- Export Allowed

- SQL and DQL allowed (SQL option required)

Chapter 6: Using Administrative Functions

You can automatically access one option on the Administrative Menu, the PROFILE option. In addition, site management can delegate any administrative task to any user, so you could have more than one option on your Administrative Menu.

The following provides an overview of administrative information you might need about the User Profile panel, print options, mode changes and group display. For specific information, see the Help panels or contact your CA Dataquery Administrator.

The Administrative Menu appears when you select ADMINISTRATION from the Main Menu. Listed on it are all the administrative functions you are authorized to perform. Your menu might include more than the PROFILE function if you are authorized for administrative tasks.

If your Administrative Menu lists any functions in addition to PROFILE, see the *CA Dataquery Administrator Guide* or consult your CA Dataquery Administrator for operational instructions.

Defining or Modifying the User Profile

CA Dataquery displays the User Profile panel, an example of which follows:

User Profile (DQKL0)

```
=>
Overtype the values to be modified and press PF4 to complete the update
--------------------------------------------------------------------------DQKM0
DATAQUERY:  USER PROFILE            FOR => _____
--------------------------------------------------------------------------------
   HARDCOPY PRINT OPTIONS        EXPLANATION
--------------------------------------------------------------------------------
 NETWORK PRINTER-ID         =>  ____    Four Character ID of Network printer
 PRINT QUERY TEXT           =>  ___     YES print the query text, NO do not
 PRINT STATISTICS           =>  ___     YES print the query stats, NO do not
 PRINT BANNER PAGE          =>  ___     YES print the banner page, NO do not
 PRINT USING WINDOWS        =>  ___     YES window format, NO wrap format
 PRINT PAGES TOGETHER       =>  ___     YES pages together, NO windows together
 PRINT NUMBER OF COLUMNS    =>  ___     Three digit column width of hardcopy
 PRINT NUMBER OF ROWS       =>  ___     Three digit page length in rows




 --------------------------------------------------------------------------------
 <PF1> HELP       <PF2> RETURN      <PF3> DISP GROUPS    <PF4> UPDATE
 <PF5> PROFILE    <PF6> NOT USED    <PF7> NOT USED       <PF8> NOT USED
```

Timing

When changing your profile, some changes take effect immediately and some are changed for the duration of the current session only. The CA Datacom Datadictionary database ID always reverts back to the site default at sign-off. The SQL Authorization ID returns to the user's default at sign-off.

CA Dataquery supplies entries to the panel from the User table, the Option table, and the previous session (if any).

DATADICTIONARY DATABASE ID

(Required) Enter the CA Datacom/DB database ID that specifies the CA Datacom Datadictionary database to be accessed. The database specified must be a CA Datacom Datadictionary database accessible to CA Dataquery. CA Dataquery supplies the CA Datacom/DB database ID from the System Option Table.

LIST AND DISPLAY ALIASES

(Required) Enter YES or NO. Specify YES to include CA Datacom Datadictionary aliases in the Directory of DQL Tables, and Keys and Columns Display panels. NO excludes CA Datacom Datadictionary aliases from these display panels. (See the CA Dataquery end user documentation for details on these panels.)

GROUP DISPLAY

(Required) Enter YES or NO. Determines the way a compound field is displayed on a report. If you specify YES, fields making up the compound field are shown as individual fields. When you specify NO, a compound field is shown as a single alphanumeric field, even though one or more of the simple fields contained in the compound field is a numeric field which cannot be printed. If an invalid value is entered, the parameter defaults to NO.

SUPPRESS DUPLICATE COLUMNS

(Required) Enter YES or NO. Determines if duplicate values for columns specified as control break columns are suppressed in the generated report. If you specify YES, the value contained in a control break column is displayed only once. Each time the value in the control break column changes, the new value is displayed. If the output continues to the top of a new page, the current value in the control break column is displayed at the top of the new page.

SUPPRESS PFKEYS ON PRINT

(Required) Enter YES or NO. Specify YES to suppress the PF key descriptions on the print panel that displays the report. NO causes the PF keys descriptions to be displayed.

SUPPRESS EXECUTE PANEL

(Required) Enter YES or NO. Specify YES to suppress the display of the Online Execution Query panel. NO causes the Online Execute Query panel to be displayed. A user would want to suppress the display of the Online Execution Query panel if their queries always read and collect data and display it on their terminals. Suppressing the display saves a step during the execution process by accepting the execution defaults.

PRIMARY LANGUAGE

(Required) Enter 2 characters. Specifies the primary language to be used during the current CA Dataquery session. A valid 2-character entry overrides the language specified in the System Option Table at installation. (AE American English is the default if no other language is specified on the System Option Table.)

SECONDARY LANGUAGE

(Required) Enter 2 characters. Specifies the secondary language to be used during the current CA Dataquery session. A valid 2-character entry overrides the language specified in the System Option Table at installation. (AE American English is the default if no other language is specified on the System Option Table.)

DECIMAL POINT CHARACTER

(Optional) Enter 1 character. Specifies the decimal point character for this ID. The default is the value of the DECPT= parameter in the System Option Table.

QUERY LANGUAGE

(Required) Enter either DQL or SQL. Specifies the query language to be used for this ID. Y (yes) must have been specified on the User Table Maintenance in the field SQL AND DQL ALLOWED for the user to be able to change from DQL to SQL in this field.

SQL AUTHORIZATION ID

(Required) Enter a 1- to 18-character authorization ID. Specifies the SQL authorization ID for execution of SQL statements for this ID.

When the SQL authorization ID is changed by the PROFILE or AUTHID command, it changes only on the user profile, **and not** on the User Table. The private SQL authorization ID attaches to the table name regardless of the authid in use during creation of the table. When the DISPLAY, LIST, EXECUTE, or CREATE functions are used, the profile authid is used.

PF Keys

Each PF key for the User Profile panel is listed below.

<PF3> DISP GROUPS

Display group to which user is assigned.

<PF4> UPDATE

Save the values displayed on this panel. Refresh User Profile panel.

<PF5> PRINT OPT

Display print options for profile. Print Options panel appears. See the section on printer options for details.

Displaying Your Group Assignments

Action

To view the groups to which you are assigned, press <PF3> DISP GROUPS during User Profile display. CA Dataquery displays the Group Display panel.

CA Dataquery does not allow you to change any values on the display. With authorization, you can change these values only on the User Table Maintenance panel.

A sample Group Display panel follows.

Sample Group Display (DQK20)

```
=>
The named operator is currently assigned to these group(S)
----------------------------------------------------------------------DQK20
DATAQUERY:  GROUP DISPLAY                FOR =>
--------------------------------------------------------------------------


       GROUP ONE   =>

       GROUP TWO   =>

       GROUP THREE =>


--------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN
```

Displaying Hardcopy Print Options

To view a user's print options, select <PF 5> PRINT OPT on the User Profile panel.

These options apply to print output on a network printer or in DQBATCH, except for number of rows and number of columns. All fields are **required**.

User Profile - Print Options (DQKM0)

```
 =>
 Overtype the values to be modified and press PF4 to complete the update
 -----------------------------------------------------------------------DQKM0
 DATAQUERY:  USER PROFILE          FOR => _____
 -----------------------------------------------------------------------------
    HARDCOPY PRINT OPTIONS       EXPLANATION
 -----------------------------------------------------------------------------
  NETWORK PRINTER-ID        => ____     Four Character ID of Network printer
  PRINT QUERY TEXT          => ___      YES print the query text, NO do not
  PRINT STATISTICS          => ___      YES print the query stats, NO do not
  PRINT BANNER PAGE         => ___      YES print the banner page, NO do not
  PRINT USING WINDOWS       => ___      YES window format, NO wrap format
  PRINT PAGES TOGETHER      => ___      YES pages together, NO windows together
  PRINT NUMBER OF COLUMNS   => ___      Three digit column width of hardcopy
  PRINT NUMBER OF ROWS      => ___      Three digit page length in rows




 -----------------------------------------------------------------------------
 <PF1> HELP       <PF2> RETURN       <PF3> DISP GROUPS   <PF4> UPDATE
 <PF5> PROFILE    <PF6> NOT USED     <PF7> NOT USED      <PF8> NOT USED
```

Panel Description

NETWORK PRINTER-ID

Enter a 1- to 4-character printer ID. CA Dataquery displays the value entered in the System Option Table, if one has not been entered for the user.

PRINT QUERY TEXT

Y (yes), the default, if the text of the query that produced the report is to be printed when the report is printed on a network printer.

N (no) does not print the query text.

PRINT STATISTICS

Y (yes), the default, if the statistics of the query that produced the report are to be printed when the report is printed on a network printer.

N (no) does not print the query statistics.

PRINT BANNER PAGE

Y (yes), the default, if the print jobs are to be preceeded with a banner page containing user name, date, and time, to aid in distributing the reports.

N (no) suppresses the printing of the banner page.

PRINT USING WINDOWS

Y (yes) if the report extends beyond 80 columns and you do not want the report lines to wrap.

N (no) the default, states that you want the print to wrap or continue on the next line.

PRINT PAGES TOGETHER

Use this field when printing a report composed of two or more adjacent (side-by-side) pages. If the first page (left-hand page) is labeled A and the second page (right-hand page) is labeled B and the report is three pages in length, specifying:

Y (yes), the default, would result in these pages being printed in the order of 1A, 1B, 2A, 2B, 3A, 3B.

N (no) results in a printing order of 1A, 2A, 3A, 1B, 2B, 3B.

This applies to both network and system printers.

PRINT NUMBER OF COLUMNS

Indicate a 1- to 3-character numeric value. Specify the width of the hardcopy on the network printer by stating the number of columns to be printed.

PRINT NUMBER OF ROWS

This is a 3-character numeric field. Specify the number of rows to be printed on one page of hardcopy on the network printer.

When you have completed your input to either User Profile panel (DQKL0 or DQKM0), or both, press <PF4> UPDATE to save changes. The new print options are in effect at the next sign-on with this ID.

Changing SQL and DQL Modes

Working in SQL Mode allows you to use SQL to create queries and dialogs, as well as to complete other interactive SQL tasks, if authorized.

Working in DQL Mode allows you to execute existing DQL queries, and create your own queries using the DQL. It also allows you to create terms (words especially defined for use in queries).

The USER PROFILE panel (DQK10) displays your current mode of operation and, if you are authorized to change modes, allows you to make an entry that changes your mode.

If you want to access DQL queries, write queries or dialogs in DQL, or execute existing DQL queries or dialogs, make sure you are working in DQL Mode. To use SQL, be sure you are working in SQL Mode. You can use the Personal Database Facility in either mode.

Prerequisites

You can only change modes if your CA Dataquery Administrator has authorized you to do so.

Procedure

Change modes through the USER PROFILE panel by following this procedure:

Step 1

Display your USER PROFILE (PROFILE command).

Step 2

Type **DQL** or **SQL** in the QUERY LANGUAGE field.

Step 3

Press <PF4> UPDATE and exit the USER PROFILE panel.

Once your User Profile is updated, you are operating in the new mode. See the *CA Dataquery Reference Guide* for syntax information for DQL and SQL queries.

Chapter 7: Using Commands

You can enter a valid command on the command line (top line) of any panel or menu. Authorization to use various commands varies depending on your authorization level. If you have administrative authorization, you can use additional administrative commands documented in the *CA Dataquery Administrator Guide*.

Whatever your authorization level, you can always type *OFF* on the command line to exit CA Dataquery rather than returning with the <PF2> Return key.

Follow this procedure to command operation.

Step 1

Position cursor on command line.

Step 2

Type a valid command.

Step 3

Press Enter.

Step 4

View new panel or menu.

CA Dataquery commands can be used in place of making selections from menus and thus speed your operation of CA Dataquery.

In CA Dataquery, commands terminate any active operation. For instance, if a command is not entered during an operation, you can press <PF2> Return and expect to return to the previous panel or, in the case of GUIDE, to the first panel of the previous process. However, if you enter a command and then press <PF2> Return, CA Dataquery displays the Main Menu, because you interrupted the active process with the command.

If you enter a command requiring a different authorization level, CA Dataquery displays a message telling you that you used the command incorrectly or you are not authorized to use it.

For details about syntax, usage, and operands, see the *CA Dataquery Reference Guide* when you use the commands.

Using Operands

A few commands allow you to add specifications (operands) to clarify the command. For instance, if you want to see a list of all the queries in your private library whose names begin with the letter *d*, you would type:

```
LIST queries private d
```

If you enter a command requiring operands without entering any operands, CA Dataquery displays a panel called a command prompter that you can use to add the operands. For example, if you enter only LIST and press Enter, you see the following panel.

```
=>

-----------------------------------------------------------------------DQAD0
DATAQUERY:  LIST COMMAND

LIST ALL      PRIVATE                        A
    (1)         (2)                         (3)
----------------------------------------------------------------------------
(1) Select a          (2) Select the type     (3) Enter 1 to 32 letters of the
    Directory Type:       of Query Library:       alphabet to indicate the
                                                  beginning of the display.

    ALL (Queries          PRIVATE
      and dialogs)        PUBLIC
    QUERIES               BOTH (Public and private)
    DIALOGS               A User (Enter ID)
    TABLES


----------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN
```

Operation

To enter the operands, use the Tab key to move the cursor to each numbered field and type a valid operand from the list below the field, or accept the defaults shown. Then press Enter to see the command result. For the preceding sample, CA Dataquery will display a directory listing of all items for the named user, beginning the list with the letter *a*.

Complete instructions on operating the prompter panels can be found in the *CA Dataquery Reference Guide*.

Command Summary

+nnnn

(Where nnnn represents a number) Scrolls forward nnnn pages on a multi-screen panel.

-nnnn

(Where nnnn represents a number) Scrolls backward nnnn pages on a multi-screen panel.

ADMIN

Displays Administrative Menu.

BOTTOM

Scrolls to bottom of multi-screen panel.

CREATE

Displays CA Dataquery EDITOR panel.

DETAIL

Entered on the report output panel, formats report to display the report as it is defined in the query, with detail and totals.

DIRECTORY

Displays DIRECTORY SELECTION panel.

DISPLAY

Displays KEY AND COLUMNS DISPLAY panel for named table.

DQL

Changes mode of operation from SQL Mode to DQL Mode.

DRAW

With a table-name operand, creates a simple query. See Creating a Simple Query Using DRAW for details.

EDIT

With operand, displays EDITOR panel containing named text. Can be used to change a private query (by updating) or to display and copy any query by changing the name and saving it.

EXECUTE

Displays ONLINE EXECUTION panel for query named in command.

EXTRACT

(DQL only). Displays EXTRACT ACTIVE FOUND SET panel to save a set of data found by a query.

FORMAT

(SQL only) Displays the first REPORT FORMAT panel for the active query.

GUIDE

Displays the first panel for constructing a query with the GUIDE function.

HELP

Displays HELP panel topics you can select for additional Help.

KEEP

(DQL only). Displays panel for saving query output.

LIST

With operands, displays directory of queries, dialogs, or tables.

MENU

Displays MAIN MENU.

MSG

With operands, sends a message to designated user.

NO-TOTALS

Entered on the report output panel, formats report to display query output without totals.

NOWRAP

Issue after WRAP command to return wrapped report lines to multi-screen display.

OFF

Signs CA Dataquery off and returns to monitor.

PDB

Initiates Personal Database Facility.

PFn

Where n is a number from 1 to 12, acts as a numbered PF key.

PROFILE

Displays USER PROFILE panel.

SQL

Changes mode of operation from DQL Mode to SQL Mode.

STATS

Displays EXECUTION STATISTICS panel for current query.

STORE

With unique, table name operand, creates a personal table from active found set of data.

SUBMIT

With query name, displays BATCH EXECUTION panel for query named.

TIME

Displays current time and date.

TOP

Scrolls to the top of a multi-screen panel.

TOTALS

Entered on the REPORT OUTPUT panel, formats report to display only total lines and suppresses detail lines.

WRAP

Moves off-screen lines to current screen of multi-screen display by wrapping each report line before starting the next report line.

Chapter 8: Using the CA Dataquery EDITOR

The CA Dataquery EDITOR is a panel that you use to create a query, dialog, or DQL term definition. The CA Dataquery EDITOR can also be used by authorized administrators to create a JCL member, security condition, or PROC.

Accessing the EDITOR

Display the CA Dataquery EDITOR in one of the following ways:

- Select CREATE from the Main Menu.

- Type **CREATE** in the command line on any panel.

- Use <PF4> EDIT on any panel which displays this option, such as directory panels.

- Type **EDIT query-name** in the command line on any panel. The *query-name* entry must be the name of an existing query or dialog that you want to view, change or copy.

- Type **EDIT *** to display the active query.

- Type **DRAW table-name** to create a query listing all columns that you can access in the named table.

The CA Dataquery EDITOR allows you to type directly on the screen or select items from other displays to be included in the text. You can display and make selections from a template of clauses, a list of tables for your current ID, and from a list of columns in any table you select. Operate the EDITOR by entering commands and by pressing PF keys.

The following example shows the EDITOR as it appears with no entries.

Parts of the CA Dataquery EDITOR

```
   =>
   CREATION PANEL
   ----------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR            CURRENT TABLE:  _____
   ------------------------------------------------------------------------------
   NAME:  _____           TYPE:  _____    STATUS:  _____
   DESCRIPTION:  _____
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. ========================= T O P =============================
   ..

   ..
   ..
   ..
      ===================== B O T T O M =============================
   ------------------------------------------------------------------------------
   <PF1> HELP        <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
   <PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD       <PF8>  FORWARD
   <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12> PROCESS MODE
```

Description

Name	Purpose
Command line	Enter CA Dataquery system commands.
Mode prompt	Displays current EDITOR mode: Create or Process.
Description area	Describes query or dialog. Entries can be changed.
Line commands	Enter EDITOR commands in this area.
Text area (TOP to BOTTOM)	Type clauses or insert them from the template on these lines. Also insert table and column names that you select from displays accessed by <PF6> LIST TABLES and <PF3> DISPLAY COLUMNS.
PF key menu	Create Mode keys or Process Mode keys. Change modes with <PF12> PROCESS MODE.

Using the Template

The EDITOR provides a query template from which you can select and insert formatted clauses into the text area on the EDITOR panel. The template contains language syntax for the current mode.

Each clause on the template contains text that you can type over or delete. The text of each clause shows the correct syntax for the clauses that make up queries. Display the template as many times as you need and select your clauses one at a time or all at once.

See the *CA Dataquery Reference Guide* for complete instructions on using the syntax template.

Changing EDITOR Modes

The EDITOR panel operates in two modes: Create Mode and Process Mode. <PF12> PROCESS MODE allows switching back and forth between modes, depending on what you need to do.

Most people use Create Mode while writing, and change to Process Mode to save, update, or use the member. The EDITOR line commands are available in either mode. Both modes allow entries in the text area.

The following outlines the basic functions available in each mode.

Create Mode

- Select table names for current authorization ID.
- Select column names for current table.
- Use the template to create a query.

Process Mode

- Save entries for a query or dialogthat has never been saved.
- Save updates to a named query or dialog that has been saved before.
- Display panels for defining currently displayed dialog variables and prompt panels.
- Execute the query or dialog.

Both Modes

- Validate syntax.
- Scroll text area forward and backward.
- Online Help.
- Mode change.

Using the PF Keys

The preceding describes the Create and Process Modes available with the CA Dataquery EDITOR. Each mode presents its own set of PF keys. The following tables describe the PF keys available in each mode.

Create Mode PF Keys

The following describes the Create Mode PF keys.

<PF1> HELP

Display information about the current panel.

<PF2> Return

Return to the previous panel.

<PF3> DISPLAY COLUMNS

Display a list of all columns for the current table.

<PF4> DISPLAY KEYS

DQL: Display a list of keys for the current table. SQL: Display columns for the current table. (Keys are not used in SQL statements.)

<PF5> DISPLAY ALL

Display a list of all columns for the current tables.

<PF6> LIST TABLES

Display a list of all tables you can access.

<PF7> BACKWARD

Display the previous screen of a partially shown panel.

<PF8> FORWARD

Display the next screen of a partially shown panel.

<PF9> TEMPLATE

Display template for selecting model statements for building queries.

<PF10> VALIDATE

Screen the current entries on the EDITOR panel for errors.

<PF11> RIGHT/LEFT

Move current panel four columns left or right on 80-column terminal screens.

<PF12> PROCESS MODE

Display PF keys for processing the current member. (*See the following for Process Mode PF key usage.*)

Process Mode PF Keys

The following describes the Process Mode PF keys.

<PF1> HELP

Display information about the current panel.

<PF2> Return

Redisplay previous panel.

<PF3> EXECUTE

Execute the current query or dialog online.

<PF4> SAVE

Save the current member in the appropriate library.

<PF5> DIALOG DEF

Define dialog variables if the EDITOR contains a query with variables specified. See Defining the Dialog.

<PF6> DELETE

Delete the last version saved, if you own the member.

<PF7> BACKWARD

Display the previous screen of a partially shown panel.

<PF8> FORWARD

Display the next screen of a partially shown panel.

<PF9> UPDATE

Apply any changes made to the member, if you own it.

<PF10> VALIDATE

Have CA Dataquery check the entries for errors.

<PF11> RIGHT/LEFT

Move the panel 4 columns to the left or right, if an 80-column terminal screen.

<PF12> CREATE MODE

Display PF keys for creating a member.

Using Line Commands

The EDITOR has line commands that insert, copy, move, delete, repeat and split lines. Other commands permit shifting the position of data within a line, locating or changing character strings, and scrolling text forward and backward. All you do is type a simple command in the line command area described in Using the CA Dataquery EDITOR (see page 69) and press Enter.

Summary

The following summarizes the commands that are discussed in detail in the *CA Dataquery Reference Guide*.

A

After -- Destination for a move or copy after line with A.

B

Before -- Destination for a move or copy before line with B.

CH /string1/string2

Changes the first string to the second string.

C

Copies a single line to the specified destination.

Cn

Copies the indicated number of lines starting with the line on which you entered the command to the specified destination.

CB

Copies all lines following the command through the end of the panel to the specified destination.

CC

Copies the block you define to the specified destination.

CT

Copies from the first line through the line with the command.

D

Deletes a single line.

DB

Deletes from line with the command through the last line.

dd

Deletes block of lines specified by a pair of line commands *DD*.

Dn

Deletes a specified number of lines including the one on which you enter the command.

DT

Deletes from first line through line with the command.

GC /string1/string2

Changes every occurrence of first string to second string, and leaves display positioned at last string changed.

I

Inserts a blank line after the line with the I command.

I*n*

Inserts the specified number of lines after the line with the I*n*.

NE /string

Searches forward for the specified text string.

PR /string

Searches backward for the specified text string.

M

Moves a single line to the specified destination.

MB

Moves a block of text starting with the line on which you enter the command through the end of the panel.

MM

Defines and moves a block of text to the specified destination.

Mn

Moves the specified number of lines to the specified destination.

MT

Moves a block of text starting with line 01 and continuing through the line on which you enter the command.

R

Repeats the line on which you enter the R command.

Rn

Repeats the line with the R command n times.

*****

Scrolls the line on which you enter the * to the top of the display.

T

Scrolls to the top of the panel.

<n

Shifts the display the specified number of columns to the left.

>n

Shifts the display the specified number of columns to the right.

sp

Splits the line into two lines at the point you place your cursor.

X

On any line, cancels pending COPY, MOVE, BEFORE, or AFTER.

Entering a Sample Line Command

Operation

On the following sample EDITOR panel, note that the letter **M** has been typed over the zero of line 02. This tells the EDITOR to move line 02 to the line following the **A** typed over the zero of line 03.

```
=>
----------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR
--------------------------------------------------------------------------------
NAME:         SAMPLE                            TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   MOVE ONE LINE_____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
01 SELECT ITM_ID, ORD_ID, SHIP_QTY
M2 WHERE SHIP_QTY > 10
A3 FROM CAI_SLSHST_TBL
04 ORDER BY ITM_ID
.. ======================= B O T T O M ================================




--------------------------------------------------------------------------------
<PF1>  HELP           <PF2>  RETURN    <PF3>  EXECUTE      <PF4>  SAVE
<PF5>  DIALOG DEF     <PF6>  DELETE    <PF7>  BACKWARD     <PF8>  FORWARD
<PF9>  UPDATE         <PF10> VALIDATE  <PF11> RIGHT/LEFT   <PF12> CREATE MODE
```

Result

The following example shows the results of moving line 02 to follow line 03.

```
  =>
  ------------------------------------------------------------------------DQD10
  DATAQUERY:  EDITOR
 --------------------------------------------------------------------------------
  NAME:         SAMPLE                           TYPE: QUERY    STATUS: PRIVATE
  DESCRIPTION:   MOVE ONE LINE_____
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. ========================== T O P ===============================
  01 SELECT ITM_ID, ORD_ID, SHIP_QTY
  02 FROM CAI_SLSHST_TBL
  03 WHERE SHIP_QTY > 10
  04 ORDER BY ITM_ID
  .. ======================= B O T T O M ============================




  --------------------------------------------------------------------------------
  <PF1>  HELP           <PF2>  RETURN     <PF3>  EXECUTE    <PF4>  SAVE
  <PF5>  DIALOG DEF     <PF6>  DELETE     <PF7>  BACKWARD   <PF8>  FORWARD
  <PF9>  UPDATE         <PF10> VALIDATE   <PF11> RIGHT/LEFT <PF12> CREATE MODE
```

See the *CA Dataquery Reference Guide* for complete instructions on EDITOR commands.

Chapter 9: Restrictions on Names

When naming such things as queries, dialogs, terms, temporary results, or any CA Datacom item, do not use words from the following categories:

- CA Dataquery commands

- CA Dataquery EDITOR commands

- DQL keywords

- SQL keywords

- Ignored words, such as *rows*, *records*, or *from* that are used in constructing queries and dialogs.

Because these words have special meanings to CA Dataquery or are ignored by CA Dataquery, failure to avoid them causes problems when you execute any query in which they are contained. A complete list of reserved and ignored words appears in the *CA Dataquery Reference Guide*.

Chapter 10: Getting a Report

DQL Mode and SQL Mode handle report formatting differently. When you use DQL to write a query, you include formatting commands in the query syntax. Reformatting options are available on the ONLINE EXECUTION panel or on the OUTPUT panel. With SQL syntax, the primary focus is on obtaining the data. Therefore, CA Dataquery provides a series of panels in SQL Mode that permit you to vary the format of a report.

Procedure

You must execute a query or dialog to get output. Approach execution from one of three ways:

■ Select a query or dialog from a directory.

■ Issue a command (EXECUTE or SUBMIT).

■ Press a PF key while viewing the EDITOR panel.

After identifying the query or dialog to be processed, execute it using the online or batch method.

Online execution means the execution takes place while you are signed on. Batch execution means a job is submitted with JCL instructions and the processing takes place outside of the current operation of CA Dataquery. Batch results do not print on the terminal screen.

Choosing an Execution Method

After you select a query or dialog, issue the command or press the PF key that starts the execution method you want to use. Execution methods are described below.

EXEC or EXECUTE

(PF key or command)

Choose online execution when you want the results of a query or dialog to appear immediately on your terminal screen or if you want immediate execution of a hardcopy.

SUBMIT

(PF key or command)

Choose batch execution when you:

■ Do not need a report on the screen

■ Know the processing takes a long time

■ Want to delay processing

■ Want to export the results instead of print them

Panels

Following are two panels for executing queries. The first is the ONLINE EXECUTION panel (for SQL Mode) and the next is the BATCH EXECUTION panel. SQL Mode and DQL Mode ONLINE EXECUTION panels are almost the same. The only real differences are that in DQL Mode you can restart execution at various points in the process of computation, sorting, and executing. In SQL Mode, you can revise the default report format. (For an example of the DQL Mode ONLINE EXECUTION panel, see Executing in DQL Mode.)

ONLINE EXECUTION Panel (SQL Mode)

```
 =>
  Enter the desired options and press PF3 to execute
 -------------------------------------------------------------------------DQE60
 DATAQUERY:  ONLINE EXECUTION SQL QUERY
 -----------------------------------------------------------------------------
   EXECUTE QUERY NAMED => ACTIVE QUERY

   EXECUTE STEP                  The first query step to execute
    _   SELECTION                - Read and collect the data
    _   REPORTING                - Produce the report

   REPORT DESTINATION            The destination for the report
    _   VIDEO TERMINAL           - Produce the report on the terminal
    _   NETWORK PRINTER ____     - Produce the report on a network printer
    _   SYSTEM PRINTER           - Produce the report on the system printer




 -----------------------------------------------------------------------------
 <PF1> HELP        <PF2> RETURN        <PF3> EXECUTE       <PF4> FORMAT REPORT
```

BATCH EXECUTION Panel (SQL Mode)

```
  =>
 ------------------------------------------------------------------------DQEN0
  DATAQUERY:  BATCH EXECUTION
 ------------------------------------------------------------------------------
 Enter name of query to submit:         ACTIVE-QUERY
 Select the type of execution:          X  Immediate
                                        _  Defer execution until time __ : __
 Enter the name of the JCL member to use: $$DQJCL
 Enter nonblank to use JCL for deferred:  _
 Select the report type:
           X  Detail and totals        _  When/do column functions only
           _  Detail only (no totals)  _  No detail (totals and when/do)
           _  Totals only (summary)    _  Suppress report
  To export print data to a sequential file, select output record type:
           _  Variable comma separated  _  Fixed length record
  For variable, enter name of output set   _____
  For variable, select output type:       _  Detail
                                          _  Totals
  Select the output file device type:     _  Tape
                                          _  Disk


 ------------------------------------------------------------------------------
  <PF1> HELP      <PF2>  RETURN     <PF3>  SUBMIT
```

Authorization

If the ONLINE EXECUTION panel does not appear on your screen, it means it is being suppressed, probably as a site standard. If you are authorized to change your profile, you can change this specification with the PROFILE option on the Administrative Menu. If you cannot change your profile, the ONLINE EXECUTION panel does not appear and the PF keys will initiate execution with default selections shown on previous panel samples.

Also, batch execution can be prohibited. If you want to use batch execution, see your CA Dataquery Administrator. If you cannot use batch, the SUBMIT PF key will not function.

Options

When a query or dialog author defines a report's appearance with mathematical functions or totaling options, you can specify whether you want to see detail data or totals. You can also change the definition with online execution. (See n (see page 86) for details.)

With the ONLINE EXECUTION panel, you can specify a destination different from the defaults. To change the destination with batch execution, you must change the JCL. The only way you can access the JCL is if a JCL prompt appears or if you have CA Dataquery Administrator authorization to update JCL.

The following table shows you which report options are available with each type of execution.

Option	Online	Batch
Change appearance	Yes	Yes, by copying query and defining new appearance
Output to screen	Yes	No
Choose a printer	Yes	Yes, in JCL
Change totals presentation	Yes, on output screen	Yes (if defined)

Specifying an Output Destination

When you execute a query online, you can specify multiple destinations for your execution output.

If you execute a query in batch, you can only specify a printer as the output destination, and not the terminal screen. For more information about batch execution, see Executing in Batch (see page 123).

Options

The following figure compares the output destinations available with online and batch execution.

Destination	Advantages	Disadvantages
Video Terminal	■ Immediate results ■ Can change total options without reexecuting ■ Can change report format without reexecuting ■ Can go directly to any page	■ Must scroll to see report that is wider or longer than your terminal screen
Network Printer	■ Get a hardcopy ■ Can see all of a long or wide report ■ Output is probably faster than system printer	■ Must wait turn in print queue ■ Paper might not be wide enough

Destination	Advantages	Disadvantages
System Printer	■ Get a hardcopy ■ Can see all of long or wide reports ■ Best for wide reports ■ Might have laser printer ■ Best for large volume	■ Probably slowest output turnaround ■ Cannot be used if the query contains a DISPLAY statement

Hints

Printer time and report retrieval time are site-specific. You might find, for instance, that your system printer produces faster turn around time than your network printer. When specifying a printer as your report destination, please remember these things:

■ Very long reports should probably be sent to the system printer, as a courtesy to others who share your network printer.

■ There is a maximum page count specified at your site that limits the number of pages on a report. If your report exceeds the limit, the report stops when the maximum is reached. See your CA Dataquery Administrator if you need to print longer reports.

■ If you have problems obtaining your printed output, your CA Dataquery Administrator can check the status of your request for you.

■ To help you identify your printout, CA Dataquery places a banner page at the beginning of every report that contains your name and the report date.

■ You can print the query or dialog that produced the report as part of your output. You can also print the execution statistics. An explanation of the statistics page is available in <u>Viewing Query Statistics</u> (see page 117). For information about changing your User Profile, please see <u>Using Administrative Functions</u> (see page 55).

■ DISPLAY queries must be submitted for batch execution if output is to be printed on a system printer.

Using SQL Mode Reporting

When you create a query, SQL Mode execution allows you to provide specifications about the default report you want to produce at execution time. If you do not want to define a default report, CA Dataquery creates one automatically. If you are executing someone else's query or dialog, you can change the specifications, depending on what you want in your report.

Options

You can add the following features:

- **Overall appearance:**
  - Title
  - Columnar or List presentation
  - Report column order
  - Headings for report columns
  - Edit patterns for numeric data

- **Extras permitted if the ORDER BY clause is present in query:**
  - Sorting sequence of ORDER BY columns
  - Control breaks taken on ORDER BY columns
  - Separate pages for each ORDER BY group of columns

- **Mathematical functions**
  - Column functions AVG, MAX, MIN, SUM, CNT, and TOT at control breaks or end of report
  - Legends for function results
  - Edit patterns of function results

To report results of mathematical functions for groups of rows, change sort specifications or use page breaks, the query must contain an ORDER BY clause so that rows are retrieved in sorted order.

Description

Enter report specifications on the sequence of panels that appears when you press <PF4> FORMAT REPORT during display of the ONLINE EXECUTION panel (DQE60) or when you use the FORMAT command. Once the query author sets these specifications, they become the default. Others who can access the query can change the specifications for one online execution only.

The specifications cannot be changed during batch execution. To process a query in batch with different report specifications, copy the query and set your own default report. (See Accessing the EDITOR (see page 69) for details on copying queries.)

The remainder of these pages describe the process of setting report specifications.

Note: For more information about each panel, see the *CA Dataquery Reference Guide*.

Step 1: Plan a Report in SQL Mode

Example

The following query produces the data wanted for the report. It also contains an ORDER BY clause that permits control breaks to be specified.

```
 =>

 -----------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR
 ------------------------------------------------------------------------------
 NAME:        TEMP                          TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. =========================== T O P ================================
 01 SELECT SALARY,
 02        DEPT,
 03        NAME,
 04        ID
 05 FROM STAFF
 06 ORDER BY DEPT
 .. ====================== B O T T O M ===========================



 ------------------------------------------------------------------------------
 <PF1>  HELP        <PF2>  RETURN      <PF3>  EXECUTE        <PF4>  SAVE
 <PF5>  DIALOG DEF <PF6>  DELETE      <PF7>  BACKWARD       <PF8>  FORWARD
 <PF9>  UPDATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12> CREATE MODE
```

Result

Note that the following default report sorts the found rows by DEPT as a result of the ORDER BY clause in the query.

```
03/17/11
12:16:15                     SEE UNSPECIFIED REPORT FORMAT


      SALARY    DEPT  NAME        ID
   ---------  -------  --------  -------
   017654.50        7  SMITH        220
   002010.00       10  LU           210
   022959.20       10  MOLINARE     160
   019260.25       10  DANIELS      240
   021234.25       10  JONES        260
   020659.80       15  HANES         50
   012258.50       15  KERMISCH     170
   012508.20       15  NGAN         110
   016502.83       15  ROTHMAN       70
   018357.50       20  SANDERS       10
   018171.25       20  PERNAL        20
   014252.75       20  SNEIDER      190
```

Options

The ORDER BY clause is important in creating the sample report. When ORDER BY is in a query, a panel appears in the Report Format sequence that allows the person executing a query to specify control breaks and page breaks based on the columns listed in the ORDER BY clause.

The ORDER BY clause tells CA Dataquery to group rows together according to data found in one or more named columns. A control break can be assigned to any ORDER BY column. A control break refers to a point in processing where CA Dataquery finds a different data value than one it has just read, meaning the current group of rows is complete. If directed, CA Dataquery performs a specified function at the control break. At a control break, CA Dataquery can perform mathematical functions, calculating results for the rows just processed. You still have to tell CA Dataquery which columns to perform the control break process on, but you do not do that using this panel.

Example

The following example shows how CA Dataquery sees the rows found by a query after sorting them by LAST-NAME. Since the query report format specified LAST-NAME as a control-break column, CA Dataquery sees the rows containing identical values in that column as logical groups and takes a control break after each group. If subtotals were specified on another panel for the CONTRIBUTIONS column, CA Dataquery would total the CONTRIBUTIONS values for each group at the control break.

LAST-NAME	FIRST-NAME	CLASS	CONTRIBUTIONS
Adams	James	A	45345.89
Adams	Arlene	C	98765.21
Adams	Robert	C	23456.90
>>>>>>>>>> *Control Break* <<<<<<<<<<			
Burns	John	A	7897.32
Burns	Jeff	C	198.21
Burns	Alice	B	99321.42
>>>>>>>>>> *Control Break* <<<<<<<<<<			
Crosby	Fred	A	278.13
Crosby	Mary	C	9978.13

Use control breaks to organize the selected data, grouping it to provide more easily understood results. Control breaks also provide a way to summarize large volumes of data.

Example

```
03/15/11                    DATAQUERY DEVELOPMENT
15:04:21                    SORTED COLUMNAR REPORT
         WITH CONTROL BREAKS, COUNTS, AVERAGES, PAGE BREAKS AND SUM


    DEPT  NAME           ID      SALARY
    ------- ---------  ------- ----------
      10   LU            210   20,010.00
           MOLINARE      160   22,959.20
           DANIELS       240   19,260.25
           JONES         260   21,234.25

  NUMBER OF PEOPLE                        4

  AVERAGE   SALARY      20,865.92

  SUM       SALARY      83,463.70


03/15/11                    DATAQUERY DEVELOPMENT
15:04:21                    SORTED COLUMNAR REPORT
         CONTROL BREAKS, COUNTS, AVERAGES, SUMS, PAGE B


  NUMBER OF PEOPLE                       37

  AVERAGE   SALARY      16,174.57

  SUM       SALARY     598,459.13
```

The new report contains the same data. However, the order of columns, the mathematical data that appears for each department and at the end of the report, and the paging have all been supplied by the report format panels. The next section describes the report format panels and the selections that define the sample report.

Step 2: Define a Report in SQL Mode

The following pages show the sequence of panels that appear whenever you choose <PF4> FORMAT REPORT during online execution. The panels pertaining to control breaks and page breaks do not appear if the query does not contain an ORDER BY clause.

This particular set of panels represents the definition of the preceding sample report. Following are the SQL Report Definition Steps.

Step 1

Select a query for execution.

Step 2

Display ONLINE EXECUTION SQL QUERY (DQE60) panel.

Step 3

Press <PF4> FORMAT REPORT.

Step 4

Complete REPORT TITLE panel as follows.

```
=>

-------------------------------------------------------------------------DQF30
DATAQUERY:  REPORT FORMAT - REPORT TITLE      QUERY NAME:    TESTEXEC
-------------------------------------------------------------------------

Enter up to two lines for a
report title:        => COLUMNAR REPORT
                     => CONTROL BREAKS, COUNTS, AND SUMS

Select the desired report format:    X  Columnar format: one row per line.
                                     _  List format: one row per page.




-------------------------------------------------------------------------
<PF1> HELP        <PF2> RETURN        <PF3> DELETE FORMAT      <PF4> CONTINUE
```

This panel tells CA Dataquery to produce a columnar report with the specified title on each page.

Caution Defining an SQL Report Format causes the current 'ACTIVE' query to be updated in the DQQ if it has been previously saved. This means that any changes to the query on the EDITOR panel made during this session is permanent even though a query update was not requested. This occurs to ensure that the SQL Report Format and SQL query syntax remain in synch with each other.

Step 5

Press <PF4> CONTINUE to display the following CONTROL BREAKS (DQF40) panel. Complete the panel as shown to permit column functions and page breaks to be reported for all rows having the same Dept data. See Step 1: Plan a Report in SQL Mode (see page 87) for an explanation of control breaks.

```
=>
 --------------------------------------------------------------------DQF40
 DATAQUERY:  REPORT FORMAT - CONTROL BREAKS        QUERY NAME: TEMP
 ----------------------------------------------------------------------
 The named columns were used to order rows in the table resulting from the
 execution of this SQL query.  Place any character under "CONTROL BREAK"
 to select that column as a control break.  Place any character under "NEW
 PAGE" for a column selected for control break to get a new report page.
 ----------------------------------------------------------------------
                                |SORT SEQUENCE |CONTROL | NEW
 COLUMN NAME                    |ASCEND/DESCEND| BREAK  | PAGE
 ----------------------------------------------------------------------
 DEPT                           |   X          |   X    | X
                                |              |        |
                                |              |        |
                                |              |        |
                                |              |        |
                                |              |        |
                                |              |        |
 ----------------------------------------------------------------------
 <PF1> HELP         <PF2> RETURN       <PF3> NOT USED     <PF4> CONTINUE
 <PF5> NOT USED     <PF6> NOT USED     <PF7> BACKWARD     <PF8> FORWARD
```

Step 6

Press <PF4> CONTINUE to display the COLUMN FUNCTIONS (DQF50) panel. Complete the panel as shown below to:

■   Order the report columns

■   Count the rows (people) in each Dept

■   Report the average salary for each Dept

■   Report the sum of all salaries for each Dept

The SUM function and TOT function allow you to keep a running calculation on the numeric columns. The difference between the two is in how the calculation gets printed. TOT prints control break calculations and resets with every control break. SUM allows you to choose at which control you want intermediate calculations to appear. (Both permit calculation of a grand total even when ORDER BY is not present in the query.)

■   Report a count, average, and sum for all rows

```
 Press <PF1> for help with defining the report
-------------------------------------------------------------------------DQF50
DATAQUERY:  REPORT FORMAT - COLUMN FUNCTIONS  QUERY NAME:    TEMP
------------------------------------------------------------------------------
Specify the order in which the columns are to appear on the report by
inserting an order number below.  Column functions may be selected by placing
any character under the corresponding functions.
------------------------------------------------------------------------------
NUMBER| COLUMN NAME                  | AVG | MAX | MIN | SUM | CNT | TOT
------------------------------------------------------------------------------
 04   | SALARY                       |  X  |     |     |  X  |     |
 01   | DEPT                         |     |     |     |     |  X  |
 02   | NAME                         |     |     |     |     |     |
 03   | ID                           |     |     |     |     |     |
      |                              |     |     |     |     |     |
      |                              |     |     |     |     |     |
      |                              |     |     |     |     |     |
      |                              |     |     |     |     |     |
      |                              |     |     |     |     |     |
      |                              |     |     |     |     |     |
- LAST PAGE ------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
<PF5> NOT USED       <PF6> NOT USED     <PF7> BACKWARD   <PF8> FORWARD
```

Step 7

Press <PF4> CONTINUE to display the following COLUMN HEADING (DQF60) panel.
Leave the default values. These values create report column headings.

```
-------------------------------------------------------------------------DQF60
DATAQUERY:  REPORT FORMAT - COLUMN HEADINGS    QUERY NAME: TEMP
------------------------------------------------------------------------------
You may enter alternate headings for any column on the report.
Defaults are provided and can be modified.
------------------------------------------------------------------------------
COLUMN: DEPT                              LINE1: DEPT
                                          LINE2:

COLUMN: NAME                              LINE1: NAME
                                          LINE2:

COLUMN: ID                                LINE1: ID
                                          LINE2:

COLUMN: SALARY                            LINE1: SALARY


------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
<PF5> NOT USED       <PF6> NOT USED     <PF7> BACKWARD   <PF8> FORWARD
```

Step 8

Press <PF4> CONTINUE to display the COLUMN FORMAT (DQF70) panel. Leave the
default values so that all numeric data will appear in the format labeled Column 2
(without dollar signs).

```
------------------------------------------------------------------------DQF70
 DATAQUERY:  REPORT FORMAT - COLUMN FORMAT        QUERY NAME: TEMP
 ------------------------------------------------------------------------------
 Select the type of editing desired for each numeric column on your report.
 Place any character under the number that represents the edit format needed.
 Defaults are provided and can be modified.
   Column 1:  12345.678  Column 3: 0,012,345.678
   Column 2: 12,345.678  Column 4:   $12,345.68
 ------------------------------------------------------------------------------
 COLUMN NAME                     |  1  |  2  |  3  |  4  |
 ------------------------------------------------------------------------------
 DEPT                            |     |  X  |     |     |
 ID                              |     |  X  |     |     |
 SALARY                          |     |  X  |     |     |
                                 |     |     |     |     |
                                 |     |     |     |     |
                                 |     |     |     |     |
                                 |     |     |     |     |

 ------------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
 <PF5> NOT USED      <PF6> NOT USED     <PF7> BACKWARD    <PF8> FORWARD
```

Step 9

Press <PF4> CONTINUE to display the FUNCTION LEGENDS (DQF80) panel. The
legends are the text that will appear on the report each time a column function
result is printed. Type over the default legends as follows.

```
------------------------------------------------------------------------DQF80
 DATAQUERY:  REPORT FORMAT - FUNCTION LEGENDS        QUERY NAME: TEMP
 ------------------------------------------------------------------------------
 Enter a legend to be displayed with the result of the indicated function
 during control break processing.
 Defaults are provided and can be modified.
 ------------------------------------------------------------------------------
 FNC | COLUMN NAME                     | LEGEND
 ------------------------------------------------------------------------------
 CNT | DEPT                            | NUMBER OF PEOPLE
 AVG | SALARY                          | AVERAGE    SALARY
 SUM | SALARY                          | SUM        SALARY
     |                                 |
     |                                 |
     |                                 |
     |                                 |
     |                                 |
     |                                 |
     |                                 |
 ------------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
 <PF5> NOT USED      <PF6> NOT USED     <PF7> BACKWARD    <PF8> FORWARD
```

Step 10

Press <PF4> CONTINUE to display the FUNCTION FORMAT (DQF90) panel. Leave the defaults so that the amounts printed for the counts, averages and sums will have the format identified as Column 2 (no dollar signs).

```
=>
---------------------------------------------------------------------DQF90
DATAQUERY:  REPORT FORMAT - FUNCTION FORMAT     QUERY NAME: TEMP
----------------------------------------------------------------------------
Select the type of editing desired for each function result.
Place any character under the number that represents the edit format needed.
Defaults are provided and can be modified.
  Column 1:  12345.678  Column 3: 0,012,345.678
  Column 2: 12,345.678  Column 4:   $12,345.68
----------------------------------------------------------------------------
FCN | COLUMN NAME                   | 1 | 2 | 3 | 4 |
----------------------------------------------------------------------------
CNT | DEPT                          |   | X |   |   |
AVG | SALARY                        |   | X |   |   |
SUM | SALARY                        |   | X |   |   |
    |                               |   |   |   |   |
    |                               |   |   |   |   |
    |                               |   |   |   |   |
    |                               |   |   |   |   |
    |                               |   |   |   |   |
----------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN          <PF3> NOT USED   <PF4> CONTINUE
<PF5> NOT USED      <PF6> NOT USED        <PF7> BACKWARD   <PF8> FORWARD
```

Step 11

Press <PF4> CONTINUE to display the FUNCTION CONTROL BREAK (DQFA0) panel for the CNT function associated with the DEPT column. One of these panels appears for each column function chosen on the COLUMN FUNCTIONS (DQF50) panel.

For every panel, select *both* the DEPT control break *and* the END OF REPORT options. This causes the results of each function chosen to appear for each department, as well as printing a count, average salary and sum of salaries for all departments at the end of the report.

```
------------------------------------------------------------------------DQFA0
DATAQUERY:  REPORT FORMAT-FUNCTION CONTROL BREAK   QUERY NAME: TEMP
-----------------------------------------------------------------------------
Select the control break level at which the  COUNT   function for the
DEPT                           column is to be displayed.
The appropriate level may be indicated by placing any character next to the
desired names.
-----------------------------------------------------------------------------
SEL|  CONTROL BREAK COLUMN NAME       |
-----------------------------------------------------------------------------
 X | DEPT                             |
 X | END OF REPORT                    |
   |                                  |
   |                                  |
   |                                  |
   |                                  |
   |                                  |
   |                                  |
   |                                  |
 ----------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> NOT USED       <PF6> NOT USED      <PF7> BACKWARD    <PF8> FORWARD
```

Step 12

When all FUNCTION CONTROL BREAK (DQFA0) panels are completed, CA Dataquery redisplays the ONLINE EXECUTION panel with the following message.

```
DQ125I - THE REPORT FORMAT HAS BEEN SUCCESSFULLY COMPLETED
---------------------------------------------------------------------DQE60
DATAQUERY:  ONLINE EXECUTION SQL QUERY
----------------------------------------------------------------------------
  EXECUTE QUERY NAMED => ACTIVE QUERY

  EXECUTE STEP                   The first query step to execute
   X  SELECTION                  - Read and collect the data
   _  REPORTING                  - Produce the report

  REPORT DESTINATION             The destination for the report
   _  VIDEO TERMINAL             - Produce the report on the terminal
   _  NETWORK PRINTER ____       - Produce the report on a network printer
   _  SYSTEM PRINTER             - Produce the report on the system printer




  ----------------------------------------------------------------------------
  <PF1> HELP        <PF2> RETURN        <PF3> EXECUTE       <PF4> FORMAT REPORT
```

If you created the query, you have just defined the default report.

If you are not the author of the query, the specifications you entered are good for one execution only. You must reenter specifications every time you want this particular report. Or, edit the query, save it in your library with a different name, and create a different report format.

Modify an SQL Report Format

If you want to change the default report format for an SQL query, begin execution of the query, make changes to the format, and execute. If you are the author, the format is updated.

When you have updated a query that you wrote, you should review the format to determine whether or not changes should be made.

Using DQL Mode Reporting

Most of the time you execute a query or dialog so that you can produce a specific kind of report with the data you find. Even if you only want to create a business chart, you should create a report first. In DQL Mode, you have a variety of options in creating your report. You can specify its:

- Format (appearance)

- Kinds of totals

- Destination

The remainder of this chapter tells you about the reporting options you have with both online and batch execution in DQL Mode.

Choosing Format Options in DQL Mode

When you produce a report or when you create a query or dialog, you can specify its format. The report produced by your query can present the data arranged in columns (*columnar format*) or with a separate row on every page (*list format*).

With the ONLINE EXECUTION panel you can change the default format specified in the query or dialog and select the alternative. When the query specifies PRINT, the data appears in columns. When the query specifies DISPLAY, the data appears in list format. Batch execution does not allow you to change the format specified in the query.

Note: Queries containing DISPLAY statements must be executed in batch if a system printer is chosen.

The following pages show examples of columnar and list formats in reports.

Example - Sample Columnar Report

```
 SLMN-ID  NAME                          YTD-SALES
 -------  ----------------------------  -------------
 00760    HARTFORD IRON WORKS INC           7,600.00
 23160    UNIVERSAL AIRWORKS              231,600.00
 00795    NATIONAL HARRIS CORPORATION       7,950.00
 34222    CANNON TOOLS CO               3,322,123.00
 23615    M.A.C. SAVINGS                  236,150.00
 11400    MALIRY ENTERTAINMENT INDUSTRY   114,000.00
 25155    CHESTERSON-KIDD INC             251,550.00
 00655    WEST LIFE INSURANCE               6,550.00
 09755    NETTLETON AIRCRAFT               97,550.00
 10595    JOHNSON MULTIFOODS              105,950.00
 10420    MARK & MARK INTERNATIONAL, INC  104,200.00
 05730    BELL-BAKER POWER & SERVICE       57,300.00
```

Selecting the column option during online execution or using the PRINT statement in your query or dialog creation produces a report with data arranged in columns. Each column has a heading defined in the query or uses the default CA Datacom Datadictionary alternate heading that identifies the field containing the data. In the above sample columnar report, the headings are SLMN-ID, NAME and YTD-SALES.

When a report extends beyond 80 columns, the WRAP and NOWRAP commands control the output display and the User Profile Print Options control the hardcopy report width. See Using Administrative Functions (see page 55) to change the PRINT USING WINDOWS option of your User Profile.

Example - Sample Report in List Format

```
=>

------------------------------------------------------------------------DQED0
DATAQUERY:  ROW DISPLAY                              ROW 00001 PAGE     00001
------------------------------------------------------------------------------
SLMN-ID                         00760
NAME                            HARTFORD IRON WORKS INC
YTD-SALES                       0007600.00
```

If you choose the list option during online execution or query or dialog creation, CA Dataquery places only one row of information on each page (or panel). The report lists the headings for the columns on the left, as in the sample list report above. The data is listed at the right in the report.

Using DQL Mode Totaling Options

If a query you execute specifies totals, you can specify output variations on the TOTALING OPTIONS panel (DQE30) during execution. Totaling options are also available by PF key or command during online output display. (See Changing the Format of DQL Mode Total Output (see page 100)).

The available totaling variations are:

- Show detail and all totals

- Show detail only

- Show totals only

- Show only control break totals (See Totals By Name Sample Output (see page 104).)

- Show only WHEN/DO results

- Show everything but detail lines

To see examples of these totaling variations, see DQL Mode Totaling Options Examples (see page 103).

The query specifies which numeric columns are totaled in the PRINT statement of the query. A SORT statement can specify *control breaks* with parentheses around column names. If totals are specified, they occur at control breaks and at the end of the report. A query can produce other kinds of calculation results, like sums, counts, averages, maximums, and minimums of report columns. These results are produced by WHEN/DO statements in the query.

You can suppress the output totals or the detail, or select only one control break for totals if the query specifies more than one control break column.

Results

The following chart shows the results of choosing various totaling options at execution or during output display:

Totaling Option	Detail Lines	PRINT Statement Totals	WHEN/DO Amounts
DETAIL (and Totals)	Yes	Yes	Yes
NO-DETAIL	No	Yes	Yes
NO-TOTALS	Yes	No	No
TOTALS-ONLY	No	Yes	No
WHEN-ONLY	No	No	Yes

When entering these commands, it is important to include the hyphen. If the hyphen is omitted, the results can be unpredictable.

Changing the Format of DQL Mode Total Output

When a DQL Mode query or dialog selected for execution specifies totals of one or more numeric columns, you can alter the appearance of the query output from the output screen.

The query executed specifies the kinds of totals the query produces and which data is totaled. During output presentation, you can suppress the totals or the detail if totals are specified in the query/dialog report format. You cannot suppress the results of other calculations.

In SQL Mode, you can also alter the report format definition through <PF4> FORMAT REPORT on the ONLINE EXECUTION panel. See Step 2: Define a Report in SQL Mode (see page 90) for details.

Operation

The output PF keys and output commands allow you to specify output variations when totals are specified in the query or on the DQL Mode TOTALING panel at execution.

Be sure to include hyphens in commands where required. Typing a hyphenated command as two words can produce unpredictable results.

DETAIL

Shows all items on the report. For example:

```
SALES-REP  CUSTOMER                              YEAR-TO-DATE
    ID          NAME                                    SALES
 --------   ------------------------------   ------------
 52733      UNITED ATLANTIC SHARES                 452.00


 TOTAL CITY CHARLOTTE
                                             *    452.00


 52733      SUN DIAL CITRUS GROWERS              21101.50
 52733      SUN DIAL CITRUS GROWERS              21101.50
 52733      SUN DIAL CITRUS GROWERS              21101.50


 TOTAL CITY LOS ANGELES
```

The command for this presentation is **DETAIL**.

NO-DETAIL

Shows no data rows. Shows PRINT statement totals and function results. For example:

```
 TOTAL CITY NEW YORK
                                             *  12000.00

  * GRAND TOTAL
                                             *  75756.50


 AVERAGE YEAR-TO-DATE SALES PER CUSTOMER 0007575.65
```

The command for this presentation is **NO-DETAIL.**

TOTALS ONLY

Shows no data rows and no function results. For example:

```
                        YEAR-TO-DATE
         CITY              SALES
         ---------------  ------------
         CHARLOTTE            452.00
         LOS ANGELES       63304.50
         NEW YORK          12000.00


       * GRAND TOTAL
                           75756.50
```

The command for this presentation is **TOTALS**.

NO TOTALS

Shows no totals or column function results. Detail lines only. For example:

```
SALES-REP  CUSTOMER                        YEAR-TO-DATE
   ID        NAME                              SALES
--------  ------------------------------  ------------
52733     UNITED ATLANTIC SHARES              452.00
52733     SUN DIAL CITRUS GROWERS           21101.50
52733     SUN DIAL CITRUS GROWERS           21101.50
52733     SUN DIAL CITRUS GROWERS           21101.50
52733     INTERNATIONAL BANK CORP.           2000.00
52733     INTERNATIONAL BANK CORP.           2000.00
52733     INTERNATIONAL BANK CORP.           2000.00
52733     INTERNATIONAL BANK CORP.           2000.00
52733     INTERNATIONAL BANK CORP.           2000.00
52733     INTERNATIONAL BANK CORP.           2000.00
```

The command for this presentation is **NO-TOT**.

WHEN-ONLY

Shows only results of WHEN/DO statements. For example:

```
  AVERAGE YEAR-TO-DATE SALES 0007575.65
```

The command for this presentation is **WHEN-ONLY**.

DQL Mode Totaling Options Examples

Following are examples of reports created by executing the same query and altering only the totaling specifications.

Detail and Totals Sample Output

```
                          CA DATAQUERY
                          TOTAL SALES


   SLMN-ID  NAME                                YTD-SALES
   -------  ------------------------------  -------------
   00795    NATIONAL HARRIS CORPORATION          7,950.00
   23615    M.A.C. SAVINGS                     236,150.00
   34222    CANNON TOOLS CO                  3,322,123.00

      TOTAL CITY ATLANTA
                                            *3,566,223.00


      AVERAGE SALES FOR ATLANTA             1,188,741.00


      TOTAL STATE GA
                                            *3,566,223.00
```

Selecting the detail and totals option for your report at execution produces a report containing all output data, including details, calculation results and totals, requested by the query. In the above sample output, detail lines are produced which contain the sales representative's ID (SLMN-ID), the name of the company (NAME) and the year-to-date sales (YTD-SALES) to that company. The query which produced this report specifies *CITY* and *STATE* as control break columns. This means a total of year-to-date sales is calculated for each city included in the report, such as in the line identified as TOTAL CITY ATLANTA. Then when the state changes, a sum of all sales from all cities is presented.

Detail Only Sample Output

```
                          CA DATAQUERY
                          TOTAL SALES

   SLMN-ID  NAME                                YTD-SALES
   -------  ------------------------------  -------------
   00795    NATIONAL HARRIS CORPORATION          7,950.00
   23615    M.A.C. SAVINGS                     236,150.00
   34222    CANNON TOOLS CO                  3,322,123.00
   00655    WEST LIFE INSURANCE                  6,550.00
   11400    MALIRY ENTERTAINMENT INDUSTRY      114,000.00
   25155    CHESTERSON-KIDD INC                251,550.00
   28655    FOXBORRO PETRO-CHEMICAL            286,550.00
   11785    PARKER REPUBLIC CONSOLIDATED       117,850.00
```

Selecting the detail only option (<PF5> NO-TOTALS on output display) produces a report which suppresses totals, including those produced by control break columns. This report includes calculation results requested by the query, except for totals. The above sample output shows only the detail lines, which includes the sales representative's ID (SLMN-ID), company name (NAME) and the year-to-date sales (YTD-SALES) to that company.

Totals Only Sample Output

```
                         CA DATAQUERY
                         TOTAL SALES

       STATE  CITY                YTD-SALES
       -----  ---------------  -------------
       GA     ATLANTA          3,566,223.00
       GA                      3,566,223.00
       MD     BALTIMORE          372,100.00
       MD     GERMANTOWN         286,550.00
       MD     TOWSON             117,850.00
       MD                        776,500.00

    *  GRAND TOTAL
                               4,342,723.00
```

If you select the totals only option, the report contains only the totals requested by the query. No detail lines are included in this report. The above sample output shows only the totals produced after you execute the query.

Totals by Name Sample Output

Totals Using Only Totals by Name - (STATE)

```
          CA DATAQUERY
          TOTAL SALES


       STATE       YTD-SALES
       -----    -------------
       GA       3,566,223.00
       MD         776,500.00

    *  GRAND TOTAL
               4,342,723.00
```

The previous sample output shows only the totals produced for each state, which is specified as a control break column in the query. The report identifies the control break column (STATE) and the total (YTD-SALES) calculated for each control break. The following example shows the output produced if CITY is the name used on the TOTALING OPTIONS panel (assuming CITY is a control break column).

Totals Using Only Totals by Name - (CITY)

```
                   CA DATAQUERY
                   TOTAL SALES

    STATE  CITY              YTD-SALES
    -----  ---------------  -------------
    GA     ATLANTA          3,566,223.00
    MD     BALTIMORE          372,100.00
    MD     GERMANTOWN         286,550.00
    MD     TOWSON             117,850.00

  * GRAND TOTAL
                            4,342,723.00
```

If you choose the control break name option, the report contains only the totals for a specific control break column contained in the query. No detail lines are included in this report. The sample output shows only the totals produced for each city, which is specified as a control break column in the query. The report identifies the control break column (CITY) and the total (YTD-SALES) calculated for each control break.

To find out which columns are designated as control breaks, you can display the query with the EDIT query-name command. Look for column names in the SORT statement that are enclosed in parentheses.

WHEN/DO Totals Sample Output

Totals Using Only WHEN/DO Results

```
   =>

  10/03/11                    CA DATAQUERY                       PAGE 1
  13:41:44                    TOTAL SALES                   WHENS-ONLY


   AVERAGE YEAR TO DATE SALES PER CUSTOMER 0007402.48
```

The previous example shows a typical report when only WHEN/DO is specified on the TOTALING OPTIONS panel or with the WHEN command on the output panel. The query must contain a WHEN/DO statement.

NO-DETAIL Totals Sample Output

```
 =>

11/12/11                        CA DATAQUERY                        PAGE 1
15:10:43                        TOTAL SALES                         NO-DETAIL


  TOTAL CITY CHARLOTTE
                                                *     452.00

  TOTAL CITY LOS ANGELES
                                                *  63304.50

  TOTAL CITY NEW YORK
                                                *  12000.00

* GRAND TOTAL
                                                *  75756.50

  AVERAGE YEAR TO DATE SALES PER CUSTOMER 0007575.65
```

The previous example shows the results when NO-DETAIL is selected on the TOTALING OPTIONS panel or typed as a command.

DETAIL Totals Sample Output

To add other totals and detail lines to a TOTALING OPTIONS display, DETAIL must be selected, as in the following example.

```
 =>

10/03/03                        CA DATAQUERY                        PAGE 5
13:41:44                        TOTAL SALES                         DETAIL


  REP_ID   NAME                              YTD-SALES
  -------- ------------------------------- ------------
  52733    INTERNATIONAL BANK CORP.           2,000.00

  TOTAL CITY NEW YORK
                                            *16,000.00

* GRAND TOTAL
                                           *207,269.50

  AVERAGE YEAR TO DATE SALES PER CUSTOMER   7,402.48
```

Chapter 11: Executing Online

After you select a query or dialog from the DIRECTORY OF QUERIES panel, you press a PF key to indicate your choice of an execution method.

When you execute a query online, you request immediate use of system resources to query the database table and return information in the form of a report. The surest way to get an immediate report (if the query was designed to process quickly) is to specify the screen as your report destination. If you specify a printer as the destination, the report output might follow other print requests for the same printer. It is usually best to review your output online at the terminal before printing it, although you can route the output to the printer and the screen at the same time.

The ONLINE EXECUTION panel might be suppressed by a USER PROFILE option coded by your CA Dataquery Administrator. If so, execution PF keys initiate execution with default specifications and without displaying the panel. If you find you need to execute a query online with different specifications than the defaults, see your CA Dataquery Administrator about changing your profile.

Executing in SQL Mode

In SQL Mode, follow these basic steps during execution:

1. View ONLINE EXECUTION panel and change specifications if needed.

2. In SQL Mode, press <PF4> FORMAT REPORT to view or change report format.

3. Press <PF3> EXECUTE to initiate execution.

4. Respond to dialog prompt panels if they appear.

5. Retrieve report.

6. The query format for the report is not saved in the query library unless the query is saved. Otherwise, the format functions only for the active query.

Panel

When you press <PF3> EXECUTE during display of the DIRECTORY OF QUERIES panel, CA Dataquery displays the following ONLINE EXECUTION SQL QUERY panel.

```
=>
 Enter the desired options and press PF3 to execute
-------------------------------------------------------------------------DQE60
DATAQUERY:  ONLINE EXECUTION SQL QUERY
--------------------------------------------------------------------------------
  EXECUTE QUERY NAMED => ACTIVE QUERY

  EXECUTE STEP                   The first query step to execute
  _   SELECTION                  - Read and collect the data

  REPORT DESTINATION             The destination for the report
  _   VIDEO TERMINAL             - Produce the report on the terminal
  _   NETWORK PRINTER ____       - Produce the report on a network printer
  _   SYSTEM PRINTER             - Produce the report on the system printer




--------------------------------------------------------------------------------
 <PF1> HELP        <PF2> RETURN        <PF3> EXECUTE
```

Operation

You can leave the default entries on the screen or change them if necessary. If a query currently resides in the active query area because you previously selected or executed it, it will be executed unless you change ACTIVE QUERY to another valid query name.

Use the space bar to remove entries and the keyboard keys to type different entries. Enter any character beside the selection of your choice.

Executing in DQL Mode

In DQL Mode, follow these basic steps to execute a query online:

1. View ONLINE EXECUTION panel and change specifications if needed.

2. View TOTALING OPTIONS panel and change specifications if needed.

3. Press a PF key to initiate execution.

4. Respond to dialog prompt panels if they appear.

5. Retrieve report.

6. If you want to re-execute with different specifications, press <PF2> to redisplay the execution panel.

Additional information about report format and destination options appear in Using DQL Mode Reporting (see page 98).

Panel

When you press <PF3> EXEC QUERY during display of the DIRECTORY OF QUERIES panel, CA Dataquery displays the following ONLINE EXECUTION panel if your USER PROFILE is set to YES for panel display.

```
 =>
  ENTER THE DESIRED OPTIONS AND PRESS PF3 TO EXECUTE
 ------------------------------------------------------------------------DQE10
 DATAQUERY:  ONLINE EXECUTION
 --------------------------------------------------------------------------------
   EXECUTE QUERY NAMED => ACTIVE QUERY

   EXECUTE STEP                 THE FIRST QUERY STEP TO EXECUTE
   _   SELECTION                - READ AND COLLECT THE DATA
   _   COMPUTATION              - PERFORM THE USER DEFINED CALCULATIONS
   _   SORTING                  - ORDER THE COLLECTED DATA

   REPORT FORMAT                THE REPORT FORMAT
   _   COLUMNAR                 - SHOW THE DATA ARRANGED ONE ROW PER LINE
   _   LIST                     - SHOW THE DATA ARRANGED ONE ROW PER PAGE

   REPORT DESTINATION           THE DESTINATION FOR THE REPORT
   _   VIDEO TERMINAL           - PRODUCE THE REPORT ON THE TERMINAL
   _   NETWORK PRINTER ____     - PRODUCE THE REPORT ON A NETWORK PRINTER
   _   SYSTEM PRINTER           - PRODUCE THE REPORT ON THE SYSTEM PRINTER
 --------------------------------------------------------------------------------
 <PF1> HELP      <PF2>  RETURN      <PF3> EXECUTE      <PF4> TOTALING OPTIONS
```

Operation

You can leave the default entries on the screen or change them if necessary. If a query currently resides in the active query area, it will be executed if ACTIVE QUERY is the query named. You can write over it with a valid query name.

The default formatting specifications that appear on the Online Specifications are determined by the contents of the query or dialog chosen for execution. The options on the panel allow you to override the query or dialog specifications.

Use the space bar to remove entries and the keyboard keys to type different entries. Enter any character beside the selection of your choice. Be sure the panel contains an entry or selection for each category on the screen.

See the following chart for valid entries and explanations of the items on the DQL Mode ONLINE EXECUTION panel.

Field	Valid Entries	Explanation
EXECUTE QUERY NAMED	ACTIVE QUERY	Query previously selected from DIRECTORY OF QUERIES or query just executed.
	Any valid query name	Type over ACTIVE QUERY with a name.
EXECUTE STEP	SELECTION	First execution step.
	COMPUTATION	Re-execute beginning with math functions, if any (SET).
	SORTING	Re-execute beginning with sorting functions, if any (SORT).
REPORT FORMAT	COLUMNAR	Rows of data with columns arranged horizontally.
	LIST	Each row appears on separate page with vertical column display.
DESTINATION	VIDEO TERMINAL	Report appears on screen.
	NETWORK PRINTER	Hardcopy appears at designated printer.
	SYSTEM PRINTER	Hardcopy appears at system printer.
REPORT FORMAT	COLUMNAR	Rows of data with columns arranged horizontally.
	LIST	Each row appears on separate page with vertical column display.
DESTINATION	VIDEO TERMINAL	Report appears on screen.
	NETWORK PRINTER	Hardcopy appears at designated printer.
	SYSTEM PRINTER	Hardcopy appears at system printer.

If you press <PF2> RETURN after viewing a report because you want to make a change on the ONLINE EXECUTION panel (DQE10), do not start execution at SELECTION unless you have changed the FIND statement in the query. Pressing <PF3> begins the execution process, displays prompts, if any, execution messages, and then the report.

When the ONLINE EXECUTION panel is complete, press a PF key to tell CA Dataquery the next step. If you like, you can press <PF4> TOTALING OPTIONS to display another panel for changing the default (detail and totals) to another option.

Using the DQL Mode TOTALING OPTIONS Panel

When you execute online, the TOTALING OPTIONS panel appears if you select it from the ONLINE EXECUTION panel with <PF4> TOTALING OPTIONS.

```
=>
Enter the desired options and press the appropriate PFkey
-------------------------------------------------------------------------DQEO0
DATAQUERY:  TOTALING OPTIONS
--------------------------------------------------------------------------------

QUERY NAME =>  ACTIVE-QUERY

TOTALING OPTIONS

   _   DETAIL and TOTALS            - Produce report with detail and totals
   _   DETAIL ONLY                  - Suppress any requested totaling
   _   TOTALS ONLY                  - Produce the report with totals only
   _   TOTALS BY NAME               - Only use the entered control-break name
                                      _____
   _   WHEN/DO RESULTS ONLY         - Suppress all except when/do results
   _   NO DETAIL                    - Suppress detail lines on report




--------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN    <PF3> EXECUTE
```

Background information about totaling options and examples of each option appear in Using DQL Mode Reporting (see page 98). When a query or dialog with totals is executed with the video terminal as the destination, you can change the totaling options as many times as you like while you view the report. See Choosing Format Options in DQL Mode.

Executing from the Totaling Options Panel

Follow these basic steps to complete execution:

1. View TOTALING OPTIONS panel and change specifications if needed.

2. Press a PF key to initiate execution.

3. Respond to dialog prompt panels if they appear.

4. Retrieve the report.

5. To re-execute with different specifications, press <PF2> to redisplay execution panel. Or, use the PF keys shown with the output panel.

Chapter 12: Using the Online Output

When you execute a query (or dialog) and the results appear on your screen, what you see is the upper-left corner of a report. If the report format is columnar, the width of the report itself might extend many columns to the right. Any report can contain more lines than are immediately visible on your terminal screen.

When a report extends beyond one screen, CA Dataquery divides it into sections and assigns each section a page number. The number of report sections depends on the number of columns listed in the query. Each section is 80 characters wide (132 characters on special terminals) and as long as your terminal screen. Use PF keys to move different sections of the report onto your screen.

The following diagram shows how a columnar report that is 320 characters wide and 48 lines long is divided into sections for an 80-character, 24-line terminal screen. The number of sections required for your reports depends on the number and length of output columns.

```
           PAGE 1A           PAGE 1B           PAGE 1C           PAGE 1D

        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::

        --- MORE -->   <=-- MORE -->   <=-- MORE -->   <=-- MORE ---



           PAGE 2A           PAGE 2B           PAGE 2C           PAGE 2D

        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::
        ::::::::::::      ::::::::::::      ::::::::::::      ::::::::::::

        - LAST PAGE =>   <= LAST PAGE=>   <= LAST PAGE =>  <= LAST PAGE -
```

Operation

Arrows and notations on the line above the PF key menu indicate whether more of the report exists beyond the screen. RIGHT and LEFT PF keys allow you to move across the report (horizontally) and FORWARD and BACKWARD PF keys allow you to move up and down from one segment to another. The WRAP command, issued on the command line during output display, moves off-screen lines to the current screen by wrapping them from one line to the next. NOWRAP returns the output to its multi-screen display.

If PF keys do not appear on your output panel, your User Profile is set to suppress them. Talk to your CA Dataquery Administrator about changing your profile if you want to see the PF key menu.

Example

Following is the first page of a typical report that prints on the terminal screen. Numbered portions of the report are described in a chart following the sample.

```
  =>

  03/12/11                          CA DATAQUERY                          PAGE 1A

  14:43:11          SAMPLE ORDER ENTRY DATABASE ¢ DETAIL
                              CUSTOMER TABLE

   CUST-ID  IND-CD  CUST-NO  NAME
   -------  ------  -------  -------------------------------
   B0530    B       0530     GULF LAND USA
   B0570    B       0570     TEXAS LIFE & CASUALTY CO
   B1150    B       1150     AFTON INDUSTRIES &R5.
   B1250    B       1250     PALMOLIVE INNS
   B1570    B       1570     PAMMEL BREWING




   -------------------------- LAST PAGE ---------------------------------- =>
  <PF1>  HELP       <PF2>  RETURN       <PF3>  TOTALS ONLY <PF4>   DETAIL
  <PF5>  NO TOTALS <PF6>  STATS        <PF7>  BACKWARD    <PF8>  FORWARD
  <PF9> NOT USED    <PF10> NOT USED     <PF11> LEFT        <PF12> RIGHT
```

Explanation

The items on the panel are described as follows:

Date

Date report was executed.

Page number

Number indicates sequence and letter indicates horizontal 80-character section, from A to Z.

Time

Military numbering from 00:00:00 to 24:00:00 (hours:minutes:seconds).

Totaling option

Matches totaling PF key selected (Detail is the used default).

Body

Report data.

Bottom line

Indicates whether more is available.

<=

Indicates more of the report is at the left, press <PF11>.

=>

Indicates more of the report is at the right, press <PF12>.

Last Page

Indicates that no more lines follow.

More

Indicates that more lines follow, press <PF8>.

PF Key Menu

PF keys for viewing report or other panels.

Using the Output PF Keys

While viewing the report on the screen, see the following chart for PF key operation. For more information about totaling options, see Changing the Format of DQL Mode Total Output (see page 100).

Objective	Key	Read
Display Help panel.	<PF1> HELP	Getting Online Help (see page 35)
Redisplay ONLINE EXECUTION panel.	<PF2> RETURN	Executing Online (see page 107)
See totals and no detail.	<PF3> TOTALS ONLY	Changing the Format of DQL Mode Total Output (see page 100)
See detail and totals.	<PF4> DETAIL	Changing the Format of DQL Mode Total Output (see page 100)

Objective	Key	Read
See detail with no totals.	<PF5> NO TOTALS	Changing the Format of DQL Mode Total Output (see page 100)
Display execution statistics.	<PF6> STATS	Viewing Query Statistics (see page 117)
Scroll back to previous screen.	<PF7> BACKWARD	Using the Keyboard (see page 34)
Scroll forward to next screen.	<PF8> FORWARD	Using the Keyboard (see page 34)
Shift report 80 characters to left.	<PF11> LEFT	Using the Online Output (see page 113)
Shift report 80 characters to right.	<PF12> RIGHT	Using the Online Output (see page 113)

Using Output Commands

You can enter output formatting commands on the command line whether or not the PF key menu appears on the output panel. The commands are:

DETAIL

Entered on the report output panel, formats report to display the report as it is defined in the query, with detail and totals.

NO-DETAIL

Shows PRINT command totals and WHEN/DO results. Suppresses detail lines.

NO-TOTALS

Show only detail lines and suppress total lines.

TOTALS

Show only total lines and omit detail lines.

NOWRAP

Issue after WRAP command to return wrapped report lines to multi-screen display.

WHEN-ONLY

Shows only WHEN/DO statement results and omits all other data.

WRAP

Moves off-screen lines to current screen of multi-screen display by wrapping each report line before starting the next report line.

See Changing the Format of DQL Mode Total Output (see page 100) for a complete discussion of these output options.

Viewing Query Statistics

If you press <PF6> STATS while viewing a report on your terminal screen, you can display a panel as shown in the following example.

```
=>
Current Dataquery FIND/SELECT Statistics.
-------------------------------------------------------------------------DQEF0
DATAQUERY:  FIND STATISTICS                     QUERY NAME: TESTSQL001
--------------------------------------------------------------------------------


     NUMBER REQUESTED: All                          COMPLETION DATE:
     NUMBER FOUND: 9                                COMPLETION TIME:


     FIND TERMINATED BECAUSE: NORMAL END OF SEARCH WAS REACHED

                                 OVERALL    OPTIMIZATION    SEARCH
                                 -------    ------------    ------
     ELAPSED TIME (SECONDS):     1               0               0
     I/O EVENTS:                 0               0               0
     SELFR TOTAL:                0               0               0
     SELNR TOTAL:                0                               0
     TOTAL BYTES:                0




     --------------------------------------------------------------------------
     <PF1> HELP        <PF2> RETURN
```

The QUERY STATISTICS panel gives you information about how the query functioned when you executed it. Details about the meaning of each field are available in the *CA Dataquery Reference Guide* and from your CA Dataquery Administrator.

You might need to pass this information to your CA Dataquery Administrator if you should experience problems in executing a query. Press <PF3> if you do not want to include a cover letter with

Creating a Personal Table from Output

If your site has installed the SQL Option of CA Datacom/DB, you can create a personal table using the online output of any query. For details on using the STORE command, turn to STORE Data.

Chapter 13: Saving and Using DQL Mode Sets

CA Dataquery lets you save the locations in the database of any data found with a query and it also lets you save the found data itself. The following terms are used in this chapter.

Definitions

Active found set

Directions to the location of database information found by the last executed query during the current CA Dataquery session or the last saved set activated. A set is active until you execute another query, use another saved set, or sign off.

Saved set

Saved set of directions to location of data found by an executed query. Saved sets remain intact even after you sign off CA Dataquery. You can access a saved set during another CA Dataquery session.

Extracted set

Saved data found by an executed query. An extracted set contains the values of columns named in the PRINT or DISPLAY statement. Extracted sets cannot be used by CA Dataquery; you create them with CA Dataquery for use by other programs. See the CA Dataquery Administrator for more information.

Directory of Saved Sets

Lists saved sets and extracted sets by name, type, description, date and size. Display the directory when you want to use a saved set or when you want to delete a saved or extracted set.

Uses for Sets

You can use saved sets to speed processing by pressing the USE PF key to activate the saved set. (It becomes the active found set.) Once a set is active, the query that finds it can be executed without re-finding the data, saving search and retrieval time.

Saved sets can be made active and then extracted (EXTRACT command) to save the data itself.

Before you can save or extract a set, it must be active (active found set). Activate a set by executing a query or pressing the USE PF key during Directory of Saved Set display.

Options

KEEP

Use the KEEP command to save search and retrieval time the next time you execute a query or dialog. During display of output, enter KEEP on the command line and press Enter. Only one KEEP per active found set is allowed. See the *CA Dataquery Reference Guide* for complete instructions.

EXTRACT

Enter EXTRACT on the command line when the set whose data you want to save is active (after executing a query or after using the USE key to make a saved set active). This saves the data printed or displayed by the query as a special format database file that can be accessed by other products. See the *CA Dataquery Reference Guide* for complete instructions.

<PF4> USE

During display of the Directory of Saved Sets, place the cursor on a saved set name (labeled K, for *KEEP*) to activate the set and press <PF4> USE. You can then use it in execution or for extraction.

Cautions

Remember these facts as you save, extract, and use sets:

■ Each time you press <PF4> USE during Directory of Saved Sets display to activate a saved set, the data might be different. The KEEP command saves the location, not the data, so the data may have been updated or deleted since the pointers were saved. In addition, the pointer may have become invalid when changes to the database were made.

■ The table created with EXTRACT is not updatable. This is an advantage when you need to use a non-DATAQUERY program that works with dated information. However, if you need the extract set to contain current data, you should FIND and then EXTRACT the set again.

■ The amount of space allotted to you for saving and extracting sets is limited by your CA Dataquery Administrator. You should maintain only those sets that you really need and delete (from the Directory of Saved Sets) all sets you do not need.

■ Your CA Dataquery Administrator can also maintain your sets. Contact your CA Dataquery Administrator about any sets that you do not want deleted.

Using the DIRECTORY OF SAVED SETS

Selecting Saved Sets from the DIRECTORY SELECTION panel (MAIN MENU DIRECTORIES option) displays a DIRECTORY OF SAVED SETS panel as shown in the following example:

```
   =>
   PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY
   ---------------------------------------------------------------------------DQA70
   DATAQUERY: DIRECTORY OF SAVED SETS
   ---------------------------------------------------------------------------
     NAME      |TYPE | DATE ADDED | BLOCKS USED | DESCRIPTION
   ---------------------------------------------------------------------------
   PERSONS    | K   | 06/01/11  | 31062       | LIST PERSONS IN DEPT
   SALES-MAR  | E   | 04/02/11  | 63009       | TOTAL SALES FOR MARCH
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
              |     |           |             |
   ---------------------------------------------------------------------------
   <PF1> HELP           <PF2>  RETURN        <PF3> DELETE      <PF4> USE
   <PF5> NOT USED       <PF6>  NOT USED      <PF7> BACKWARD    <PF8> FORWARD
```

The sets listed on your directory are those you have created. Note that you can scroll forward and backward if your list of sets extends beyond your screen.

Display the Directory of Saved Sets when you need to use a saved set or delete a saved or extracted set. Before you can save or extract a set, it must be active (active found set). Activate a set by executing a query or pressing the USE PF key during Directory of Saved Set display. When a set is active, you can use the EXTRACT command to create an extracted set. You can also execute the query that uses the set with EXECUTE * typed on the command line. (On the ONLINE EXECUTION panel, show that processing is to begin after the FIND.) Instructions on using the DIRECTORY OF SAVED SETS panel appear in the *CA Dataquery Reference Guide*.

Note: To activate a saved set, the query to be executed using this set must be validated first. After activating the set, it may then be executed, starting after the SELECTION step on the execution panel.

Chapter 14: Executing in Batch

Once you select a query or dialog for execution, you can issue the SUBMIT query-name command or press the SUBMIT PF key to indicate that you want to execute your selection in batch from online CA Dataquery.

Another method, called Batch SIGNON, uses JCL that can be accessed through CA Roscoe IE or another editor and submitted to sign on to CA Dataquery and process a query. End users do not commonly use Batch SIGNON.

If you are authorized for batch execution of queries, you can accomplish a number of objectives with batch execution. Unlike online execution, you can defer execution, suppress the output or export the output sent when you complete the BATCH EXECUTION panel.

The following lists unique objectives that are available when processing in batch.

- Defer execution time.

- Use a specific JCL member to change processing specifications.

- Suppress the report (usually to export data).

- Export the print data to make it available to other products or programs. You must be authorized to perform this task.

Following Batch Execution Steps

Follow these basic steps for batch execution:

1. Display the execution panel and enter or change specifications as needed.

2. Press a PF key to initiate execution.

3. Respond to dialog or JCL PROC prompt panels if they appear.

If you want to reexecute with different specifications, press <PF2> to redisplay the execution panel.

The remaining sections in this part of the manual provide instructions for following execution steps.

Using the BATCH EXECUTION Panel

Description

When you select <PF4> SUBMIT from the DIRECTORY OF QUERIES panel, CA Dataquery displays the BATCH EXECUTION panel. At some sites, batch execution might be prohibited. If this is the case at your site, the SUBMIT PF key will not function. See your CA Dataquery Administrator for batch submission authorization. You complete entries on this panel and press a PF key to continue execution.

```
=>
--------------------------------------------------------------------------DQEN0
DATAQUERY:  BATCH EXECUTION
--------------------------------------------------------------------------------
Enter name of query to submit:           ACTIVE-QUERY
Select the type of execution:            X  Immediate
                                         _  Defer execution until time __ : __
Enter the name of the JCL member to use: $$DQJCL
Enter nonblank to use JCL for deferred:  _
Select the report type:
        X  Detail and totals        _  When/do column functions only
        _  Detail only (no totals)  _  No detail (totals and when/do)
        _  Totals only (summary)    _  Suppress report
To export print data to a sequential file, select output record type:
        _  Variable comma separated  _  Fixed length record
For variable, enter name of output set    _____
For variable, select output type:        _  Detail
                                         _  Totals
Select the output file device type:      _  Tape
                                         _  Disk


--------------------------------------------------------------------------------
<PF1> HELP      <PF2>  RETURN      <PF3>  SUBMIT
```

You can leave the default entries on the screen or change them if necessary. Use the space bar to remove entries and the keyboard keys to type different entries. Enter any character to select an option. Be sure the panel contains an entry or selection for each field on the screen. The following figure describes the use of each field on the BATCH EXECUTION panel (DQE40).

Entries

Field	Valid Entries	Explanation
Enter name of query to submit:	ACTIVE-QUERY	Query previously selected from Directory of Queries or query just executed
	Any valid query name	Type over ACTIVE-QUERY with a name
Select the type of	Immediate:	Execution begins at next system opportunity.

Field	Valid Entries	Explanation
execution:	Defer execution until time __ : __:	Computer operator submits query for execution after the time specified. Time is expressed in *hours:minutes* using military time. For example, 3:00 p.m. is 15:00.
Enter the name of the JCL member to use:	default-name:	Executes the query as specified in the JCL maintained by the CA Dataquery Administrator. If a prompt panel appears, it must be completed.
	A valid JCL member name:	Use only if authorized.
Enter non-blank to use JCL for deferred:	Enter any non-blank character to use deferred JCL.	Defer execution until time __:__ must also be selected.
Select the report type:	Detail and totals:	Print detail and totals, if specified in query/report definition.
	Detail only (no totals):	Print only detail lines.
	Totals only (summary):	Suppress detail data.
	WHEN/DO column functions only	Suppress all contents except DQL Mode WHEN/DO results.
	No detail (totals and when/do)	Suppress detail lines.
	Suppress report	Do not produce hardcopy. Select this item if exporting.
To export print data to a sequential file, select output record type:	Variable comma separated	Data in character format with data fields separated by commas. Character fields will be in quotes with trailing blanks truncated. Numeric fields will have leading zeros truncated. Rows will vary in length.
	Fixed length record	Data will be exported in same type and length as retrieved from the database table. All rows will be the same length.
For variable, enter name of output set:	Any valid name.	Obtain a valid set name from the CA Dataquery Administrator.
For variable, select output type:	Any type listed	Choose one or both: ■ Detail ■ Totals
Select the output file device type:	Tape	Output to tape (DOS only).
	Disk	Output to disk (DOS only).

PF Keys

Use the following PF keys after completing the BATCH EXECUTION panel.

<PF1> HELP

Displays Help for panel.

<PF2> RETURN

Redisplays Directory of Queries panel.

<PF3> SUBMIT

1. Begins execution process.

2. Displays prompt panel for selection.

3. Displays execution messages.

Changing an SQL Report Format for Batch Execution

You cannot change the defined report format during batch execution. You can, however, create a new one. Follow these steps:

1. Type **EDIT query-name** and press Enter.

2. Change the name of the query.

3. Validate the query.

4. Save the query.

5. Display ONLINE EXECUTION panel.

6. Press <PF4> FORMAT REPORT or enter the FORMAT command.

7. Enter report specifications.

8. Complete report definition.

9. Type **SUBMIT *** on the command line.

10. Press Enter.

If you are the author of the query, you can make permanent changes to the report format during online execution.

Chapter 15: Responding to Extra Panels During Execution

A prompt panel is an extra panel that requires you to enter further information before a function can be completed. You might encounter two types of prompt panels in your use of CA Dataquery. Dialog prompt panels allow you to adapt a query by replacing values. JCL PROC prompt panels let you adapt a JCL member by replacing values. By changing these values, you retain the structure of the query or JCL but alter some of the specifications.

Description

If you select a query with the type of DIALOG from the Directory of Queries for online or batch execution, a panel appears that lists the query variables you can change. If you type in the name of a JCL PROC (a JCL member that is defined with replaceable variables) on the BATCH EXECUTION panel, a panel appears listing JCL variables that you can change.

Dialog and JCL PROC authors are able to create a list of valid replacements for each character variable and a range of valid numbers for each numeric variable. If a range or list panel was created, you can display it by pressing a PF key.

All of the text on prompt panels is written by the query author. If you do not understand the instructions on any prompt panel, ask your CA Dataquery Administrator for assistance.

Operation

When you select a dialog for execution or use a JCL PROC in batch execution, prompt panels appear. When you see a prompt panel, you can accept the default variables shown or replace them with your own choices. You will use JCL PROCs only if you have been instructed to do so by your CA Dataquery Administrator and provided with valid replacements for the variables.

Example

Selecting a dialog and completing the execution panel (online or batch) causes a prompt panel as shown in the following example to appear. The panel describes the query and each variable that can be replaced. The variables on the next screen are Dallas and 75242.

```
=>

---------------------------------------------------------------------------DQEX0

QUERY PRINTS A LIST OF ALL CUSTOMERS IN A SELECTED CITY, ALONG WITH
CUSTOMER NAME, CUSTOMER NUMBER, AND TOTAL YEAR-TO-DATE SALES FOR 1986.



ENTER THE NAME OF THE CITY TO BE REPORTED:
 'DALLAS'_____

ENTER THE ZIP CODE TO BE REPORTED
75242



--------------------------------------------------------------------------------
<PF1>  HELP        <PF2>  RETURN        <PF3>  EXECUTE        <PF4>  NOTUSED
<PF5>  RANGE/LIST <PF6>  NOT USED       <PF7>  BACKWARD       <PF8>  FORWARD
```

Example

Any JCL member you use to submit a query for batch execution can contain embedded variables that you can change. If a prompt panel appears when you submit the query for execution, you use it in exactly the same way as a dialog prompt panel. Your CA Dataquery Administrator can provide you with the valid replacements for variables listed on a JCL PROC prompt panel. You might also be able to display valid replacements or ranges for the variables shown if they were created by the JCL PROC author by pressing <PF5> RANGE/LIST.

Following is a sample JCL PROC. The variables on the next panel are DQBATCH, USERID, and PASSWORD.

```
=>

-------------------------------------------------------------------------------DQEX0

        THIS JCL IS SHARED BY OTHER MEMBERS OF YOUR GROUP.  CUSTOMIZE IT
        WITH YOUR SPECIFICATIONS BY TYPING OVER THE VARIABLES LISTED
        BELOW.


ENTER A JOBNAME NOT LONGER THAN 8 CHARACTERS

DQBATCH

ENTER YOUR RACF USER IDENTIFICATION, FOLLOWED BY A COMMA

USERID,
ENTER YOUR RACF PASSWORD


PASSWORD


--------------------------------------------------------------------------------
<PF1>  HELP       <PF2>  RETURN     <PF3>  EXECUTE    <PF4>  NOTUSED
<PF5>  RANGE/LIST <PF6>  NOT USED   <PF7>  BACKWARD   <PF8>  FORWARD
```

Using a Prompt Panel

The cursor appears on the first variable that you can replace. Variables are always highlighted or, with color monitors, shown in a different color.

You can accept the defaults shown, type in a valid variable name, or if a list or range was created, display list or range panels and change the prompt panel according to the valid entries shown on the list or range panels. See Using a LIST Panel (see page 131) and Using a RANGE Panel (see page 132) for instructions.

Rules

1. If apostrophes enclose the default variable on the prompt panel, you must also use apostrophes.

2. The variable you enter cannot be longer than the total number of characters in the default variable, including dialog fill (space-holder) characters. A special character is assigned at your site to serve as a space holder that allows you to enter replacements longer than the default. In our examples, we use the underscore (_) character.

3. If a range was created for a numeric variable, you can only enter numbers within that range.

4. If a list of valid entries was created for an alphabetic or mixed variable, you cannot enter a variable that is not on the list.

PF Keys

The following shows the objectives you can attain with PF keys during prompt panel display.

<PF1> HELP

Displays Help for panel.

<PF2> RETURN

Redisplays Directory of Queries panel.

<PF3> EXECUTE

Execute selected query with default variables.

<PF5> RANGE/LIST

Displays list of valid entries or range of valid numbers if either panel was defined for this variable. Cursor must be positioned on the variable.

<PF7> FORWARD

Displays next screen if prompt extends beyond the screen.

<PF8> BACKWARD

Displays previous screen, if any.

Using a LIST Panel

If you press <PF5> RANGE/LIST with the cursor on a variable, and *if* a list is defined, CA Dataquery presents a list of valid replacement values. The following sample list was defined for the first *DALLAS* variables shown on the previous dialog example.

```
=>

--------------------------------------------------------------------------DQEL0

CHOOSE A VALUE FROM THE LIST BELOW VIA CURSOR POSITION AND PRESS <PF2>.
PROMPT:
ENTER THE NAME OF THE CITY TO BE REPORTED:

  'DALLAS'
  'NEW YORK'
  'PHILADELPHIA'
  'HOUSTON'
  'SAN FRANCISCO'
  'SALT LAKE CITY'
  'LOS ANGELES'


--------------------------------------------------------------------------------
<PF1>  HELP        <PF2>  RETURN     <PF3>  NOT USED   <PF4>  NOT USED
<PF5>  NOT USED    <PF6>  NOT USED   <PF7>  BACKWARD   <PF8>  FORWARD
```

Press the RETURN key to redisplay the prompt panel, or move the cursor to a variable you want to select and press RETURN to select it. If the list extends beyond the screen of your terminal, press <PF8> FORWARD to display the next page. <PF7> BACKWARD displays a previous page, if any.

Using a RANGE Panel

If you press <PF5> RANGE/LIST with the cursor on a numeric variable, CA Dataquery presents a range of valid numbers if one was defined by the dialog or JCL PROC author. The following sample range was defined for the *ZIP CODE* variable shown on the previous dialog example.

```
=>

-------------------------------------------------------------------------------DQER0
PROMPT:
ENTER A ZIP CODE IN THE RANGE SHOWN BELOW



RANGE      FROM 75000
           TO 75081


-------------------------------------------------------------------------------
<PF1>  HELP          <PF2>  RETURN        <PF3>  NOT USED    <PF4>  NOT USED
```

Your cursor is positioned at the beginning of a field where you can enter a number. Enter a number within the range shown or press the RETURN key to redisplay the prompt panel. Leave the default number or type in a number within the range shown on the range panel.

Chapter 16: Understanding the Terminology

Before you begin to construct your own queries, dialogs, saved sets, terms or personal tables, you should know something about:

■ The structure of a database. See Database Storage (see page 15).

■ Database terminology.

■ How a query works.

■ The purposes of dialogs, terms, and saved sets.

The following pages provide definitions for commonly-used database terminology, as well as a foundation in database structure.

Authorization ID (authid)

Each user who works in SQL Mode has a special ID called the Private SQL Authorization ID. It is the user's default authorization ID for personal database and for all SQL Mode. If you change your SQL authorization ID with the PROFILE or AUTHID command, it changes only on the User Profile. If you create a personal table, your default authorization ID is attached to the table name regardless of the authid you were using when you created the table.

Column and Row

To access the tables in your database with queries, you need to know their table names. To get to the values in each row, you need to know the *column* names. A column name is a label for a specific type of information, for instance, NAME or ADDRESS.

The horizontal components of a table are called *rows* (sometimes called *records*). Since the columns of a table are defined with a specific sequence, data type, and number of positions, each row of a table has identical column definitions. Rows within a specific table are differentiated from each other by their sequence in the table and by the values assigned to each column.

Column and Row

LAST	FIRST	CITY	STATE
SMITH	*MARY*	ATLANTA	GEORGIA
ALLEN	*JOE*	*PARIS*	*TEXAS*
WILSON	*ALICE*	BAILY	TEXAS

← Row

↑ Column

Compound Fields

CA Datacom/DB provides the ability to give a single column name to a group of contiguous columns and to refer to the group by that name. Each individual column also has a name. This data structure can also be called a *compound field.*

Compound Field

NAME		CITY	STATE
LAST	*FIRST*	CITY	STATE
SMITH	*MARY*	ATLANTA	GEORGIA

Join

Suppose you were required to provide a report listing the name, employee number, state, insurance code, and number of dependents for employees with dependents. The Personnel Table contains some of the information, arranged by employee number. The Benefits table contains the rest of the information, arranged by insurance code. Since the name column exists in each table, the query can use it to relate the rows in the tables to each other, whenever the same name appears in each table.

Joining the rows found in the first table to rows in other tables temporarily creates a new kind of table called a *found set* that contains the columns you need from each table, as in the following illustration. CA Dataquery retrieves the data for query output from the found set.

Simple Equijoin Example

Personnel Table

NO	NAME	ST
1	*SMITH*	NY
2	*JONES*	OK
3	*GRAY*	NY

Benefits Table

C	NAME	DEP
A	*SMITH*	2
B	WHITE	3
C	*GRAY*	2

Found Set

NAME	NO	ST	C	DEP
SMITH	1	NY	A	2
GRAY	3	NY	C	2

The previous illustration shows the traditional *equijoin* concept, meaning that tables will be joined when the common key or column contains equal values in each related table, and only joined rows will appear in the output.

At CA Dataquery Version 10.0, we provided the ability to perform *outer joins*, thus including specific unrelated rows in the found set. See the *CA Dataquery Reference Guide* for complete details.

Key

CA Datacom/DB provides the ability to define one or more keys for a table. In DQL Mode only, keys are specially defined columns or groups of columns whose definitions are stored in the CA Datacom/DB index along with directions to the location of actual data. A group of columns can be defined as one key and is known as a compound key. Using keys to join tables means CA Dataquery users can quickly retrieve data because CA Dataquery does not read whole tables to find the locations of needed rows.

Repeating Fields

With CA Dataquery in DQL Mode, you can take advantage of the ability of CA Datacom/DB to duplicate the structure of a column to create another column for cases where there might be more than one occurrence of a piece of information, as in monthly figures or family dependent information. This type of data structure can be referred to as a repeating field.

Repeating Fields

CUST-NO	MONTHLY-PAYMENT											
00039432	17	17	17	17	17	17						
00039982	18	18	18	18	18	18	18	18	18			
00044524	23	23	23	23	23	23	23					

In this example, MONTHLY-PAYMENT is a repeating field. There is one occurrence for each month of the current year.

A repeating field can consist of simple or compound fields. Each repetition of a repeating field is called an occurrence. Each occurrence in a repeating field can also be a repeating field. The entire set of occurrences is called an array. To refer in a query to a specific data item in an array, use a subscript, as in the following example:

PRINT FLDB(2,1)

The (2,1) denotes the second occurrence of FLDA and the first occurrence of FLDB within FLDA. See the following illustration for clarification.

Two-level Array (Repeating Field)

FLDA		FLDA		FLDA	
FLDB	FLDB	FLDB	FLDB	FLDB	FLDB

CA Dataquery queries can access one- and two-level arrays. If an array consists of more than one level, only the first two levels can be accessed by a query, and then only if the levels are adjoining. The following examples show how to reference various types of occurrences in a simple repeating field.

Two-level Array (Repeating Field)

FLDA		FLDA	
FLD	FL	FLDB	FLD

To reference in a PRINT statement:

First FLDA

> PRINT FLDA(1)

Second FLDA

> PRINT FLDA(2)

First FLD

> PRINT FLDB(1,1)

FL

> PRINT FLDB(1,2)

FLDB

> PRINT FLDB(2,1)

Second FLD

> PRINT FLDB(2,2)

Repeating fields can be used in any statement that permits naming a regular column or key, that is, WITH, SET, SORT, WHEN/DO.

Schema

In SQL Mode, when a user is added with a private SQL authorization specified, CA Dataquery automatically creates a schema in CA Datacom Datadictionary for the SQL authorization ID. A schema defines the individual user's SQL environment. A schema contains all table, view, and privilege definitions owned by a given authorization ID.

Synonym

In SQL Mode, the use of a synonym provides an alternate name for a table. The synonym is a convenience that allows the user to avoid naming both the authorization ID and the table name (authid. tablename) in the query. It has no effect on security. The CREATE SYNONYM command names the authorization ID of the owner and the alternate table name. The other user accesses the table by using the alternate table name in the queries.

Table

Just as a file cabinet might be organized so that each drawer holds different types of information, a database contains separate *tables* for different types of information. For instance, you might have a Personnel table, a Payroll table, a Benefits table, and so on. They can all reside together in one database. See the *CA Dataquery Reference Guide* or the *CA Datacom/DB SQL User Guide* for information on the GRANT and REVOKE commands for accessing tables.

Value

A value is actual data at an assigned row and an assigned column in a table. For instance, the column named LAST-NAME might have many values, such as SMITH, THOMAS, WILSON, and so on.

View

In SQL Mode, a view is a portion of a table that permits access to some, but not all of the data. See the CA Datacom/DB documentation for more information on the use of views.

Chapter 17: Displaying Database Names and Structures

If you do not know the names of the tables, columns, and keys in your database, you will not be able to construct queries. Fortunately, CA Dataquery makes it easy for you to get that information. Every panel where you might need that information has a PF key assignment for tables, columns, and keys. For details about the operation of the panels in this manual, see the *CA Dataquery Reference Guide*.

The following few pages show examples of panels that display:

- A list of accessible tables

- The text description of a table

- The names of columns in a table

- The names of keys for a table

- The names of both keys and columns in a table

- The definitions of the columns or keys for a table

Directory of Tables

If you want to know which tables you are authorized to access, you can display a panel like this:

SQL Mode

```
 =>
 PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY
 ------------------------------------------------------------------------DQDA0
 DATAQUERY:  DIRECTORY OF TABLES   START WITH: -------------------------------
 ------------------------------------------------------------------------------
        OBJECT NAME                 |      DESCRIPTION
 ------------------------------------------------------------------------------
 VELA-TABLE_NAME                    |  DESCRIPTIVE TEXT BY CREATOR
 LABBE-TABLE_NAME                   |  MORE DESCRIPTIVE TEXT
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
                                    |
 ------------------------------------------------------------------------------
 <PF1> HELP         <PF2> RETURN          <PF3> DISPLAY COLUMNS <PF4> NOT USED
 <PF5> NOT USED     <PF6> DISPLAY TEXT <PF7> BACKWARD           <PF8> FORWARD
```

Note: The names displayed are the SQL names of tables or names of views or synonyms for the currently used authid.

DQL Mode

```
=>
PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY
--------------------------------------------------------------------DQAF0
DATAQUERY:  DIRECTORY OF TABLES            DATADICTIONARY BASE ID: 002
                              START WITH: -------------------------------
--------------------------------------------------------------------------
      TABLE  NAME                 |STATUS|     DESCRIPTION
--------------------------------------------------------------------------
    AGGREGATE                     |  O   | DD ENTITY FILE
    ALIAS                         |  C   | DD ENTITY ALIAS
    AREA                          |  O   | DD ENTITY AREA
    ARENDT-FIELDS                 |  O   |
    ARENDT-INVPERF                |  O   |
    AUTHORIZATION                 |  O   | AUTHORIZATION-ENTITY-TYPE-RECORD
    BAHR-CHARLIE                  |  O   |
    BAHR-EMP-DB                   |  O   |
    BAHR-EMPLOYEE                 |  O   |
    BAHR-JOINED-TABLE             |  O   |
    BAHR-MY-TABLE                 |  C   |
    BAHR-PAYROLL                  |  O   |
    BEN-ACCTBLE                   |  O   |
--------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6> DISPLAY TEXT <PF7> BACKWARD        <PF8> FORWARD
```

The table names shown on this panel are CA Datacom Datadictionary entity names. The list shows tables you can access, including personal tables you create.   DESCRIPTION provides a brief description of the table contents.

TEXT DISPLAY

To see a written description of a table your company created, position the cursor on the table name, press the PF key called DISPLAY TEXT and see a panel as shown following.

Sample TEXT DISPLAY (DQB80)

```
=>

--------------------------------------------------------------------------DQB80
DATAQUERY:  TEXT DISPLAY
--------------------------------------------------------------------------------
TABLE: CA-SALESMAN
--------------------------------------------------------------------------------
THE SALESMAN ROW CONTAINS UP TO 24 MONTHS OF SALES DATA FOR EACH
CUSTOMER BY SALES PERSON.  THERE ARE FOUR REPEATING FIELDS THAT SHOW
TWELVE MONTHS OF SALES ORDERS AND TOTAL SALES FOR THE CURRENT YEAR AND
PREVIOUS YEAR.  THE KEYS TO THIS ROW ARE THE REP-ID AND THE
CUST-ID.




- LAST PAGE -------------------------------------------------------------------
<PF1>  HELP       <PF2>  RETURN       <PF3>  NOT USED    <PF4>  NOT USED
<PF5>  NOT USED   <PF6>  NOT USED     <PF7>  BACKWARD     <PF8>  FORWARD
```

COLUMN DISPLAY

If you want to know the names and descriptions of all the columns in a particular table, you view the DIRECTORY OF TABLES, point the cursor to a table name, and press the PF key called DISPLAY COLUMNS to see a panel as shown following:

Sample COLUMN DISPLAY (DQB20)

```
=>
Place the cursor on the desired name and press the appropriate PFkey.
-------------------------------------------------------------------------DQB20
DATAQUERY:  COLUMN DISPLAY                    DICTIONARY DATABASE ID: 189
--------------------------------------------------------------------------------
 TABLE NAME: CA-ACCTS-TBL                     DB NAME: ACT   DB ID: 010
--------------------------------------------------------------------------------
          COLUMN NAME             |             DESCRIPTION
--------------------------------------------------------------------------------
   CUST-ID                        | CUSTOMER ID NUMBER
   BILL-DT                        | BILLING DATE
   BILL-YR                        | BILLING YEAR
   BILL-MO                        | BILLING MONTH
   BILL-DAY                       | BILLING DAY OF WEEK
   ORD-AMT                        | ORDER AMOUNT
   FRT-AMT                        | FREIGHT AMOUNT
   DISC-AMT                       | DISCOUNT AMOUNT
   CUST-NO                        | CUSTOMER NUMBER
                                  |
                                  |
                                  |
- LAST PAGE ---------------------------------------------------------------------
<PF1> HELP           <PF2>  RETURN    <PF3> NOT USED      <PF4> NOT USED
<PF5> EXTENDED DEFN <PF6>  TEXT       <PF7> BACKWARD      <PF8> FORWARD
```

EXTENDED COLUMN DISPLAY

To get more information about how a column is made up, you can display the TEXT for it and you can also use a PF key called EXTENDED DEFN to display a panel like this:

Sample EXTENDED COLUMN DISPLAY (DQBC0)

```
=>
PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY.
----------------------------------------------------------------------DQBC0
DATAQUERY:  EXTENDED COLUMN DISPLAY    TABLE: AGGREGATE
------------------------------------------------------------------------------
  COLUMN NAME                   |TYPE   LEN  DEC SIGN  NULL   OCC CLASS
------------------------------------------------------------------------------
    STATS                       | C     316       N    N      1   C
    STATUS                      | C       1       N    N      1   S
    NATIVE-SEQ-KEY              | C      34       N    N      1   C
    ENTITY-NAME                 | C      32       N    N      1   S
    ENTITY-VER                  | N       5       N    N      1   S
    DESCRIPTION                 | C      36       N    N      1   S
    CONTROLLER                  | C      32       N    N      1   S
    AUTHOR                      | C      32       N    N      1   S
    LOCK                        | C       1       N    N      1   S
    PASSWORD                    | C       4       N    N      1   S
    COUNT                       | N      10       N    N      1   S
    DATE-STATUS-CHG             | C       8       N    N      1   S
                                |
                                |
------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN    <PF3> NOT USED      <PF4> DISPLAY KEYS
<PF5> NOT USED      <PF6>  TEXT      <PF7> BACKWARD      <PF8> FORWARD
```

See the *CA Dataquery Reference Guide* for a complete explanation of the codes that can appear on this panel.

KEY DISPLAY

If you want to know the names of keys (in DQL Mode) for a table, you press the DISPLAY KEYS PF key to see this panel:

Sample KEY DISPLAY (DQB50)

```
 =>
 PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY.
 ----------------------------------------------------------------------DQB50
 DATAQUERY:  KEY DISPLAY                     DICTIONARY DATABASE ID: 189
 ------------------------------------------------------------------------------
  TABLE NAME:  PERSONNEL                       DB NAME:  PMF   DB ID:  001
 ------------------------------------------------------------------------------
   KEY NAME                              |              DESCRIPTION
        COLUMN NAMES                     |
 ------------------------------------------------------------------------------
   NUMBER                                | EMPLOYEE NUMBER KEY
        NUMBER                           | EMPLOYEE NUMBER
   STATE-ZIP                             | EMPLOYEE STATE ZIP KEY
        STATE-ADDRESS                    | EMPLOYEE STATE CODE
        ZIP-CODE-LOC                     | EMPLOYEE ZIP CODE
                                         |
                                         |
                                         |
                                         |
                                         |
                                         |
 - LAST PAGE ------------------------------------------------------------------
 <PF1> HELP           <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> NOT USED
 <PF5> EXTENDED DEFN  <PF6>  TEXT       <PF7> BACKWARD        <PF8> FORWARD
```

All column names are indented following the name of the key to which they belong. Notice that the key named NUMBER consists of only one column, while the STATE-ZIP key consists of two columns. The high-order column in a key is the column listed first.

EXTENDED KEY DISPLAY

If you want to see the extended definition for keys (in DQL Mode), you can display a panel as shown following:

Sample EXTENDED KEY DISPLAY (DQB60)

```
=>
PLACE THE CURSOR ON THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY.
------------------------------------------------------------------------DQB60
DATAQUERY:  EXTENDED KEY DISPLAY      TABLE:PERSONNEL
------------------------------------------------------------------------------
  KEY NAME                            |
      COLUMN NAMES                    | TYPE  LEN   DEC  SIGN   OCC   CLASS
------------------------------------- |---------------------------------------
  NUMBER                              | EMPLOYEE NUMBER KEY
      NUMBER                          | N      5          N     1     S
  STATE-ZIP                           | EMPLOYEE STATE ZIP KEY
      STATE-ADDRESS                   | C      2          N     1     S
      ZIP-CODE-LOC                    | C      5          N     1     S
                                      |
                                      |
                                      |
                                      |
                                      |
                                      |
                                      |
 - LAST PAGE -----------------------------------------------------------------
 <PF1>  HELP         <PF2>  RETURN    <PF3> DISPLAY COLUMNS <PF4> NOT USED
 <PF5>  NOT USED     <PF6>  TEXT      <PF7> BACKWARD        <PF8> FORWARD
```

Note that you can press additional PF keys to see a TEXT display or a column display for any key or column.

Chapter 18: Introducing CA Dataquery Query Creation

These are the types of queries you can create with CA Dataquery:

- Queries that return data as specified

- COUNT queries

- Dialogs

Definition

Your primary objective in using CA Dataquery is retrieving data. To do that, you construct different kinds of queries, execute them, and look at the results. You can print the results, display them on your terminal screen, or export them to sequential files for use by other products or programs. Unless you have someone create your queries for you, you must learn how to construct a query.

Example

A query can be as simple or as sophisticated as you need it to be. You can make a simple query that finds and displays customer names and phone numbers:

SELECT NAME, PHONE

FROM CUSTOMER

Variations

CA Dataquery can do more than retrieve and display data. You could alter the preceding simple query to perform the following:

- Specify search criteria

- Retrieve data from two or more tables

- Present the results of mathematical calculation

- Sort the data

- Allow parts of it to be completed at execution

- Count the number of rows of specific data

Report Definition

You can define reports in two ways in CA Dataquery. In DQL Mode, the way you use keywords to write the query specifies most of the format of the report. In SQL Mode, an online function allows you to specify a default report and to re-specify the report with each execution.

Choosing a Query-Creation Method

You do not have to know anything at all about SQL or DQL to create a query that accesses one or two tables. If you prefer, you can have CA Dataquery create your queries for you.

All you do is select GUIDE from the Main Menu and let CA Dataquery prompt you for information. The GUIDE function is also an excellent way to learn syntax. Read the chapters on GUIDE for DQL or SQL to get started.

It is also easy to write queries yourself without the aid of the GUIDE function. Simply display the EDITOR panel and enter the keywords. Use the tutorials in this book to get started on using the keywords. Use the *CA Dataquery Reference Guide* to look up details about each keyword. Use these methods to write queries on the EDITOR:

- **Type** the query syntax.

- **Select** keywords from the statement template.

- **Enter** the DRAW command and a table name. The DRAW command automatically creates a basic query listing column names from the named table.

See Using CREATE in SQL Mode for help in using the CREATE function the first time.

Decision

The choice of whether to use GUIDE, type queries yourself (CREATE function), or use the DRAW command is mostly a matter of preference. However, if you want to retrieve data from more than two database tables at a time, if you want to create a dialog, or if you have become experienced in using GUIDE, you will want to learn the CREATE function. It is faster, once you know the language. And if you do not want to learn the language or use GUIDE, you can still create a query that prints everything in one table by using DRAW.

Whichever function you choose, you can use all of CA Dataquery's power to retrieve and manipulate data, whether you use CA Dataquery every day or only occasionally.

Options

Whether you use GUIDE or CREATE to create queries, you can create new tables from found data. The following pages describe these capabilities.

Query Creation Summaries

The following pages provide samples of things you can create with the CA Dataquery EDITOR.

SQL Query

SQL queries are made up of clauses which can be as simple or as complex as you want them to be. You can write these clauses yourself using the CREATE function or you can enter specifications on the GUIDE panels and have CA Dataquery construct the clauses (and the query) for you.

The following chart summarizes the SQL clauses in the order in which they are used in an SQL query or dialog.

Keyword	Operand	Explanation
SELECT	selection-list	Starts an SQL query or dialog. Specifies the data to be retrieved. The items in a selection list can be: column names, mathematical functions, arithmetic expressions, and literal constants.
FROM	table-names	Identifies the table or tables where data can be found.

Keyword	Operand	Explanation
WHERE	predicate	Tests each row in the named tables. If the result of the test is true, the row is selected. A predicate can be a comparison or a special search condition.
GROUP BY	column-names	Arranges data in groups. Usually used when needed for applying functions (like SUM) to groups of data.
HAVING	predicate	Used with GROUP BY to retrieve rows whose groups meet the search condition.
ORDER BY	select-list-items	Lists column names to specify the order in which data is to be presented. Columns listed must be in the SELECT clause. Ascending order is the default but DESC (descending) can be specified.

Additional SQL keywords can be used in CA Dataquery, but have very specific uses not normally needed for a query. For a list of those words and information about their use, see the *CA Datacom/DB SQL User Guide*.

Example

If you are working in SQL Mode and you want to create a list of your Texas customers with a 2008 through 2010 shipped order quantity equal to or greater than 10, your query might look like this.

Sample Query

```
SELECT REP-ID, CUST-ID, TERMS, ORDER-TOTAL
FROM CA-SLSHST-TBL, CA-ORDERS-TBL
WHERE CUST-ID EQ CUST-NO
  AND SHIP-QTY GTE 10
  AND ORD-YR GTE 08
ORDER BY REP-ID
```

The syntax is written to sort the results by sales representative, and include customer IDs, terms, and order amounts. The query joins two tables and orders and reports data in columns from each table. It also specifies selection criteria for the rows to be read during its search for data.

Results - Sample Report from Two Tables

```
05/08/11                                                      PAGE  1
16:39:07                                                      DETAIL


   REP-ID  CUST-ID   TERMS              ORDER-TOTAL
   -------  -------   ---------------    -----------
   07585    I4790    NET30               0000931.72
   07585    I4790    NET30               0000353.50
   07585    I4790    NET30               0002710.61
   07585    I4790    NET30               0000076.00
   14830    H4130    NET30               0000181.78
   14830    H4130    NET30               0003595.75
   14830    H4130    NET30               0002258.10
   14830    H4130    NET30               0000190.65
   18365    M5750    NET30               0002032.10
```

There is much more you can do with a query, like setting up dialogs for other users.

DQL Query

DQL queries are made up of basic types of statements which can be as simple or as complex as you want them to be. You can write these statements yourself using the CREATE function or you can enter specifications on the GUIDE panels and have CA Dataquery construct the statements (and the query) for you.

The following shows the basic tasks a DQL query can perform.

FIND

Starts a query that produces a report, specifying tables to search. Can specify number of rows to find. Can contain clauses that narrow the search and join more than one table.

COUNT

Starts a query that produces a count of rows in a table. Can specify types of rows and join more than one table if WITH and relationship clauses are added.

SET

Creates a report result for each detail row by combining existing columns mathematically, for example,
SET GROSS = SALES + COMMISSION.

SORT BY

Sorts rows found. Can specify grouping of rows found (control breaks).

PRINT

Requests columnar report format.

DISPLAY

Requests report format that displays one row per panel (or page). Can specify totaling and other numeric functions.

Example

```
FIND ALL CAI-SLSHST-TBL
   WITH SHIP-QTY GTE 10
   RELATED BY CUST-ID VIA CUST-ID TO CAI-ORDERS-TBL
   WITH ORD-YR GTE 85
SORT BY CAI-SLHST-TBL REP-ID
PRINT FROM CAI-SLSHST-TBL
           REP-ID
           CUST-ID
        FROM CAI-ORDERS-TBL
           TERMS
           ORDER-TOTAL
```

The sample query joins two related tables by naming the keys they have in common and tells CA Dataquery to print columns from each table. It also specifies selection criteria for the rows it wants CA Dataquery to read during its search for data. Later chapters take you through building basic queries. The *CA Dataquery Reference Guide* provides all the information you need about building queries that join tables.

Results

```
05/08/11                                                    PAGE  1
16:39:07                                                    DETAIL


  REP-ID  CUST-ID   TERMS            ORDER-TOTAL
  -------  -------   ---------------  -----------
  07585    I4790     NET30            0000931.72
  07585    I4790     NET30            0000353.50
  07585    I4790     NET30            0002710.61
  07585    I4790     NET30            0000076.00
  14830    H4130     NET30            0000181.78
  14830    H4130     NET30            0003595.75
  14830    H4130     NET30            0002258.10
  14830    H4130     NET30            0000190.65
  18365    M5750     NET30            0002032.10
```

SQL COUNT Query

If all you need is a count of something, use the COUNT(*) function of the SELECT clause. The COUNT(*) function lets you tally the number of rows in the result table created by the query. Using COUNT (DISTINCT column-name) gives you the number of distinct values in a specific column. CA Dataquery executes the query and returns the results as output. A simple query with a COUNT function looks like this:

```
SELECT COUNT(*)
  FROM CA-SLSHST-TBL
```

A more complex query with a COUNT function looks like this:

```
SELECT COUNT(DISTINCT ITM-ID)
  FROM INVENTORY
    WHERE ON-HAND > 50 AND UNIT-PRICE >= 100.00
```

By adding a WHERE clause, say you want to know how many different items are in inventory where the number on hand exceeds 50 and the unit price is equal to or greater than $100.00.

Similar results can be obtained by using other functions in a SELECT clause. You can obtain total, average, minimum, and maximum amounts.

DQL COUNT Query

If all you need is a count of something, using a COUNT statement is much faster than FIND, since no rows are retrieved. CA Dataquery simply executes the query and displays a message about the number of rows found. A simple query with a COUNT statement looks like this:

```
COUNT SALES-HISTORY
```

A complex query with a COUNT statement looks like this:

```
COUNT SALES-HISTORY
  WITH REP-ID = G007
    AND ORD-AMT > 1000.00
  RELATED BY ORD-ID TO ORDERS-HISTORY
```

By adding a WITH clause and a RELATED BY clause, you say you want to know how many rows exist in the SALES table and the ORDERS table where the salesperson G007 sold more than $1000.00.

Note: For more information about COUNT, see the *CA Dataquery Reference Guide*.

Dialog

Your department frequently produces reports containing data from the same table. However, while you access the same table, you want to sort the data differently each time and you do not always print the same types of data. You create a dialog (which is a type of query) so that the person producing the report can change the sorting and printing instructions. Following is an example of how it appears:

```
 SELECT 1?ITEM-NAME-------    2?ITM-ID--------
   3?SHIP-QTY--------     4?UNIT-PRICE--------
   FROM INVENTORY
  ORDER BY 5?ITM-ID--------
```

Because of the way you defined this dialog, people who execute it can sort by any column and print four columns of their choice, or they can use the defaults shown in the dialog. You limited their choices of sorts and columns when you defined the dialog, so you know the reports are standardized. You also entered site-specific fill characters to allow for entry.

Chapter 19: Creating a Simple Query Using DRAW

You can create a simple query automatically, without knowing the keywords, understanding the process, or completing any panels. All you need to know is the name of a table you want to access.

In DQL Mode

To create a query that lists all compound and simple fields

> Type: DRAW table-name ALL

To create a query that does not list compound fields

> Type: DRAW table-name

In SQL Mode Only

To create a query that selects all data

> Type: DRAW table-name

To create a query that inserts data in all columns

> Type: DRAW table-name INSERT

To create a query that deletes data from all columns

> Type: DRAW table-name DELETE

To create a query that updates data in all columns

> Type: DRAW table-name UPDATE

See the *CA Dataquery Reference Guide* for instructions on using the preceding SQL keywords. See the CA Dataquery Administrator for information about the INSERT, DELETE and UPDATE keywords.

Result

When you press Enter after entering the command, CA Dataquery displays a simple query.

Procedure

The following procedure shows how to create a simple query with a SQL Mode SELECT clause and a FROM clause. The procedure is the same in DQL Mode, producing a simple query with a FIND statement and a PRINT statement.

Step 1

Type **DRAW table-name** and press Enter.

Step 2

View the EDITOR panel containing the query. Following is an SQL Mode sample:

```
 =>

 -----------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR
 -------------------------------------------------------------------------------
 NAME:          ---------------                    TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. ========================= T O P ==============================
 01 SELECT ORD-ID, CUST-ID, IND-CD, CUST-NO, ORD-DT, ORD-YR,
 02 ORD-MO, ORD-DAY, EXP-DT, EXP-YR, EXP-MO, EXP-DAY, DISC-PCT, STAT,
 03 SHIP-DT, SHIP-YR, SHIP-MO, SHIP-DAY, TERMS, INSTR, CUST-PO,
 04 SHIP-ID, ORDER-TOTAL, FRT-AMT, REP-ID, ACT-DT, ACT-YR, ACT-MO,
 05 ACT-DAY, ORD-AMT
 06 FROM  CAI-ORDERS-TBL;
  .. ======================= B O T T O M ============================
 -------------------------------------------------------------------------------
 <PF1>  HELP        <PF2>  RETURN        <PF3>  EXECUTE    <PF4>  SAVE
 <PF5>  DIALOG DEF <PF6>  DELETE        <PF7>  BACKWARD   <PF8> FORWARD
 <PF9>  UPDATE      <PF10> VALIDATE      <PF11> RIGHT/LEFT <PF12> CREATE MODE
```

Note: If you enter *DRAW* from the EDITOR panel, the new query is appended to the existing (active) query. From any other panel, the new query becomes the active query.

Enter a name in the NAME field that begins with a letter and is one word long. Press <PF4> SAVE. See Step 7: Format Report and Execute Query (see page 218).

To make changes to the query, see Accessing the EDITOR (see page 69).

Chapter 20: Using GUIDE in SQL Mode

The following tutorial provides step-by-step instructions for using the GUIDE function to create a query. You can use the next pages to gain confidence in using GUIDE to perform the following:

- Solve a business problem

- Create a simple query

- Learn about SQL

After you have read these sections, you should be comfortable about using CA Dataquery and the *CA Dataquery Reference Guide* to create queries that solve your business problems.

Building a Query with GUIDE

Select GUIDE from the Main Menu to invoke the GUIDE function. We recommend selecting GUIDE if you:

- Are a new CA Dataquery user

- Only use CA Dataquery occasionally

- Want to have CA Dataquery build your queries

- Want to learn more about SQL

Guided Query Overview

The GUIDE function allows you to preselect the components of your query.   Depending on your selections, it prompts you through each step of building a simple or fairly complex query. You cannot leave out a required step. All you do is respond to each panel as it appears by making entries or skipping the panel where permitted.

Options

In addition to building a query by completing panels with the Guided Query Creation function, you can:

- Display database information about tables and columns

- Execute the query you have just created

- Learn SQL

A special PF key is available at any point in building a query that will display the actual query CA Dataquery is creating for you. If you like, you can press this key after completing any panel and see how a query keyword, like FROM, relates to a step you have completed.

With Guided Query, you respond to panels and create the same query you might create by writing SQL, with only a few restrictions.

Restrictions

Guided Query should *not* be your choice if you want to:

■ Select data from three or more database tables.

■ Create a dialog (although you can edit a query created with Guide and make it into a dialog).

■ Apply search conditions in the form of arithmetic expressions.

When naming such things as queries, dialogs, tables, or any CA Datacom item, do not use words from the following categories:

■ CA Dataquery commands

■ CA Dataquery EDITOR commands

■ DQL words

■ SQL words

■ Ignored words, such as *rows*, *records,* or *by* that are used in constructing queries and dialogs in either SQL Mode or DQL Mode.

Since these words have special meanings to CA Dataquery or are ignored by CA Dataquery, failure to avoid them will cause problems when you execute any query containing them. A complete list of reserved and ignored words appears in the *CA Dataquery Reference Guide*.

Procedure

If you want your query to perform functions not available with the GUIDE option and you still want to use Guided Query, you can. All you do is create the basic query with GUIDE and add the extra functions by editing your query with the CA Dataquery EDITOR. For example, you can edit the query you create with Guided Query to make a dialog. You can access the query through the Main Menu DIRECTORIES option or by using the EDIT command. See the *CA Dataquery Reference Guide* for instructions. See Reviewing the Process for more information about dialogs.

Operation Overview

There are several GUIDE panels, divided into groups according to which component of the query they produce. On the first GUIDE panel, you choose the components for the query you want to build. This panel determines which GUIDE panels are needed to create the query.

If you are using all GUIDE features, CA Dataquery automatically displays the initial panel in each component group. Only a few require entries and with most panels you can accept the default entries. If you complete an optional panel, subordinate panels appear and may require entries.

Just as in any other CA Dataquery function, you can always press <PF2> RETURN to return to a previous task.

Press <PF2> when the first panel in a component group is displayed to return to:

First panel of previous component group

Press <PF2> when the subordinate panels are displayed to return to:

Previous panel

When you return to a previous panel, you can change your selections or leave them as they are. If you want to save all previous selections, you must redisplay them on your terminal screen before going on to the next panel.

Note: For detailed instructions on operation and purpose of any panel, see the *CA Dataquery Reference Guide*.

Planning the Query

This section provides information about planning a query, an overview of query creation steps, and an introduction to the sample query created in the next section.

Planning Overview

As discussed in <u>Displaying Database Names and Structures</u> (see page 139), online aids are available to help you in making decisions about your query. However, before you begin creating a new query using Guided Query, the CREATE function, by editing an existing query, or using the DRAW command, you should already have a general idea about what you want.

Prerequisites

Before you begin creating a query, you should know the following:

- What kind of data, in general, you want to report?

- Whether you want to see only certain rows (for instance, only the data for certain zip codes)?

- Whether you want to make calculations based on the existing data?

Important things to find out as you create your report are:

- Which database tables contain the data you need?

- Whether you need to search more than one table to retrieve all the information you require?

- If you search more than one table, what data should be used to join the tables?

In addition to using the CA Dataquery online aids, you can also obtain a report from your CA Dataquery Administrator that lists authorized database tables and column names, along with other pertinent information. We recommend that you ask your CA Dataquery Administrator to give you some background information about the tables you are authorized to use before you begin to use CA Dataquery.

Report Format Definition

The title, headings and format of the query output and specifications for sorting, subtotals and totals are decided by input you provide during the initial execution of the query. You should be familiar with the format definition options available with the execution panels as you plan your query. <u>Getting a Report</u> (see page 81) provides details about report format specifications.

Selecting GUIDE Panels

Select GUIDE from the Main Menu to create a query with the GUIDE function. CA Dataquery presents this panel so you can preselect components for your query.

The tutorial in the following section shows you how to make selections from this panel and how to make a typical query with GUIDE.

GUIDED QUERY CREATION: OPTION SELECTION (DQHV0)

```
=>
---------------------------------------------------------------------------DQHV0
DATAQUERY:   GUIDED QUERY CREATION:  OPTION SELECTION
--------------------------------------------------------------------------------
When you create a query with Guided Query, a basic query will be generated as
the default.  You may override this default and customize your query by
selecting one or more of the extended options listed below.

To create a basic query that selects all rows from a single table, presenting
the selected rows in a random sequence, press <PF4>.

To select options to add to the basic query, place any character beside the
options of your choice and press <PF4>.

    _   Specify the order in which the retrieved information will be presented

    _   Limit the output report size by specifying selection criteria

    _   Create your own columns for the output report

    _   Retrieve and combine information from two tables


--------------------------------------------------------------------------------
<PF1> HELP        <PF2> RETURN        <PF3> NOT USED        <PF4>  CONTINUE
```

With this panel, you can choose to display GUIDE panels that:

■   Create the simplest possible query.

■   Add one or more query components to the basic version.

■   Display every GUIDE panel.

The next sections describe these three levels of GUIDE use.

The Simplest Query

To create a simple query with Guide, select GUIDE from the Main Menu and do not make a selection on the GUIDED QUERY CREATION: OPTION SELECTION panel. Simply press <PF4> CONTINUE.

For information about the panels that appear for these components, turn to Creating a Sample. The following list describes the query creation tasks you complete for a simple query.

- Identify the new query.

- Select one table for data selection.

- Select columns for output.

- Specify order of columns and select mathematical functions (if any).

CA Dataquery creates a default report for you. You can format your own report at execution time if you choose not to use the defaults. See Getting a Report for details.

Add Individual Components to the Basic Query

You can choose to add one or more groups of panels to a basic query. The basic query only reads one table. You can choose GUIDE panels that help you:

- Search two tables.

- Limit the search for data.

- calculate data.

- Sort data for the report.

Use All Guided Panels

You can choose to display all GUIDE panels and create a complex query. During display of the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel, enter a character in every field. You will not be required to make entries on optional panels if you change your mind. Use the *CA Dataquery Reference Guide* as a reference for panels when you create your own queries.

Creating a Basic Query

The following chart shows the steps involved in creating a query with the GUIDE function on the Main Menu. It provides an overview of the steps outlined in the next section.

Step	Action	Description
1	Invoke GUIDE	See Step 1: Invoke GUIDED QUERY CREATION (see page 166).
2	Preselect input panels	Mark the things you want your query to do. See Step 2: Decide Which Panels to Use (see page 166).
3	Identify the query	Give the query a name, status, and optional description. See Step 3: Identify and Save the Query (see page 168) for details.
4	Complete the input panels as they appear	See the remainder of this chapter for procedures. See the *CA Dataquery* Reference *Guide* for details on each panel.
5	Execute the query	Complete the ONLINE EXECUTION panel. Define the report you want if you choose to change the defaults defined by GUIDE. Then execute the query. See the remainder of this chapter for training. See Getting a Report (see page 81) and Executing Online (see page 107) for more details.

Creating a Sample Query

Use this section to gain a basic understanding of how the GUIDE function works. When you finish, you will understand how to create a basic query with GUIDE and you will also know some fundamental facts about CA Dataquery.

This section presents a sample objective, the report needed to accomplish the objective, and the GUIDE panels that appear when a basic query is selected from the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel. Along with a discussion of the procedures involved in creating a query with Guide, we present basic concepts where they are relevant to the discussion of a panel.

You can follow the tutorial and create your own query. Simply choose a table on your database that has both character and numeric data and follow the directions on the next pages (using the correct names for your data).

A Typical Business Need

Assume you are president of a new manufacturing company and you have been in business for only one month. You want to know how many items have been shipped and how much you can expect to be paid for each group of items. You know your DP department has created a sales history table that lists the items that have been sold and shipped. You decide to create a query to produce the information you need.

How to Meet the Need

The following describes tasks to be completed in analyzing and resolving the sample business problem.

Define the need

Create a query that produces a report containing this information:

- The ID of each item shipped.

- How many of each item have been shipped.

- The price of each item.

- The total expected income from each group of items.

Visualize the report

Determine how the report should look.

Identify tables

Find out which tables contain the needed data.

Identify columns

Find out which columns should be referenced to locate the data.

Decide

Whether an existing query or dialog can produce the report. If not, decide whether you want to copy and edit an existing query (or dialog) or write your own. If you want to write your own, decide whether to use GUIDE, CREATE or DRAW.

Begin query creation

Select GUIDE from the Main Menu.

Define report

Access the ONLINE EXECUTION panel for the query created. Select <PF3> FORMAT REPORT and enter specifications. Specifications are saved and become the defaults for the query whenever it is executed.

Sample Report

Following is a sample of how you want to view the data:

```
07/20/11                                                          PAGE      1
18:23:59                                                          DETAIL


   ITM_ID         SHIP_QTY  UNIT_PRICE      EXPRESSION 01
   ----------     ----------  ----------    --------------------
   A10002              4       19.99              79.96000
   A20000              1      149.99             149.99000
   A30000              2       39.99              79.98000
   A40000              5        5.99              29.95000
   A60000              4       49.99             199.96000
   H10003            100       12.99            1299.00000
   H20005            200       17.99            3598.00000
   H30001            102       14.99            1528.98000
   H40000            900       15.99           14391.00000
```

Check the highlighted number of the report items against the following chart for a description of each item.

Report Item	Description
ITM_ID	You want to know which items have been shipped.
SHIP_QTY	You want to know how many of each item have been shipped.
UNIT_PRICE	You want to know the price of each item.
EXPRESSION 01	You want to create a result of the SHIP_QTY multiplied by the UNIT_PRICE for each row to get the total invoice amount. CA Dataquery automatically generates this kind of heading for mathematical results. (If you want your reports to have more descriptive column headings, you can specify headings during the report definition phase of execution.)

Sample Procedure

This section explains the steps necessary to create a query with SQL Mode GUIDE.

Step 1: Invoke GUIDED QUERY CREATION

There are two ways to start up the GUIDE function. The simplest and most common is to select it from the Main Menu. You can also type **GUIDE** on the command line during presentation of any panel and then press Enter.

Note: If you exit GUIDED QUERY CREATION: (by completing all panels presented or by entering a command on the command line), you cannot reenter GUIDE to continue work on the query. You can, however, use the EDITOR to display or edit it.

Step 2: Decide Which Panels to Use

This section tells you what the GUIDE options are and how to choose them. It also shows you how to complete this step as you resolve the sample business problem.

To Start

After you select GUIDE from the Main Menu, the following panel appears:

GUIDED QUERY CREATION: OPTION SELECTION (DQHV0)

```
 =>

 ------------------------------------------------------------------------DQHV0
 DATAQUERY:   GUIDED QUERY CREATION:  OPTION SELECTION
 ------------------------------------------------------------------------------
 When you create a query with Guided Query, a basic query will be generated as
 the default.  You may override this default and customize your query by
 selecting one or more of the extended options listed below.

 To create a basic query that selects all rows from a single table, presenting
 the selected rows in a random sequence, press <PF4>.

 To select options to add to the basic query, place any character beside the
 options of your choice and press <PF4>.

    _   Specify the order in which the retrieved information will be presented

    _   Limit the output report size by specifying selection criteria

    _   Create your own columns for the output report

    _   Retrieve and combine information from two tables
 ------------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN        <PF3> NOT USED       <PF4>  CONTINUE
```

Facts

The following describes what each selection enables you to do.

Create a basic query...

Select one table and one or more columns to produce a report. Perform mathematical functions on one or more columns, if needed.

Specify order....

Determine the sorting order for report data.

Limit report size...

Define criteria the data must meet to be selected.

Create your own report columns...

Create data for the report that is a result of an arithmetic expression or that is a literal value.

Retrieve information from two tables...

Specify two tables for data selection and establish conditions for joining them.

When you need to create queries that perform these functions, make the appropriate selections and use the *CA Dataquery Reference Guide* to look up the required entries for each panel that appears.

Action

To make selections for the sample, enter an **X** in the fields for selecting panels that allow you to specify the order of report data and to create your own report columns. Press <PF4> CONTINUE.

Options

Select any or all of the available options.

Step 3: Identify and Save the Query

This section describes how to complete the QUERY IDENTIFICATION panel and shows you how to complete it for the sample business problem.

To Start

After you select options for the query, CA Dataquery presents the following panel.

Query Identification (DQHI0)

```
=>

-------------------------------------------------------------------------DQH10
DATAQUERY:   QUERY IDENTIFICATION
-------------------------------------------------------------------------------

ENTER A UNIQUE NAME FOR THE NEW QUERY ==>    _____

SELECT THE ACCESSIBILITY LEVEL FOR YOUR QUERY BY PLACING ANY CHARACTER
NEXT TO YOUR CHOICE.

   _  PUBLIC
   X  PRIVATE

ENTER A DESCRIPTION FOR THE NEW QUERY
   ==> _____




-------------------------------------------------------------------------------
<PF1> HELP         <PF2> RETURN        <PF3> NOT USED      <PF4>  CONTINUE
```

Facts

The following presents some facts needed to complete the Query Identification panel for the sample query.

Enter a unique name...

A query name must be unique within its assigned library and must be one word of 1 to 15 alphabetic characters, numbers, underscores, or special characters. The first character must be a letter.

Select the accessibility...

The selections are PUBLIC or PRIVATE. You can update and delete queries saved in your private library. If you assign a query to the public library, others can use it, and you cannot change or delete it unless your site permits. Contact your CA Dataquery Administrator for procedures at your site.

Enter a description...

> A description is recommended but not required. A description should tell the query's purpose and note anything that makes it unique. The description cannot exceed 60 characters.

<PF4> CONTINUE

> Once you press <PF4> CONTINUE on the QUERY IDENTIFICATION panel, the query is saved and resides in the library you specified on the panel. Thereafter, each time you press <PF4> CONTINUE during display of a panel, the query is updated.

Action

The following chart shows how to complete this panel so that it identifies the sample query:

Field	Enter	Reason
Name	SQLGUIDE	Readily shows that this is an SQL query created with the GUIDE function.
Accessibility level	PRIVATE	Since this is a practice query, it may not be needed by others. Its library assignment can always be changed via the EDITOR panel.
Description	CAI_SLSHST_TBL table, all rows, sorted by ITM_ID	Describes the table the query accesses, whether or not selection criteria is applied (it is not), and says that the output is sorted. During directory display, you can see right away whether or not the query meets your need.

With all fields complete, press <PF4> CONTINUE to save the query identification and library assignment and to go on to the next panel.

Options

The following lists other things you could do with this panel.

Use a different name

> You can create a query name that is up to 15 characters long. You can use numbers and hyphens anywhere after the first character.

Omit a description

> If a description is unimportant to you, you can leave it off. You can always add a description later using the EDITOR panel.

Step 4: Select a Table

This section tells how to choose a table to be searched by the query.

After you give the query a name, library, and description, and press <PF4> CONTINUE, CA Dataquery displays this panel:

Primary Table Selection (DQM20)

```
 =>


 --------------------------------------------------------------------------DQM20
 DATAQUERY:  PRIMARY TABLE SELECTION                 QUERY NAME:  SQLGUIDE
 --------------------------------------------------------------------------------
 SELECT ONE TABLE FROM WHICH YOU WANT INFORMATION BY PLACING ANY CHARACTER
 NEXT TO THE DESIRED TABLE NAME.   START WITH _____
 --------------------------------------------------------------------------------
 SELECT|   TABLE NAME                        |        DESCRIPTION
 --------------------------------------------------------------------------------
    _   | ADDRESS
    _   | CAI_ACCTS_TBL                       | ORDER ENTRY DEMO ACCTS
    _   | CAI_CUST_TBL                        | CUSTOMERS RECORD
    _   | CAI_DETAIL_TBL                      | DETAILS RECORD
    _   | CAI_ITEMS_TBL                       | ITEMS RECORD
    _   | CAI_ORD_NO_TBL                      | ORDER NUMBERS RECORD
    _   | CAI_ORDERS_TBL                      | ORDERS RECORD
    _   | CAI_RCPTS_TBL                       | ORDER ENTRY DEMO RECEIPTS
    _   | CAI_SHIPTO_TBL                      | SHIP_TO RECORD
    X   | CAI_SLSHST_TBL                      | ORDER ENTRY DEMO SALES_HIST R
    _   | CAIDEMO_DEM_PNC                     | CAI SAMPLE PART COST TABLE
 --------------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN        <PF3> DISPLAY TEXT <PF4> CONTINUE
 <PF5> DISPLAY TABLE <PF6> DISPLAY QUERY  <PF7> BACKWARD      <PF8> FORWARD
```

Facts

The following presents some facts about table selection that are needed to create the sample query.

Primary Table

The primary table is the one CA Dataquery reads first in its search for data. If rows from another table are to be joined to rows selected from the primary table, that table is referred to as the *secondary table*.

Table Name

This column lists all tables for your current authorization ID. These are the tables you can access, unless a table name is a reserved word. (Reserved words are documented in the *CA Dataquery Reference Guide*.)

Table Description

Basic information about listed tables.

Steps

The following shows the steps for selecting a table for the sample query.

Step 1

Decide which table contains the data needed for the report.

Step 2

Use the Tab key to move the cursor to the field in front of CAI_SLSHST_TBL and enter an **X**.

Step 3

Press <PF4> CONTINUE.

Options

The following lists additional panels you might display during table selection.

Display Text

Move the cursor to the SELECT field next to a table name and press <PF3>. If a text description exists for a table, it can contain any information the person responsible for it considers pertinent.

Display Table

Move the cursor to a SELECT field next to a table name and press <PF5> to see a panel listing the column names and descriptions for that table.

Extended Definition

The Display Table panel that appears when you press <PF5> allows you to press another PF key to see basic information about how the columns are defined. You can use this information to deduce what kind of data each column should contain.

Additional Information

The following provides additional information you might want to know about selecting tables.

FROM clause

Selecting a table with GUIDE allows CA Dataquery to build the FROM clause portion of the query for you. See Edit FROM Clause (see page 208) for additional FROM clause details.

Decision-making tips

Decision-making aids can include:

- Reading the table description.

- Using online aids described in Displaying Database Names and Structures (see page 139).

- Obtaining information from the CA Dataquery Administrator.

- Looking at a portion of the data in a table you want to know about. Use the DRAW command to write a query that reports on all columns and then execute that query to see the data.

Step 5: Select Columns

This section tells how to select columns for the sample query.

After you select a table and press <PF4> CONTINUE, you see this panel:

Output Row: Column Selection (DQIG0)

```
=>

--------------------------------------------------------------------------------DQIG0
DATAQUERY: OUTPUT ROW: COLUMN SELECTION           QUERY NAME:   SQLGUIDE
--------------------------------------------------------------------------------
SELECT COLUMNS TO BE INCLUDED IN THE OUTPUT ROW BY PLACING ANY CHARACTER NEXT
TO THE DESIRED NAMES.
--------------------------------------------------------------------------------
SELECT|TABLE/COLUMN NAME                        |      DESCRIPTION
--------------------------------------------------------------------------------
      | CAI_SLSHST_TBL                          |
   _  |    ORD_ID                               |
   _  |    ITM_ID                               |
   _  |    ORD_DT                               |
   _  |    ORD_YR                               |
   _  |    ORD_MO                               |
   _  |    ORD_DAY                              |
   _  |    ORD_QTY                              |
   _  |    SHIP_QTY                             |
   _  |    UNIT_PRICE                           |
   _  |    DISC_PCT                             |
--------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED   <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD   <PF8> FORWARD
```

Facts

The following presents the facts needed to select columns for the sample query.

Output row

Query execution creates a result table that is made up of rows of found data.

Result of column selection

Your report will consist of data that CA Dataquery finds in each column you select
on this panel.

Steps

The following describes the steps required for selecting output columns in creating the sample query.

Step 1

Decide which column should contain the data needed for the report.

Step 2

Type an **X** in the fields preceding ITM_ID, SHIP_QTY, and UNIT_PRICE.

Step 3

Press <PF4> CONTINUE.

Options

The following lists other things you could do during display of this panel.

Extend Column

Press <PF5> to see a panel with the definitions for each column in the table.

Display Query

Press <PF6> to see the query as it looks before column selection.

Select more or fewer columns

You can select as many columns as you like, as long as you select at least one.

Additional Information

The following provides additional information you might want to read about selecting tables.

SELECT clause

The portion of a query that lists the database columns that contain data wanted in the output. (SELECT clauses can perform several functions. For more information, see 1 (see page 205).)

Decision-making tips

Decision-making aids can include:

■ Reading the column description.

■ Using online aids described in Displaying Database Names and Structures (see page 139).

■ Obtaining information from the CA Dataquery Administrator.

■ Looking at a portion of the data in a table you want to know about. You can use the DRAW command to write a query that reports on all columns and then execute that query.

Step 6: Select Columns for a Result Expression

This section tells how to select column names to include in an expression whose results appear in the output of the sample query.

After you select output columns and press <PF4> CONTINUE, CA Dataquery presents the following panel. It is the first of a series of panels that help you set up your own output columns to contain the results of expressions.

```
=>


------------------------------------------------------------------------------DQIA0
DATAQUERY: DEFINE EXPRESSION: SELECT COLUMNS     QUERY NAME: SQLGUIDE
--------------------------------------------------------------------------------
SELECT ANY COLUMNS YOU WISH TO USE IN CALCULATING THE VALUE OF:
EXPRESSION  01.
PLACE ANY CHARACTER NEXT TO THE DESIRED COLUMN NAMES.
--------------------------------------------------------------------------------
SELECT|  TABLE NAME/COLUMN NAME             | DESCRIPTION
--------------------------------------------------------------------------------
      | CAI_SLSHST_TBL                      |
   _  |   ORD_ID                            |
   _  |   ORD_QTY                           |
   _  |   SHIP_QTY                          |
   _  |   UNIT_PRICE                        |
   _  |   DISC_PCT                          |
      |                                     |
      |                                     |
      |                                     |
- LAST PAGE ----------------------------------------------------------------
<PF1> HELP           <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD   <PF8> FORWARD
```

Facts

The following presents facts about selecting columns as part of an expression whose results are to be part of the sample query output.

Why does this panel appear?

You selected *Create your own columns* on the GUIDED QUERY CREATION OPTION SELECTION panel.

What does a *result* have to do with creating my own report columns?

To create your own data for the report, you must define an arithmetic expression or a literal value. The result is a value that appears on each output row in the output table. The expression is included in the SELECT clause.

What does an expression look like?

Example 1: (SALARY + BONUS) * .10

Example 2: 'RETIRED'

What do database columns have to do with creating my own columns?

Your query will contain an expression that results in a value that can be handled by CA Dataquery as though it were a value in a column. The expression can contain the names of columns in the table you select, so you get a chance to select those columns.

What happens to the columns I select?

CA Dataquery offers two panels for each expression needed. On this one, you select column names. To these names, CA Dataquery assigns numbers to represent them in the expression. On the second panel, you write the expression using the numbers to save space. (You also get a chance to do another expression.)

Steps

The following describes the procedure involved in selecting columns for the sample query expression.

Step 1

Determine what type of result you need to get.

Step 2

Determine the names of the columns that contain data you want used to create the values of one expression.

Step 3

Type an **X** in the fields preceding SHIP_QTY and UNIT_PRICE.

Step 4

Press <PF4> CONTINUE.

Options

The following lists some other things you can do during this step.

Extend Column

Display a new panel that provides background information about any column selected by positioning the cursor on it and pressing <PF5>.

Display Query

See how the query looks so far by pressing <PF6>. At this point, no columns or expressions follow the SELECT keyword. The SELECT clause is not complete until all Guided panels relating to it are completed.

Select more or fewer columns

Select as many columns as you need to include in an expression.

Select no columns

CA Dataquery displays the panel for writing an expression whether or not you select columns for it.

Additional Information

The following answers some other questions you might have about expressions that create your own columns on report output.

Will I encounter the expression as I use other GUIDE panels?

Yes. Any panels listing SELECT columns also list expressions by their names. The first expression you write receives the name EXPRESSION 01, and so on.

How do I recognize a result when it appears on reports?

The column heading is an automatically assigned expression name (like Expression 01) unless you assign a different name in the report format definition during execution.

Step 7: Write an Expression that Creates Columns

This section tells how to produce the result values in the sample business report.

After you select columns whose names you want to use in creating a result, press <PF4> CONTINUE. CA Dataquery displays the following panel so you can write the expression that produces output columns.

Define Expression: Write Statement (DQIB0)

```
 =>
  Enter definition for Expression 01.  Press <PF1> for help.
 --------------------------------------------------------------------------DQIB0
 DATAQUERY: DEFINE EXPRESSION: WRITE STATEMENT      QUERY NAME: _____
 --------------------------------------------------------------------------------
 Write an arithmetic expression to be used in calculating the value of an
 output column.  Use the column numbers, F01, F02, etc., numeric literals,
 or a combination of both and arithmetic operators.
 The default expression appears below. You may type over it to change it.
 => F01 + F02_____
 --------------------------------------------------------------------------------
 NUMBER|  TABLE NAME/COLUMN NAME            | DESCRIPTION
 --------------------------------------------------------------------------------
       | CAI_SLSHST_TBL                     |
   F01 |   SHIP_QTY                         |
   F02 |   UNIT_PRICE                       |
       |                                    |
       |                                    |
       |                                    |
       |                                    |
       |                                    |
 --------------------------------------------------------------------------------
 <PF1> HELP            <PF2> RETURN        <PF3> NEW COLUMN  <PF4> CONTINUE
 <PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD     <PF8> FORWARD
```

Facts

The following describes the facts needed to write the expression for the sample query.

Why does this panel appear?

Selecting *Create your own columns* on the GUIDED QUERY CREATION: OPTION SELECTION panel (DQHV0) gives you an opportunity to define an expression that produces results for the output. In the previous step, column names were selected for use in the expression. This is the panel for writing that expression.

Default Expression

CA Dataquery writes a default expression by adding assigned numbers together in a series. You can write over all or part of the default to change it.

F01

CA Dataquery assigns numbers for each column you select to be included in the expression. The numbers are the letter F followed by a number. The numbers are listed on the panel.

Length of expression

Your expression cannot exceed the length of the line containing the default expression.

Steps

The following describes the steps required to complete the expression for the sample query.

Step 1

Move the cursor to the + between F01 and F02 and type an asterisk over it so that the expression reads *F01 * F02*. The expression tells CA Dataquery to multiply the data in SHIP_QTY (F01) on each output row by the data in UNIT_PRICE (F02) on the same row to get a new value for that row. The new value will be included in the report to show the total price of each item listed on the report.

Step 2

Press <PF4> CONTINUE.

Options

Use another column name

Type the name of any column that fits on the line following the => entry field. You are not limited to only previously selected columns. However, if you misspell the name, CA Dataquery does not check it here.

Write any valid portion of a SELECT clause in the field

You could enter a comma-separated statement in the => entry field. You could also enter a column function. Column functions are discussed in <u>Step 8: Specify Column Order (and Functions)</u> (see page 181).

An example of a valid entry of this type is:

'Average Salary is: $', AVG(SALARY)

Add more columns with shorthand labels

You can use <PF2> RETURN to redisplay the panel for selecting expression columns and reselect columns.

To create a second result

Press <PF3> NEW COLUMN to display the panel for selecting columns to create another report column.

Additional Facts

The following answers some other questions you might have about expressions.

How do I get numeric results?

Either write out a number that is to appear on all output rows or write out an arithemetic expression that produces numeric results.

What should I know about numeric expressions?

The arithmetic expression can be made up of the names of numeric columns, arithmetic operators, parentheses, and numbers. Expressions may be simple or complex, using arithmetic operators (+ - / * =) and parentheses.

What is a nested expression?

Use parentheses to clarify which operations are to be performed first in a complex calculation (up to 5 levels of nested expressions).

Here is an example:

(SALARY + (SALARY * .10)) * .10

Notice that one set of parentheses is inside another one.

What is a complex expression?

Here is one:

(F01 * 3.3) + (F02/F05)/(F03 + F04)

Notice the expression consists of a combination of several simple expressions.

How do I get a literal value as the result?

Write a character string and enclose it in apostrophes.

Can I perform other kinds of calculations with Guide?

Yes. You can perform calculations on individual columns. For instance, you could calculate an average of the values in the UNIT_PRICE column by applying the AVG function to UNIT_PRICE. See Step 8: Specify Column Order (and Functions) (see page 181) or the *CA Dataquery Reference Guide* for more information.

Step 8: Specify Column Order (and Functions)

This section tells how to specify column order for the sample report produced by the sample query.

After you specify the output for your report (columns and result expressions), CA Dataquery displays this panel:

Output Row: Definition (DQII0)

```
 =>
  PRESS <PF1> FOR HELP WITH DEFINING THE OUTPUT ROW
 ------------------------------------------------------------------------DQII0
 DATAQUERY: OUTPUT ROW: DEFINITION              QUERY NAME:    SQLGUIDE
 ----------------------------------------------------------------------------
 SPECIFY THE ORDER IN WHICH THE COLUMNS ARE TO APPEAR IN THE OUTPUT ROW BY
 INSERTING AN ORDER NUMBER BELOW.  COLUMN FUNCTIONS MAY BE SELECTED BY PLACING
 ANY CHARACTER IN THE CORRESPONDING COLUMNS.  COUNT OUTPUT ROWS? _ YES X NO
 ----------------------------------------------------------------------------
 ORDER | TABLE NAME/                      |     |     |     |     | COUNT
 NUMBER|  COLUMN NAME                     | AVG | MAX | MIN | SUM | DISTINCT
 ----------------------------------------------------------------------------
       |CAI_SLSHST_TBL                    |     |     |     |     |
  01   | ITM_ID                           |     |     |     |     |
  02   | SHIP_QTY                         |     |     |     |     |
  03   | UNIT_PRICE                       |     |     |     |     |
       |USER-DEFINED EXPRESSION           |     |     |     |     |
  04   | EXPRESSION    01                 |     |     |     |     |
       |                                  |     |     |     |     |
       |                                  |     |     |     |     |
       |                                  |     |     |     |     |
       |                                  |     |     |     |     |
 - LAST PAGE ----------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
 <PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD   <PF8> FORWARD
```

Facts

The following explains the facts needed to complete this panel for the sample query.

ORDER NUMBER

GUIDE assigns a default order on the report for output columns and results. You can change the order.

Steps

The following describes the steps required to complete the Output Row: Order column for the sample query.

Step 1

Decide whether the default order numbers show the way you want your report columns arranged.

Step 2

Accept the default by pressing <PF4> CONTINUE.

Options

Change the column order

Type over the numbers shown.

Apply column functions

Calculate results by performing mathematical functions on any or all numeric data.

Count rows in the output

Select Yes for COUNT OUTPUT ROWS?

Additional Facts

The following provides additional information about the OUTPUT ROW: DEFINITION panel (DQII0).

Why does this panel have columns headed with the names of mathematical functions?

You can also use this panel to apply column functions to any numeric column or result.

What happens when I select one of the functions?

This list shows the results of applying each function:

AVG

Returns the average value of a column.

MAX

Returns the highest value of a column.

MIN

Returns the lowest value of a column.

SUM

Returns the sum of all values in a column.

COUNT DISTINCT

If the query finds duplicate rows and you only need one of them in your result table, mark this function for columns.

Can I apply functions to some columns and not to others?

Yes. The result of applying column functions means that the report output will consist of column result rows and **will not contain detail rows**. Because of this, if you assign functions to some columns and not to others, those columns become the control breaks for the values that are produced.

You must decide the grouping priority for the unassigned columns. You do that on a new panel that appears for *grouping*. The grouping priority panel appears only if more than one column is unassigned because if there is only one, no priority decision is to be made.

How can I get detail rows in my output and also apply column functions?

You can omit column functions in the query definition and apply them later during report definition. The query output must be sorted on the panel discussed in Step 9: Specify Presentation Order (see page 184).

Step 9: Specify Presentation Order

This section tells how to specify the order of columns in the sample business report.

After you complete selection and calculation specifications for the sample query, CA Dataquery presents the panel shown following:

Ordering Rows: Priority (DQIE0)

```
=>


-----------------------------------------------------------------------------DQIE0
DATAQUERY: ORDERING ROWS: PRIORITY              QUERY NAME:    SQLGUIDE
-------------------------------------------------------------------------------
DETERMINE THE ORDER IN WHICH YOUR OUTPUT ROWS WILL BE RETURNED TO YOU BY
ENTERING 1, 2, ETC. AS A PRIORITY NUMBER NEXT TO ANY COLUMN YOU WISH TO USE
IN DETERMINING OUTPUT SEQUENCE.  SEQUENCE ASCENDING OR SEQUENCE DESCENDING
MAY BE SELECTED BY PLACING ANY CHARACTER UNDER THE SEQUENCE ABBREVIATION.
-------------------------------------------------------------------------------
PRIORITY|TABLE NAME/                          |SEQUENCE|
NUMBER  | COLUMN NAME                         |ASC/DESC| DESCRIPTION
-------------------------------------------------------------------------------
        |CAI_SLSHST_TBL                       |        |
  __    | ITM_ID                              | X   _  |
  __    | SHIP_QTY                            | _   _  |
  __    | UNIT_PRICE                          | _   _  |
        |USER-DEFINED EXPRESSION              |        |
  __    | EXPRESSION   01                     | _   _  |
        |                                     |        |
        |                                     |        |
- LAST PAGE -------------------------------------------------------------------
<PF1> HELP             <PF2> RETURN         <PF3> NOT USED   <PF4> CONTINUE
<PF5> EXTEND COLUMN   <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

Facts

The following tells you the facts you need to finish creating the sample query.

Why does this panel appear?

Selecting *Specify sequence...* on the GUIDED QUERY CREATION: OPTION SELECTION panel (DQHV0) means you want to sort the output. This panel lets you specify sorting order.

Priority

With Guide, you can specify how you want the output data sorted on the report. The priority column lets you number the columns from major to minor sorts. You can sort on any number of columns.

Ascending (ASC)

You can sort from lowest to highest on any sort column.

Column Name

All columns selected for the output row and all results selected for the output row are listed here so you can specify which one contains data to sort by. You can sort on a result column just as you can with column data.

Steps

The following describes the steps required to complete the ORDERING ROWS: PRIORITY (DQIE0) panel for the sample query.

Step 1

Decide how the report should be arranged.

Step 2

Mark an X in the field next to ITM_ID.

Step 3

Mark an X in the ASC field following ITM_ID.

Step 4

Press <PF4> CONTINUE.

Options

Sort on additional columns

Within each group of ITM_IDs created by sorting the data by ITM-ID, you could also sort according to any other column.

Do not sort at all

You can skip this panel.

Sort on a different column

If you wanted to sort the report data according to total price, from the highest to the lowest, you could select Expression 01 and mark DESC.

Additional Information

The following provides additional information about the ORDERING ROWS: PRIORITY panel (DQIE0).

Descending (DESC)

You can sort from highest to lowest on any sort column.

Description

This column shows any CA Datacom Datadictionary description assigned to a column.

Control Breaks

Selecting columns for sorting on this panel means that you can use the selected columns as control breaks or page breaks for the report. Selecting them causes panels to appear during the report definition phase of execution that list those columns and allow you to designate control breaks or page breaks.

Step 10: View Query and Execute

When you complete the last of the GUIDE panels, CA Dataquery presents the query it constructed according to your panel entries. The following is an example of how it appears:

Guided Query Display (DQIN0)

```
=>
QUERY CREATION COMPLETED
------------------------------------------------------------------------------DQIN0
DATAQUERY:  GUIDED QUERY DISPLAY              QUERY NAME: _____
--------------------------------------------------------------------------------
TO EXECUTE THIS QUERY ONLINE, PRESS <PF3>.  TO SUBMIT THIS QUERY FOR BATCH
EXECUTION, PRESS <PF5>.   TO EXIT GUIDED QUERY AND RETURN TO THE MAIN MENU,
PRESS <PF4>.  TO CONTINUE QUERY CREATION USING GUIDED QUERY, PRESS <PF6>.
--------------------------------------------------------------------------------
============================ T O P ===============================
01 SELECT ITM_ID, SHIP_QTY, UNIT_PRICE,
02        SHIP-QTY * UNIT-PRICE
03 FROM  CAI_SLSHST_TBL
04 ORDER BY ITM_ID




========================= B O T T O M =============================
--------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN    <PF3>  EXEC QUERY <PF4>  MAIN MENU
<PF5> SUBMIT QUERY  <PF6> NEW QUERY <PF7>  BACKWARD   <PF8>  FORWARD
```

Facts

The following chart explains how each line of the new query relates to the panels completed during operation of GUIDED QUERY CREATION: OPTION SELECTION

Line	Keyword	Panels and
01/02	SELECT	This clause tells which columns and results are to appear in the output row and the order in which they should appear.
03	FROM	This clause tells which table contains the data.
04	ORDER BY	This clause tells the sorting order for the report data.

Steps

The following describes the steps for executing the newly created sample query.

Step 1

Press <PF3> EXECUTE to display the execution panel.

Step 2

Press <PF3> EXECUTE on the execution panel.

Options

Define report defaults

During display of the ONLINE EXECUTION panel, you can display other panels to define the report format. See Getting a Report (see page 81) for details.

Submit the query

You can submit the query for batch execution. See Executing in Batch (see page 123) for details.

Edit the query

Type **EDIT *** on the command line to view the query on the EDITOR panel. You can then change it, make a business chart from the data it produces, or turn it into a dialog. See Creating Dialogs if you want to know more about editing the query.

Start another query

Start up GUIDE again to make a new query by pressing <PF6> NEW QUERY.

Change the query in GUIDE

Press <PF2> RETURN to return to one or more of this query's definition panels and make changes. Remember that when you return to a panel and then go forward again using <PF4> CONTINUE, you must redisplay every selection to retain it.

Delete the query

Display a directory and use <PF6> DELETE to delete the query. See Selecting a Directory (see page 45) for details.

View Report

The following example shows how output from the sample query looks on the terminal screen when execution is complete. No format definition has been done.

Query Output Panel

```
07/20/00                                                       PAGE     1
18:23:59                                                       DETAIL

  ITEM           QUANTITY        UNIT
   ID            SHIPPED        PRICE       EXPRESSION 01
----------     ----------    ----------    --------------------
A10002                  4        19.99      0000000079.96000
A20000                  1       149.99      0000000149.99000
A30000                  2        39.99      0000000079.98000
A40000                  5         5.99      0000000029.95000
A60000                  4        49.99      0000000199.96000
H10003                100        12.99      0000001299.00000
H20005                200        17.99      0000003598.00000
H30001                102        14.99      0000001528.98000
H40000                900        15.99      0000014391.00000



------------------------------ LAST PAGE -------------------------------------
<PF1>  HELP           <PF2>  RETURN       <PF3>  TOTALS ONLY  <PF4>  DETAIL
<PF5>  NO TOTALS      <PF6>  STATS        <PF7>  BACKWARD      <PF8>  FORWARD
<PF9> NOT USED        <PF10> NOT USED     <PF11> LEFT          <PF12> RIGHT
```

Facts

The following tells you the facts you need to understand the output of the sample query.

Column headings

Since no report format was defined, CA Dataquery's first choice for column headings of database columns is always the CA Datacom Datadictionary alternate heading. Also, CA Dataquery uses the automatically assigned Expression 01 for the result column heading. All of these headings can be overridden in the report format definition.

Leading zeros

Since leading zeros appear in the numeric columns in the database, they also appear here. They can be eliminated by selecting a different edit pattern on a panel in the report format definition.

Options

Define a report format

Display the execution panel and make entries on the report format definition panels that you can access.

View statistics

Press <PF6> STATS to see a display of execution statistics for this query. See Viewing Query Statistics (see page 117) for information.

Additional Information

The following provides additional information you might want to know about the output display of the sample query.

TOTALS

Since no report definition was defined, totals are not available for these columns.

Chapter 21: Using CREATE in SQL Mode

SQL is a comprehensive way to query your database. Use these sections to gain confidence in using:

- The CA Dataquery EDITOR

- The SQL template

- Basic SQL key words in a simple query

- CA Dataquery to solve a business problem

Note: If you like, you can follow the next lessons by using your own data and the correct names for your own database.

Once you have read these sections, you should be comfortable using the *CA Dataquery Reference Guide* to create queries that solve your business problems.

Prerequisites

Familiarity with the database concepts and terminology discussed in Understanding the Terminology (see page 133) is suggested prior to reading these sections for the first time.

Content

The following sections present the concepts for building a basic query using the CA Dataquery EDITOR. Included in them are:

- A brief overview of the EDITOR panel

- Advice on planning a query

- An example of a typical business situation and a sample query that meets the need

- A tutorial on creating the sample query

- Information about defining a default report format for use whenever the query is executed

On Your Own

These sections provide enough information for you to start creating your own SQL queries on the EDITOR. They also provide introductions to some advanced SQL query capabilities and to defining the format of the query output. If you want more information as you create your own queries, display the Help panels or turn to the *CA Dataquery Reference Guide* or the *CA Datacom/DB SQL User Guide*.

Planning the Query

You can chose among several methods to create a new query. You can use Guided or the CA Dataquery EDITOR available with CREATE function. And, you can access the EDITOR in any of the ways discussed in Accessing the EDITOR (see page 69). Before you do any of these things, however, you should have a general idea about what you want to accomplish before you begin.

Prerequisites

Before creating a query, you should know the following:

- What data to report.

- The authorization IDs for the tables to be searched if the tables are not identified by your authorization ID.

- Whether to select only certain rows of data (for instance, only the data for certain zip codes).

You need to decide the following:

- Which database tables contain the data that you want.

- Whether to search more than one table.

- Which columns can be used to join tables. (See Understanding the Terminology (see page 133) for more information about the concept of joining tables.)

You should be familiar with the format definition options available with the execution panels as you plan your query. Getting a Report (see page 81) provides details about report format specifications, which include control breaks, subtotals, and totals.

Resources

CA Dataquery can provide online information about tables and columns for the SQL authorization ID shown on your USER PROFILE panel. (For details, see Using Administrative Functions (see page 55).) The CA Dataquery Administrator can obtain a CA Datacom Datadictionary report that lists table and column names, along with other pertinent information.

Limitations

In writing a query or dialog, there are specific limitations to what you can do. You should not:

■ Use words whose meanings might be misunderstood by CA Dataquery. (See the *CA Dataquery Reference Guide* for details.)

■ Exceed the site-specific line limit of the EDITOR panel. (Line limits are dependent on certain installation parameters. See your CA Dataquery Administrator for site limits.)

■ Join more than ten database tables or result tables.

Basic Query Creation Procedure

The following chart shows the steps involved in creating a query with the CREATE function on the Main Menu. It provides an overview of the steps outlined in the next section. As you gain experience, you might decide to vary the order of some steps.

Step	Action	Description
1	Invoke the EDITOR	See Accessing the EDITOR (see page 69).
2	Identify query	Complete the fields at the top of the panel with a query name, type, status, and description. See Step 2: Identify the Query (see page 199) and be sure to see Restrictions on Names (see page 79) for important restrictions on names.
3	Use template panel	Display the SQL template and select clauses needed for the query to create a customized template. See Step 3: Use the SQL Template (see page 201) for details.
4	Edit the query template you create	Use line commands and keyboard keys to alter template clauses as you create the query. See 1 (see page 205) through Edit ORDER BY Clause (see page 213) for details.
5	Validate	Have CA Dataquery check the query syntax, table names, and column names for accuracy. See Steps 5 and 6: Validate and Save the Query (see page 216) for details.
6	Save the query	Save the query with the name shown so that it can be used again later. (You can also change it later and update your changes, if it becomes necessary.)

Step	Action	Description
7	Execute the query	Complete the ONLINE EXECUTION Panel and define the report you want if you do not want to use the defaults. Then execute the query. See Step 7: Format Report and Execute Query (see page 218) for more information.

Writing a Sample SQL Query

Use this section to gain a basic understanding of how the CREATE function works. When you finish, you will understand how to create a basic query with the EDITOR and you will also know some basic facts about CA Dataquery.

This section provides an overview of the procedure involved in creating a planned query. The tutorial presents basic query-building concepts, an introduction to SQL, and lists additional concepts and functions.

You can follow the tutorial and create your own query. Simply choose a table on your database that has both character and numeric data and follow the directions on the following pages (using the correct names for your data).

A Typical Business Need

Assume you are a sales manager and you want to increase orders from existing customers. You are considering the idea of offering price discounts on orders that exceed $1,000.00. You want to know how many orders of that kind were placed in 2010. With that information, you can estimate what the cost will be to the company. You also want to know which salespersons have received those orders. You want to meet with them to discuss the idea.

Meeting the Need

The following describes the general phases of resolving the preceding business problem.

Define the need

Create a query that produces a report containing this information:

- Which customers placed orders greater than $1000 in 1987?

- Which salespersons should attend the meeting?

Visualize the report

Determine how the report should look.

Identify tables

Find out which tables contain the needed data.

Identify columns

Find out which columns should be referenced to locate the data.

Decide

Determine whether an existing query or dialog can produce the report. If not, decide whether you want to copy and edit an existing query (or dialog) or write your own. If you want to write your own, decide whether to use GUIDE, CREATE or DRAW. If the existing query was authored by you, you can update it. Make sure to make appropriate changes to the report format.

Begin query creation

Select CREATE from the Main Menu.

Define report

Access the ONLINE EXECUTION panel for the query created. Select <PF3> FORMAT REPORT and enter the printing specifications. These printing specifications are saved and become the defaults for the query whenever it is executed.

Visualizing the Report

Following is a sample of how you want your report to look:

```
=>

06/21/11
15:25:00

  REP_ID   ORD_AMT  NAME
  --------  -------  ------------------------------
  34222    1021.89  DRISCOLL CO.
  34222    1919.11  DRISCOLL CO.
  34222    2001.95  FOX AND SON APPLIANCES
  34222    2112.00  INGERSOLL DIE CO.
  35111    1311.00  ABERNATHY PLUMBING
  35111    1578.90  WILSON TOOLS CO
  44123    1477.00  AUSTIN TOOLS CO
  44123    1230.00  MAXWELL TOOLS CO
  44222    7329.34  BENTLEY MANUFACTURING
  44222    1778.00  FARBER TOOL AND DIE
```

Understanding the Report

Compare the numbered items on the sample report for a description of each item you want to know about.

Report Item	Your Query Should
REP_ID	Sort the qualifying data found by the salesperson ID and print that ID as the first column in the report.
ORD_AMT	Sort the qualifying data for each salesperson by order amount. Print the qualifying order amounts in the second column of the report.
NAME	Print the customer name for each order in the third column of the report.

Creating the Sample Query

The next section describes creation of the query that produces the sample objective report. Following is an example of how the query looks on the Editor panel:

```
=>


--------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE: _____
------------------------------------------------------------------------------
NAME:           SQLBASIC                          TYPE: SQL     STATUS: PUBLIC
DESCRIPTION:   SAMPLE BASIC QUERY
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ======================= T O P ===============================
01 SELECT  REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
03 WHERE GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID
04      AND GLS_ACCTS_TABLE.ORD_AMT >= 01000.00
05 ORDER BY REP_ID, ORD_AMT, NAME
.. ======================= B O T T O M ==========================




------------------------------------------------------------------------------
<PF1> HELP        <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8> FORWARD
<PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12>PROCESS MODE
```

The following chart provides a brief description of the four basic SQL clauses.

Clause Type and Keyword	Predicate	Description
SELECT	Column names	Names columns containing data wanted on the report. Specifies order of output columns.
FROM	Table names	Specifies the names of tables where the columns named in the SELECT clause are found.
WHERE	Search condition	Specifies criteria that data must meet to be used for joining tables or selecting rows.
ORDER BY	Column names	Specifies sorting order for data as it appears on the report.

CA Dataquery permits the use of a number of SQL keywords. See the *CA Dataquery Reference Guide* or the *CA Datacom/DB SQL User Guide* for complete information about the following SQL keywords accepted by CA Dataquery:

- ALTER

- COMMENT

- CREATE INDEX

- CREATE SYNONYM

- CREATE TABLE

- CREATE VIEW

- DELETE

- DROP SYNONYM

- DROP TABLE

- DROP VIEW

- GRANT

- INSERT

- REVOKE

- SELECT

- UPDATE

Define Report

The report needed for this example is the default report produced by CA Dataquery and no additional formatting is needed. If the solution to the business need required subtotals, control breaks, or mathematical functions, those specifications could be made during execution. See for details.

Step 1: Display the EDITOR Panel

This section describes how to display the EDITOR panel.

Select CREATE from the Main Menu to display the CA Dataquery EDITOR.

Options

You could alter an existing query rather than beginning with a blank EDITOR panel. To display the query, enter the EDIT command followed by a query name on the command line. Changing the entry in the NAME field makes it a new query created by you. You can then alter any portion of the query and save it as your own.

You could also enter the DRAW command and a table name on the command line, press Enter, and see a display of the EDITOR panel containing a simple query with a SELECT clause listing all column names and a FROM clause with the table name. You could then edit the basic query. See Choosing a Query-Creation Method (see page 148) for details.

Step 2: Identify the Query

This section describes how to give the query a name, library status, and description.

After you select CREATE from the Main Menu, you see the following EDITOR panel (DQD10).

```
 =>
 CREATION PANEL
 --------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR            CURRENT TABLE: _____
 --------------------------------------------------------------------------------
 NAME:        _____               TYPE: _____   STATUS: _____
 DESCRIPTION: _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P =================================
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
     ====================== B O T T O M =============================
 --------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN     <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Facts

You are not required to name a query until you save it. However, if you want to validate or execute it, you must give it a type. You might as well identify the query as your first step.

These are the things you should know about identifying a query:

NAME:

> A query name must be unique within its assigned library and must be one word of 1 to 15 alphabetic characters, numbers, underscores, or special characters. Be sure to see Restrictions on Names (see page 79) for important restrictions on names.

TYPE:

> Valid entries are QUERY or DIALOG. A dialog allows users to substitute variables in a query. For information about using the CA Dataquery EDITOR to create dialogs, see Creating Dialogs.

STATUS:

> Valid entries are PRIVATE and PUBLIC. You can update and delete queries saved in your private library. If you assign a query to the public library, you cannot change or delete it once the query has been saved unless your site allows the author of a public query to change it. Contact your CA Dataquery Administrator for more information.

> **Note:** If you chose to update a query you own, you may also need to update the report format. Some changes cause an error message to appear warning that the format does not match the query. Others, such as adding new columns or new ORDER BY statements, would not affect the report format verification process and therefore would not cause a message to appear. For information about changing the default report format when you change a query, see Modify an SQL Report Format (see page 97).

DESCRIPTION:

> A description should tell the query's purpose and note anything that makes it unique. It cannot exceed 60 characters in length.

Entries

Use the Tab key to move the cursor to each field in turn: NAME, TYPE, STATUS, and DESCRIPTION. The following chart shows the appropriate entries for the sample query.

Field	Entry	Explanation
NAME	SQLSAMPLE01	The name indicates that it is an SQL query and that it is the first sample query created.
TYPE	QUERY	Self-explanatory.

Field	Entry	Explanation
STATUS	PUBLIC	The query should be available to other users.
DESCRIPTION	SAMPLE BASIC QUERY	Describes the query's purpose when its name is listed on a directory.

How it Looks Now

The following illustration shows the completed identification fields for the sample query.

```
 DATAQUERY:  EDITOR              CURRENT TABLE:  _____
 --------------------------------------------------------------------------------
 NAME:          SQLSAMPLE01____                    TYPE: QUERY_  STATUS: PUBLIC_
 DESCRIPTION:   SAMPLE BASIC QUERY_____
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. ========================= T 0 P ===============================
```

Options

You could include more information about the query itself in the description. For instance, you could list the columns reported or name the tables accessed in the query description. You could also make your queries PRIVATE until you are sure you want to share them with other users.

Step 3: Use the SQL Template

This section describes how to display the SQL Template and copy syntax from it to the EDITOR panel to create a customized template for a query. After displaying the EDITOR panel in Create Mode and identifying a new query, you can begin creating the query.

In this step you learn how to display the SQL Template and copy needed syntax from it to the EDITOR panel.

Entries

The following describes the steps required to display and copy syntax to an EDITOR panel in Create Mode.

Step 1

On the EDITOR panel (Create Mode), move the cursor to the first position in the text entry area.

Step 2

Press <PF9> TEMPLATE.

Step 3

View the Query Template (DQD50) panel shown below:

```
=>
Place a nonblank beside each statement that is to be included in the query
----------------------------------------------------------------------DQD50
DATAQUERY:  QUERY TEMPLATE
----------------------------------------------------------------------------
Lower case words represent entries which must be replaced by the user.
Parentheses indicate optional entries: these may be included by removing the
parentheses only or deleted by removing both the parentheses and data.
----------------------------------------------------------------------------
_   SELECT column1, column2, count(column3)
_   FROM table1, table2
_   WHERE table1.column1 = table2.column2 and column3 > 0
_   GROUP BY column1, column2
_   ORDER BY column1
----------------------------------------------------------------------------
<PF1>  HELP        <PF2>  RETURN      <PF3>  NOT USED    <PF4>  NOT USED
<PF5>  NOT USED    <PF6>  NOT USED    <PF7>  BACKWARD    <PF8>  FORWARD
```

Step 4

Place a character in the field preceding each keyword needed for the new query.

Step 5

Press <PF2> RETURN.

Result

The following sample shows how the EDITOR (DQD10) panel looks when syntax is copied from the SQL Template panel.

```
 =>

 -----------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR            CURRENT TABLE:  _____
 ----------------------------------------------------------------------------------
 NAME:          SQLSAMPLE01                    TYPE: SQL     STATUS: PUBLIC
 DESCRIPTION:   SAMPLE BASIC QUERY_____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. =========================== T O P ================================
 01  SELECT column1, column2, count(column3)
 02  FROM table1, table2
 03  WHERE table1.column1 = table2.column2 and column3 > 0
 04  ORDER BY column1
 .. ======================= B O T T O M ============================




 ----------------------------------------------------------------------------------
 <PF1> HELP         <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL  <PF6>  LIST TABLES <PF7>  BACKWARD        <PF8>  FORWARD
 <PF9> TEMPLATE     <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Options

The following is a guide to other things you could do when you use the SQL Template.

Look at the syntax

> You can choose to use the Template only as a help panel by not entering anything in the fields on the template.

Copy one clause at a time

> You can access the Template as many times as you like and copy each clause separately, where and when you decide you need it.

Do not use the template

> You can simply type your query in the text entry area without displaying the template.

Step 4: Using SQL Keywords

When the SQL Template panel clauses needed for a query are copied to the EDITOR panel, a template for the new query exists. The next step is using the EDITOR to alter the template and type in specific table and column names to finish writing the query.

Keywords

The remaining sections in this step discuss creating the clauses selected for the sample query: SELECT, FROM, WHERE, and ORDER BY. The information presented with the tutorial provides a good foundation for creating basic queries.

Very complex queries can be created in the SQL, as well. Further details on creating complex queries appear in the *CA Dataquery Reference Guide*.

GROUP BY

The GROUP BY clause produces query results where each row in the result table consists of results of mathematical functions applied to a group of data. GROUP BY is only required if you apply mathematical functions to some columns and not others. The report format definitions that are created during execution of a query can provide results similar to GROUP BY and also provide detail rows in the query output; therefore, the sample query and this section do not reference GROUP BY.

Note: For details about this clause, see the *CA Dataquery Reference Guide*.

Facts

The following outlines general information about writing queries.

Spacing rules:

It does not matter how many spaces you enter between words in a clause. It also does not matter whether you choose to type your clauses all on one line (if they fit) or arrange them in a list fashion. The examples in this manual show formatted queries with one space between each word because they are easier for most people to read.

Ordering rules:

The order in which you use SQL keywords is important. If you do not adhere to ordering conventions, the query cannot be understood by CA Dataquery or CA Datacom/DB. For the SQL clauses, use this order:

1. SELECT
2. FROM
3. WHERE
4. GROUP BY
5. ORDER BY

Edit SELECT Clause

A SELECT clause tells CA Dataquery the names of columns that contain data to be found by the query. This section presents basic SELECT clause rules and usage and discusses creation of the SELECT clause of the sample query.

```
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================

01 SELECT column1, column2, count(column3)
02  FROM table1, table2
03  WHERE table1.column1 = table2.column2 and column3 > 0
04  ORDER BY column1
.. ====================== B O T T O M ===========================
```

Facts

The following tables provide basic information about SELECT statements and SELECT clause definitions, and SELECT clause rules. Details, additional keywords, and formats are available in the *CA Dataquery Reference Guide*.

The following outlines general information about the keyword SELECT.

SELECT Statements

> SQL queries always begin with a SELECT statement. The first clause of a SELECT statement is the SELECT clause. A SELECT statement can contain additional clauses as well, beginning with the keywords FROM, WHERE, GROUP BY, and ORDER BY.

SELECT Clause Purpose

> A SELECT clause names the columns containing data that is to appear on the report.

The following lists basic rules about SELECT clauses.

Punctuation

> Follow the word SELECT with a space and a column name. Add additional column names as needed, separated by commas.

> Example:

> SELECT column1, column2, column3, column4

Table ID

> It is not necessary to attach the table ID to a column name unless you have duplicate column names (in more than one table) and you only want to print one of them. To attach a table ID, type the table name, a period, and the column name as one word.

> Example:

> SELECT column1, column2, table2.column3, column4

Duplicate rows

If the query finds duplicate rows and you only need one of them in your result table, follow the word SELECT with the word DISTINCT before listing column names. A space must precede and follow DISTINCT.

Example:

SELECT DISTINCT column1, column2, column3

Return all rows

To explicitly state that all rows found should be included in the report, insert the word ALL between SELECT and the first column name. Precede and follow ALL with a space.

Example:

SELECT ALL column1, column2, column3

Select all columns

To select data from all columns in the referenced tables in the report, use an asterisk (*) instead of listing the column names.

Example:

SELECT *

Ordering report columns

The order in which you list columns in the SELECT clause determines the order of columns on the report. If selecting from more than one table (specified in a FROM clause), you can list columns without regard to their table names.

Steps

These are the steps for editing the SELECT clause to match the query:

Step 1

Move the cursor to the c in the word column1. Press the EOF key or use the Delete key to delete the rest of the line.

Step 2

To show where to find the data and to specify the order of its presentation in the report, type these characters beginning at the cursor location:

REP_ID, ORD_AMT, NAME

Results

Here is a portion of the panel showing how the SELECT clause looks now.

```
DESCRIPTION:   SAMPLE BASIC QUERY_____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ============================ T O P ================================
01  SELECT REP_ID, ORD_AMT, NAME
02  FROM table1, table2
```

Options

The following is a guide to other things you can do when you create your own queries.

Use the online lists of tables and columns.

You can display a list of tables for your current authorization ID if the cursor is in the text area. You can also see the column names for any table listed. You can use the lists for information or you can copy names from them into the text area at the point of the cursor. See Displaying Database Names and Structures (see page 139) or the *CA Dataquery Reference Guide* for details.

Use the CURRENT TABLE field.

When the CURRENT TABLE field contains a name, you can display information about the columns in that table as you create the query. There are two ways to get a name in the CURRENT TABLE field. You can enter it or you can place the cursor in the text entry area, press <PF6> LIST TABLES, and select a table name to be inserted in both the text entry area and the CURRENT TABLE field. See Displaying Database Names and Structures (see page 139) and the *CA Dataquery Reference Guide* for details.

Change authorization ID.

If you change to another known authorization ID on your USER PROFILE panel (PROFILE command), you can display lists of tables and columns in other schemas.

Specify mathematical functions for columns.

You can request that CA Dataquery return the results of a mathematical function you specify for one or more numeric columns, rather than the actual data itself. You can get sums, averages, minimum values, maximum values, or a count of the number of values in any column in the result table.

Specify temporary results.

You can write an expression consisting of column names and arithmetic expressions and include the expression as a column name in the SELECT clause. The result appears in the output as column data.

Edit FROM Clause

A FROM clause tells CA Dataquery which table or tables to search to find the columns listed in the SELECT clause. This section presents basic FROM clause rules and uses and discusses creation of the FROM clause of the sample query.

```
.. ========================= T O P ==============================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM table1, table2
03 WHERE table1.column1 = table2.column2 and column3 > 0
04 ORDER BY column1
.. ====================== B O T T O M ===========================
```

Facts

The following lists rules about basic FROM clauses. Details, additional keywords, and formats are available in the *CA Dataquery Reference Guide*.

FROM Clause Purpose

A FROM clause names the tables containing data that is to be read in creating the report.

Punctuation

Follow the word FROM with a space and a table name. Add additional table names as needed, separated by commas.

Examples:

FROM table1, table2, table3, table4

FROM table1,table2,table3,table4

Authorization ID

It is not necessary to attach the authorization ID to a table name unless it is not listed in the current schema. To attach an authorization ID, type it in front of the table name and separate with a period.

Example:

FROM table1, table2, public.table3, table4

Order of table names

The order in which you list tables in the FROM clause is of no importance.

Number of table names

You can list up to ten table names in one FROM clause. You can also use SQL to join and name result tables, or *views*. No more than ten tables can be referenced altogether, meaning your total count must include the number of tables making up a view.

Steps

These are the steps for editing the FROM clause to match the sample query:

Step 1

Move the cursor to the t in the word table1. Press the EOF or use the Delete key to delete the rest of the line.

Step 2

Type these characters beginning at the cursor location:

GLS_CUST_TABLE, GLS_ACCTS_TABLE

This tells CA Dataquery that the data to be printed in the report comes from the two tables named.

Results

The following is a sample of a portion of the panel showing how the SELECT clause looks now:

```
DESCRIPTION:   SAMPLE BASIC QUERY_____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P =================================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
```

Options

The following is a guide to other things you can do when you create your own queries.

Use the online lists of tables and columns.

You can display a list of tables for your current authorization ID to copy the table names you want right into the text area. All you do is position the cursor where you want the name and press <PF6> LIST TABLES. From the list that appears, you choose one or more table names. See Displaying Database Names and Structures (see page 139) or the *CA Dataquery Reference Guide* for details.

Change authorization ID.

If you change to another known authorization ID on your USER PROFILE panel (PROFILE command), you can display lists of tables in other schemas.

Edit WHERE Clause

A WHERE clause tells CA Dataquery the criteria for selecting data for the query output. It can also specify relationships that join tables by listing conditions to be found in two or more tables. This section presents basic WHERE clause rules and usage and discusses creation of the WHERE clause of the sample query.

```
 .. =========================== T O P ===============================
 01 SELECT REP_ID, ORD_AMT, NAME
 02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
 03 WHERE table1.column1 = table2.column2 and column3 > 0
 04 ORDER BY column1
 .. ====================== B O T T O M ==========================
```

Facts

The following provides basic information about the purpose of WHERE clauses and rules for their use. Additional rules exist for complex usage. See the *CA Dataquery Reference Guide* for details.

Purpose

The purpose of a WHERE clause is to:

■ Join tables by naming columns containing data related as shown by a comparison operator, even though column names may differ.

■ Qualify data found by specifying one or more search conditions against which the rows are tested.

Location

WHERE clauses always follow a FROM statement.

Number of WHERE clauses

You can use multiple WHERE clauses and join them by using AND, OR, and parentheses to create logical expressions.

Punctuation

Follow the word WHERE with a space and a predicate. Use spaces between words and symbols in the predicate.

Basic Predicates

Basic predicates compare two values and consist of one value followed by a comparison operator and another value. The value can be a column name or an expression. (The second value can also be a SUBSELECT.) See the *CA Dataquery Reference Guide* for instructions on using this SUBSELECT. The result of the comparison is either true or false. When the result is true for a given row, that row is selected for the result table.

Types of basic predicates are:

■   Joins based on logical expressions including comparison operators that compare two values.

■   NOT preceding the predicate indicating that CA Dataquery should find only rows where the predicate is *not* found.

■   Multiple expressions that are a mixture of the above, connected with the logical operators AND and OR.

    Example:

    WHERE table1.name-column = table2.name-column

    AND (AMOUNT >= 100 OR AMOUNT <= 1000)

    OR (CURRENT_DATE_YEAR < 11)

Basic Predicate Comparison Operators

Comparison operators define the type of comparison to be made between one expression and another. Valid operators in a basic predicate of an SQL WHERE clause are:

■   = (Equal)

■   < (Less than)

■   > (More than)

■   <> (Not equal)

■   <= (Less than or equal to)

■   >= (More than or equal to)

■   ¬= (Not equal to)

■   ¬< (Not less than)

■   ¬> (Not greater than)

Expressions

Expressions may be simple or complex, using arithmetic operators (+ - / * =) and parentheses. Use parentheses to clarify which operations are to be performed first in a complex calculation (up to 5 levels of nested expressions).

Other Types of Predicates

You can use other types of predicates in a WHERE clause. See the *CA Dataquery Reference Guide* for more information about:

- ALL

- ANY

- BETWEEN

- EXISTS

- IN

- LIKE

- NULL

- SOME

Steps

These are the steps for editing the WHERE clause in the sample query:

Step 1

Move the cursor to the t in the word table1.column1. Press the EOF or use the Delete key to delete the rest of the line.

Step 2

To specify that the CUST_ID column in both tables is to be used to join the tables and that only rows where the ORD_AMT is greater than $1,000.00 are to be selected, type these characters beginning at the cursor location:

GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID AND ORD_AMT > 1000.00

Results

The following is a sample of a portion of the panel showing how the SELECT statement looks now:

```
DESCRIPTION:   SAMPLE BASIC QUERY_____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ==============================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
03 WHERE GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID AND ORD_AMT > 1000.00
```

Options

The following is a guide to other things you can do when you create your own queries.

Join more than two tables with the WHERE clause.

You can join up to ten tables (or result tables) in your queries using the WHERE clause.

Use the UNION keyword to join tables.

You can create more complex joins by using the UNION keyword to join results tables created by two or more SELECT statements. See the *CA Dataquery Reference Guide*.

Use a variety of comparison operators.

Operators are available for creating very specific search conditions.

Use special search conditions. See the *CA Dataquery Reference Guide*.

Special keywords like BETWEEN, IN, LIKE, and IS NULL are available for creating specialized search conditions.

Use parentheses.

Create complex search conditions using parentheses and AND and OR to write the logical expression.

Use another query as the object of the WHERE clause.

For example:

SELECT * FROM PAY WHERE COLUMN =

(SELECT * FROM PER)

Edit ORDER BY Clause

An ORDER BY clause tells CA Dataquery the order in which data is to be presented in the query output. If an ORDER BY clause is not used the row order matches the order of rows in the result table. (The column order always matches the order of column names in the SELECT statement.) This section presents basic ORDER BY clause rules and uses and discusses creation of the ORDER BY clause of the sample query.

```
 .. =========================== T O P ===============================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
03 WHERE GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID AND ORD_AMT > 1000.00
04 ORDER BY column1
 .. ====================== B O T T O M ==========================
```

Facts

The ORDER BY clause lets you sort the result table rows into any order needed, based on the values of data found in specific columns. Name the columns whose contents are to be sorted and those columns determine the order in which rows are to be arranged on the report. For example, examine the following three groups of data.

ORD_ID	NAME	ORD_AMT
C00012	WILSON	090000.00
R01000	ADAMS	113456.98
A00300	JONES	237890.00
B00120	ADAMS	000325.00

Ordering the previous sample rows by NAME and ORD-ID produces the following results.

ORD_ID	NAME	ORD_AMT
B00120	ADAMS	000325.00
R01000	ADAMS	113456.98
A00300	JONES	237890.00
C00012	WILSON	090000.00

Ordering the previous sample rows by ORD_ID and NAME produces this result:

ORD_ID	NAME	ORD_AMT
A00300	JONES	237890.00
B00120	ADAMS	000325.00
C00012	WILSON	090000.00
R01000	ADAMS	113456.98

The following lists basic rules for using the keyword ORDER BY. Details, additional keywords, and formats are available in the *CA Dataquery Reference Guide*.

Location

An ORDER BY clause must be the last clause in a SELECT query.

Validity of ordering columns

You can use any column in any table referenced by the query as an ordering column, whether it is included in the SELECT clause or not.

Direction of sort

Rows are sorted in an ascending direction unless otherwise specified with a keyword of DESC for a descending sort.

Punctuation

Follow the words ORDER BY with a space and one or more column names. Use commas between column names.

Specify table ID

Where two or more tables are joined in the query and where a duplicate of an ORDER BY column exists, attach the table ID to the column name to indicate which column is to be used in ordering.

Example:

ORDER BY ACCT_TABLE.ORDER_DATE, CUST_ID

Steps

These are the steps for editing the ORDER BY clause to match the sample query:

Step 1

Move the cursor to the c in the word column1. Press the EOF or use the Delete key to delete the rest of the line.

Step 2

Type these characters beginning at the cursor location:

REP_ID, ORD_AMT, NAME

to tell CA Dataquery to arrange all the rows in the report into groups by REP_ID. Within each group of REP_IDs, the data is to be arranged in ascending order by the amount of the order (ORD_AMT). Where duplicate order amounts exist, the data is to be arranged in ascending order by customer name (NAME).

Results

The following is a sample of a portion of the panel showing how the SELECT statement looks now:

```
DESCRIPTION:   SAMPLE BASIC QUERY_____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
03 WHERE GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID AND ORD_AMT > 1000.00
04 ORDER BY REP_ID, ORD_AMT, NAME
```

Options

The following is a guide to other things you can do when you create your own queries.

Order report data by columns that are not printed.

You might like to group data on the report according to data in a column you are not interested in seeing printed. For instance, you might not want to see the same date printed on every line of output even though you might want the data ordered by date. You can use the date column in the ORDER BY clause while you omit it from the SELECT clause.

Change order of columns in SELECT clause.

You might want to print report columns in the same order as the columns in the ORDER BY clause.

Steps 5 and 6: Validate and Save the Query

Check your queries (and dialogs) for syntax errors and naming errors before they are saved. To do this, you press a key to have CA Dataquery *validate* the query.

Once the query is validated, it should be saved if it is to be reused.

Results

The following is a sample of how the text area of the EDITOR panel appears after completing the procedures in the previous step:

```
.. ========================= T O P ================================
01 SELECT REP_ID, ORD_AMT, NAME
02 FROM GLS_CUST_TABLE, GLS_ACCTS_TABLE
03 WHERE GLS_CUST_TABLE.CUST_ID = GLS_ACCTS_TABLE.CUST_ID AND ORD_AMT > 1000.00
04 ORDER BY REP_ID, ORD_AMT, NAME
.. ======================= B O T T O M ==============================
```

Facts

The following provides information about the validation process.

How safe is my current query?

> A query resides in the active query area until you use a command or selection to activate another query. You should save any query you might want to work on later or execute more than once. Once you save a query, you can change it and press <PF9> UPDATE in Process Mode to save the changes. If you have already created a report format, you should determine whether it is necessary to alter the format as well. If you have not saved a query you are working on and you leave the EDITOR panel to perform another function, you can use the EDIT * command to recall it if another query has not been activated.

Timing?

> You can validate a query or dialog at any point during construction. While CA Dataquery checks for errors, it does not check to see whether a query is complete.

What is validated by CA Dataquery?

> CA Dataquery checks that the user is authorized to do the function, for example, SELECT, DROP, CREATE. CA Dataquery then passes the query to CA Datacom/DB which checks the syntax. If a syntax error is found, CA Dataquery displays a message beginning with the letters DQ. You correct the error and validate again. CA Dataquery then passes the query to CA Datacom/DB.

What happens when CA Datacom/DB finds a mistake?

> CA Datacom/DB returns a message with a code that begins with *DQ093* and that describes the error (like *DQ093 ILLEGAL TABLE NAME*). You correct the error and validate again. Ask your CA Dataquery Administrator for assistance with CA Datacom/DB errors if you need it.

Consider saving and updating queries as they grow to avoid losing your work if you make a mistake.

The following provides information about saving queries.

Timing?

> You should save any query you want to use again. If you are creating a complex query and spending a lot of time on it, consider saving it before you are finished. If you do, you can use the <PF9> UPDATE PF key to save it again. You can save without validating first.

What is saved?

> CA Dataquery saves everything written in the text area of the EDITOR panel. The item must have a name, type (query or dialog) and status (public or private) before it can be saved.

What happens if I exit the EDITOR panel without saving?

A query or dialog resides in the Active Query Area until you access another query or dialog. You can recall an active query to the EDITOR panel with the EDIT * command.

How can I delete an unwanted query?

When you no longer need a saved query, you can delete it from your private library or, if you are authorized, from the public library. Once you delete a query, you can only recall it if it is currently in the Active Query Area because you have displayed, validated, or executed it.

Delete queries by pressing <PF6> during directory display. See <u>Selecting a Directory</u> (see page 45) for details.

Steps

These are the steps for validating and saving the sample query.

Step 1

Press <PF10> in either mode during display of the query.

Step 2

Correct errors, if any and repeat step 1 until the QUERY VALIDATION WAS SUCCESSFUL message appears.

Step 3

If in Create Mode, press <PF12> PROCESS MODE to change the PF key menu.

Step 4

In Process Mode, press <PF4> SAVE, if the query has not been saved before. If the query already exists, press <PF9> UPDATE to save the changes.

Step 7: Format Report and Execute Query

The Process Mode PF key menu provides a PF key for executing a query. We recommend that you execute new queries and check the results. You might decide to alter and update the saved query. Execution instructions appear in Executing in SQL Mode.

SQL Mode execution allows you to provide specifications about the report you want to produce at execution time. These specifications are:

- Title

- Columnar or List presentation

- Sorting sequence of ORDER BY columns and control breaks for ORDER BY columns

- Starting a new page

- Column order

- Mathematical functions AVG, MAX, MIN, SUM, CNT, and TOT

- Legends for function results

- Edit patterns of function results

- Two-line column names

To use control breaks and sorting with report format specifications during execution, the query must contain an ORDER BY clause so that rows are retrieved in sorted order.

You can set the defaults for these specifications for a query you create. The Execution panel provides an optional set of panels that any user with access to your query can use to specify report specifications. When you execute a *saved* query for the first time and enter the specifications, they are saved and become the defaults. If you do not enter any specifications, CA Dataquery sets the defaults.

For details and information about defining a report created from an SQL query, see Getting a Report (see page 81). Follow directions there for completing the report definition panels. When you execute the query the first time, the specifications are saved.

Chapter 22: Using GUIDE in DQL Mode

In DQL mode, select GUIDE from the Main Menu to invoke the GUIDE function. Select GUIDE under these conditions if you:

- Are a new CA Dataquery user

- Only use CA Dataquery occasionally

- Want to have CA Dataquery build your queries

- Want to learn more about particular DQL words

The GUIDE function allows you to preselect the components of your query. Next, depending on your selections, it prompts you through each step of building a simple or fairly complex query. You cannot leave out a required step. All you do is respond to each panel as it appears by making entries or skipping the panel where permitted.

A special PF key is available at any point in building a query that will display the actual query CA Dataquery is creating for you. If you like, you can press this key after completing any panel and see how the actual query statement, like FIND, relates to a step you have completed.

With Guided Query, you respond to panels and create the same query you might create by writing DQL, with only two restrictions.

Reserved Words

Guided Query should not be your choice if you want to:

- Select data from three or more database tables.

- Create a dialog (although you can edit a query created with Guide and make it into a dialog).

When naming such things as queries, dialogs, terms, temporary results, or any CA Datacom item, do not use words from the following categories:

- CA Dataquery commands

- CA Dataquery EDITOR commands

- DQL keywords

- SQL keywords

- Ignored words, such as *rows*, *records*, or *from* that are used in constructing queries and dialogs

Because these words have special meanings to CA Dataquery or are ignored by CA Dataquery, failure to avoid them causes problems when you execute any query in which they are contained. A complete list of reserved and ignored words appears in the *CA Dataquery Reference Guide*.

There are several GUIDE panels, divided into groups according to which part of the query they produce. On the first panel, you indicate which Guide panels you need to create your query. If you decide to view all of the panels, only four of them require entries to create a complete, simple query.

Just as in any other CA Dataquery function, you can always press <PF2> RETURN to return to a previous task.

Press <PF2> when the first panel in a group is displayed

> To return to first panel of previous group

Press <PF2> when the Subordination panel in a group is displayed

> To return to the previous panel in that group

When you return to a previous panel, you can change your selections or leave them as they are. If you scroll back through panels, you must redisplay all previous entries if you want CA Dataquery to retain them.

If you are using all GUIDE features, CA Dataquery displays the initial panel in each component group. Only a few require entries and with most panels, you can accept the default entries.

Optional Panels

If you complete an optional panel, subordinate panels appear and might require entries. If you press <PF2> to redisplay a previous panel in the same group, your previous selections are retained only if you redisplay them on your terminal screen before going on to the next panel.

Note: For detailed instructions on operation and purpose of any panel, see the *CA Dataquery Reference Guide*.

GUIDE Function Tasks and Sub-tasks

* Indicates a required step.:

Step	Major Tasks and Sub-tasks	Panel Name
1*	CHOOSE QUERY COMPONENTS	

Step	Major Tasks and Sub-tasks	Panel Name
	Preselect the components of the query.	OPTION SELECTION
2*	IDENTIFY NEW QUERY	
	Name the query and designate public or private library.	QUERY IDENTIFICATION
3*	SELECT TABLE(S)	
	*Select the first or only database table you want to search.	PRIMARY TABLE SELECTION
	Select second table.	SECONDARY TABLE SELECTION
4	SELECT JOIN CRITERIA (If secondary table selected.)	
	Select primary key or column.	PRIMARY TABLE JOIN CRITERIA
	Select secondary key or column.	SECONDARY TABLE
5	SPECIFY SEARCH CRITERIA	
	Specify columns to search for specific search conditions.	SELECTION CRITERIA: DESIGNATE COLUMNS
	Define each search condition.	SELECTION CRITERIA: DEFINE THE CONDITION
	Logically group conditions by using AND, OR, and parentheses.	SELECTION CRITERIA: MULTIPLE CONDITIONS
6	SET UP TEMPORARY RESULTS	
	Name the results columns of arithmetic expressions.	DEFINE TEMPORARY RESULTS
	Select columns to include in the arithmetic expression.	SELECT COLUMNS FOR CALCULATION
	Define the arithmetic expression.	DEFINE THE ARITHMETIC EXPRESSION
7	SORT REPORT DATA	
	Select columns to control sorting.	SORT CRITERIA DEFINITION
	Specify order, sequence, breaks.	ROW ORDERING

Step	Major Tasks and Sub-tasks	Panel Name
8*	DEFINE REPORT APPEARANCE AND CONTENT	
	Enter title, format, row count.	REPORT DEFINITION
	Select data for report.	REPORT COLUMN DEFINITION
	Specify column presentation order.	PRESENTATION ORDER
	Give your own titles to columns.	REPORT COLUMN HEADING DEFINITION
	Select temporary result location.	FUNCTION CONTROL BREAK SELECTION
	Specify a format for numeric data.	REPORT FORMAT DEFINITION
9*	FINALIZE QUERY	
	*Exit GUIDE and save the query or RETURN to previous step.	GUIDED QUERY DISPLAY

Selecting Guide Panels

When you select GUIDE from the Main Menu, you begin to create a query with the GUIDE function. CA Dataquery presents the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel which you use to preselect components for your query.

```
=>
-------------------------------------------------------------------------DQHV0
DATAQUERY:   GUIDED QUERY CREATION:   OPTION SELECTION
-----------------------------------------------------------------------------
When you create a query with Guided Query, a basic query will be generated as
the default.  You may override this default and customize your query by
selecting one or more of the extended options listed below.

To create a basic query that selects all rows from a single table, presenting
the selected rows in a random sequence, press <PF4>.

To select options to add to the basic query, place any character beside the
options of your choice and press <PF4>.

    _   Specify the order in which the retrieved information will be presented

    _   Limit the output report size by specifying selection criteria

    _   Create your own columns for the output report

    _   Retrieve and combine information from two tables
-----------------------------------------------------------------------------
<PF1> HELP        <PF2> RETURN       <PF3> NOT USED      <PF4>  CONTINUE
```

You can choose to display Guide panels that:

■   Create the simplest possible query.

■   Add one or more query components to the basic version.

■   Display every Guide panel.

The following sections describe these three levels of Guide use.

The Simplest Query

To create a query that prints all the data in a table in a basic report format, do not make a selection on the GUIDED QUERY CREATION: OPTION SELECTION panel. Simply press <PF4> CONTINUE.

For information about the panels that appear for these components, turn to Creating a Sample (see page 227).

The following describes the query creation steps you complete and tells you where to read about them.

Step 1. Identify the new query.

Step 1: Name the Query and its Library (see page 230).

Step 2. Select one table for data selection.

Step 2: Choose a Table to Read (see page 233).

Step 3. Define the report.

Step 10: Begin Defining the Report's Appearance (see page 261) through Step 15: Finalize Query (see page 278).

Choose Components

You can choose to add one or more groups of panels to a basic query. The basic query only reads one table and prints all the data in the table. You can choose Guide panels that help you:

- Search two tables.

- Limit the search.

- Calculate data.

- Sort data for the report.

The following tells you where to read more about the Guide components that you can add to the base Guide query. When a panel appears as a result of selections you make on the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0), turn to the section that matches its description.

To join two tables for data selection. (relationship clause)

Read the *CA Dataquery Reference Guide*.

To apply selection criteria to data selection. (WITH clause)

Read Step 3: Narrow the Search (see page 238).
Step 4: Define Data Selection Conditions (see page 240).

To tell CA Dataquery how to create data for the report from data found in the table (SET statement).

Step 5: Name a Temporary Result (see page 244),

> Step 6: Select Columns for Temporary Result Calculation,
> Step 7: Calculate Temporary Result.

To sort the output data (SORT statement).

> Read Step 8: Sort Data for the Report (see page 254),
> Step 9: Specify Sorting Priority and Control Breaks (see page 257).

Use All Guided Features

You can choose to display all Guide panels and create a complex query. During display of the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel, enter a character in every field. You will not be required to make entries on nonrequired panels if you change your mind. For an introduction to most of the Guided panels, read all of Creating a Sample (see page 227). (Use the *CA Dataquery Reference Guide* as a reference for panels when you create your own queries.)

Creating a Sample

This section presents a sample objective, the report needed to accomplish the objective, and presents each Guide panel as it would appear if all options were selected from the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel.

You can follow the tutorial and create your own query. Simply choose a table on your database that has both character and numeric data and follow the directions on the following pages (using the correct names for your data).

Background

Assume you are a sales manager who is planning a new sales campaign. Your company produces personal computer accessories. Several items are available, each ranging in price from the economy model to the deluxe model.

You want to know which customers are most likely to order this year's deluxe diskette holder, which you hope will make last year's model obsolete. You will send color brochures advertising the latest deluxe diskette holder to all customers who seem to order your most expensive items.

You also want to know which customers order less expensive items. You will send them the new color brochure that advertises the entire product line. In addition, you want to know which items a particular customer likes, and how large the orders are, so you can make decisions about a letter to go along with your brochures.

Objective

You want a report that shows total dollar amount of orders for each customer, along with the average price per order. You will use the report in planning your sales campaign and in supplying you with data to personalize a letter to each customer. You know the data you need is in the CAI-DETAIL-TBL file. And you know CA Dataquery is the solution to your reporting needs.

Following is a sample of how you want your report to look:

```
04/14/11                                                          PAGE 1

14:56:22                   FILLED CUSTOMER ORDERS                 DETAIL


  CUST-ID    ITM-ID      SHIP-QTY     UNIT-PRICE     SHIP-PRICE
  ---------  ----------  -----------  -------------  -------------
    01008    C10000            2          29.50          59.00
             C10002            6          14.00          84.00
             C10001            4          21.00          84.00
             C10005            2          66.75         133.50

    TOTAL CUST-ID     01008
                                                       360.50

    AVERAGE ITEM PRICE 00032.81

    01009    A60005            1         219.99         219.99
             A70000            4          99.99         399.96
             A60008            2         179.99         359.98

  TOTAL CUST-ID     1009
                                                       979.93

  AVERAGE ITEM PRICE    166.65
```

Compare the numbered items on the sample report for a description of each item you, as the sales manager, want to know about.

Report Item	Your Query Should
Subject	Search a table for all filled orders.
Title	Define a logical title.
CUST-ID	Sort rows by customer and show totals for each customer.
ITM-ID	Report the items ordered by each customer.
SHIP-QTY	Tell you how many of each item was shipped.
UNIT-PRICE	Tell you the price per item.
SHIP-PRICE	Calculate the total cost of each item shipped to a customer.

Report Item	Your Query Should
TOTAL CUST-ID	Tell you the total amount ordered by each customer.
AVERAGE ITEM PRICE	Tell you the average item price for a customer.

Getting Ready

The following sections explain how to create the query that produces the sample objective report. You can follow the tutorial and create your own query. Simply choose a table on your database that has both character and numeric data and follow the directions on the following pages (using the correct names for your data).

Step 1

Sign on to CA Dataquery.

Step 2

Select GUIDE from the Main Menu.

Step 3

Select *Use all Guide features* from the GUIDED QUERY CREATION: OPTION SELECTION (DQHV0) panel and press <PF4> CONTINUE.

The following steps cover completing the panels that define the sample query.

Step 1: Name the Query and its Library

DQH10

When you select GUIDE from the Main Menu, the GUIDED QUERY CREATION: OPTION Selection panel (DQHV0) appears. On it, you mark the options you want to define for the query to be created. For this sample, all options are marked. Therefore, the sample steps discuss each GUIDED QUERY panel.

```
 =>

 ------------------------------------------------------------------------DQH10
 DATAQUERY:   QUERY IDENTIFICATION
 -----------------------------------------------------------------------------

 ENTER A UNIQUE NAME FOR THE NEW QUERY ==>    _____

 SELECT THE ACCESSIBILITY LEVEL FOR YOUR QUERY BY PLACING ANY CHARACTER
 NEXT TO YOUR CHOICE.

    _  PUBLIC
    X  PRIVATE

 ENTER A DESCRIPTION FOR THE NEW QUERY
   ==> _____



 -----------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN        <PF3> NOT USED      <PF4>  CONTINUE
```

If you are not certain how to complete a panel, you can press <PF1> HELP to get information about the panel or read the documentation about the panel in the *CA Dataquery Reference Guide*. Then you decide how you want to complete it.

Purpose

The required QUERY IDENTIFICATION panel names the query, tells CA Dataquery the library in which to keep it, and provides a short description for the library directory. When you complete this panel and press Enter, the query resides in that library unless you delete it during a directory display.

Concepts

These are the major concepts related to this panel:

Name
A query name must be unique within its assigned library and must be one word of 1 to 15 alphabetic characters, numbers, or dashes. **Library**
The library (public or private) is the place in which CA Dataquery is to store the query. At some sites, if you assign a query to the public library, you cannot change or delete it. CA Dataquery provides an installation option which determines whether the author of a public query can change or delete it. Your CA Dataquery Administrator can answer any questions you have concerning public libraries at your site. The library in which you store your query determines whether other users can access and use it.

Description
A description should tell the query's purpose and note anything that makes it unique. It cannot exceed 60 characters in length.

Panel Operation

The Tab key moves the cursor from one field to another. You type entries, and press <PF4> CONTINUE (or Enter) to display the next panel.

Note: For complete instructions on operating this panel, see the *CA Dataquery Reference Guide*.

Completed Example

The following completed panel shows how to complete the QUERY IDENTIFICATION panel to produce the sample report.

```
=>

-------------------------------------------------------------------------DQH10
DATAQUERY:   QUERY IDENTIFICATION
-------------------------------------------------------------------------------

ENTER A UNIQUE NAME FOR THE NEW QUERY ==>   USER-SAMPLE____

SELECT THE ACCESSIBILITY LEVEL FOR YOUR QUERY BY PLACING ANY CHARACTER
NEXT TO YOUR CHOICE.

   _   PUBLIC
   X   PRIVATE

ENTER A DESCRIPTION FOR THE NEW QUERY
   ==> TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE_____




-------------------------------------------------------------------------------
<PF1> HELP         <PF2> RETURN         <PF3> NOT USED      <PF4>  CONTINUE
```

This chart explains each entry/selection.

Field or Item	Sample Entry or Selection	Reason
Name	USER-SAMPLE	User preference.
Accessibility	PRIVATE	This query will not be shared.
Description	Total orders per customer -- average price	Tells purpose of the query.

Options

You could give your query a name that shows its history and relationship to other queries, like USER-SAMPLE-1. You could then change the number as you refine the query. Thus, the name would show a history. Your query description might even include a user's name, if you create one for someone else and place it in the public library. Your CA Dataquery Administrator may provide guidelines for naming queries at your site.

To Go to the Next Step

Pressing <PF4> CONTINUE displays the next panel.

Step 2: Choose a Table to Read

DQH20

```
=>

----------------------------------------------------------------------------DQH20
DATAQUERY:  PRIMARY TABLE SELECTION               QUERY NAME:  USER-SAMPLE
--------------------------------------------------------------------------------
Select one table from which you want information by placing any character
next to the desired table name.  START WITH: _____
--------------------------------------------------------------------------------
SELECT|    TABLE NAME                |STATUS|     DESCRIPTION
--------------------------------------------------------------------------------
  _   | ADDRESS                      |  0   | CUSTOMER ADDRESSES
  _   | CAI-ACCTS-TBL                |  0   | ORDER ENTRY DEMO ACCTS ROW
  _   | CAI-CUST-TBL                 |  0   | CUSTOMERS ROW
  _   | CAI-DETAIL-TBL               |  0   | DETAILS ROW
  _   | CAI-ITEMS-TBL                |  0   | ITEMS ROW
  _   | CAI-ORD-NO-TBL               |  0   | ORDER NUMBERS ROW
  _   | CAI-ORDERS-TBL               |  0   | ORDERS ROW
  _   | CAI-RCPTS-TBL                |  0   | ORDER ENTRY DEMO RECEIPTS REC
  _   | CAI-SHIPTO-TBL               |  0   | SHIP-TO ROW
  _   | CAI-SLSHST-TBL               |  0   | ORDER ENTRY DEMO SALES-HIST R
  _   | CAIDEMO-DEM-PNC              |  0   | CAI SAMPLE PART COST TABLE
--------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN       <PF3> DISPLAY TEXT <PF4> CONTINUE
<PF5> DISPLAY TABLE <PF6> DISPLAY QUERY <PF7> BACKWARD       <PF8> FORWARD
```

If you are not certain how to complete a panel, you can press <PF1> HELP to get some information about the panel. Then you decide how you want to complete it.

Purpose

The required PRIMARY TABLE SELECTION panel tells CA Dataquery which table to read for the data you want.

Concepts

These are the major concepts related to this panel:

Primary Table
The primary table should contain all of the data you want if it is to be the only table read. If you plan to join two tables, CA Dataquery reads the primary table first and then looks for rows in the secondary table that meet criteria specified in the query for joining the rows from each table to make the rows in the active found set.

Table Names
The table names shown on this panel are entity-names assigned by CA Datacom Datadictionary. The names listed are all the tables you can access, including your personal tables.

Secondary Table
If you want CA Dataquery to join the primary table to another database table (the secondary table), the primary table should share a common value with the secondary table. If CA Dataquery finds a row in the primary table, it searches the secondary table for matching data. You can press <PF5> DISPLAY TABLE to see a list of keys and columns for the table selected by the cursor. Use this list to plan ahead.

Status
A database table can be open (O), closed (C), or disabled (D). If it is closed or disabled, CA Dataquery cannot read it and you cannot select it at this time. Contact your CA Dataquery Administrator if you need access to a table which is closed or disabled.

Panel Operation

On this panel, you use the Tab key to move the cursor from one blank field to another. Locate the cursor next to the table you want to select and enter a character. Press <PF4> CONTINUE (or Enter) to display the next panel.

Note: For complete instructions on operating this panel, see the *CA Dataquery Reference Guide*.

Completed Example

The following completed panel shows the completed PRIMARY TABLE SELECTION panel that specifies the table CA Dataquery is to read.

```
=>

-------------------------------------------------------------------------DQHT0
DATAQUERY:  PRIMARY TABLE SELECTION             QUERY NAME:  USER-SAMPLE
-------------------------------------------------------------------------------
Select one table from which you want information by placing any character
next to the desired table name.   START WITH:  _____
-------------------------------------------------------------------------------
SELECT|    TABLE NAME                 |STATUS|    DESCRIPTION
-------------------------------------------------------------------------------
   _  | ADDRESS                       | 0    |
   _  | CAI-ACCTS-TBL                 | 0    | ORDER ENTRY DEMO ACCTS ROW
   _  | CAI-CUST-TBL                  | 0    | CUSTOMERS ROW
   x  | CAI-DETAIL-TBL                | 0    | DETAILS ROW
   _  | CAI-ITEMS-TBL                 | 0    | ITEMS ROW
   _  | CAI-ORD-NO-TBL                | 0    | ORDER NUMBERS ROW
   _  | CAI-ORDERS-TBL                | 0    | ORDERS ROW
   _  | CAI-RCPTS-TBL                 | 0    | ORDER ENTRY DEMO RECEIPTS REC
   _  | CAI-SHIPTO-TBL                | 0    | SHIP-TO ROW
   _  | CAI-SLSHST-TBL                | 0    | ORDER ENTRY DEMO SALES-HIST R
   _  | CAIDEMO-DEM-PNC               | 0    | CAI SAMPLE PART COST TABLE
-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN       <PF3> DISPLAY TEXT <PF4> CONTINUE
<PF5> DISPLAY TABLE <PF6> DISPLAY QUERY <PF7> BACKWARD       <PF8> FORWARD
```

This chart explains each entry/selection.

Field or Item	Sample Entry	Reason
CAI-DETAIL-TBL	X	A displayed list of key and column names and the displayed CA Datacom Datadictionary text description of each column shows that this table contains all of our data.

Options

You could use the PRIMARY TABLE SELECTION panel to display columns and keys for any table, changing your selection until you found the one you wanted. If you need data that is in another table, you could join your primary table to another, secondary table, by making a selection from the SECONDARY TABLE SELECTION panel, and report on data that is contained in both tables.

Note: For more information about joining tables, see the *CA Dataquery Reference Guide*.

To Go to the Next Step

When the PRIMARY TABLE SELECTION panel is complete, CA Dataquery displays an unneeded panel because the selections on the initial GUIDE panel cause all panels to appear. Following is an example of how it appears:

```
=>
  PRESS <PF4> IF INFORMATION FROM A SECONDARY TABLE IS NOT DESIRED
------------------------------------------------------------------------------DQHU0
DATAQUERY:  SECONDARY TABLE SELECTION              QUERY NAME:  USER-SAMPLE____
--------------------------------------------------------------------------------
YOU CAN USE INFORMATION FROM THE PRIMARY TABLE CAI-DETAIL-TBL_____
TO JOIN WITH RELATED INFORMATION FROM ANOTHER TABLE. TO JOIN TWO TABLES,
SELECT THE SECOND TABLE BY PLACING ANY CHARACTER NEXT TO THE DESIRED NAME.

RETRIEVE THE FIRST RELATED ROW (BYPASS OTHER OCCURRENCES)?     YES _  NO X
                               START WITH: _____
--------------------------------------------------------------------------------
SELECT|    TABLE NAME                    |STATUS|    DESCRIPTION
--------------------------------------------------------------------------------
      |                                  |      |
```

The following chart tells you which panels are skipped and why.

Note: For detailed information about the panels, see the *CA Dataquery Reference Guide*.

Panel Name	What It Does	Reason Skipped
SECONDARY TABLE SELECTION (DQH30)	Lists other tables that can be joined to yours for the search.	All data is in the primary table.
PRIMARY TABLE KEY SELECTION (DQH40)	Lists keys and columns for join.	Does not appear when secondary table is not selected.
SECONDARY TABLE KEY SELECTION (DQH50)	List keys and columns shared.	Do not appear when secondary table is not selected.

Summary

You can select the database table, that CA Dataquery is to search, for your data. You can determine whether it contains the data needed by displaying the list of columns and keys and then displaying the CA Datacom Datadictionary description for each column.

When the SELECTION CRITERIA: DESIGNATE COLUMNS panel appears, pressing <PF6> DISPLAY QUERY displays the following:

```
  =>


  -------------------------------------------------------------------------------DQHN0
  DATAQUERY:  GUIDED QUERY DISPLAY            QUERY NAME: USER-SAMPLE
  -------------------------------------------------------------------------------
  =========================== T O P  ================================
  FIND      ALL      CAI-DETAIL-TBL
  ========================= B O T T O M  ============================




  -------------------------------------------------------------------------------
  <PF1> HELP          <PF2> RETURN      <PF3>  NOT USED    <PF4>  NOT USED
  <PF5> NOT USED      <PF6> NOT USED    <PF7>  BACKWARD     <PF8>  FORWARD
```

So far, the query has a name and library. It will read (FIND) all of the CAI-DETAIL-TBL rows in your search for data.

Step 3: Narrow the Search

DQH60

```
 =>
 Press <PF4> if you do not wish to specify further selection conditions
----------------------------------------------------------------------------DQH60
DATAQUERY: SELECTION CRITERIA: DESIGNATE COLUMNS QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
Specify columns that will be evaluated for row selection by placing
any character next to the desired names.
--------------------------------------------------------------------------------
SELECT| KEY(*) AND COLUMN NAMES |             DESCRIPTION
--------------------------------------------------------------------------------
      | CAI-DETAIL-TBL            |
 _    | * ITM-ID-KEY             | DETAILS ITEM-ID SECONDAY KEY
 _    | * ITM-ID                 |
 _    | * ITMID-ORDID-KEY        | ITMID & ORDID SECONDARY KEY
 _    | * ITM-ID                 |
 _    | * ORDID-ITMID-KEY        | DETAIL ORDID & ITMID KEY
 _    | * ORD-ID                 |
 _    | * ORDID-KEY              | ORDER ID KEY
 _    | * ORD-ID                 |
 _    |   CUST-ID                |
 _    |   SHIP-QTY               |
--------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN      <PF3> NOT USED <PF4> CONTINUE
<PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD <PF8> FORWARD
```

Purpose

The optional SELECTION CRITERIA: DESIGNATE COLUMNS panel allows you to narrow
the search for data. You can select up to 15 columns that contain data you can search
for specifically, by stating that you want to see a range of data, an exact match, and so
forth. You use this panel to tell CA Dataquery to read only rows that contain data you
specify. For instance, you can indicate that you only want rows that contain specific
values in a particular column, like CITY = DALLAS.

Concepts

These are the major concepts related to this panel:

Selection Criteria
It is a good idea to limit the search for data as much as possible, especially with large
tables. You can conserve system resources that way. You can also make your reports
very specific.

Selection Criteria Key/Column

You should have some idea about what kind of data is found in the keys or columns you select. You can use the CA Dataquery online aid PF keys to get CA Datacom Datadictionary information about the keys/columns. To know what kind of data you are likely to find, obtain a report from your CA Dataquery Administrator or create a simple query that lists the data in the columns you want to know about. Your CA Dataquery Administrator can also help you when you need to know more about the structure of a key or column. It is always better to use a key than a column, where possible, to speed query processing.

Panel Operation

On this panel, you use the Tab key to move the cursor from one blank field to another. Locate the cursor next to the column you want to select and enter a character. Press <PF4> CONTINUE (or Enter) to display the next panel.

Completed Example

The following completed panel shows a completed SELECTION CRITERIA: DESIGNATE COLUMNS panel for the sample report.

```
=>
 Press <PF4> if you do not wish to specify further selection conditions
-----------------------------------------------------------------------------DQH60
DATAQUERY: SELECTION CRITERIA: DESIGNATE COLUMNS QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
Specify columns that will be evaluated for row selection by placing
any character next to the desired names.
--------------------------------------------------------------------------------
SELECT| KEY(*) AND COLUMN NAMES |              DESCRIPTION
--------------------------------------------------------------------------------
      | CAI-DETAIL-TBL            |
  _   | * ITM-ID-KEY              | DETAILS ITEM-ID SECONDAY KEY
  _   | * ITM-ID                  |
  _   | * ITMID-ORDID-KEY         | ITMID & ORDID SECONDARY KEY
  _   | * ITM-ID                  |
  _   | * ORDID-ITMID-KEY         | DETAIL ORDID & ITMID KEY
  _   | * ORD-ID                  |
  _   |   CUST-ID                 |
  X   |   SHIP-QTY                |
--------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED <PF4> CONTINUE
<PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD <PF8> FORWARD
```

This chart explains each entry/selection.

Field or Item	Sample Entry	Reason
SHIP-QTY	X	The query should search the rows for orders that have been shipped. If this column contains a zero, no orders have been shipped to this customer. The marketing material is to go only to active customers.

Options

You could select up to 15 columns to narrow the search for qualifying rows. This example, with completion of the next step, limits the search to rows with a ship quantity greater than zero. The search could be more complex by selecting multiple columns here and further qualifying the search in the next step.

To Go to the Next Step

Pressing <PF4> CONTINUE (or Enter) displays the next panel, SELECTION CRITERIA: DEFINE CONDITION. That panel defines the condition to search for in the column named SHIP-QTY.

Step 4: Define Data Selection Conditions

DQH70

```
=>

------------------------------------------------------------------------------DQH70
DATAQUERY: SELECTION CRITERIA: DEFINE CONDITION     QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
Define the condition by selecting a comparison operator and a value to compare
with  SHIP-QTY                              in  CAI-DETAIL-TBL

Select one comparison operator:
  _ Equal (EQ)       _ Greater than (GT)          _ Less than (LT)
  _ Not equal (NE)   _ Greater than or equal (GTE) _ Less than or equal (LTE)
  _ Containing
Enter values for comparison with SHIP-QTY

_____
_____
_____
_____
_____


--------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> REPEAT COLUMN <PF4> CONTINUE
<PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> NOT USED       <PF8> NOT USED
```

Purpose

The optional SELECTION CRITERIA: DEFINE CONDITION panel appears for every column selected as a Selection Criteria column in the previous step. With it, you describe the data you want to be used in qualifying a row for inclusion in your report.   You do that by defining a logical expression, which can be simple or complex. For example, you can specify that you only want rows with a certain zip code or with amounts falling in a specific range, or with a column containing a certain value.

Concepts

These are the major concepts related to this panel:

Value
The exact characters you want to find *or* a column name from the secondary table, if the columns qualify for matching.

Comparison Operator
A comparison operator that tells CA Dataquery how to compare the value to the data. For instance, if a ZIP CODE value is 75081, and you want only rows with that zip code, you will select *Equal* as the comparison operator and complete the panel so that CA Dataquery searches the ZIP CODE column for data *Equal* to *75081.*

Note: For more information about value comparisons, see the *CA Dataquery Reference Guide*.

You can select from these operators:

Equal (EQ)

> Select value exactly

Greater than (GT)

> Select data with higher value

Less than (LT)

> Select data lower than value

Not equal (NE)

> Select data that does not match

Greater than or equal to (GTE)

> Select data of equal or higher value

Less than or equal to (LTE)

> Select same or lower value

Containing

> Select data that contains value

Values for comparison

(Masking) You can enter an exact value here to search for the value. You can *mask* certain positions in the column to tell CA Dataquery you want to find the value in positions other than the first ones. If *containing* is your comparison operator, you can enter a value that you want found somewhere in the column. You can even write a column name or key name from a primary or secondary table, if you selected one, that you want CA Dataquery to use in qualifying the search for rows. The rules for comparison values are detailed in the *CA Dataquery Reference Guide*.

Panel Operation

On this panel, the Tab key moves the cursor from one field to another. Type entries and press <PF4> CONTINUE (or Enter) to display the next panel.

Completed Example

The following completed panel shows how a completed SELECTION CRITERIA: DEFINE CONDITION panel produces the sample report.

```
 =>


 ----------------------------------------------------------------------------DQH70
 DATAQUERY: SELECTION CRITERIA: DEFINE CONDITION    QUERY NAME: USER-SAMPLE
 --------------------------------------------------------------------------------
 Define the condition by selecting a comparison operator and a value to compare
 with  SHIP-QTY                          in  CAI-DETAIL-TBL

 Select one comparison operator:
   _ Equal (EQ)       X Greater than (GT)        _ Greater than or equal (GTE)
   _ Less than (LT)   _ Less than or equal (LTE) _ Containing
   _ Use "NOT" before the operator selected above
 Enter values for comparison with SHIP-QTY
 0_____
 _____
 _____
 _____
 _____



 --------------------------------------------------------------------------------
 <PF1> HELP           <PF2> RETURN         <PF3> REPEAT COLUMN <PF4> CONTINUE
 <PF5> EXTEND COLUMN <PF6> DISPLAY QUERY  <PF7> NOT USED       <PF8> NOT USED
```

This chart explains each entry/selection.

Field or Item	Sample Entry:	Reason
Greater than (GT)	X	The only rows needed are for customers who were shipped orders. Therefore, the ship quantity *greater than* zero (0).
Value entered	0	See above.

Options

You could apply very complex selection conditions to narrow your search for qualified rows.

You could create an arithmetic expression or a literal expression as the basis of your selection condition. To read more about the rules for such expressions, see the *CA Dataquery Reference Guide*.

To Go to the Next Step

When *SHIP-QTY GT 0* is defined, pressing <PF4> CONTINUE displays the next panel.

If two columns were selected on the DESIGNATE COLUMNS (DQH60) panel with defined conditions for each, or if <PF3> REPEAT COLUMN were used to define the SHIP-QTY column more than once, CA Dataquery would now display a new panel to group the conditions into a logical expression. The expression would be written on the additional panel.

For example, having selected ZIP and STREET and having said to select rows where ZIP equals 15081 and where the STREET value is *Main St.* requires that the condition be stated according to CA Dataquery syntax rules. The additional panel presents a default expression that could be altered. Here is what that panel would look like:

```
=>

---------------------------------------------------------------------------DQH80
DATAQUERY: SELECTION CRITERIA: MULTIPLE CONDITIONS QUERY NAME: SAMPLE
--------------------------------------------------------------------------------
Below are the conditions you defined to qualify records selected from table
  CAI-CUST-TBL
Use the logical operators "AND", "OR", "(", and ")" to logically group your
conditions.
The default statement appears below.  You may type over it to change it.
=> 01 AND 02
--------------------------------------------------------------------------------
NUMBER|      KEY (*) AND COLUMN NAMES      |COMPARISON OPERATOR(S) AND VALUE(S)
--------------------------------------------------------------------------------
 01   | ZIP                               | EQ 15081
 02   | STREET                            | 'MAIN ST.'
      |                                   |
      |                                   |
      |                                   |
      |                                   |
--------------------------------------------------------------------------------
<PF1> HELP         <PF2> RETURN      <PF3> NOT USED   <PF4> CONTINUE
<PF5> NOT USED     <PF6> DISPLAY QUERY <PF7> BACKWARD  <PF8> FORWARD
```

For this example, the default statement created by CA Dataquery is correct. See the *CA Dataquery Reference Guide* for more information about using this panel.

When the next panel appears, you can press <PF6> DISPLAY QUERY to see what the query looks like so far.

```
=>

-------------------------------------------------------------------------------DQHN0
DATAQUERY:  GUIDED QUERY DISPLAY          QUERY NAME: _____
-------------------------------------------------------------------------------
=========================== T O P ================================
FIND ALL CAI-DETAIL-TBL
     WITH SHIP-QTY GT 0
========================= B O T T O M ============================




                                                                       



-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN      <PF3>  NOT USED     <PF4>  NOT USED
<PF5> NOT USED      <PF6> NOT USED    <PF7>  BACKWARD     <PF8>  FORWARD
```

The query tells CA Dataquery to read (FIND) all CAI-DETAIL-TBL table rows that have (WITH) a ship quantity greater than 0 in the search for data.

Step 5: Name a Temporary Result

DQH90

```
=>
 PRESS <PF4> IF YOU DO NOT WISH TO DEFINE ANY TEMPORARY RESULTS
-------------------------------------------------------------------------------DQH90
DATAQUERY: DEFINE TEMPORARY RESULTS QUERY NAME: USER-SAMPLE
-------------------------------------------------------------------------------
ENTER THE NAME(S) OF ANY TEMPORARY RESULT(S) YOU WANT CALCULATED DURING
QUERY EXECUTION.  YOU MAY ALSO SPECIFY THE NUMBER OF DIGITS BEFORE AND AFTER
THE DECIMAL POINT (THE PRECISION) OF EACH RESULT COLUMN. THE DEFAULT IS (13.2).
-------------------------------------------------------------------------------
       RESULT COLUMN NAME          |PRECISION(N.D)
-------------------------------------------------------------------------------
                                   |
                                   |
                                   |
                                   |
                                   |
                                   |
                                   |
                                   |
-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN        <PF3> NOT USED      <PF4> CONTINUE
<PF5> NOT USED      <PF6> DISPLAY QUERY  <PF7> NOT USED     <PF8> NOT USED
```

Purpose

The optional DEFINE TEMPORARY RESULT panel lets you name and define value lengths for up to 10 temporary results. A result is calculated based on a formula you supply. Temporary result formulas can include values found in columns that exist on the database.

Concepts

These are the major concepts related to this panel:

Temporary Result
 A value created for this report that is produced by an expression. The results can be printed or used in other calculations performed by CA Dataquery.

Precision (n.d)
 Refers to the number of positions in the value before and after the decimal point (n.d). You can use the default of 13.2. If you decide to define the number of positions, be sure to specify a length that can contain the largest possible result. The sum of entries for n and d must be equal to or less than 18.

Panel Operation

On this panel, you use the Tab key to move the cursor from one field to another. There are two input fields per result, one under each heading. You type entries and press <PF4> CONTINUE (or ENTER) to display the next panel and define the temporary result you just named.

Completed Example

The following sample shows how the completed DEFINE TEMPORARY RESULT panel is used to name the temporary result.

```
=>
 PRESS <PF4> IF YOU DO NOT WISH TO DEFINE ANY TEMPORARY RESULT
-------------------------------------------------------------------------DQH90
DATAQUERY: DEFINE TEMPORARY RESULTS QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
ENTER THE NAME(S) OF ANY TEMPORARY RESULT(S) YOU WANT CALCULATED DURING
QUERY EXECUTION.  YOU MAY ALSO SPECIFY THE NUMBER OF DIGITS BEFORE AND AFTER
THE DECIMAL POINT (THE PRECISION) OF EACH RESULT. THE DEFAULT IS (13.2).
--------------------------------------------------------------------------------
    RESULT NAME                    |PRECISION(N.D)
--------------------------------------------------------------------------------
SHIP-PRICE                         | 13.2
                                   |
                                   |
                                   |
                                   |
                                   |
                                   |
                                   |
--------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN        <PF3> NOT USED      <PF4> CONTINUE
<PF5> NOT USED      <PF6> DISPLAY QUERY <PF7> NOT USED      <PF8> NOT USED
```

This chart explains each entry/selection.

Field or Item	Sample Entry or Selection	Reason
RESULT COLUMN NAME	SHIP-PRICE	Will contain results of quantity multiplied by price for each item ordered. Be sure to see Restrictions on Names (see page 79) for important restrictions on names.
PRECISION (N.D)	No entry	Without knowing what the largest quantity or highest price would be, the default is a good choice.

Options

You could name temporary results that are the results of calculations based on other temporary results.

To Go to the Next Step

When the Define temporary results panel is complete, the next panel tells CA Dataquery which columns to use to calculate the values. The next step is to select those columns and tell CA Dataquery to multiply them.

Step 6: Select Columns for Temporary Result Calculation

DQHA0

```
=>

-------------------------------------------------------------------------------DQHA0
DATAQUERY:  SELECT COLUMNS FOR CALCULATION QUERY NAME: USER-SAMPLE
-------------------------------------------------------------------------------
Select the columns you wish to use in calculating the value of the temporary
result. SHIP-PRICE                    with precision (13.2).
Place any character next to the desired names.
-------------------------------------------------------------------------------
SELECT|  TABLE NAME/COLUMN NAME               | DESCRIPTION
-------------------------------------------------------------------------------
      | CAI-DETAIL-TBL                        |
  _   |    CUST-ID                            |
  _   |    ORD-QTY                            |
  _   |    SHIP-QTY                           |
  _   |    UNIT-PRICE                         |
  _   |    DISC-PCT                           |
      |                                       |
      |                                       |
      |                                       |
      |                                       |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN          <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY   <PF7> BACKWARD     <PF8> FORWARD
```

Purpose

You will not need to fill out this panel if your temporary result is to be set to a specific value. For example, INTEREST = 8.25. You do fill out this panel if columns from the selected database tables are used in calculating the value of your temporary result. You only use it if your arithmetic expression will include data found during query execution in a column. With it, you tell CA Dataquery which columns you will use in an arithmetic expression to create the results you want. You can use up to ten columns. You are also allowed to include literal values in your calculation.

Concepts

These are the major concepts related to this panel:

Columns for Calculation
All columns listed on this panel are numeric. However, you should be aware of the definition of any column you use in a calculation.

Calculation
You will be permitted on the following panel to type an algebraic equation or use the default equation provided. Your equation can be as simple or as complex as you need it to be.

Panel Operation

You use the Tab key to move the cursor from one field to another, select columns by marking a character next to their names, and press <PF4> CONTINUE to display the next panel. If the list of columns extends beyond the screen, you can use the PF keys to scroll forward and backward.

Completed Example

The following completed panel shows how to select the columns for the calculation to be defined.

```
  =>

  --------------------------------------------------------------------------DQHA0
  DATAQUERY:  SELECT COLUMNS FOR CALCULATION QUERY NAME: USER-SAMPLE
  --------------------------------------------------------------------------------
  Select the columns you wish to use in calculating the value of the temporary
  result. SHIP-PRICE                  with precision (13.2).
  Place any character next to the desired names.
  --------------------------------------------------------------------------------
  SELECT|  TABLE NAME/COLUMN NAME                   | DESCRIPTION
  --------------------------------------------------------------------------------
        | CAI-DETAIL-TBL                            |
    _   |    CUST-ID                                |
    _   |    ORD-QTY                                |
    X   |    SHIP-QTY                               |
    X   |    UNIT-PRICE                             |
    _   |    DISC-PCT                               |
        |                                           |
        |                                           |
        |                                           |
        |                                           |
  - LAST PAGE --------------------------------------------------------------------
  <PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
  <PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

This chart explains each entry/selection.

Field or Item	Sample Entry	Reason
SHIP-QTY	X	To get the number of items shipped.
UNIT-PRICE	X	To get the price per item.

Options

You could select only one column to be calculated using a constant number or you could select more columns. Or, you could skip this panel altogether, and go on to define a calculation whose results would appear on the report for every output row.

To Go to the Next Step

After the columns for calculation are selected, press <PF4> CONTINUE to display the next panel.

Step 7: Calculate Temporary Result

DQHB0

```
=>
 Press <PF1> for help with writing the arithmetic expression
-------------------------------------------------------------------------------DQHB0
DATAQUERY:  DEFINE THE ARITHMETIC EXPRESSION       QUERY NAME: USER-SAMPLE
-------------------------------------------------------------------------------
Write an arithmetic expression to be used in calculating the value of the
temporary result. SHIP-PRICE            with precision (13.2)
Use the column numbers F01, F02, etc., numeric literals, or a combination of
both and arithmetic operators.
The default calculation appears below. You may type over it to change it.
=> F01 + F02
-------------------------------------------------------------------------------
NUMBER|  TABLE NAME/COLUMN NAME          | DESCRIPTION
-------------------------------------------------------------------------------
      | CAI-DETAIL-TBL                   |
  F01 |   SHIP-QTY                       |
  F02 |   UNIT-PRICE                     |
      |                                  |
      |                                  |
      |                                  |
      |                                  |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The DEFINE THE ARITHMETIC EXPRESSION panel is required only if you named a temporary result. One panel appears for each temporary result you named. With it, you type an algebraic equation that can be simple or complex, and can contain column names and/or literal values.

Concepts

These are the major concepts related to this panel:

Arithmetic Expression
You have a 75-character line upon which you can enter any valid equation whose result will provide the value for your temporary result column for each row. You can add, multiply, divide, subtract, and use parenthetical expressions.

User-Defined Functions
You can even include in an arithmetic expression those special calculations that are created at your site and numbered for inclusion in arithmetic expressions. Your CA Dataquery Administrator can provide you a list of user-defined functions if they are used at your site.

Note: For more information about user-defined and other possible functions, see the *CA Dataquery Reference Guide*.

Column Number
CA Dataquery allows you to use shorthand to identify any columns that were selected for use in your calculation with a number assigned on the list. Using this shorthand provides you more room to write complex expressions.

Default Calculation
As a default calculation, CA Dataquery always sequentially adds the columns you selected. You can change the expression by writing over it, inserting, or deleting characters. The result will be your final calculation. It must conform to the rules for calculations detailed in the *CA Dataquery Reference Guide*.

Panel Operation

On this panel, you use the Tab key to move the cursor from one field to another, type entries, and press <PF4> CONTINUE to display the next panel.

Completed Example

The following completed panel shows how the completed DEFINE ARITHMETIC
EXPRESSION panel defines the calculation.

```
=>
 Press <PF1> for help with writing the arithmetic expression
-------------------------------------------------------------------------DQHB0
DATAQUERY:  DEFINE THE ARITHMETIC EXPRESSION      QUERY NAME: USER-SAMPLE
-------------------------------------------------------------------------------
Write an arithmetic expression to be used in calculating the value of the
temporary result      SHIP-PRICE                               with precision
(13.2)
Use the column numbers, F01, F02, etc., numeric literals, or a combination of
both and arithmetic operators.
The default calculation appears below. You may type over it to change it.
=> F01 * F02
-------------------------------------------------------------------------------
NUMBER|  TABLE NAME/COLUMN NAME           | DESCRIPTION
-------------------------------------------------------------------------------
      | CAI-DETAIL-TBL                    |
  F01 |   SHIP-QTY                        |
  F02 |   UNIT-PRICE                      |
      |                                   |
      |                                   |
      |                                   |
      |                                   |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP            <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

This chart explains the reason for the entries.

Field or Item	Sample Entry	Reason
Calculation	F01 * F02	To multiply the number of items shipped by the price.

Options

You could create a very simple calculation, like:

F01 * .10

Or, with more columns defining your calculation, you could create a very complex
calculation, like:

(F01 * 3.3) + (F02 / F05) / (F03 + F04)

Hierarchical rules for mathematical expressions in CA Dataquery are found in the *CA
Dataquery Reference Guide*.

To Go to the Next Step

After defining the temporary result calculation for this query, the next panel, after pressing <PF4> CONTINUE, tells how to sort the data.

Before you go on, take a look at how the query looks in DQL so far.

```
=>


-----------------------------------------------------------------------DQHN0
DATAQUERY:  GUIDED QUERY DISPLAY          QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
=========================== T O P ==================================
FIND ALL CAI-DETAIL-TBL
    WITH SHIP-QTY GT 0
SET SHIP-PRICE(13.2) = CAI-DETAIL-TBL SHIP-QTY * CAI-DETAIL-TBL UNIT-PRICE
=========================== B O T T O M ==============================






-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN      <PF3>  NOT USED    <PF4>  NOT USED
<PF5> NOT USED      <PF6> NOT USED    <PF7>  BACKWARD     <PF8>  FORWARD
```

So far, the query reads (FIND) all CAI-DETAIL-TBL table rows in the search for data that have (WITH) a SHIP-QTY greater than 0. It also calculates for each row (SET) the result of SHIP-QTY multiplied by UNIT-PRICE and place the result into SHIP-PRICE.

Step 8: Sort Data for the Report

DQHD0

```
 =>
  Press <PF4> if you do not wish to define sort criteria
-----------------------------------------------------------------------------DQHD0
DATAQUERY:  SORT CRITERIA DEFINITION          QUERY NAME:    USER-SAMPLE
-------------------------------------------------------------------------------
You may order the selected rows in ascending or descending sequence
according to the contents of one or more columns. Select the columns by
placing any character next to the desired names.
-------------------------------------------------------------------------------
SELECT | TABLE NAME/KEY (*) OR COLUMN NAME | DESCRIPTION
-------------------------------------------------------------------------------
       | CAI-DETAIL-TBL                    |
   _   | * ITM-ID-KEY                      | DETAILS ITEM-ID SECONDAY KEY
   _   | * ITM-ID                          |
   _   | * ITMID-ORDID-KEY                 | ITMID & ORDID SECONDARY KEY
   _   | * ITM-ID                          |
   _   | * ORDID-ITMID-KEY                 | DETAIL ORDID & ITMID KEY
   _   | * ORD-ID                          |
   _   | * ORDID-KEY                       | ORDER ID KEY
   _   | * ORD-ID                          |
-------------------------------------------------------------------------------
<PF1> HELP            <PF2> RETURN       <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The optional SORT CRITERIA DEFINITION panel allows you to order rows in your report in ascending or descending sequence according to the contents of one or more table columns or temporary results. With this capability, you can group rows together for purposes of reporting. Also, when you sort data, you can make reports easier to read. You can also allow for subtotals, should you decide to apply them. More about that in the next step.

You can perform a simple sort or a complex sort. With a complex sort you could sort data within each logical group. For instance, if you are reporting names and addresses, you can arrange your report alphabetically by State, then within each state you can sort the rows by City, and then within each City, you can sort the rows alphabetically by Name. In this case, State is the major sort key; City, the intermediate sort key; and Name, the minor sort key.

Concept

This is the major concept related to this panel:

Sort Criteria
Report data can be sorted out to 10 levels, based on the columns of the table selected in the query. If you select more than one column for sorting, you will be asked to define the sorting priority, from major to minor.

Panel Operation

On this panel, you use the Tab key to move the cursor from one field to another. You enter a character in the field next to the column name or key name of your choice and press <PF4> CONTINUE to display the next panel.

Completed Example

The following shows how the completed SORT CRITERIA DEFINITION panel selects the column for sorting.

```
=>
 Press <PF4> if you do not wish to define sort criteria
----------------------------------------------------------------------------DQHD0
DATAQUERY:  SORT CRITERIA DEFINITION            QUERY NAME:    USER-SAMPLE
--------------------------------------------------------------------------------
You may order the selected rows in ascending or descending sequence
according to the contents of one or more columns. Select the columns by
placing any character next to the desired names.
--------------------------------------------------------------------------------
SELECT | TABLE NAME/KEY (*) OR COLUMN NAME | DESCRIPTION
--------------------------------------------------------------------------------
       | CAI-DETAIL-TBL                    |
   _   | * ITM-ID-KEY                      | DETAILS ITEM-ID SECONDAY KEY
   X   | * CUST-ID                         |
   _   | * ITMID-ORDID-KEY                 | ITMID & ORDID SECONDARY KEY
   _   | * ITM-ID                          |
   _   | * ORDID-ITMID-KEY                 | DETAIL ORDID & ITMID KEY
   _   | * ORD-ID                          |
   _   | * ORDID-KEY                       | ORDER ID KEY
   _   | * ORD-ID                          |
   _   |   ORD-ID                          |
--------------------------------------------------------------------------------
<PF1> HELP            <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

This chart explains each entry/selection.

Field or Item	Sample Entry	Reason
CUST-ID	X	To report and total results for individual customers. The data in the CUST-ID column identifies the customer for each individual order.

Options

You could sort your report data by customer, and then by item ordered for this report. Or, you could also specify a sort on the temporary result SHIP-QTY, and arrange the rows in descending order from highest amount shipped to lowest for each customer. There are many ways to sort the data. If you have a need, CA Dataquery can probably fill it.

Note: For More information about rules for sorting can be found in the *CA Dataquery Reference Guide*.

To Go to the Next Step

Once you select one or more columns to control report sorting, you are ready to tell CA Dataquery in detail how to perform the sorts. Press <PF4> CONTINUE to go on.

Step 9: Specify Sorting Priority and Control Breaks

DQHE0

```
 =>


 --------------------------------------------------------------------DQHE0
 DATAQUERY:  ROW ORDERING                    QUERY NAME:    USER-SAMPLE
 ----------------------------------------------------------------------------
 If you chose more than 1 sort column, number them 1, 2, etc. to show their
 sort priority from major to minor. Defaults are provided and can be modified.
 Sort sequence, control breaks, and paging control may be selected
 by placing any character in the corresponding fields.
 ----------------------------------------------------------------------------
 ORDER | TABLE NAME/                         |SORT SEQUENCE |CONTROL | NEW
 NUMBER|   KEY OR COLUMN NAME                |ASCEND/DESCEND| BREAK  | PAGE
 ----------------------------------------------------------------------------
       |CAI-DETAIL-TBL                       |              |        |
  01   | CUST-ID                             |     X        |        |
       |                                     |              |        |
       |                                     |              |        |
       |                                     |              |        |
       |                                     |              |        |
       |                                     |              |        |
       |                                     |              |        |
 - LAST PAGE ----------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN        <PF3> NOT USED   <PF4> CONTINUE
 <PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD   <PF8> FORWARD
```

Purpose

The ROW ORDERING panel appears when you select a column to be sorted. On it are listed the columns which you selected in the order in which they were listed on the previous panel. Their order on the ROW ORDERING panel indicates sorting priority from major to minor. You can change the priority. This panel also allows you to specify whether you want to sort from lowest to highest or highest to lowest value. Especially important, this panel lets you use the sort columns during execution to allow control breaks or start a new report page for each logical group created by sorting.

Concepts

These are the major concepts related to this panel:

Order
If the data in more than one column is to be sorted, order is important. CA Dataquery assigns a default number to each sort column you select. You can change it. The major sort is performed on the column to which 01 is assigned, the next sort on 02, and so on.

Ascending Sequence
From A to Z and from 0 to 9.

Descending Sequence
From highest to lowest -- 9 to 0 and from Z to A.

Control Break

A control break refers to a point in processing where CA Dataquery finds a different data value than one it has just read. If directed, CA Dataquery performs a specified function at the control break.

Query authors designate columns for control breaks to tell CA Dataquery to read the values in a sorted column and take a break in processing when it reads a different value. At a control break, CA Dataquery can perform other functions, calculating subtotals for the rows just processed. You still have to tell CA Dataquery which columns to perform the control break process on, but you do not do that using this panel.

Example

The following example shows how CA Dataquery sees the rows found by a query after sorting them by LASTNAME. Since the query author specified LASTNAME as a control-break column, CA Dataquery sees the rows containing identical values in that column as logical groups and takes a control break after each group. If subtotals were specified on another panel for the CONTRIBUTION column, CA Dataquery would total the CONTRIBUTION values for each group at the control break.

LASTNAME	FIRSTNAME	CLASS	CONTRIBUTIONS
Adams	James	A	45345.89
Adams	Arlene	C	98765.21
Adams	Robert	C	23456.90
>>>>>>>>>> *Control Break* <<<<<<<<<<			
Burns	John	A	7897.32
Burns	Jeff	C	198.21
Burns	Alice	B	99321.42
>>>>>>>>>> *Control Break* <<<<<<<<<<			
Crosby	Fred	A	278.13
Crosby	Mary	C	9978.13
>>>>>>>>>> *Control Break* <<<<<<<<<<			

Use control breaks to organize the selected data, grouping it to provide more easily understood results. Control breaks also provide a way to summarize large volumes of data.

Note: For more information about control breaks, see the *CA Dataquery Reference Guide*.

New Page

You can have CA Dataquery start a new page or new screen every time there is a control break.

Panel Operation

On this panel, you use the Tab key to move the cursor from one column to another. You can type over numbers in the Order column, erase default Xs in the Ascending column, and tab to the columns in the Descending, Control Break, and New Page columns. When you are finished, you press <PF4> CONTINUE to display the next panel.

Completed Example

The following shows how the completed ROW ORDERING panel tells CA Dataquery to sort the report data by customer ID and to perform a control break each time it encounters data for a new customer.

```
  =>

  -------------------------------------------------------------------------DQHE0
  DATAQUERY:  ROW ORDERING                      QUERY NAME:    USER-SAMPLE
  -------------------------------------------------------------------------------
  If you chose more than 1 sort column, number them 1, 2, etc. to show their
  sort priority from major to minor. Defaults are provided and can be modified.
  Sort sequence, control breaks, and paging control may be selected
  by placing any character in the corresponding fields.
  -------------------------------------------------------------------------------
  ORDER | TABLE NAME/                        |SORT SEQUENCE |CONTROL | NEW
  NUMBER|   KEY OR COLUMN NAME               |ASCEND/DESCEND| BREAK  | PAGE
  -------------------------------------------------------------------------------
        |CAI-DETAIL-TBL                      |              |        |
   01   | CUST-ID                            |      X       |   X    |
        |                                    |              |        |
        |                                    |              |        |
        |                                    |              |        |
        |                                    |              |        |
        |                                    |              |        |
        |                                    |              |        |
  - LAST PAGE --------------------------------------------------------------------
  <PF1> HELP            <PF2> RETURN         <PF3> NOT USED   <PF4> CONTINUE
  <PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD   <PF8> FORWARD
```

This chart explains each entry/selection.

Field/Item	Sample Entry	Reason
Ascend	X	To order the customer IDs from lowest to highest.
Control Break	X	To produce subtotals of certain data for each customer.

Options

You could also tell CA Dataquery to start printing the data for each customer on a new page. If you were printing hard copies of your report and wanted to send each customer a record, that is what you would do.

To Go to the Next Step

Once the search and sort specifications are complete, the next panel specifies what to print in the report. <PF4> CONTINUE displays the next panel.

Following is a sample of how the panel looks so far.

```
=>

-----------------------------------------------------------------------------DQHN0
DATAQUERY:  GUIDED QUERY DISPLAY          QUERY NAME: _____
-----------------------------------------------------------------------------------
=========================== T O P ================================
FIND ALL CAI-DETAIL-TBL
    WITH SHIP-QTY GT 0
SET SHIP-PRICE(13.2) = CAI-DETAIL-TBL SHIP-QTY * CAI-DETAIL-TBL UNIT-PRICE
SORT CAI-DETAIL-TBL (CUST-ID)

========================= B O T T O M ===========================



-----------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED   <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

So far, this query reads (FINDs) all CAI-DETAIL-TBL table rows in the search for data that have (WITH) a SHIP-QTY greater than 0. It also calculates (SETs) for each row the result of SHIP-QTY multiplied by UNIT-PRICE. Completing this step specifies sorting (SORTs) the rows found by the customer ID and to take a control break every time the customer ID changes (parentheses around the column name).

Step 10: Begin Defining the Report's Appearance

DQHF0

```
=>

-----------------------------------------------------------------------DQHF0
DATAQUERY:  REPORT DEFINITION                    QUERY NAME: USER-SAMPLE
-------------------------------------------------------------------------------


ENTER UP TO TWO LINES FOR A
REPORT TITLE:        =>
                     =>

SELECT THE DESIRED REPORT FORMAT:    X  COLUMNAR FORMAT: ONE ROW PER LINE.
                                     _  LIST FORMAT: ONE ROW PER PAGE.

ENTER THE NUMBER OF ROWS TO BE
PROCESSED FOR THE REPORT:           => ALL




-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN       <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The REPORT DEFINITION panel is not required and you can bypass it. However, if you want to assign a title to your report, display your data one row per page rather than in columnar format, or select fewer than all rows for the report, you will want to make some entries on this panel.

Concepts

These are the major concepts related to this panel:

Title

CA Dataquery allows you to create a two-line title for any report. Each line can be up to 55 characters. All characters are allowed, except for reserved words, listed in the *CA Dataquery Reference Guide*. When your CA Dataquery system was installed, a title was specified which will appear above the title you define on this panel.

Be sure to see Restrictions on Names (see page 79) for important restrictions on names.

Columnar Format

Data on the report appears in columns, with each line representing one row of the found set.

```
Name        City        State     Zip
----------- ----------- -------   ------
Allen       Dallas      TX        75042
Wilson      Austin      TX        79034
  .           .           .         .
  .           .           .         .
```

List Format

Data on the report appears on pages, with one page per found set row, and with one line for each column name printed.

```
Name        Allen
City        Dallas
State       TX
Zip         75042
```

Number of Rows

If your query will search a large table and you are only querying the table to see what kind of data is in it, you might only want to see a few of the rows. This causes your query to execute faster and allows you to preview the results before searching the entire database.

Panel Operation

On this panel, you use the Tab key to move the cursor from one field to another, type entries, and press <PF4> CONTINUE to display the next panel. You can accept the defaults and leave off a title by pressing <PF4> CONTINUE without making an entry.

Completed Example

The following completed panel shows how the REPORT DEFINITION panel looks for the sample report.

```
=>

------------------------------------------------------------------------------DQHF0
DATAQUERY:  REPORT DEFINITION                    QUERY NAME: USER-SAMPLE
------------------------------------------------------------------------------

ENTER UP TO TWO LINES FOR A
REPORT TITLE:       => FILLED CUSTOMER ORDERS
                    =>

SELECT THE DESIRED REPORT FORMAT:    X  COLUMNAR FORMAT: ONE ROW PER LINE.
                                     _  LIST FORMAT: ONE ROW PER PAGE.

ENTER THE NUMBER OF ROWS TO BE
PROCESSED FOR THE REPORT:            => ALL




------------------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD     <PF8> FORWARD
```

This chart explains each entry/selection.

Field/Item	Sample Entry	Reason
Title	Filled Customer Orders	Explains report's purpose.
Columnar	X	To see all the customer data on the report, to make comparisons.
Number	All	To get all the data that meets the search criteria.

Options

If you want to see each order row on a separate page, select the List format. If you only want to see what kind of data was in the table before creating a complex query, change ALL to a small number, like 25.

To Go to the Next Step

With entries complete on the REPORT DEFINITION panel, you are ready to further define the report. Pressing <PF4> CONTINUE displays the next panel.

Step 11: Select Columns for Printing

DQHG0

```
=>

-----------------------------------------------------------------------DQHG0
DATAQUERY:  REPORT COLUMN DEFINITION QUERY NAME              USER-SAMPLE
--------------------------------------------------------------------------------
Select the keys or columns to be columns on the report by placing any character
next to the desired names.
--------------------------------------------------------------------------------
SELECT|TABLE/KEY(*) OR COLUMN NAME             |     DESCRIPTION
--------------------------------------------------------------------------------
      | CAI-DETAIL-TBL                         |
   _  | * ITM-ID-KEY                           | DETAILS ITEM-ID SECONDAY KEY
   _  | * CUST-ID                              | CUSTOMER ID
   _  | * ITMID-ORDID-KEY                      | ITMID & ORDID SECONDARY KEY
   _  | * ITM-ID                               | ITEM ID
   _  | * ORDID-ITMID-KEY                      | DETAIL ORDID & ITMID KEY
   _  |   SHIP-QTY                             | QUANTITY SHIPPED
   _  |   UNIT-PRICE                           | UNIT PRICE
   _  | * TEMPORARY RESULT                     |
   _  |   SHIP-PRICE                           |
--------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN       <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The required REPORT COLUMN DEFINITION QUERY NAME panel allows you to choose up to 96 of the keys and columns of the tables you selected for your query to be printed in your report.

Important If you plan to create your own titles and reformat numeric data in a later step, your query could become quite lengthy and exceed the line limit of the EDITOR panel established at your site.

Your site may have established a limit of 24, 48, 72, or 96 lines. For details, contact your CA Dataquery Administrator. (If you have displayed your query with each step, you have an idea of how many lines it occupies.) The contents of each key, column or temporary result selected can be printed on the report.

Concepts

These are the major concepts related to this panel:

Key
Remember that keys can be made up of more than one column. You might not want a key printed on your report.

Column
You should make at least one selection to complete your query and obtain results. Otherwise, all your query does is read a table, make calculations, and sort data, and you would never see the results.

Panel Operation

On this panel, you use the Tab key to move the cursor from one field to another, mark a character in the blank next to the column or key you want to report, and press <PF4> CONTINUE to display the next panel.

Completed Example

The following completed panel shows how to use the REPORT COLUMN DEFINITION QUERY NAME panel to select columns whose data will appear in your report.

```
=>

-------------------------------------------------------------------------DQHG0
DATAQUERY:  REPORT COLUMN DEFINITION QUERY NAME                    USER-SAMPLE
-------------------------------------------------------------------------------
Select the keys or columns to be columns on the report by placing any character
next to the desired names.
-------------------------------------------------------------------------------
SELECT|TABLE/KEY(*) OR COLUMN NAME            |     DESCRIPTION
-------------------------------------------------------------------------------
      | CAI-DETAIL-TBL                        |
   _  | * ITM-ID-KEY                          | DETAILS ITEM-ID SECONDAY KEY
   X̄  | * CUST-ID                             | CUSTOMER ID
   _  | * ITMID-ORDID-KEY                     | ITMID & ORDID SECONDARY KEY
   X̄  | * ITM-ID                              | ITEM ID
   _  | * ORDID-ITMID-KEY                     | DETAIL ORDID & ITMID KEY
   X̄  |   SHIP-QTY                            | QUANTITY SHIPPED
   X  |   UNIT-PRICE                          | UNIT PRICE
      | * TEMPORARY RESULT                    |
   X  |   SHIP-PRICE                          |
      |                                       |
-------------------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN       <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD   <PF8> FORWARD
```

The following explains each entry/selection.

CUST-ID

To know which customer's data is presented.

ITM-ID

To know which items were ordered.

SHIP-QTY

To know how many ordered items were shipped.

UNIT-PRICE

To show the price for each individual item.

SHIP-PRICE

To show the results of the calculation.

Options

You could print all columns in the report, or only one. Whatever data you need can be included in this report.

To Go to the Next Step

After selecting columns for the report, tell CA Dataquery the order in which to print them, and any mathematical functions or column titles to use. Pressing <PF4> CONTINUE displays the next panel.

Step 12: Define Column Order and Function

DQHI0

```
  =>
   Press <PF1> for help with defining the report
  -----------------------------------------------------------------------------DQHI0
  DATAQUERY:  COLUMN DEFINITION                   QUERY NAME:    USER-SAMPLE
  ------------------------------------------------------------------------------
  Specify the order in which the columns are to appear on the report by
  inserting an order number below.  Column functions may be selected by placing
  any character in the corresponding input field.
  ------------------------------------------------------------------------------
  ORDER | TABLE NAME/                    |     |     |     |     |     |
  NUMBER|  KEY OR COLUMN NAME            | AVG | MAX | MIN | SUM | CNT | TOT
  ------------------------------------------------------------------------------
        |CAI-DETAIL-TBL                  |     |     |     |     |     |
   01   | CUST-ID                        |     |     |     |     |     |
   02   | ITM-ID                         |     |     |     |     |     |
   03   | SHIP-QTY                       |     |     |     |     |     |
   04   | UNIT-PRICE                     |     |     |     |     |     |
        |TEMPORARY RESULT                |     |     |     |     |     |
   05   | SHIP-PRICE                     |     |     |     |     |     |
        |                                |     |     |     |     |     |
        |                                |     |     |     |     |     |
        |                                |     |     |     |     |     |
  - LAST PAGE --------------------------------------------------------------
  <PF1> HELP            <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
  <PF5> EXTEND COLUMN   <PF6> DISPLAY QUERY  <PF7> BACKWARD   <PF8> FORWARD
```

Purpose

The COLUMN DEFINITION panel can be accepted with the defaults CA Dataquery
assigns, resulting in report data printed in the same order in which it was selected.
However, you might want to change the order in which columns are printed. You might
also want to request that mathematical functions be performed on some or all numeric
columns. If so, you will select math functions for columns. At the end of the report, or at
control breaks that you can specify later, you can obtain the results of the functions
which you select on this panel.

Concepts

These are the major concepts related to this panel:

Column Functions
You may enhance the contents of your report by applying mathematical functions to
individual columns. You can print the results of performing these functions on your
report in either or both of two locations. You can print results at control breaks and at
the end of the report.

Mathematical Functions

The following mathematical functions are available to you:

AVG

CA Dataquery divides the number of rows reported into the total of the selected column to obtain an average.

MAX

CA Dataquery reports the largest value found for the specified column.

MIN

CA Dataquery reports the smallest value found for the specified column.

SUM

CA Dataquery reports the total of all values for the specified column.

CNT

CA Dataquery reports the number of rows found.

TOT

CA Dataquery reports totals in column format at all control breaks and at the end of the report.

These totals print in the columns of the column totaled.

Panel Operation

On this panel, the Tab key moves the cursor from one field to another. You type entries, and press <PF4> CONTINUE to display the next panel.

Completed Example

The following completed COLUMN DEFINITION panel shows how to prepare the sample report and perform mathematical functions.

```
=>
 Press <PF1> for help with defining the report
-------------------------------------------------------------------------------DQHI0
DATAQUERY:  COLUMN DEFINITION                 QUERY NAME:    USER-SAMPLE
-------------------------------------------------------------------------------
Specify the order in which the columns are to appear on the report by
inserting an order number below.  Column functions may be selected by placing
any character in the corresponding columns.
-------------------------------------------------------------------------------
ORDER | TABLE NAME/             |     |     |     |     |     |
NUMBER|  KEY OR COLUMN NAME     | AVG | MAX | MIN | SUM | CNT | TOT
-------------------------------------------------------------------------------
      |CAI-DETAIL-TBL           |     |     |     |     |     |
 01   | CUST-ID                 |     |     |     |     |     |
 02   | ITM-ID                  |     |     |     |     |     |
 03   | SHIP-QTY                |     |     |     |     |     |
 04   | UNIT-PRICE              |     |     |     |     |     |
      |TEMPORARY RESULT         |     |     |     |     |     |
 05   | SHIP-PRICE              |  X  |     |     |     |     |  X
      |                         |     |     |     |     |     |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

This chart explains each entry/selection.

Field/Item	Sample Entry	Reason
Order	Accepted defaults	The defaults happened to match the order in which the data should appear.
SHIP-PRICE	AVG	To show how much, on the average, this customer is willing to spend.
SHIP-PRICE	TOT	To show totals for each customer.

Options

It is possible to select a different column function for each numeric column in the report. AVG, MIN, MAX, TOT, and SUM are for numeric columns only. CNT can be selected for any column.

Note: For more information about column functions, see the *CA Dataquery Reference Guide*.

To Go to the Next Step

The next step is to refine the report's appearance. This example skips the next panel that appears. It allows assigning titles to the report columns. Skipping this panel causes CA Dataquery to use CA Datacom Datadictionary default column headings. If there are no default column headings, CA Dataquery uses the column names. This example also skips the next panel, REPORT COLUMN FORMAT DEFINITION, since the defaults are acceptable.

Following are samples of the two panels to be skipped.

```
 =>

 --------------------------------------------------------------------------DQHK0
 DATAQUERY:  REPORT COLUMN HEADING DEFINITION QUERY NAME: USER-SAMPLE
 -------------------------------------------------------------------------------
 You may enter alternate headings for any column on the report.
 Defaults are provided and can be modified.
 -------------------------------------------------------------------------------
 COLUMN: ITM-ID                        LINE1: ITM-ID
 TABLE : CAI-DETAIL-TBL                LINE2:

 COLUMN: SHIP-QTY                      LINE1: SHIP-QTY
 TABLE : CAI-DETAIL-TBL                LINE2:

 COLUMN: UNIT-PRICE                    LINE1: UNIT-PRICE
 TABLE : CAI-DETAIL-TBL                LINE2:

 COLUMN: ORD-ID                        LINE1: ORD-ID
 TABLE : CAI-DETAIL-TBL                LINE2:



 -------------------------------------------------------------------------------
 <PF1> HELP           <PF2> RETURN       <PF3> NOT USED   <PF4> CONTINUE
 <PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

```
  =>


  ------------------------------------------------------------------------DQHL0
  DATAQUERY:  REPORT COLUMN FORMAT DEFINITION QUERY NAME: USER-SAMPLE
  ------------------------------------------------------------------------------
  Select the type of editing desired for each numeric column on your report.
  Place any character in the column that represents the edit format needed.
  Defaults are provided and can be modified.
    Column 1: 12345.678 Column 3: 0,012,345.678 Column 5: Datadictionary edit
    Column 2: 12,345.678 Column 4: $12,345.68
  ------------------------------------------------------------------------------
    TABLE NAME/COLUMN NAME           |  1  |  2  |  3  |  4  |  5
  ------------------------------------------------------------------------------
  CAI-DETAIL-TBL                     |     |     |     |     |
    SHIP-QTY                         |  _  |  X  |  _  |  _  |
    UNIT-PRICE                       |  _  |  X  |  _  |  _  |
    ORD-ID                           |  _  |  X  |  _  |  _  |
  TEMPORARY RESULT COLUMN            |     |     |     |     |
    SHIP-PRICE                       |  _  |  X  |  _  |  _  |
                                     |     |     |     |     |
                                     |     |     |     |     |
  - LAST PAGE ------------------------------------------------------------------
  <PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
  <PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY  <PF7> BACKWARD    <PF8> FORWARD
```

The following chart describes the panels to be skipped. For detailed information about these panels, please see the *CA Dataquery Reference Guide*.

Panel Name	What It Does	Reason for Omission
Report Column Heading Definition	Applies new titles	The defaults are acceptable.
Report Column Format Definition	Allows you to tell CA Dataquery how to display numeric data with different edit patterns	The default is acceptable: ■ No dollar signs ■ No leading zeros ■ Commas ■ A decimal point

Step 13: Assign a Legend to the Average Ship Price

DQHO0

```
=>


-----------------------------------------------------------------------------DQHO0
DATAQUERY:  COLUMN FUNCTION LEGENDS                  QUERY NAME: USER-SAMPLE
-----------------------------------------------------------------------------
Enter a legend to be displayed with the result of the indicated function
during control break processing.
Defaults are provided and can be modified.
-----------------------------------------------------------------------------
FNC | TABLE NAME/COLUMN NAME          | LEGEND
-----------------------------------------------------------------------------
    |TEMPORARY RESULT                 |
AVG | SHIP-PRICE                      | AVERAGE   SHIP-PRICE
    |                                 |
    |                                 |
    |                                 |
    |                                 |
    |                                 |
    |                                 |
    |                                 |
- LAST PAGE ------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN       <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN  <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The optional COLUMN FUNCTION LEGENDS panel allows you to assign a legend to the printed results of each column function you selected. This legend appears next to the results and describes the value of the function that appears on the report.

Panel Operation

On this panel, the Tab key moves the cursor from one Legend field to another. You can type over the default, if you like, and press <PF4> CONTINUE to display the next panel.

Completed Example

The following completed COLUMN FUNCTION LEGENDS panel gets the results of averaging the item price.

```
=>

------------------------------------------------------------------------DQHO0
DATAQUERY:  COLUMN FUNCTION LEGENDS              QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
Enter a legend to be displayed with the result of the indicated function
during control break processing.
Defaults are provided and can be modified.
--------------------------------------------------------------------------------
FNC | TABLE NAME/COLUMN NAME       | LEGEND
--------------------------------------------------------------------------------
    |TEMPORARY RESULT              |
AVG | SHIP-PRICE                   | AVERAGE SHIPPING PRICE
    |                              |
    |                              |
    |                              |
    |                              |
    |                              |
    |                              |
    |                              |
    |                              |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP          <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> EXTEND COLUMN <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

This chart explains each entry/selection.

Field/Item	Sample Entry	Reason
Legend	Average Shipping Price	It makes the results easier to identify.

Options

You could use a special symbol designated by your site to print the current value of the control break column as part of the legend. To find out which character acts as your heading substitution character, look at the System Profile topic after displaying Topic Help with the HELP command. For instance, if the symbol were &&, you might write *Customer && Average Price:* as the legend.

To Go to the Next Step

The calculation that will print the average of the item prices has a legend. Since the default format is acceptable, this example skips the next panel, FUNCTION RESULT PRINT FORMAT.

The following chart describes the panel to be skipped and the reason for skipping it. For detailed information about the panels, please see the *CA Dataquery Reference Guide*.

Panel Name	Purpose	Skipped Because
The defaults are acceptable.	FUNCTION RESULT PRINT FORMAT	Formats results

Step 14: Specify When to Print Function Results

DQHJ0

```
=>

------------------------------------------------------------------------------DQHJ0
DATAQUERY:  FUNCTION CONTROL BREAK SELECTION       QUERY NAME: USER-SAMPLE
------------------------------------------------------------------------------
Select the control break level at which the  AVERAGE column function for the
SHIP-PRICE                        column in the
CAI-DETAIL-TBL         table is to be displayed.
The appropriate level may be indicated by placing any character next to the
desired names.
------------------------------------------------------------------------------
SEL|LEVEL|  CONTROL BREAK COLUMN NAME | CONTROL BREAK COLUMN DESCRIPTION
------------------------------------------------------------------------------
    |     |CAI-DETAIL-TBL             |
    |001  | CUST-ID                   |
    |     |END OF REPORT              |
  X |000  |                           | END OF REPORT
    |     |                           |
    |     |                           |
    |     |                           |
    |     |                           |
- LAST PAGE -------------------------------------------------------------------
<PF1> HELP           <PF2> RETURN        <PF3> NOT USED    <PF4> CONTINUE
<PF5> NOT USED       <PF6> DISPLAY QUERY <PF7> BACKWARD    <PF8> FORWARD
```

Purpose

The optional FUNCTION CONTROL BREAK SELECTION panel allows you to tell CA Dataquery when to print the results of any function you selected. You can print results at each control break (each time the value in a control break column changes) or you can accept the default and print the result at the end of the report.

Panel Operation

On this panel, you use the Tab key to move the cursor to the field under the SEL heading and place a character next to the option you want. If you want the results printed at a particular control break, you select the control break name that you chose previously. For example, you would choose the DEPARTMENT control break if you wanted an average for each department and you had previously designated the DEPARTMENT column as a control break on the SORT CRITERIA DEFINITION panel.

Completed Example

The following completed FUNCTION CONTROL BREAK SELECTION panel specifies that an average price for all items will print for each customer.

```
 =>

 --------------------------------------------------------------------------DQHJ0
 DATAQUERY:  FUNCTION CONTROL BREAK SELECTION      QUERY NAME: USER-SAMPLE
 --------------------------------------------------------------------------------
 Select the control break level at which the  AVERAGE column function for the
 SHIP-PRICE                        column in the
 TEMPORARY RESULT COLUMN table is to be displayed.
 The appropriate level may be indicated by placing any character next to the
 desired names.
 --------------------------------------------------------------------------------
 SEL|LEVEL|  CONTROL BREAK COLUMN NAME | CONTROL BREAK COLUMN DESCRIPTION
 --------------------------------------------------------------------------------
   |     |CAI-DETAIL-TBL              |
 x | 001 | CUST-ID                    |
   |     |END OF REPORT               |
   | 000 |                            | END OF REPORT
   |     |                            |
   |     |                            |
   |     |                            |
   |     |                            |
 - LAST PAGE --------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN      <PF3> NOT USED   <PF4> CONTINUE
 <PF5> NOT USED      <PF6> DISPLAY QUERY <PF7> BACKWARD   <PF8> FORWARD
```

This chart explains each entry/selection.

Field/Item	Sample Entry	Reason
LEVEL	CUST-ID	To see the average price of items ordered for each customer.
LEVEL	END OF REPORT	The average is not wanted at the end of the report, so the x next to this level is deleted.

Options

You could select both the control break *and* End-of-Report, to get an average for each customer and an average for all customers.

The sample query is defined. Following is the completed query as it appears on the EDITOR.

First Screen

```
  =>
  QUERY CREATION COMPLETED
  --------------------------------------------------------------------------DQHM0
  DATAQUERY:  GUIDED QUERY DISPLAY            QUERY NAME: USER-SAMPLE
  -------------------------------------------------------------------------------
  To execute this query online, press <PF3>.  To submit this query for batch
  execution, press <PF5>.   To exit GUIDED QUERY and return to the MAIN MENU,
  press <PF4>.  To continue query creation using GUIDED QUERY, press <PF6>.
  -------------------------------------------------------------------------------
  ===========================  T O P  =================================
  FIND     ALL       CAI-DETAIL-TBL
  WITH    SHIP-QTY                        GT    0
  SET     SHIP-PRICE(13.2) = CAI-DETAIL-TBL SHIP-QTY * CAI-DETAIL-TBL UNIT-PRICE
  SORT     CAI-DETAIL-TBL (CUST-ID)
  PRINT      TITLE1 'FILLED CUSTOMER ORDERS'
             CAI-DETAIL-TBL CUST-ID
             CAI-DETAIL-TBL ITM-ID
             CAI-DETAIL-TBL SHIP-QTY
             PICTURE     'Z,ZZZ,ZZ9-'
             CAI-DETAIL-TBL UNIT-PRICE
             PICTURE     'ZZ,ZZ9.99-'
  -------------------------------------------------------------------------------
  <PF1> HELP          <PF2> RETURN       <PF3>  EXEC QUERY  <PF4>  MAIN MENU
  <PF5> SUBMIT QUERY  <PF6> NEW QUERY    <PF7>  BACKWARD     <PF8>  FORWARD
```

Second Screen

```
=>
QUERY CREATION COMPLETED
-----------------------------------------------------------------------------DQHM0
DATAQUERY:  GUIDED QUERY DISPLAY            QUERY NAME: USER-SAMPLE
--------------------------------------------------------------------------------
To execute this query online, press <PF3>.  To submit this query for batch
execution, press <PF5>.   To exit GUIDED QUERY and return to the MAIN MENU,
press <PF4>.  To continue query creation using GUIDED QUERY, press <PF6>.
--------------------------------------------------------------------------------
            (SHIP-PRICE)
            CAI-DETAIL-TBL UNIT-PRICE
            PICTURE      'ZZ,ZZ9.99-'
            CAI-DETAIL-TBL ORD-ID
            PICTURE      'ZZ,ZZ9'
            (SHIP-PRICE)
            PICTURE      'Z,ZZZ,ZZZ,ZZZ,ZZ9.99-'
 WHEN  CAI-DETAIL-TBL CUST-ID
   DO    'AVERAGE PRICE PER ITEM' AVERAGE
     SHIP-PRICE
            PICTURE      'Z,ZZZ,ZZZ,ZZZ,ZZ9.99-'
========================= B O T T O M ==============================
<PF1> HELP           <PF2> RETURN      <PF3>  EXEC QUERY  <PF4>  MAIN MENU
<PF5> SUBMIT QUERY  <PF6> NEW QUERY    <PF7>  BACKWARD    <PF8>  FORWARD
```

Explanation

This step tells CA Dataquery to sort (SORT) the rows found by the customer ID and to take a control break every time the customer ID changes (parentheses around the column name).

The rest of the query tells CA Dataquery which title to put on the report (TITLE1), which columns to print (PRINT), how to format the numeric data (PICTURE) and when to print column function results (WHEN/DO).

Step 15: Finalize Query

Pressing <PF3> EXEC QUERY executes the query and produces the finished report on the screen.

Compare the query to the sample report to see what specific part of the query produced that part in the report. Use the following chart to see what each query statement does in producing the report.

Query Created with Guided Query

```
    FIND ALL CAI-DETAIL-TBL ROWS

        WITH SHIP-QTY GT 0

    SET SHIP-PRICE (13.2) = UNIT-PRICE * SHIP-QTY

    SORT BY (CUST-ID)

  PRINT TITLE1 'FILLED CUSTOMER ORDERS'

      CUST-ID

      ITM-ID

      SHIP-QTY

        PICTURE 'Z,ZZZ.ZZ9-'

      UNIT-PRICE

        PICTURE 'ZZ,ZZ9.ZZ9-'

      (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'

        WHEN CUST-ID BREAKS

          DO 'AVERAGE PRICE' AVG SHIP-PRICE

            PICTURE    'Z,ZZZ,ZZZ,ZZZ,ZZ9.99-'
```

On Guided Query Report

```
    04/14/11                 DATAQUERY                    PAGE    1

    14:56:2             FILLED CUSTOMER ORDERS            DETAIL



      CUST-ID    ITM-ID      SHIP-QTY      UNIT-PRICE     SHIP-PRICE

     ---------  ----------  -----------  -------------  -------------
```

```
        01008          C10000          2          29.50          59.00

                       C10002          6          14.00          84.00

                       C10001          4          21.00          84.00

                       C10005          2          66.75         133.50



              TOTAL ORD-ID      01008

                                                                360.50

        AVERAGE PRICE 00032.81
```

Statement	What Query Statement Does
FIND, WITH	Searches all CAI-DETAIL-TBL rows and locates those where the value for SHIP-QTY is greater than zero.
SET	Creates a temporary result named SHIP-PRICE and multiplies UNIT-PRICE by SHIP-QTY to calculate the total cost of each item shipped to a customer. Also designates that the resulting calculations can have up to 13 digits to the left of the decimal point and 2 digits to the right.
SORT	Places the located rows in ascending order according to the values in CUST-ID, which identifies the company ordering the items. Since CUST-ID is enclosed in parentheses, it is a control break column, meaning that, if specified on the PRINT statement, totals (or other functions) may be processed for each group of rows having the same customer number.
PRINT	Produces a columnar report which includes a title and data for the specified columns. Specifies the PICTURE clause (format) for the output in the report with Zs to indicate that leading zeros will not be printed.
TITLE1	Specifies the title for the report.
SHIP-PRICE	Calculates the total cost for all items shipped to a customer since SHIP-PRICE is enclosed in parentheses in this statement. ORD-ID, which you designated as a control break column in the SORT statement, controls when this total is calculated. Specifies the PICTURE clause, that is, the format, for the output in the report. This format is enclosed in single quotes and uses Zs to indicate that leading zeros will not be printed.

Statement	What Query Statement Does
WHEN/DO	Calculates an average for the SHIP-PRICE values each time processing of data for a specific CUST-ID is completed (control break). The result of this WHEN/DO statement appears after control break totals. You can specify a legend in the DO statement to identify the results, such as *AVERAGE PRICE* PER *ITEM.*

Changing the Query

If you spot a mistake in your finished query, you can fix it. Just use the RETURN PF key to go back into GUIDE, make the change, and redisplay every selection that follows the change. Or, you can use the EDIT * command to change it using the CA Dataquery EDITOR.

Chapter 23: Using CREATE in DQL Mode

The sections in this part of the manual present the basic concepts you need to understand to build a query using the CA Dataquery EDITOR. First, you see how to create a simple query without understanding the EDITOR. Next, you read a brief overview of what you can do with the EDITOR. Last, this section provides a sample CA Dataquery report and shows you the panels that produce it.

As you follow the query creation steps, you get a foundation in query concepts and a basic introduction to query building. As you create your own queries using the EDITOR, and you want to know more about a capability introduced here, turn to the *CA Dataquery Reference Guide* for details about panels, commands, or syntax.

Planning the Query

When you create a new query, whether you use GUIDE, CREATE, the DRAW command, or simply edit an existing query, you should have a general idea about what you want to accomplish.

Prerequisites

You should know:

- What data you want to report.

- Whether you want to see only certain rows (for instance, only the data for certain zip codes).

- Whether you want to make calculations (adding, multiplying, dividing or averaging) based on the existing information.

- Whether you want to total any data.

Objectives

Important things to find out by using the online database information are:

- Which database tables contain the data you need.

- Whether you need to search more than one table to retrieve all the information you require.

- If you search more than one table, which keys or columns will join the tables.

You can obtain a CA Datacom Datadictionary report from your CA Dataquery Administrator that lists database table and column names, along with other pertinent information, or you can display this information online as you create your query. Background information about this capability can be found in Displaying Database Names and Structures (see page 139).

Query Creation Steps

The following chart shows the steps involved in creating a query with the CREATE function on the Main Menu. It provides an overview of the steps outlined in the next section. As you gain experience, you may decide to vary the order of some steps.

Step	Action	Description
1	Invoke the EDITOR	See Accessing the EDITOR (see page 69).
2	Identify query	Complete the fields at the top of the panel with a query name, type, status, and description. See Step 2: Identify the Query (see page 199).
3	Use template panel	Display the DQL template and select clauses needed for the query to create a customized template. See Step 3: Use the SQL Template (see page 201) for details.
4	Edit the query template you create	Use line commands and keyboard keys to alter template clauses as you create the query. See Edit SELECT Clause (see page 205) through Edit ORDER BY Clause (see page 213) for details.
5	Validate	Have CA Dataquery check the query syntax, table names, and column names for accuracy. See Steps 5 and 6: Validate and Save the Query (see page 216) for details.
6	Save the query	Save the query with the name shown so that it can be used again later. (You can also change it later and update your changes, if it becomes necessary.)
7	Execute the query	Complete the ONLINE EXECUTION panel and define the report you want if you do not want to use the defaults. Then execute the query. See Step 7: Format Report and Execute Query (see page 218) for more information.

CREATE Function Tasks and Subtasks

Following is a list showing all major CREATE function tasks and subtasks which you can perform along with the panels you use. Required major tasks and subtasks are marked by an asterisk (*).

Required Steps are Designated by an Asterisk (*):

Step	Major Tasks/Subtasks	Panel Name
1*	IDENTIFY NEW QUERY **Note:** This step is only required if you want to save the query.	
a*	Name the query and designate public or private library.	EDITOR: CREATE MODE
2*	SELECT FIRST TABLE	
a*	Select the FIND statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
b*	Select the first or only database table you want to search or type in the table name.	DIRECTORY OF TABLES EDITOR: CREATE MODE
3	SPECIFY SEARCH CRITERIA FOR FIRST TABLE	
a	Select the WITH statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
b	Select the columns to search for specific conditions or type in the column names.	DIRECTORY OF TABLES EDITOR: CREATE MODE
c	Define each search condition.	EDITOR: CREATE MODE
d	Logically group conditions using AND, OR, and parentheses.	EDITOR: CREATE MODE
4	SELECT AND JOIN SECOND TABLE	
a	Select relationship statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
b	Select key or column name for join or type in key or column name.	KEY OR COLUMN DISPLAY EDITOR: CREATE MODE
c	Select second database table to search or type in table name.	DIRECTORY OF TABLES EDITOR: CREATE MODE
5	SPECIFY SEARCH CRITERIA FOR SECOND TABLE	
a	Select the WITH statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
b	Select the columns to search for specific conditions or type in the column names.	DIRECTORY OF TABLES EDITOR: CREATE MODE
c	Define each search condition.	EDITOR: CREATE MODE

Step	Major Tasks/Subtasks	Panel Name
d	Logically group conditions by using AND, OR, and parentheses.	EDITOR: CREATE MODE
6	SET UP TEMPORARY RESULTS	
a	Select SET statement or type it in.	QUERY TEMPLATE
b	Type in name of new result and specify the precision.	EDITOR: CREATE MODE
c	Select columns to be included in the arithmetic expression for a new column or type in the column names.	COLUMN DISPLAY EDITOR: CREATE MODE
d	Specify the arithmetic operation to be performed (+, -, /, *), and group operations logically using parentheses.	EDITOR: CREATE MODE
7	SORT REPORT DATA	
a	Select SORT statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
b	Select columns to control report sorting of data or type in the column names.	COLUMN DISPLAY EDITOR: CREATE MODE
c	Specify sort order, sequence, breaks in control of totaling operations, new page generation.	EDITOR: CREATE MODE
8*	DEFINE REPORT APPEARANCE AND CONTENT	
a*	Select PRINT or DISPLAY statement or type in the statement.	QUERY TEMPLATE EDITOR: CREATE MODE
b*	Select columns/keys whose contents are to be printed on the report or type in the column/key names.	COLUMN OR KEY DISPLAY EDITOR: CREATE MODE
c	Specify columns which are to be totaled in report by enclosing in parentheses.	EDITOR: CREATE MODE
d	Specify a format for numeric data.	EDITOR: CREATE MODE
e	Give your own titles to columns.	EDITOR: CREATE MODE
f	Select WHEN-DO statement or type it in.	QUERY TEMPLATE EDITOR: CREATE MODE
g	Specify when and what math functions are to be performed on which columns, if any.	EDITOR: CREATE MODE
9*	VALIDATE QUERY	
a	Check query for syntax or database information errors.	EDITOR: CREATE MODE EDITOR: PROCESS MODE

Restrictions

When assigning names to such things as tables, queries, columns, keys, temporary results, and so on, do not use words from the following categories:

- CA Dataquery commands
- CA Dataquery EDITOR commands
- CA Dataquery Language words
- SQL words
- Ignored words, such as *rows*, *records*, or *from* that are used in constructing queries and dialogs.

A complete list of off-limits words appears in the *CA Dataquery Reference Guide*.

Creating the Sample Query

This section presents a sample objective, the report needed to accomplish the objective, and presents each step taken to produce the report using the CREATE function.

You can follow the tutorial and create your own query. Simply choose a table on your database that has both character and numeric data and follow the directions on the following pages (using the correct names for your data).

The Objective

Assume you are a sales manager who is planning a new sales campaign. Your company produces personal computer accessories. Several items are available, each ranging in price from the economy model to the deluxe model.

You want to know which customers are most likely to order this year's deluxe diskette holder, which you hope will make last year's model obsolete. You will send color brochures advertising the latest deluxe diskette holder to all customers who seem to order your most expensive items.

You also want to know which customers order less expensive items. You will send them the new color brochure that advertises the entire product line. In addition, you want to know which items a particular customer likes, and how large the orders are, so you can make decisions about letters to go along with your brochures.

You want a report that shows total orders for each customer, along with the average price per order. You will use the report to plan your sales campaign and to supply data for a letter to each customer. The data you need is in the CAI-DETAIL-TBL table.

Sample Report

Here is how you want your report to look:

```
04/14/11¢PAGE 1
14:56:22            FILLED CUSTOMER ORDERS   ¢DETAIL
  CUST-ID    ITM-ID       SHIP-QTY     UNIT-PRICE    SHIP-PRICE
 ---------  ----------   -----------  -------------  -------------
    01008  C10000        0000002       00029.50          59.00
           C10001        0000004       00021.00          84.00
           C10002        0000006       00014.00          84.00
           C10005        0000002       00066.75         133.50

    TOTAL CUST-ID    01008
                                                        360.50

    AVERAGE ITEM PRICE 00032.81

    01009  A60005        0000001       00219.99         219.99
           A60008        0000002       00179.99         359.98
           A70000        0000004       00099.99         399.96

 TOTAL CUST-ID    01009
                                                        979.93


 AVERAGE ITEM PRICE 00166.65

    01010  H20006        0000005       00012.99          64.95
           H30000        0000004       00124.99         499.96
           H40000        0000015       00015.99         239.85
           H20001        0000003       00021.99          65.97
           H30002        0000006       00069.99         419.94
           H10002        0000010       00004.99          49.90
           H20004        0000002       00021.99          43.98
           H70001        0000100       00038.99       3,899.00
```

Report Description

Compare the numbered items on the sample report for a description of each item you, as the sales manager, want to know about.

No.	Report Item	Your Query Should:
&co1.	Subject	Search a table for all filled orders.
&co2.	Title	Define a logical title.
&co3.	CUST-ID	Sort order rows by customer, take control breaks at changes, and print customer ID.
&co4.	ITM-ID	Report the items ordered by each customer.
&co5.	SHIP-QTY	Tell you how many of each item was shipped.
&co6.	UNIT-PRICE	Tell you the price per item.

No.	Report Item	Your Query Should:
&co7.	SHIP-PRICE	Calculate the total cost of each item shipped to a customer.
&co8.	TOTAL CUST-ID	Tell you the total amount ordered by each customer.
&co9.	AVERAGE ITEM PRICE	Tell you the average item price for a customer.

The next sections explain the development of the query that produces the sample report.

Step 1: Query Identification

After you sign on to CA Dataquery and select CREATE from the Main Menu, you come to the first step in creating a query on the EDITOR. In this step, you learn how to name your query and give it a description and how to tell CA Dataquery where to store your query.

Create Mode

```
 =>
 CREATION PANEL
 -------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR              CURRENT TABLE:  _____
 -----------------------------------------------------------------------------
 NAME:        _____                  TYPE: _____   STATUS: _____
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================== T O P ================================
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
    ===================== B O T T O M =============================
 -----------------------------------------------------------------------------
 <PF1> HELP         <PF2> RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL  <PF6> LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
 <PF9> TEMPLATE     <PF10> VALIDATE   <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Concepts

These are the major concepts related to this step:

CREATE MODE
You use the EDITOR: CREATE MODE panel to create a query using the CREATE function. At the top of the CREATE MODE panel, use the displayed columns to name your query, specify that it is a query, designate which library to keep it in, and provide a short description for the library directory. If you know the name of the first (or only) table you are going to search, you can also specify the name of that table. You use the panel area below the line marked *TOP* to actually construct the statements in your query.

Current Table
A query must search at least one database table. The table named in the Current Table field on the panel is accessed when you make requests for CA Datacom Datadictionary information about keys or columns.

NAME
A query name must be unique within its assigned library and must be one word of 1 to 15 alphabetic characters, numbers, dashes or special characters. You do not have to name a query immediately. You may execute an Active Query several times, making changes as required, before saving the query. When you save a query, CA Dataquery requires that it have a name, type, and status. Be sure to see Restrictions on Names (see page 79) for important restrictions on names.

TYPE
Valid entries are QUERY and DIALOG for either mode. TERM is valid in DQL Mode and, with authorization, so is REPORT. A dialog allows users to substitute variables in a query. A term is a short-hand word you create to replace frequently used parts of a query. For information about using the CA Dataquery EDITOR to create dialogs and terms, see Creating Dialogs (see page 335) and Creating and Using Terms (see page 343).

STATUS
Valid entries are PRIVATE and PUBLIC. You can update and delete queries saved in your private library. If you assign a query to the public library, you may be unable to change or delete it once the query has been saved if your site has chosen that restriction. Contact your CA Dataquery Administrator for more information.

DESCRIPTION

A description should tell the query's purpose and note anything that makes it unique. It cannot exceed 60 characters in length.

Completed Example

```
   =>
   CREATION PANEL
   ----------------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR            CURRENT TABLE:  _____
   --------------------------------------------------------------------------------
   NAME:         USER-SAMPLE                      TYPE: QUERY    STATUS: PRIVATE
   DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. ========================= T O P ================================
   ..
   ..
   ..
   ..
   ..
   ..
   ..
   ..
   ..
      ====================== B O T T O M ============================
   --------------------------------------------------------------------------------
   <PF1> HELP       <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
   <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD       <PF8> FORWARD
   <PF9> TEMPLATE    <PF10> VALIDATE   <PF11>RIGHT/LEFT      <PF12>PROCESS MODE
```

This chart explains each entry/selection and its reason.

Field/Item	Sample Entry	Reasons
CURRENT TABLE:	Blank	This is an optional entry.
NAME:	USER-SAMPLE	Identify the query.
TYPE:	QUERY	This is not a dialog or term.
STATUS:	PRIVATE	The query should not be shared at this point.
DESCRIPTION:	TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE	Describes the query's purpose.

To Go to the Next Step

Move the cursor to the first blank line (under the line marked TOP) on this panel.

Other Things You Could Do

If you know the name of the first table you are going to search, you can fill in the CURRENT TABLE field with the table name. The defaults for TYPE and STATUS stay the same since the query is not ready to be shared.

You can define a new query as a public query, but you may be unable to change or delete it once you save it if your query library has been partitioned. After you test a private query and are satisfied with the results, you can specify public in the TYPE field.

When you create a dialog, you can specify **DIALOG** for the type. However, you may want to create a query first and test it to see if it gives you the desired results before you begin the process of changing it to a dialog.

Step 2: Select First or Only Table

In this step, you learn how to tell CA Dataquery what database table to search and how many rows to locate in that table.

Concepts

These are the major concepts related to this step:

FIND
Tells CA Dataquery to search a database table. You can have only one FIND statement in a query.

(COUNT)
Tells CA Dataquery how many rows it must locate in the table. You can specify a number or ALL. The default is ALL if you do not specify anything.

Table-Name
Tells CA Dataquery the name of the table to search.

ROWS
Optional word used to clarify the statement.

Procedure

In the previous step, you learned how to identify the new query, by completing the fields at the top of the EDITOR panel. The following is a sample of how the panel looks now.

```
 =>


 -------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR            CURRENT TABLE:  _____
 ------------------------------------------------------------------------------
 NAME:          USER-SAMPLE                     TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P ================================
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 .. ======================= B O T T O M ============================
 ------------------------------------------------------------------------------
 <PF1> HELP          <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD           <PF8>  FORWARD
 <PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Display Query Template

To display the query template, follow these steps:

1. Place the cursor in the first blank line under the line marked TOP.

2. Press <PF9> TEMPLATE to display the query template.

Placing the cursor on the blank line indicates that the DQL statement selected from the query template will be inserted in that location. Pressing <PF9> displays the following panel.

```
=>
Enter the number of times each command is to be included in the query
-----------------------------------------------------------------------DQD30
DATAQUERY:  QUERY TEMPLATE
------------------------------------------------------------------------------
Lower case words represent entries which must be replaced by the user.
Parentheses indicate optional entries: these may be included by removing the
parentheses only or deleted by removing both the parentheses and data.
------------------------------------------------------------------------------
_   FIND (count)  table-name     ROWS
_   WITH selection-criteria
_   RELATED BY key-name
        TO (FIRST) table-name
_   RELATED BY link-column
        VIA key-name column-name TO table-name
_   SET result-column (13.2)
        = numeric-column-name arithmetic-expression numeric-literal
_   SORT table-name       BY column-name (DOWN)




------------------------------------------------------------------------------
<PF1>  HELP         <PF2>  RETURN       <PF3>  NOT USED    <PF4>  NOT USED
<PF5>  NOT USED     <PF6>  NOT USED     <PF7>  BACKWARD    <PF8>  FORWARD
```

Copy the FIND Statement

To copy the FIND statement, follow these steps:

1. Enter **1** in the space before the FIND statement format.

2. Press <PF2> RETURN to return to the CREATE MODE panel.

Entering **1** indicates a need for only one FIND statement in the query. A query cannot have more than one FIND verb, so if you enter **2** or a larger number, the CA Dataquery EDITOR places only one FIND statement on the CREATE MODE panel. Pressing <PF2> RETURN returns to the CREATE MODE panel. When this panel is redisplayed, the FIND statement appears at the cursor location.

```
=>


-------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  _____
-------------------------------------------------------------------------------
NAME:          USER-SAMPLE                      TYPE: QUERY   STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
..  ========================= T O P ===============================
01  FIND (count)  table-name    ROWS  _____
..  ========================= B O T T O M ==========================





-------------------------------------------------------------------------------
<PF1> HELP         <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL  <PF6>  LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
<PF9> TEMPLATE     <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Edit the FIND Statement

In the above panel, the FIND statement format is displayed exactly as it appeared on the TEMPLATE panel. The format must be edited to complete the FIND statement for this query.

Steps for the above panel are:

1. Type **ALL** over *(count)* to indicate the query is going to search all rows in the table.

2. Use the DELETE key to remove extraneous characters and spaces between ALL and ROWS. (There are three spaces between these words.)

3. Place the cursor between ALL and ROWS to indicate where the table name is to be inserted.

4. Pressing <PF6> LIST TABLES displays a list of authorized tables.

Typing ALL means the query searches all rows in the table. The data can still be limited by specifying selection criteria. (See <u>Step 3: Specify Conditions</u> (see page 296) for details on how to specify these conditions.)

CA Dataquery ignores extra spaces in a statement.

Select the Table Name

The table name can be typed in, if you know it. However, even if you know the table name, you may want to select it from the list to avoid misspelling the name. After pressing <PF6>, the following panel appears:

```
=>
Place the cursor on the desired name and press the appropriate PFkey
-----------------------------------------------------------------------------DQAF0
DATAQUERY:  DIRECTORY OF TABLES              Datadictionary BASE ID: 189
                                START WITH:  _____
--------------------------------------------------------------------------------
     TABLE NAME                 |STATUS|     DESCRIPTION
--------------------------------------------------------------------------------
  ADDRESS                       |  0   |
  CAI-ACCTS-TBL                 |  0   | ORDER ENTRY DEMO ACCTS ROW
  CAI-CUST-TBL                  |  0   | CUSTOMERS ROW
  CAI-DETAIL-TBL                |  0   | DETAILS ROW
  CAI-ITEMS-TBL                 |  0   | ITEMS ROW
  CAI-ORD-NO-TBL                |  0   | ORDER NUMBERS ROW
  CAI-ORDERS-TBL                |  0   | ORDERS ROW
  CAI-RCPTS-TBL                 |  0   | ORDER ENTRY DEMO RECEIPTS ROW
  CAI-SHIPTO-TBL                |  0   | SHIP-TO ROW
  CAI-SLSHST-TBL                |  0   | ORDER ENTRY DEMO SALES-HIST ROW
  CAIDEMO-DEM-PNC               |  0   | CAI SAMPLE PART COST TABLE
  CAIDEMO-DEM-PNM               |  0   | CAI SAMPLE PART MASTER TABLE
  CAIDEMO-DEM-POL               |  0   | CAI SAMPLE P.O. LINE-ITEM ROW
--------------------------------------------------------------------------------
<PF1> HELP         <PF2> RETURN      <PF3> DISPLAY COLUMNS <PF4>DISPLAY KEYS
<PF5> DISPLAY ALL  <PF6> DISPLAY TEXT <PF7> BACKWARD          <PF8>FORWARD
```

The table names shown on this panel are entity-names assigned to the database tables you can access. If a table you need is not listed, see your CA Dataquery Administrator.

Action

On the above panel:

1. Place the cursor on the name of the table to be selected.

2. Press <PF2> RETURN to return to the CREATE MODE panel.

Place the cursor on CAI-DETAIL-TBL to indicate that this is the table to be selected for use in the query. Pressing <PF2> returns to the CREATE MODE panel. When this panel is redisplayed, the name of the table selected is inserted in the location marked with the cursor.

Completed Example

```
=>


-----------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
-------------------------------------------------------------------------------
NAME:           USER-SAMPLE                    TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
01  FIND ALL  CAI-DETAIL-TBL ROWS
.. ====================  B O T T O M  ==========================




-------------------------------------------------------------------------------
<PF1> HELP           <PF2>  RETURN      <PF3> DISPLAY COLUMNS<PF4>DISPLAY KEYS
<PF5> DISPLAY ALL    <PF6>  LIST TABLES<PF7> BACKWARD       <PF8>FORWARD
<PF9> TEMPLATE       <PF10> VALIDATE    <PF11>RIGHT/LEFT     <PF12>PROCESS MODE
```

After returning to the above panel following table selection, the space bar and DELETE key can be used to clean up the appearance of the FIND statement. Notice that the CURRENT TABLE: field at the top of the panel now contains the name of the table selected. There is only one line in the query, now marked by a line number to the left of the display. In the next step you see how to use EDITOR line commands to insert more lines for creating the rest of the query. After completing the FIND statement, go to the next step.

Other Things You Could Do

If you know the format of the DQL FIND statement and the name of the table you are going to search, you can type in the statement without using aids, such as the query template or table list.

You do not have to search all the rows in a table. You could specify a number of rows to locate, such as 10 or 20, instead of ALL.

If you only need to know the number of rows in a table or the number of a certain type of row, and you do not need a report, you can use a COUNT statement instead of a FIND statement. Executing a query with a COUNT statement returns an online message stating the number of rows found.

Step 3: Specify Conditions

This step tells CA Dataquery how to select only those rows wanted in the report. CA Dataquery includes data in the report only if it matches specified selection criteria.

Concepts

These are the major concepts related to this step:

WITH
Tells CA Dataquery that the data in the rows must match the specifications described in the selection criteria.

Selection-criteria
Describes the data you want to use in qualifying a row for inclusion in your report. You can use column names, comparison operators, literal values (character strings or numeric values) and masking to build the logical expression containing your selection criteria.

Column name
Tells CA Dataquery which column in the table to search for the qualifying data. You can specify selection criteria for up to 15 columns per table to further limit the data for your report. You use the logical connectors, AND and OR to construct the multiple conditions. Details on constructing WITH statements with multiple conditions are contained in the *CA Dataquery Reference Guide*. If you specify the name of a column which is a repeating field, you must use subscripts to identify the occurrence. See Repeating Fields (see page 136) for more information.

Comparison operator
Tells CA Dataquery how to compare the value to the data. For example, if a zip code value is 75081, and you want only rows with that zip code, you will select EQUAL as the comparison operator and complete the expression so that CA Dataquery searches the *ZIP* column for data EQUAL to 75081.

You can select from the operators described in the following chart. For detailed information about these operators, see the *CA Dataquery Reference Guide*.

Operator	Alternate Entry	Explanation
EQUAL	EQ, =	Select exact value.
NOT EQUAL	NE, ¬=	Select all data that is not the exact value.
GREATER THAN	GT, >	Select data with higher value.
GREATER THAN OR EQUAL TO	GTE	Select data of equal or higher value.
LESS THAN	LT, <	Select data lower than value.

Operator	Alternate Entry	Explanation
LESS THAN OR EQUAL TO	LTE	Select data of equal or lower value.
CONTAINING	none	Select data that contains value (you do not need to know position of value within column data).
NOT	¬	Select all data that is not related as specified (can use before any of the above operators except NOT EQUAL).

Literal value

Tells CA Dataquery which value to search for. This value can be expressed as a character string, a numeric value, a column name, or an arithmetic expression.

Character string

A character string must be enclosed in apostrophes. For example, you can specify a search for rows where the *CITY* column contains the value 'DALLAS.'

Numeric value

A numeric value does not need to be enclosed in apostrophes. You can include decimal positions and a leading plus (+) or minus (-) sign if the column is defined as signed. Following is a sample of how the panel looks now.

```
=>

--------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
-------------------------------------------------------------------------------
NAME:         USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ==============================
01  FIND ALL  CAI-DETAIL-TBL ROWS
.. ===================== B O T T O M =============================




-------------------------------------------------------------------------------
<PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
<PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Action

On the panel, insert the following two lines after line 01:

1. On line 01, type an **I** over the 0 and type a **2** over the 1.

2. Press the ENTER key.

You can insert one line by typing I without the number, or you can insert five lines by typing I5. Remember, the blank lines are inserted *after* the line where you use the command.

```
=>

-------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
-------------------------------------------------------------------------------
NAME:         USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P =================================
01  FIND ALL  CAI-DETAIL-TBL ROWS
02
03
.. ===================== B O T T O M =============================




-------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN      <PF3> DISPLAY COLUMNS  <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL  <PF6>  LIST TABLES <PF7> BACKWARD          <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

Action

On the panel, type **WITH SHIP-QTY GT 0** in the first blank line (02).

You can type the WITH statement and selection criteria without using the online aids, such as displaying the query template or a list of columns in the table. If you know the format for a statement and the information to be used in the statement, you can simply type in the statement. In the above statement, SHIP-QTY is the name of the column that CA Dataquery is to search for a specific value, which is 0. Choosing the comparison operator GT makes sense because a value equal to 0 means that no item has been shipped. By specifying GT as the operator, the query will retrieve only those rows where an item has been shipped, that is, the value will be 1 or greater.

Completed Example

```
 =>

 -------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
 -------------------------------------------------------------------------------
 NAME:          USER-SAMPLE                     TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================== T O P ================================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03
 .. ====================== B O T T O M ============================



 -------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4>DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Options

Join Tables
You can use the query template to select the WITH format and use <PF3> DISPLAY
COLUMNS to display and select the columns in the table the query will search. If you
want the search criteria to further limit the data that is returned, you can build a logical
expression containing multiple conditions that the data must match. Your WITH clause
could also contain arithmetic expressions.

This query searches only one table, but if you need to search more than one table, you
can join the first table with a second using the RELATE statement. You could also specify
additional selection criteria for data in the second table. Information on how to use the
RELATE statement to join two or more tables is contained in the *CA Dataquery
Reference Guide*. You can also use an outer join keyword to specify selection of rows left
out of an equijoin. See the *CA Dataquery Reference Guide* for details.

Literal Masking

You can use masking to locate data in particular positions within your data. When you use masking, you must know the format of the data and the position of the value within that data. The positions that you do not want to be compared need to be masked with pound signs (#). For example, you want to locate all items in your inventory which have an ID number ending in XYZ. You know the ID for each item is six characters long and that you want to mask the first three digits. Your selection criteria for the search would be:

WITH ITM-ID = '###XYZ'.

Your site may have chosen a different character for this purpose. To verify your site's mask character, view the SYSTEM PROFILE help topic or contact your CA Dataquery Administrator.

Containing

 CONTAINING is similar to masking, except that you do not want to compare the values by position. Instead, you specify that the column must contain the value, no matter if the value appears at the beginning, middle or end of the column's value. For example, if you want to locate all items in your inventory which have XYZ in the item ID, your selection criteria for the search would be:

WITH ITM-ID CONTAINING 'XYZ'.

You cannot use CONTAINING with numeric type columns.

Step 4: Create Temporary Results

In this step, you see how to create a temporary result mathematical calculation involving data contained in the database.

Concepts

These are the major concepts related to this step:

SET
A verb in a DQL statement that defines a temporary result for calculation results and reporting.

Result
You must give the temporary result a unique name, that is, any 1- to 32-character name which is not the same as another result or a column within the tables your query is searching. You can use the temporary results name in other calculations within your query. For example, you can use one SET statement to add numeric data contained in two columns. You can use a second SET statement to multiply the first result by a numeric literal to obtain a percentage of the first result. Another possibility is using one SET statement to do both of the above operations. In this case, you would be building a more complex arithmetic expression.

Precision (n.d.)
Refers to the number of positions in the temporary result before the decimal point, N, and after the decimal point, D. You must specify a precision that will contain the largest possible result from the calculation. The default is **(10.5)**. Whatever precision you specify, the total of n and d cannot exceed 18, and the precision must be enclosed in parentheses. If you do not want any digits displayed after the decimal point, make d equal to 0.

Equal sign (=)
Tells CA Dataquery that the mathematical expression following this sign will define the calculations for the temporary result.

Numeric-column-name
Columns or other temporary results used in the calculation must contain numeric data.

Arithmetic-expression
Your expression can specify one or more arithmetic operations to perform on the selected data. The following chart describes the arithmetic functions you can use.

Function	Operator	Description
Add	+	Adds the specified numeric data.
Subtract	-	Subtracts the specified numeric data.

Function	Operator	Description
Divide	/	Divides the specified numeric data (divisor cannot be 0).
Multiply	*	Multiplies the specified numeric data (multiplier cannot be 0).
Parenthetical expression	( )	Use to clarify which operations are to be performed first in a complex calculation (can specify up to 5 levels of nested expressions).

Numeric-literal

You can assign the temporary result a numeric literal value. You can also use numeric literals alone or in combination with data from columns to build arithmetic expressions to calculate a value for the temporary result.

Procedure

The last step specified conditions for the query's search for data. Following is an example of how the query looks now.

```
 =>

 -------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
 --------------------------------------------------------------------------------
 NAME:          USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P =================================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03
 .. ====================== B O T T O M ============================

 --------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12> PROCESS MODE
```

Select SET Statement

The next step is to display the query template and place the cursor in the first position of line three to mark where the format for the SET statement on the query template is to be inserted. Pressing <PF9> displays the QUERY TEMPLATE panel, shown next.

Panel

```
=>
Enter the number of times each command is to be included in the query
------------------------------------------------------------------------------DQD30
DATAQUERY:  QUERY TEMPLATE
--------------------------------------------------------------------------------
Lowercase words represent entries which must be replaced by the user.
Parentheses indicate optional entries: these may be included by removing the
parentheses only or deleted by removing both the parentheses and data.
--------------------------------------------------------------------------------
_   FIND (count)  table-name     ROWS
_   WITH selection-criteria
_   RELATED BY key-name
          TO (FIRST) table-name
_   RELATED BY link-column
          VIA key-name column-name TO table-name
_   SET result (13.2)
          = numeric-column-name arithmetic-expression numeric-literal
_   SORT table-name       BY column-name (DOWN)



--------------------------------------------------------------------------------
<PF1>  HELP         <PF2>  RETURN      <PF3>  NOT USED    <PF4>  NOT USED
<PF5>  NOT USED     <PF6>  NOT USED    <PF7>  BACKWARD    <PF8>  FORWARD
```

Action

To copy a SET statement, follow these steps:

1. Type **1** in the space before the SET statement.

2. Press <PF2> RETURN to redisplay the CREATE MODE panel.

Entering **1** in the space before the SET format means that only one SET statement is needed. For two or more SET statements in the query, a higher number could be entered. Notice that the SET format displays the override to the default precision for temporary results, that is, (13.2).

Pressing <PF2> returns to the previous panel, which was the EDITOR's CREATE MODE panel. When the CREATE MODE panel is redisplayed, the SET format appears at the previous cursor location.

```
   =>

   --------------------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
   --------------------------------------------------------------------------------
   NAME:           USER-SAMPLE                         TYPE: QUERY    STATUS: PRIVATE
   DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. ========================== T O P ==============================
   01  FIND ALL  CAI-DETAIL-TBL ROWS
   02        WITH SHIP-QTY GT 0
   03  SET result (13.2)
   04        = numeric-column-name arithmetic-expression numeric-literal
   .. ====================== B O T T O M ==============================




   --------------------------------------------------------------------------------
   <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
   <PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
   <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12> PROCESS MODE
```

Edit SET Statement

To edit the SET statement template, follow these steps:

1. Complete the SET statement by typing over *result (13.2)* with SHIP-PRICE (7.2) = UNIT-PRICE * SHIP-QTY.

2. Position the cursor in the first blank space on line 04 and press the ERASE key to remove the remainder of the SET format.

Before retrieving the SET format from the query template, the query has only three lines, with line 03 being blank. Upon returning to the CREATE MODE panel, the query contains four lines since the SET format is two lines long. The SET format uses line 03 for the first line of the format and inserts line 04 for the second line of the format. If you are adding statements to the bottom of a query with template, CA Dataquery inserts the required lines for you.

Since the mathematical expression is simple and short, it is easier to type it in on line 03 and delete the unnecessary part on line 04. The next step is to name the temporary result **SHIP-PRICE** and set the precision at (7.2). Using the two columns UNIT-PRICE and SHIP-QTY makes it possible to calculate the result for SHIP-PRICE. UNIT-PRICE contains the price of each item and **SHIP-QTY** tells how many of that item the customer has ordered. The operation to perform is multiplication to determine the total price for each item the customer is ordering.

Completed Example

```
=>

--------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR                CURRENT TABLE:  CAI-DETAIL-TBL
--------------------------------------------------------------------------------
NAME:          USER-SAMPLE                        TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================== T O P ================================
01  FIND ALL  CAI-DETAIL-TBL ROWS
02        WITH SHIP-QTY GT 0
03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
04
.. ======================= B O T T O M ============================



--------------------------------------------------------------------------------
<PF1> HELP        <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
<PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Options

You can specify a number greater than **1** on the template if the query is to contain multiple SET calculations. You could also select only one SET format and use the EDITOR's C (COPY) line command to copy the format multiple times on the CREATE MODE panel. Further details on EDITOR line commands are available in the *CA Dataquery Reference Guide*.

If you do not know the name or data type of a column, you can use <PF3> DISPLAY COLUMNS to display the attributes of the columns and select the appropriate ones for your calculations.

Step 5: Sorting the Data

In this step, you see how you can specify that data is to be sorted in a specific order and specify breaks to control totaling operations for your report.

Concepts

These are the major concepts related to this step:

SORT
Tells CA Dataquery that the data it retrieves (from the database or temporary results) is to be arranged in a specified order in the report. Your query can contain only one SORT statement.

Table-name
Tells CA Dataquery which table contains the data you want to sort. This is an optional entry if you are searching only one table. If you are searching two or more tables, you use this field to clarify which table contains the columns you are using in your SORT statement. You can use columns from multiple tables in the SORT statement. You can also use temporary results.

BY
Tells CA Dataquery that the columns following this word are to be used as sort data.

Column-name
You specify the name of the column containing the critical data for the report's ordering. The sequence in which you list these columns determines which is the primary sort column, which is the secondary, and so forth. When you specify sort columns, make certain the sequence of sorting requests is logical. For example, you could specify that a query is to sort the data by *ZIP* as the primary sort column then by *STATE* as the secondary. This is not a logical choice since multiple zip codes exist in a single state. A better sequence would be to specify *STATE* as the primary sort and *ZIP* as the secondary. All of your sort columns together cannot exceed 100 characters in length. If you specify the name of a column which is a repeating field, you must use subscripts to identify the occurrence. See [Repeating Fields](#) (see page 136) for more information.

Control break
 You can designate control break columns by enclosing the column in parentheses in your SORT statement. Each time the value of the data in the designated control break changes, totals can be accumulated for numeric columns. (Step 6 designates which numeric columns are to be totaled.) Since numeric data can be different for each row, designating numeric columns for your control breaks may not give you the desired results for your report. Instead, you may want to select columns containing character data for your control breaks. For example, to get a total of all sales by sales representatives in a region, you could designate *STATE* as your control break. Each time CA Dataquery encounters the name of a different state in the selected data, a total could be produced for the amount of sales in that state. You may designate up to 10 control break columns in a query.

Order

Specifies whether the data for your report will be sorted in *ascending* order, A through Z for character or 0 through 9 for numeric, or in *descending* order, Z through A for character and 9 through 0 for numeric. The default is UP for ascending. If you want your report in descending order, specify DOWN.

Procedure

The last step created a temporary result named SHIP-PRICE column based on UNIT-PRICE and SHIP-QTY values. The query now has a FIND statement, a WITH clause, and a SET statement. Following is an example of how it looks now:

```
  =>


  ------------------------------------------------------------------------------DQD10
  DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
  -------------------------------------------------------------------------------
  NAME:          USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
  DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. ========================= T O P ===============================
  01  FIND ALL  CAI-DETAIL-TBL ROWS
  02       WITH SHIP-QTY GT 0
  03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
  04
  .. ====================== B O T T O M ============================




  -------------------------------------------------------------------------------
  <PF1> HELP         <PF2> RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
  <PF5> DISPLAY ALL  <PF6> LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
  <PF9> TEMPLATE     <PF10> VALIDATE   <PF11> RIGHT/LEFT     <PF12> PROCESS MODE
```

Type a SORT Statement

To type a SORT statement, follow these steps:

1. Type **SORT BY** in line 04.

2. Type one space after BY and leave the cursor in that position.

3. Press <PF6> DISPLAY COLUMNS to display the list of columns for the table to be searched.

Select a SORT Column

The format for the SORT statement is typed on line 04 without a *table-name* because this query uses only one table. Pressing <PF6> presents a list of columns in the current table. This columns can be selected for insertion in the query.

```
   =>
  TO ORDER THE COLUMNS, ENTER A NUMBER IN FRONT OF EACH ONE
  ------------------------------------------------------------------------------DQB90
  DATAQUERY:    COLUMN           DISPLAY          DICTIONARY DATABASE ID: 189
  --------------------------------------------------------------------------------
   TABLE NAME: CAI-DETAIL-TBL                     DB NAME: DTL   DB ID: 010
  --------------------------------------------------------------------------------
            COLUMN            NAME    |          DESCRIPTION
  --------------------------------------------------------------------------------
    __  CUST-ID                       |
    __  ITM-ID                        |
    __  ORD-QTY                       |
    __  SHIP-QTY                      |
    __  UNIT-PRICE                    |
    __  DISC-PCT                      |
    __  ACT-DT                        |
    __  ACT-YR                        |
    __  ACT-MO                        |
    __  ACT-DAY                       |
    - LAST PAGE ------------------------------------------------------------------
  <PF1> HELP           <PF2>  RETURN    <PF3> NOT USED       <PF4> NOT USED
  <PF5> EXTENDED DEFN <PF6>  TEXT       <PF7> BACKWARD       <PF8> FORWARD
```

Action

To select a SORT column, follow these steps:

1. Type **1** in the space to the left of CUST-ID.

2. Press <PF2> RETURN to redisplay the CREATE MODE panel.

Typing 1 when selecting CUST-ID indicates that this column is the first to be inserted in the SORT statement. CUST-ID also happens to be the only column to be used in the SORT statement. If two or more columns were to be used to sort by, then CUST-ID would be the primary sort column.

Pressing <PF2> returns to the CREATE MODE panel, where the selected column is inserted at the location marked with the cursor.

```
=>


-------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
-------------------------------------------------------------------------------
NAME:          USER-SAMPLE                    TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================== T O P ===============================
01  FIND ALL  CAI-DETAIL-TBL ROWS
02       WITH SHIP-QTY GT 0
03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
04  SORT BY CUST-ID
.. ====================== B O T T O M ============================




-------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12> PROCESS MODE
```
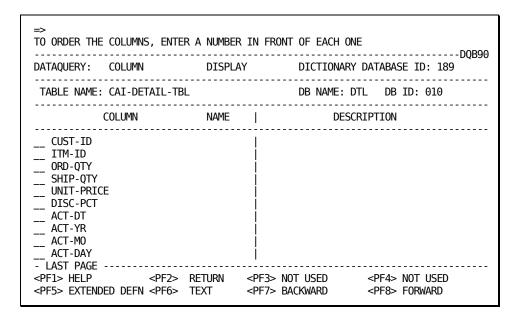
Create a Control Break

To create a control break, follow these steps:

1. Press the Insert key.

2. Type an open parenthesis, **(**, before CUST-ID.

3. Type a close parenthesis, **)**, after CUST-ID.

4. Leave the cursor in position after the close parenthesis.

The EDITOR allows you to use the Insert key so that you can manually insert data into your query. Enclosing CUST-ID in parentheses indicates that this is to be a control break column. Each time a new value is encountered for CUST-ID, that is, a different customer, CA Dataquery can total certain numeric columns (to be designated in Step 6) when the query executes.

Completed Example

```
  =>

  -----------------------------------------------------------------------------DQD10
  DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
  -------------------------------------------------------------------------------
  NAME:         USER-SAMPLE                      TYPE: QUERY    STATUS: PRIVATE
  DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. =========================== T O P ================================
  01  FIND ALL  CAI-DETAIL-TBL ROWS
  02      WITH SHIP-QTY GT 0
  03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
  04  SORT BY (CUST-ID)
  .. ======================= B O T T O M  ============================




  -------------------------------------------------------------------------------
  <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
  <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD         <PF8> FORWARD
  <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12>PROCESS MODE
```

Other Things You Could Do

You could use <PF9> TEMPLATE to display the format for the SET statement and insert the format on the CREATE MODE panel. Even though only one table is to be searched in the sample query, you can type the table name in the SORT statement.

If two or more columns were being used in the sort, then CUST-ID would be the primary sort column since 1 is typed in the space to the left of the column name. You can select the secondary sort column by typing a 2 in the space, the next with a 3, and so on for successive sort columns. Remember that the total length of all sort columns must be less than 100 characters.

Just as you can have multiple sort columns, you can also have multiple control break columns by enclosing each specific column in parentheses, up to a maximum of 10.

When you display the column DISPLAY panel, you can press <PF5> EXTENDED DEFN to display an extended definition of the columns. This display shows you information about the column, such as the type of data (character or numeric), the physical length of the column, and so forth.

Step 6: Print or Display Report Data

In this step, you see how to format your report, give it a title, format the output data in your report and to designate control break totals for numeric columns.

Concepts

These are the major concepts related to this step:

PRINT
Tells CA Dataquery to produce a report with data arranged in columnar format with one line per row. You can have only one PRINT verb in your query. If you do not want your report in columnar format, then you should use DISPLAY instead of PRINT. You cannot use both PRINT and DISPLAY in a single query. When you execute the query, you can override the columnar format by indicating your choice on the ONLINE EXECUTION panel.

DISPLAY
Tells CA Dataquery to produce a report with data displayed in pages, with one page per row, one line per column. You can have only one DISPLAY verb in your query. If you do not want your report in page per row format, then you should use PRINT. You cannot use both DISPLAY and PRINT in a single query. When you execute the query, you can override the list format.

TITLE1
Tells CA Dataquery that the information following this word is to be used as the first line of a title for the report. You can specify a second title line using TITLE2. These titles will be preceded by a title which was selected for your site when CA Dataquery was installed. The title options are valid only with the PRINT statement.

'Report-heading'
You can give your report a title which identifies the intent of the report, such as FILLED CUSTOMER ORDERS. The maximum length is 55 characters. You must enclose the report heading in apostrophes, both for TITLE1 and TITLE2. CA Dataquery centers the title at the top of your report.

FROM
Optional word you can use to clarify your PRINT or DISPLAY statement when your report includes columns from more than one table.

Table-name
Identifies the table from which the columns that follow it are extracted. If you search two or more tables in your query, you must specify which table contains the columns you are including in your PRINT or DISPLAY statement. You can include columns from all tables searched by your query, but you must precede the column name with the table name.

ROWS
Optional word you can use to clarify your PRINT or DISPLAY statement.

Column-Name
You must specify the name of each column for which you want output data included in the report. You can use columns from the tables searched by your query and temporary results created by your query. The order in which you specify columns in your PRINT or DISPLAY statement determines the order in which they appear in your report. If you specify the name of a column which is a repeating field, you must use subscripts that show which occurrence you want to include in the report. See Repeating Fields (see page 136) for more information on repeating fields and subscripts.

Totals
Tells CA Dataquery which numeric columns should be totaled and displayed each time a control break occurs or at the end of the report. To indicate that a numeric column is to be totaled, enclose the name within parentheses in your print statement. Parentheses around a PRINT statement column name tell CA Dataquery to produce totals each time a control break occurs. (Control breaks are columns enclosed in parentheses in the SORT statement.) Totals are placed under the appropriate column in the report.

CA Dataquery prints a legend in your report telling you for which column and control break value the total was accumulated. If you have not included a SORT statement or if you did not designate any Control Breaks in your SORT statement, CA Dataquery will only print totals at the end of the report.

PICTURE
Tells CA Dataquery that the information following this word will describe an alternate edit pattern for numeric data. You can use this option to arrange the appearance of numeric data in your report, such as eliminating leading zeros.

If you do not specify an edit pattern, numeric data is displayed according to a default edit pattern defined in CA Datacom Datadictionary. If there is no edit pattern defined in CA Datacom Datadictionary, CA Dataquery generates a default edit pattern.

For example, UNIT-PRICE is defined in the database with five digits to the left of the decimal point and two to the right. If the price for an item is *$29.50*, this will be displayed in the report as 00029.50. To eliminate the leading zeros in the report, you can use the PICTURE option to define an edit pattern for this column. You can also use the PICTURE option to format data from temporary results.

'Picture-clause'
Specifies the edit pattern you want for the column. This pattern must be enclosed in apostrophes. Each column in your report can have a different pattern if you like since there are several patterns you can use. For details on valid edit patterns, see the *CA Dataquery Reference Guide*. Your site may have defined default edit patterns in CA Datacom Datadictionary. Use the Display Text function to view a particular column's edit pattern (if there is one) or consult your CA Dataquery Administrator.

'Optional-heading'

Unless you specify otherwise, the heading for each column listed in your PRINT statement will be the CA Datacom Datadictionary alternate heading, if specified, or the name of the column. To make your report clearer or more attractive, you can define an alternate heading for each column in your report. CA Dataquery will use this heading instead of the CA Datacom Datadictionary heading when producing the report. You must enclose this heading in apostrophes. The maximum length is 32 characters for each of two lines. To define a two-line heading, separate the two lines with the heading separator character shown on your SYSTEM PROFILE panel, available through Topic Help. If your site has defined default headings in CA Datacom Datadictionary, use the Display Text function to view a particular column heading or consult your CA Dataquery Administrator.

Procedure

In the previous step, a SORT statement was added to the query, to tell CA Dataquery how to arrange the query output. Following is an example of how it looks now:

```
   =>

   -------------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
   -------------------------------------------------------------------------------
   NAME:          USER-SAMPLE                      TYPE: QUERY    STATUS: PRIVATE
   DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. ========================= T O P ==============================
   01  FIND ALL  CAI-DETAIL-TBL ROWS
   02      WITH SHIP-QTY GT 0
   03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
   04  SORT BY (CUST-ID)
   .. ====================== B O T T O M ============================



   -------------------------------------------------------------------------------
   <PF1> HELP        <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
   <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
   <PF9> TEMPLATE    <PF10> VALIDATE   <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Action

To display the query template, press <PF9> TEMPLATE.

At the end of Step 5, the cursor was left at the end of line 4. This shows that it is not necessary to insert a line in the CREATE MODE panel if you are going to use the query template to select a format for insertion in your query. Pressing <PF9> displays the QUERY TEMPLATE panel shown following:

```
=>
Enter the number of times each command is to be included in the query
-------------------------------------------------------------------------DQD30
DATAQUERY:  QUERY TEMPLATE
--------------------------------------------------------------------------------
Lower case words represent entries which must be replaced by the user.
Parentheses indicate optional entries: these may be included by removing the
parentheses only or deleted by removing both the parentheses and data.
--------------------------------------------------------------------------------
_   FIND (count)  table-name     ROWS
_   WITH selection-criteria
_   RELATED BY key-name
         TO (FIRST) table-name
_   RELATED BY link-column
         VIA key-name column-name TO table-name
_   SET result-column (13.2)
         = numeric-column-name arithmetic-expression numeric-literal
_   SORT table-name           BY column-name (DOWN)



--------------------------------------------------------------------------------
<PF1>  HELP        <PF2>  RETURN      <PF3>  NOT USED   <PF4>  NOT USED
<PF5>  NOT USED    <PF6>  NOT USED    <PF7>  BACKWARD   <PF8>  FORWARD
```

Action

To scroll forward, press <PF8> FORWARD.

The format needed in the query is not displayed on the above panel, but pressing <PF8> scrolls forward. If your terminal displays more than 24 lines at a time, CA Dataquery will display all of QUERY TEMPLATE on one panel and you do not have to use <PF8> to scroll forward.

```
 =>
 Enter the number of times each command is to be included in the query
 -----------------------------------------------------------------------DQD40
 DATAQUERY:  QUERY TEMPLATE
 --------------------------------------------------------------------------------
 Lower case words represent entries which must be replaced by the user.
 Parentheses indicate optional entries: these may be included by removing the
 parentheses only or deleted by removing both the parentheses and data
 --------------------------------------------------------------------------------
 _   PRINT FROM table-name      ROWS
             column-name ('optional-heading') (PICTURE 'picture-clause')
 _   DISPLAY FROM table-name
             column-name ('optional-heading') (PICTURE 'picture-clause')
 _   WHEN named-control-break-object FINISHED  BREAKS
      DO 'legend-for-display'  function  column-name (PICTURE 'picture-clause')




 --------------------------------------------------------------------------------
 <PF1>  HELP         <PF2>  RETURN      <PF3>  NOT USED    <PF4>  NOT USED
 <PF5>  NOT USED     <PF6>  NOT USED    <PF7>  BACKWARD     <PF8>  FORWARD
```

Select a PRINT Statement

To select a PRINT statement, follow these steps:

1. Type **1** in the space before the PRINT statement format.

2. Press <PF2> RETURN to return to the CREATE MODE panel.

The report is to be in columnar format, so the PRINT statement should be selected. The number 1 should be entered in the space since there can only be one PRINT verb in the query. Pressing <PF2> returns to the CREATE MODE panel where the PRINT format has been inserted as shown in the following panel.

```
 =>

 ------------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR               CURRENT TABLE:  CAI-DETAIL-TBL
 ------------------------------------------------------------------------------------
 NAME:           USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. =========================== T O P ===============================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
 04  SORT BY (CUST-ID)
 05  PRINT FROM table-name     ROWS
 06      column-name ('optional-heading') (PICTURE 'picture-clause')
 .. ======================= B O T T O M ===============================




 ------------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Edit PRINT Statement

To edit the PRINT statement template:

1. Type over *FROM table-name ROWS* with **TITLE1 'FILLED CUSTOMER ORDERS'**.

2. Type over part of the PRINT format in line 06 with **(SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'**.

3. Use the ERASE key to delete the remainder of the PRINT format on line 06.

4. Move the cursor to the line number for line 06.

5. Type **I** in the line number.

6. Press Enter to complete the insert line command.

7. Move the cursor to the first space in the new line (07).

8. To add a title, type **TITLE1** and **'FILLED CUSTOMER ORDERS'** after *PRINT*.

9. Since the query searches only one table, it is not necessary to use the *FROM file-name ROWS* portion of the PRINT format.

10. The temporary result, SHIP-PRICE, needs to be included in the report and totals should be produced on it each time a control break occurs, so (SHIP-PRICE) must be typed in. (The parentheses specify a control break.)

11. Add a PICTURE Clause.

    To show how to use an edit pattern, the clause **PICTURE 'Z,ZZZ,ZZ9.99-'** is included. Notice that the edit pattern allows for seven digits to the left of the decimal and two to the right. This is because this temporary result has been given a precision of (7.2) in the SET statement and the edit pattern must fit the column length. Using commas in the edit pattern shows you that you can do this to clarify the numeric value. The Z indicates that leading zeros are to be suppressed, that is, not displayed, in the report. The 9 tells CA Dataquery to display the appropriate value for this position, even if it is a zero. If all Zs were specified, you'd see a blank in the report if the value happened to be *0.00*. You can see that your choice of edit pattern influences how meaningful your report will be.

12. Select PRINT Columns.

    Inserting one line and pressing <PF3> DISPLAY COLUMNS shows you how you can select more than one column from the list of columns in the table you are searching.

```
=>
TO ORDER THE COLUMNS, ENTER A NUMBER IN FRONT OF EACH ONE
------------------------------------------------------------------------------DQB90
DATAQUERY:  COLUMN              DISPLAY           DICTIONARY DATABASE ID: 189
-------------------------------------------------------------------------------
 TABLE NAME: CAI-DETAIL-TBL                       DB NAME: DTL   DB ID: 010
-------------------------------------------------------------------------------
          COLUMN            NAME    |            DESCRIPTION
-------------------------------------------------------------------------------
__  CUST-ID                         |
__  ITM-ID                          |
__  ORD-QTY                         |
__  SHIP-QTY                        |
__  UNIT-PRICE                      |
__  DISC-PCT                        |
__  ACT-DT                          |
__  ACT-YR                          |
__  ACT-MO                          |
__  ACT-DAY                         |
                                    |
                                    |
- LAST PAGE --------------------------------------------------------------------
<PF1> HELP             <PF2>  RETURN     <PF3> NOT USED       <PF4> NOT USED
<PF5> EXTENDED DEFN <PF6>  TEXT      <PF7> BACKWARD       <PF8> FORWARD
```

Arrange Column Order

To arrange the columns selected in the order wanted, follow these steps:

1.   Type **1** in the space before CUST-ID.

2.   Type **2** in the space before ITM-ID.

3.   Type **3** in the space before SHIP-QTY.

4.   Type **4** in the space before UNIT-PRICE.

5.   Press <PF2> RETURN to return to the CREATE MODE panel.

To select columns for the report and to specify their order, you place an order number in the space before the column name. In this example, it so happens the columns are included in the table in the order they were selected for the report. (You could place a 1 before UNIT-PRICE and a 4 before CUST-ID if you wanted them to appear in that sequence in the report.) When selections are complete, pressing <PF2> returns to the CREATE MODE panel where the selections have been inserted as shown in the following panel.

Result

```
 =>

 -------------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
 -------------------------------------------------------------------------------
 NAME:         USER-SAMPLE                        TYPE: QUERY    STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ============================ T O P ================================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02       WITH SHIP-QTY GT 0
 03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
 04  SORT BY (CUST-ID)
 05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
 06       (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
 07  CUST-ID
 08  ITM-ID
 09  SHIP-QTY
 10  UNIT-PRICE
 .. ====================== B O T T O M  ============================
 -------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Move Lines

To use EDITOR commands to move lines on the panel, follow these steps:

1. Type **M** in the line number for line 06.

2. Type **A** in the line number for line 10.

3. Press Enter to complete the MOVE line command.

4. Type **>8** (EDITOR line command to shift data to the right, within the line, in this case 8 spaces) in the line number for line 06.

5. Press Enter to complete the shift data line command.

6. Type **>8** in the line number for line 07.

7. Press Enter to complete the shift data line command.

8. Type **>8** in the line number for line 08.

9. Press Enter to complete the shift data line command.

10. Type **>8** in the line number for line 09.

11. Press Enter to complete the shift data line command.

You need to know how you can use the EDITOR's line commands to move lines within your query and how you can shift the position of data within a line. See the *CA Dataquery Reference Guide*.

Notice that each column to appear in the report is listed on a separate line. They could be typed on one line, but this listing makes it easier to determine which individual columns are included in the report. As in previous steps, new lines have been inserted along with the data retrieved from the COLUMN DISPLAY.

After looking at the order of the columns, you can see that it is not logical to have the temporary result report column appear first in the report, so moving it makes it the last column in the report. Typing M indicates which line to move and typing A indicates which line it is to be placed after, then press Enter.

When the move operation is complete, it looks like a good idea to align names of the other columns with the SHIP-PRICE name, to improve visibility. Counting provides the number of spaces the column name must be shifted within the line and typing **>8** in the line number of the first column and pressing Enter performs the shift. The > indicates that the data is to be moved to the right, while the 8 indicates that the shift is to be 8 spaces. Since the EDITOR does not perform multiple shift requests simultaneously, you must perform a separate operation for each line. After completing the shift operations, the query appears as shown in the next panel.

Completed Example

```
=>

------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR                CURRENT TABLE:  CAI-DETAIL-TBL
--------------------------------------------------------------------------------
NAME:          USER-SAMPLE                        TYPE: QUERY    STATUS: PRIVATE
DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
01  FIND ALL  CAI-DETAIL-TBL ROWS
02       WITH SHIP-QTY GT 0
03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
04  SORT BY (CUST-ID)
05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
06          CUST-ID
07          ITM-ID
08          SHIP-QTY
09          UNIT-PRICE
10          (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
.. ======================  B O T T O M  ============================
--------------------------------------------------------------------------------
<PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
<PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Other Things You Could Do

The report has only one title line, but you can specify a second line to further describe the report.

You could specify an edit pattern for each column in the PRINT statement. You could also accumulate control break totals for other numeric columns. Each column, or selected columns, could be given an alternate heading to appear in the report.

Instead of shifting data to the right, you could shift it to the left using the < line command and a numeric factor to indicate the number of spaces the data is to be shifted. If you do not specify a numeric factor with either shift command, the default is one space.

Step 7: Specify Mathematical Function

In this step, you see how to perform mathematical functions on numeric columns, such as finding an average, maximum value or a count of occurrences. If you need a specific mathematical function which CA Dataquery does not provide as a standard function, site management can create a user-defined function (UDF) to meet your request.

Concepts

These are the major concepts related to this step:

WHEN
Tells CA Dataquery that information after this verb describes when to perform a mathematical function. The DO portion of this statement describes the function to be performed. You can use multiple WHEN/DO statements in your query to get the results you need for your report. You can also specify multiple DO statements for a single WHEN statement.

Table-name
If your query searches more than one table, you must specify the name of the table containing the column which is the *named-control- break-object* or the name of the column.

Named-control-break-object
If you want the mathematical function to be performed after a control break in your report, you can specify the name of a control break column used in your SORT statement.

BREAKS
An optional word to clarify that the mathematical function will be performed after a control break.

FINISHED
If you want the mathematical function to be performed at the end of your report, specify this keyword after the WHEN.

DO
Tells CA Dataquery that information after this verb describes what type of mathematical function is to be performed and what column will be used in the function. You can specify multiple DO statements for a single WHEN statement. If you have multiple DO statements, you must make certain that you want the specified function performed at the point specified in the WHEN statement.

'Legend-for-display'
You can specify a legend to be printed beside the results of the function calculation. This legend can be up to 64 characters in length and must be enclosed in apostrophes. If you want the current value of the control break printed within this legend, you can include a site-specified heading substitution string like && in the legend.

For example, if you want to calculate an average sales amount for each state in a region, and && were your heading substitution string, you would specify *STATE* as a control break in the SORT statement that is, *SORT (STATE)*, and as the control break object in the WHEN statement, that is, *WHEN STATE BREAKS DO 'AVERAGE SALES FOR &.&'.*. You could specify 'AVERAGE SALES FOR &&' as a legend. Each time the state name changes, the legend will identify the state for which the average was calculated. If you do not specify a legend for the DO statement, CA Dataquery prints the function followed by the name of the column on which the function is performed.

See the SYSTEM PROFILE panel in Topic Help to learn what characters are used at your site as a heading substitution string.

FUNCTION
You must identify the function that you want performed. Only one function can be specified in a single DO statement. However, you can use multiple WHEN/DO statements or multiple DO statements for a single WHEN in your query to obtain the desired results for your report. The functions you can perform are described in the next chart.

Function	Entry	Performs this function at control break or end of report:
Average	AVG	Averages the values
Count	CNT	Counts the number of values
Maximum	MAX	Finds the maximum value
Minimum	MIN	Finds the minimum value
Sum	SUM	Sums the values
Page break	PAGE-BREAK	Begins a new page

Column-Name
 You must specify the numeric column for which the function is to be performed. If you specify the name of a column which is a repeating field, you must use subscripts to show which occurrence you want. See Repeating Fields (see page 136) for more information.

PICTURE 'picture-clause'
You can specify an edit pattern to be used when reporting on the function results. See Step 6 (see page 311) for a description of *PICTURE* and *'picture-clause'*.

Procedure

In the last step, you learned how to complete a PRINT statement, telling CA Dataquery how to arrange data on the report, giving it a title, and specifying a total and a PICTURE clause for SHIP-PRICE.

```
 =>

 ----------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR              CURRENT TABLE:  CAI-DETAIL-TBL
 --------------------------------------------------------------------------------
 NAME:          USER-SAMPLE                      TYPE: QUERY   STATUS: PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P ==============================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
 04  SORT BY (CUST-ID)
 05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
 06        CUST-ID
 07        ITM-ID
 08        SHIP-QTY
 09        UNIT-PRICE
 10        (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
 .. ====================  B O T T O M  ==============================
 --------------------------------------------------------------------------------
 <PF1> HELP         <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD         <PF8> FORWARD
 <PF9> TEMPLATE     <PF10> VALIDATE   <PF11> RIGHT/LEFT      <PF12>PROCESS MODE
```

Display Query Template

To display the query template, follow these steps:

1. Scroll line 10 to the top of the display to insert a WHEN-DO template.

2. Press <PF9> TEMPLATE to display the query template.

At the end of Step 6, the cursor appears after the edit pattern in line 10 since it is not necessary to insert a blank line on the CREATE MODE panel to insert a statement format. Pressing <PF9> displays the query template. You know from Step 6 that TEMPLATE has two panels. The WHEN/DO format is displayed on the second panel. Scrolling forward from the first panel displays the following panel.

If your terminal displays more than 24 lines at a time, CA Dataquery displays the query template on one panel.

```
=>
Enter the number of times each command is to be included in the query
------------------------------------------------------------------------DQD40
DATAQUERY:  QUERY TEMPLATE
--------------------------------------------------------------------------------
Lower case words represent entries which must be replaced by the user.
Parentheses indicate optional entries: these may be included by removing the
parentheses only or deleted by removing both the parentheses and data
--------------------------------------------------------------------------------
_   PRINT FROM table-name      ROWS
            column-name ('optional-heading') (PICTURE 'picture-clause')
_   DISPLAY FROM table-name
            column-name ('optional-heading') (PICTURE 'picture-clause')
_   WHEN named-control-break-object FINISHED  BREAKS
     DO 'legend-for-display'  function  column-name (PICTURE 'picture-clause')




--------------------------------------------------------------------------------
<PF1>  HELP         <PF2>  RETURN       <PF3>  NOT USED    <PF4>  NOT USED
<PF5>  NOT USED     <PF6>  NOT USED     <PF7>  BACKWARD    <PF8>  FORWARD
```

Select WHEN/DO

To select a WHEN/DO statement:

1. Type **1** in the space before the WHEN/DO format.

2. Press <PF2> RETURN to return to the CREATE MODE panel.

Typing 1 indicates that only one WHEN/DO format is needed in the query. Pressing <PF2> returns the Create mode panel where the format has been inserted for editing.

```
   =>

   -------------------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR             CURRENT TABLE:  CAI-DETAIL-TBL
   -------------------------------------------------------------------------------
   NAME:            USER-SAMPLE                       TYPE: QUERY    STATUS: PRIVATE
   DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. =========================== T O P ================================
   10       (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
   11  WHEN named-control-break-object FINISHED  BREAKS
   12  DO 'legend-for-display'  function  column-name (PICTURE 'picture-clause')
        ==================== B O T T O M =================================




   -------------------------------------------------------------------------------
   <PF1> HELP         <PF2>  RETURN     <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
   <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
   <PF9> TEMPLATE     <PF10> VALIDATE   <PF11> RIGHT/LEFT     <PF12>PROCESS MODE
```

Edit WHEN/DO

To Edit the WHEN/DO template:

1. Type **CUST-ID** after *WHEN*.

2. Use the DELETE key to delete extraneous characters between CUST-ID and *BREAKS*.

3. Type **'AVERAGE ITEM PRICE' AVG UNIT-PRICE** after *DO*.

4. Use the ERASE key to delete the extraneous characters on the remainder of the line.

The report requires an average item price for each customer since a higher average indicates which customers purchase the more expensive items in our inventory. Specifying CUST-ID as the control break object is part of getting the average calculated for each customer. In this case, *CUST-ID* happens to be the only control break specified in the SORT statement and it is also the column to use in the WHEN statement. Using the optional word BREAKS clarifies that this action takes place after a control break.

For the *DO* portion, enter 'AVERAGE ITEM PRICE' as the legend so the report will have a meaningful identification for the result from the function. After the legend, enter AVG as the function and UNIT-PRICE to identify the column tells CA Dataquery which column to average.

Completed Example

Query entries are now complete. It appears as shown in the following panels. (On some terminals, you may have to scroll forward and backwards to view the entire query.)

Screen 1 of Query

```
 =>

 ------------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR                CURRENT TABLE:  CAI-DETAIL-TBL
 --------------------------------------------------------------------------------
 NAME:             USER-SAMPLE                            TYPE: QUERY    STATUS:
PRIVATE
 DESCRIPTION:    TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
 04  SORT BY (CUST-ID)
 05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
 06         CUST-ID
 07         ITM-ID
 08         SHIP-QTY
 09         UNIT-PRICE
 10         (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
 --------------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD        <PF8> FORWARD
 <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12>PROCESS MODE
```

Screen 2 of Query

```
  =>

  --------------------------------------------------------------------------------DQD10
  DATAQUERY:  EDITOR                         CURRENT TABLE:  CAI-DETAIL-TBL
  ---------------------------------------------------------------------------------
  NAME:              USER-SAMPLE                         TYPE: QUERY    STATUS:
  PRIVATE
  DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  11  WHEN CUST-ID BREAKS
  12   DO 'AVERAGE ITEM PRICE' AVG UNIT-PRICE
  .. ====================== B O T T O M  ==============================




  ---------------------------------------------------------------------------------
  <PF1> HELP        <PF2>  RETURN      <PF3> DISPLAY COLUMNS <PF4> DISPLAY KEYS
  <PF5> DISPLAY ALL <PF6>  LIST TABLES<PF7> BACKWARD         <PF8> FORWARD
  <PF9> TEMPLATE    <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12>PROCESS MODE
```

Other Things You Could Do

You could insert lines on the panel and type in your WHEN/DO statements. You could use the DISPLAY TABLES and DISPLAY COLUMNS options to insert table and column names into these statements. Since this query searches only one table, it is not necessary to use the optional *table-name* identifier.

When you select the WHEN/DO format from the query template, you could specify 2 or a higher number if you want multiple WHEN/DO statements in your query. Also, if you want multiple DO statements after your WHEN, you could use the EDITOR's C (COPY) line command to copy the DO format within your query or do a block copy of both WHEN and DO statements.

Using the BREAKS keyword clarifies when the function is to be performed, that is, after each control break in the report. You could use the *FINISHED* option to indicate that you want the average calculated only at the end of the report. However, for the sample query, this would not have given the results wanted, which was an average for individual customers.

If your query contains multiple control break columns in the SORT statement, you could have multiple WHEN/DO statements with different functions to be performed at each control break.

The PAGE-BREAK function may be used to put the results of column functions like AVG on a separate page. This can be done by putting the first and last DO statement in a WHEN clause as a PAGE-BREAK. The result is printing all other functions on a separate page.

Note: For information about PAGE-BREAK, see the *CA Dataquery Reference Guide*.

This query uses the AVG function. Depending on the results you want in your report, you can select any of the valid mathematical functions. You could have multiple DO statements that calculate the SUM or find the MAX or MIN of specific numeric columns.

Step 8: Validate, Save and Execute the Query

In this step you see how to access the EDITOR's Process mode panel and to validate and save your query prior to execution.

Completed Example

Here is how the completed query looks, ready to be checked for errors, saved, and executed. Press <PF12> on the EDITOR panel during display of CREATE MODE PF keys to change the PF key display to PROCESS MODE. Note the new PF key display.

```
   =>


   -------------------------------------------------------------------------DQD10
   DATAQUERY:  EDITOR
   --------------------------------------------------------------------------------
   NAME:            USER-SAMPLE                         TYPE: QUERY    STATUS:
   PRIVATE
   DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
      ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
   .. ========================= T O P ==============================
   01  FIND ALL  CAI-DETAIL-TBL ROWS
   02      WITH SHIP-QTY GT 0
   03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
   04  SORT BY (CUST-ID)
   05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
   06         CUST-ID
   07         ITM-ID
   08         SHIP-QTY
   09         UNIT-PRICE
   10         (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
   11  WHEN CUST-ID BREAKS
   --------------------------------------------------------------------------------
   <PF1>  HELP        <PF2>  RETURN      <PF3>  EXECUTE      <PF4>  SAVE
   <PF5>  DIALOG DEF <PF6>  DELETE      <PF7>  BACKWARD      <PF8>  FORWARD
   <PF9>  UPDATE      <PF10> VALIDATE     <PF11> RIGHT/LEFT   <PF12> CREATE MODE
```

Concepts

These are the major concepts related to this step:

Process Mode
You use the EDITOR: Process Mode panel to execute, save, update, or delete queries. You can also use this panel to access the option to define a dialog.

EXECUTE
When you execute a query, you are asking CA Dataquery to process the requests in your query statements and return the resulting report.

SAVE
If you do not want to re-create a query each time you want to get a report, you can save the query in your private library or the public library. You can execute a query saved in your private library or the public library.

The following provides information about saving queries.

Timing

You should save any query you want to use again. If you are creating a complex query and spending a lot of time on it, you may want to save it before you are finished. If you do, you can use the <PF9> UPDATE PF key to save it again. You can save without validating first.

What is saved?

CA Dataquery saves everything written in the text area of the EDITOR panel. The item must have a name, type (query or dialog) and status (public or private) before it can be saved.

What happens if I exit the EDITOR panel without saving?

A query or dialog resides in the active query area until you access another query or dialog. You can recall an active query to the EDITOR panel with the EDIT * command.

How can you delete an unwanted query?

When you no longer need a saved query, you can delete it from your private library or, if you are authorized, from the public library. Once you delete a query, you can only recall it if it is currently in the active query area because you have displayed, validated, or executed it.

Delete queries by pressing <PF6> during directory display. See <u>Selecting a Directory</u> (see page 45) for details.

DIALOG DEFINITION

To make a query more versatile, you can convert a query to a dialog capable of accepting variables, such as different table, column and key names or literal values each time you execute the dialog. For details on creating a dialog, see Creating Dialogs (see page 335).

DELETE

When you no longer need a saved query, you can delete it from your private library, or if you are authorized, from the public library. Once you delete a query, you can only recall it if it is currently in the active query area because you have displayed or executed it.

UPDATE

After you save a private query, you can still make changes to it as your needs change. You may also update public queries which you authored depending on options selected when CA Dataquery was installed. See your CA Dataquery Administrator for more information.

VALIDATE

Before you execute or save a newly created or updated query, you should validate the query. However, if you do not validate the query, validation will be done at execution time. When you select the VALIDATE option, you are asking CA Dataquery to check the query for correct DQL syntax and to verify that the table, column and key names in your query are spelled correctly or do actually exist.

Procedure

```
  =>

  --------------------------------------------------------------------------DQD10
  DATAQUERY:  EDITOR
  --------------------------------------------------------------------------------
  NAME:           USER-SAMPLE                            TYPE: QUERY    STATUS:
  PRIVATE
  DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. =========================== T O P ================================
  01  FIND ALL  CAI-DETAIL-TBL ROWS
  02       WITH SHIP-QTY GT 0
  03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
  04  SORT BY (CUST-ID)
  05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
  06         CUST-ID
  07         ITM-ID
  08         SHIP-QTY
  09         UNIT-PRICE
  10        (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
  11  WHEN CUST-ID BREAKS
  --------------------------------------------------------------------------------
  <PF1>  HELP       <PF2>  RETURN     <PF3>  EXECUTE      <PF4>  SAVE
  <PF5>  DIALOG DEF <PF6>  DELETE     <PF7>  BACKWARD     <PF8>  FORWARD
  <PF9>  UPDATE     <PF10> VALIDATE   <PF11> RIGHT/LEFT   <PF12> CREATE MODE
```

Validate Query

To validate the query:

■ Press <PF10> VALIDATE to validate the query.

To verify that the CA Dataquery language syntax and table and column names in the query are correct, press <PF10>. Receiving the message indicating that no errors were found means the query has been successfully validated.

Completed Example

```
 =>
 DQ214I - QUERY VALIDATION WAS SUCCESSFUL AND NO ERRORS WERE FOUND
 ------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR
 -------------------------------------------------------------------------------
 NAME:            USER-SAMPLE                           TYPE: QUERY   STATUS:
 PRIVATE
 DESCRIPTION:   TOTAL ORDERS PER CUSTOMER -- AVERAGE PRICE
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================== T O P ================================
 01  FIND ALL  CAI-DETAIL-TBL ROWS
 02      WITH SHIP-QTY GT 0
 03  SET SHIP-PRICE(7.2) = UNIT-PRICE * SHIP-QTY
 04  SORT BY (CUST-ID)
 05  PRINT FROM TITLE1 'FILLED CUSTOMER ORDERS'
 06         CUST-ID
 07         ITM-ID
 08         SHIP-QTY
 09         UNIT-PRICE
 10        (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'
 11  WHEN CUST-ID BREAKS
 -------------------------------------------------------------------------------
 <PF1>  HELP        <PF2>  RETURN    <PF3>  EXECUTE      <PF4>  SAVE
 <PF5>  DIALOG DEF <PF6>  DELETE     <PF7>  BACKWARD     <PF8>  FORWARD
 <PF9>  UPDATE      <PF10> VALIDATE  <PF11> RIGHT/LEFT   <PF12> CREATE MODE
```

Action

To keep this query so that it can be executed more than once, press <PF4> SAVE. Since the query is correct, it can be executed now as described in . Turn to the section summary to see the report.

Other Things You Could Do

You could validate your query while still in the CREATE MODE.

If you receive an error message about DQL syntax or a table or column name, make the correction specified in the error message. If you do not understand the message, press <PF1> HELP for an explanation. Once the correction is made, validate your query again. Repeat the validation option until all errors are corrected.

You may want to convert a query like this to a dialog that lets you specify variables for table, column and key names, literal values and functions. A dialog serves multiple purposes and lets you obtain different data without having separate queries. To see how this sample query can be converted to a dialog, see the steps in Creating Dialogs (see page 335).

Summary

Compare the query to the sample report to see what specific part of the query produced that part in the report. Use the chart on the following page to see what each query statement does in producing the report.

User Sample Query

```
FIND ALL CAI-DETAIL-TBL ROWS

        WITH SHIP-QTY GT 0

SET SHIP-PRICE (7.2) = UNIT-PRICE * SHIP-QTY

SORT BY (CUST-ID)

   PRINT TITLE1 'FILLED CUSTOMER ORDERS'

              CUST-ID

              ITM-ID

            SHIP-QTY

             UNIT-PRICE

          (SHIP-PRICE) PICTURE 'Z,ZZZ,ZZ9.99-'

   WHEN CUST-ID

      DO 'AVERAGE ITEM PRICE' AVG UNIT-PRICE
```

CREATE Function Sample Objective Report

```
    04/14/11              CA Dataquery 12.0          PAGE   1

    14:56:22                 FILLED CUSTOMER ORDERS      DETAIL


      CUST-ID    ITM-ID      SHIP-QTY    UNIT-PRICE    SHIP-PRICE

      ---------  ----------  -----------  -------------  -------------

    01008  C10000      0000002      00029.50       59.00

           C10001      0000004      00021.00       84.00
```

```
        C10002          0000006         00014.00          84.00

        C10005          0000002         00066.75         133.50

   TOTAL CUST-ID    01008


                                                         360.50



   AVERAGE ITEM PRICE 00032.81
```

Keyword or Symbol	Result
FIND, WITH	Searches all CAI-DETAIL-TBL rows and locates those where the value for SHIP-QTY is greater than zero.
SET	Creates a temporary result named SHIP-PRICE and multiplies UNIT-PRICE by SHIP-QTY to calculate the total cost of each item shipped to a customer. Also designates that the resulting calculations can have up to 7 digits to the left of the decimal point and 2 digits to the right.
SORT	Places the located rows in ascending order according to the values in CUST-ID, which identifies the company ordering the items.
(CUST-ID)	Since CUST-ID is enclosed in parentheses, it is a control break, meaning a total will be calculated for each customer.
PRINT	Produces a column report which includes a title and data for the specified columns.
TITLE1	Specifies the title for the report.
(SHIP-PRICE)	Calculates the total cost for all items shipped, since SHIP-PRICE is enclosed in parentheses in this statement. The total is calculated for each customer ID since CUST-ID is designated as a control break in the SORT statement, by virtue of being enclosed with parentheses.
PICTURE	Specifies the PICTURE clause, that is, format, for the output in the report. This format is enclosed in apostrophes and uses Zs to indicate that leading zeros will not be printed.
WHEN-DO	Calculates an average for the UNIT-PRICE values each time processing of data for a specific CUST-ID is completed. The result from this WHEN-DO statement appears after the control break total. You can specify a legend in the DO statement to identify the results, such as *AVERAGE ITEM PRICE*.

Chapter 24: Creating Dialogs

The Process Mode of the EDITOR panel allows you to make a query into a dialog that prompts for variable selections at execution time. A **dialog** is a query that, when executed, prompts the user for specific entries where portions of the query have been designated as variable. The dialog can provide a default selection, a list of valid entries for character variables and a range of valid entries for numeric variables.

Any part of a query can be a **variable** for which the person executing the query can substitute another value. Each variable must have a unique variable ID.

For information about how dialogs work when the user sees them, see Responding to Extra Panels During Execution (see page 127).

Reviewing the Process

When the dialog is executed, panels appear to prompt the user to take appropriate actions. First, a panel appears that describes the dialog. Next panels appear for each variable that prompt the user to use the variable default or to enter a new variable. When you define the dialog, you define these panels.

The panels for defining the prompts appear automatically after you define the type, insert variables, and press <PF5> DIALOG DEF.

The remainder of this section describes the process of setting dialog specifications.

Rules

Dialogs must:

- Follow the rules for query creation
- Contain the word *dialog* in the TYPE field
- Contain variables that you define and save

Any item that is to be a variable must have a one or two digit number and a variable symbol preceding it. You can use any number between 1 and 99, but you can only use 25 variables.

The default variable symbol is a question mark (?). Your site may use a different character as a dialog variable symbol. View the SYSTEM PROFILE HELP from the General Help panel of the Main Menu to determine what character your site uses.

To create a dialog, you must create or edit an existing query. Create variables of any query part by substituting that part with a variable.

Sample

Following is a sample format for a dialog variable. See the online HELP SYSTEM PROFILE topic for symbols.

25?CUST_ID_____

The following explains each part of the preceding sample variable.

Sample	Name	Explanation
25	Variable ID	Enter a number from 1 to 25 that is unique in this dialog.
?	Dialog symbol	The installation default symbol is a question mark. Your site may use a different character.
CUST_ID	Default	The default item to be used in processing the dialog if no replacement is entered or selected. Any query item may be made into a variable.
_____	Dialog fill character	Enter enough site-specific dialog fill characters to allow room for the longest variable replacement you will allow. Your site may use a different character.

Note: For details on each panel, see the *CA Dataquery Reference Guide*.

Planning the Dialog

The following query produces a typical report. It also contains an ORDER BY clause that permits control breaks to be specified. For more information on control breaks and ORDER BY, see .

```
=>


------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR
--------------------------------------------------------------------------------
NAME:         SALARY_INFO                                  TYPE: QUERY   STATUS:
PRIVATE
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P ==============================
01 SELECT SALARY,
02         DEPT,
03         NAME,
04         ID
05 FROM STAFF
06 ORDER BY DEPT
```

The plan for this query is to make it into a dialog so that users who execute it can change the sorted order of the output.

Action

To make the preceding query into a dialog, the object of the ORDER BY clause (DEPT) should be a variable and the TYPE should be *dialog*, as in the following example:

```
=>


------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR
--------------------------------------------------------------------------------
NAME:         SALARY_INFO                                  TYPE: DIALOG  STATUS:
PRIVATE
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P ==============================
01 SELECT SALARY,
02         DEPT,
03         NAME,
04         ID
05 FROM STAFF
06 ORDER BY 1?DEPT_____
```

Defining the Dialog

When *dialog* is the TYPE, you have access to <PF5> DIALOG DEF. This PF key accesses the panels you use to define the panels that appear during execution, along with your definitions of each variable you created on the EDITOR.

The following steps show the sequence of panels that appear when you choose <PF5> DIALOG DEF during EDITOR panel Process Mode.

This particular set of panels defines the preceding sample dialog.

Step 1

Create or select a query to be made into a dialog.

Step 2

Enter dialog as the Type.

Step 3

Move the cursor to DEPT in the ORDER BY clause, press the insert key, and type 1?.

Step 4

Save the dialog.

Step 5

Press <PF5> DIALOG DEF.

Step 6

Complete DEFINE DESCRIPTIVE TEXT (DQDP0) as shown following:

```
--------------------------------------------------------------------------------DQDP0
DATAQUERY:    DEFINE DESCRIPTIVE TEXT        NAME:    SALARY_INFO
--------------------------------------------------------------------------------
DESCRIPTION:
STATUS:         INCOMPLETE
--------------------------------------------------------------------------------
ENTER THE DESCRIPTIVE TEXT TO BE USED AS A TITLE AND SAVE IT
The report created by this dialog gives you salary, department, name and ID ___
data.  You can sort the data by any one of these items._____
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
<PF1> HELP        <PF2> RETURN      <PF3> CONTINUE        <PF4> SAVE
<PF5> NOT USED    <PF6> NOT USED    <PF7> LAST VARIABLE   <PF8> FIRST VARIABLE
```

Step 7

Press <PF4> SAVE to save this part of the dialog definition. Then, press <PF8> FIRST VARIABLE to define the 1? variable.

Step 8

Complete the DEFINE VARIABLE (DQDV0) panel as shown following:

```
-------------------------------------------------------------------------DQDV0
DATAQUERY:  DEFINE VARIABLE                       NAME:   SALARY_INFO
-------------------------------------------------------------------------------
DESCRIPTION:
STATUS:             INCOMPLETE


   NAME,
FROM STAFF
ORDER BY 1?DEPT_____
VARIABLE ID:            1 ?
ENTER THE PROMPT TO BE DISPLAYED FOR THIS VARIABLE:
SELECT A COLUMN NAME FROM THE ALLOWED NAMES OR LEAVE DEPT AS THE DEFAULT._____
VARIABLE TYPE:          c    C - CHARACTER    N - NUMERIC    A - ALPHABETIC
VARIABLE LENGTH:        16
VARIABLE DEFAULT VALUE:
DEPT_____
-------------------------------------------------------------------------------



 <PF1> HELP        <PF2> RETURN       <PF3> CONTINUE      <PF4> SAVE
 <PF5> RANGE/LIST  <PF6> DELETE       <PF7> PREV VARIABLE <PF8> NEXT VARIABLE
```

The prompt text indicates the information that identifies the variable being defined.

Step 9

Press <PF4> SAVE and then press <PF5> RANGE/LIST. Defining a range or list is optional.

Step 10

Complete the DEFINE VARIABLE LIST panel (DQDL0) as shown following:

```
=>
 ENTER THE VALID VALUES FOR THE VARIABLE BELOW
 ----------------------------------------------------------------------DQDL0
 DATAQUERY:  DEFINE VARIABLE LIST
 -------------------------------------------------------------------------------
 NAME                         SALARY_INFO
 VARIABLE ID:             1 ?
 PROMPT FOR VARIABLE:
 SELECT A COLUMN NAME FROM THE ALLOWED NAMES OR LEAVE DEPT AS THE DEFAULT.

 DEPT_____

SALARY
 NAME
 ID

 _____
 _____
 _____
 _____
 _____
 _____
 _____
 -------------------------------------------------------------------------------
 <PF1>  HELP        <PF2>  RETURN      <PF3>  DELETE      <PF4>  SAVE
 <PF5>  NOT USED    <PF6>  NOT USED    <PF7>  BACKWARD    <PF8>  FORWARD
```

You can define a list or a range (if the data is numeric) for each variable in the dialog or you can allow users to enter any valid names.

Press <PF4> SAVE to save the list and press <PF2> RETURN to go back to the DEFINE VARIABLE panel. Note that the status of the dialog is now *complete*.

Step 11

Press <PF4> CONTINUE. When the last dialog panel is saved, CA Dataquery redisplays the EDITOR panel and a message telling you to validate.

Step 12

Validate the dialog. Follow these steps:

1. Complete the dialog definition.

2. Return to the EDITOR.

3. Press <PF10> VALIDATE.

4.   View dialog prompt panel and check it for accuracy.

5.   Display any range or list definitions and check them for accuracy.

6.   Make selections from the range and list panels.

7.   Change values on the prompt panels you designed.

8.   Press <PF4> CONTINUE to complete the validation.

9.   If you are satisfied with the results of validation, your dialog is complete and ready to execute <PF3>. If you are not satisfied, you can return to the dialog definition, delete saved panels that you do not like, and change all or part of the definition.

Other Things You Could Do

The preceding sample query could also be changed so that users could add any valid column name to the SELECT clause. To do that, a variable with a blank default must be defined and added to the SELECT clause, as follows:

```
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P =================================
01 SELECT SALARY,
02          DEPT,
03          NAME,
04          ID,
05          1?_____
06 FROM STAFF
07 ORDER BY 2?DEPT_____
.. ===================== B O T T O M ==============================
```

Note that a comma was added to the preceding column name and that the dialog fill character defines the whole variable. Read more about dialog fill characters on Reviewing the Process (see page 335).

With the ORDER BY clause, three things are possible:

■   Reuse the 1? variable so that any column named as a SELECT clause variable would also be the sort column for the report.

```
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P =================================
01 SELECT SALARY,
02          DEPT,
03          NAME,
04          ID,
05          1?_____
06 FROM STAFF
07 ORDER BY 1?DEPT_____
.. ===================== B O T T O M ==============================
```

Make the entire ORDER BY clause into a variable by providing variables before and after the clause that are comment symbols. Substitutions for these symbols may be any two-letter word that is ignored by CA Dataquery.

```
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ===============================
01 SELECT SALARY,
02          DEPT,
03          NAME,
04          ID,
05 FROM STAFF
06 1?*/
07 ORDER BY 2?DEPT_____
08  3?/*
.. ====================== B O T T O M ==========================
```

Chapter 25: Creating and Using Terms

You can use the CA Dataquery EDITOR to define your own keywords for use in building queries with the Main Menu CREATE option. You may find this capability helpful if you find that many of your queries contain the same statements, clauses, or values. By defining a single word or *Term* to replace DQL Language statements, clauses, values or even to replace a complete query, you can speed query creation and create even more sophisticated queries.

Creation Procedure

Create terms just as you create a query with the CA Dataquery EDITOR. All you do is type *term* in the TYPE field when you identify the query.

Precautions

Should you decide to create a public term to share with others, be sure it does not access tables to which others are not authorized. Do not define it as public until it is complete.

Terms cannot be executed.

You cannot define a complete query as a term and embed the term in another query, because certain CA Dataquery statements, like a FIND statement, may be used only once.

Do not name terms with names that may be used as table, column or key names on the database. Be sure to see Restrictions on Names (see page 79) for important restrictions on names.

How to Use Terms

Type a defined term into your query or dialog just as you would type any valid DQL Language statement.

How to Nest Terms

You can use defined terms as part of another term definition. You can nest terms (terms within terms) up to eight levels deep if the Language Maintenance Facility is not being used. CA Dataquery does not edit the contents of the term until it is used as part of a query. As a result, CA Dataquery does not recognize some errors until all levels of nested terms are processed. To make sure nested terms are valid, create a test query and edit it using the term.

Sample Term Creation and Use

The following sections provide several examples of how terms can be created and used. Use it to become familiar with term creation and to get ideas for terms you may want to create.

Background for Examples

Imagine you are a manager who frequently creates queries that select only data for the Southwest region, which is composed of all zip codes beginning with a 75. You print different kinds of reports on different kinds of data for the same region. You think you can simplify your daily work by creating terms to eliminate repetitive parts of your queries.

A typical query you can create looks like this:

```
FIND ALL CAI-CUST-REC
    WITH ZIP EQUAL '75#'
RELATED BY CUST-ORDID-KEY TO CAI-ORDERS-REC
    WITH DATE GTE 85
SET DISCOUNT = UNIT-PRICE * DISC-PCT
SORT BY (SLMN-ID)
PRINT FROM CAI-CUST-REC
      SLMN-ID
      CUST-ID
      CITY
      STATE
      PHONE
   FROM CAI-ORDERS-REC
      ORD-ID
      TERMS
      SHIP-DT
      DISCOUNT
      (ORDER-TOTAL)
  WHEN SLMN-ID BREAKS
   DO 'AVERAGE ORDER AMOUNT' AVG ORDER-TOTAL
```

Explanation

The WITH clause in this query is an example of using literal masking to tell CA Dataquery to find specific values in specific positions of the column. The # character tells CA Dataquery that any other characters can occur in the remaining positions of the column. For complete instructions on using this kind of selection criteria, see the *CA Dataquery Reference Guide*.

Example 1: A WITH Clause

Question

Most of my queries contain the same WITH clause. **Can I replace it with a term?**

Answer

If you frequently want to report on only data for the Southwest region, composed of customers whose zip codes begin with 75, you may want to create a term for the WITH clause. Here is how your term would look on the CA Dataquery EDITOR panel:

```
 =>
 CREATION PANEL
 -------------------------------------------------------------------------DQD10
 DATAQUERY:  EDITOR            CURRENT TABLE:  _____
 --------------------------------------------------------------------------------
 NAME:            SOUTHWEST_____                        TYPE: TERM__  STATUS:
 PRIVATE
 DESCRIPTION:   WITH ZIP EQUAL '75#'_____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ============================ T O P ================================
 ..       WITH ZIP EQUAL '75#'
 ..
 ..
 ..
 ..
 ..
 ..
 ..
 ..
    ====================== B O T T O M ============================
 --------------------------------------------------------------------------------
 <PF1> HELP          <PF2> RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL   <PF6> LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
 <PF9> TEMPLATE      <PF10> VALIDATE   <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

Here is how your term would look used in a query:

```
 =>
 CREATION PANEL
 -------------------------------------------------------------------------DQD10
 DATAQUERY: EDITOR                    CURRENT TABLE: _____
 -------------------------------------------------------------------------------
 NAME:         SW-CUSTOMER-ADD                          TYPE: QUERY_  STATUS:
 PUBLIC_
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. =========================== T O P ================================
 .. FIND ALL CAI-CUST-REC
 ..     SOUTHWEST
 .. SORT BY (SLMN-ID)
 .. PRINT SLMN-ID
 ..        CUST-ID
 ..        CITY
 ..        STATE
 ..        PHONE
 ..
    ====================== B O T T O M ============================
 -------------------------------------------------------------------------------
 <PF1> HELP          <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD          <PF8>  FORWARD
 <PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

Where you type SOUTHWEST in a query, CA Dataquery substitutes at execution time:

WITH ZIP EQUAL '75#'

If you want to produce reports on several regions, you may create terms to represent WITH clauses that identify each region.

Example 2: PRINT Statement

Question

I always print the same columns. Can I replace a PRINT statement with a term?

Answer

You may want to produce several different types of reports for the same data. You could create terms that replace various print statements or various WHEN-DO statements. For instance, you may frequently print these columns in many queries you write.

```
PRINT FROM CAI-CUST-REC
      SLMN-ID
      CUST-ADDRESS-1
      CUST-ADDRESS-2
      CUST-ID
      CITY
      STATE
      PHONE
```

You could create a term to replace this print statement whenever it is used in a query. Here is how the term definition looks on the CA Dataquery EDITOR:

```
 =>
 CREATION PANEL
 --------------------------------------------------------------------------DQD10
 DATAQUERY: EDITOR                    CURRENT TABLE: _____
 --------------------------------------------------------------------------------
 NAME:           CUST-LOCATION                  TYPE: TERM__  STATUS: PRIVATE
 DESCRIPTION:  _____
    ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
 .. ========================= T O P ==============================
 ..    FROM CAI-CUST-REC
 ..        SLMN-ID
 ..        CUST-ADDRESS-1
 ..        CUST-ADDRESS-2
 ..        CUST-ID
 ..        CITY
 ..        STATE
 ..        PHONE
 ..
    ====================== B O T T O M ==========================
 --------------------------------------------------------------------------------
 <PF1> HELP          <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
 <PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD          <PF8>  FORWARD
 <PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

When you create another query that SORTs differently or FINDs customers from many regions, you can be sure you print the same columns by using the CUST-LOCATION term. Here is how it looks in the sample query:

```
=>
CREATION PANEL
--------------------------------------------------------------------------DQD10
DATAQUERY: EDITOR                CURRENT TABLE: _____
--------------------------------------------------------------------------------
NAME:         CUSTOMER-RECORD                        TYPE: QUERY_  STATUS:
PRIVATE
DESCRIPTION:   CUSTOMER REPORT_____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
01   FIND ALL CAI-CUST-REC
02       WITH ZIP EQUAL '75#'
03   RELATED BY CUST-ORDID-KEY TO CAI-ORDERS-REC
04       WITH DATE GTE 85
05   SET DISCOUNT = UNIT-PRICE * DISC-PCT
06   SORT BY (SLMN-ID)
07   PRINT CUST-LOCATION
08      FROM CAI-ORDERS-REC
09         ORD-ID
10         TERMS
     ======================= B O T T O M ============================
--------------------------------------------------------------------------------
<PF1> HELP         <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

Example 3: WHEN-DO Statement in a Dialog

Question

Can I vary the WHEN-DO statements for a particular report, depending on my need?

Answer

You could also define several terms as WHEN-DO statements that report on averages, totals, maximums, and so forth, and use them in queries to produce different results. You may want to create a dialog that prompts you for a WHEN-DO term and define a list of valid WHEN-DO terms that can be used.

Here is the first sample query again, defined as a dialog, with a variable for the WHEN-DO statement:

```
  =>
  CREATION PANEL
  -----------------------------------------------------------------------DQD10
  DATAQUERY: EDITOR              CURRENT TABLE: _____
  --------------------------------------------------------------------------
  NAME:          CUSTOMER-RECS__                        TYPE: DIALOG  STATUS:
  PRIVATE
  DESCRIPTION:    CUSTOMER REPORT WITH VARIABLE MATH FUNCTIONS_____
     ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
  .. =========================== T O P ===============================
  13       CUST-ADDRESS-2
  14       CUST-ID
  15       CITY
  16       STATE
  17       PHONE
  18     FROM CAI-ORDERS-REC
  19       ORD-ID TERMS SHIP-DT DISCOUNT (ORDER-TOTAL)
  20     11?AVG-ORDER
        ====================== B O T T O M ===============================
  --------------------------------------------------------------------------
  <PF1> HELP          <PF2> RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
  <PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
  <PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

DIALOG Prompt Panel for Example

When you use a variable WHEN-DO statement in a dialog, you make it possible to produce reports containing different mathematical results with the same query. All you do is use the WHEN-DO term you need as a variable.

Here is what the DIALOG prompt panel may look like when it appears after you press <PF3> EXECUTE on the ONLINE EXECUTION panel for the sample dialog.

```
 =>
 SCROLL VALUES WITH PF7 OR PF8 AND CHANGE THEM IF DESIRED FOR THIS EXECUTION
 ------------------------------------------------------------------------DQEX0


Describe the kind of report on orders that you want to produce.
You can calculate AVERAGES, TOTALS, MINIMUM ORDERS, or a COUNT of
orders by selecting the functions you want this dialog to perform.


Select the term name for the function you want to perform or
press <PF3> CONTINUE to accept the default.
 AVG-ORDER




 -----------------------------------------------------------------------------
 <PF1>  HELP       <PF2>  RETURN     <PF3>  CONTINUE    <PF4>  NOT USED
 <PF5>  RANGE/LIST <PF6>  NOT USED   <PF7>  BACKWARD    <PF8>  FORWARD
```

The LIST prompt panel for this dialog would look like this:

```
 =>

 ------------------------------------------------------------------------DQEL0

 CHOOSE A VALUE FROM THE LIST BELOW VIA CURSOR POSITION AND PRESS <PF2>.
 PROMPT:

Select the term name for the function you want to perform or
press <PF3> CONTINUE to accept the default.
 AVG-ORDER
 TOT-ORDER
 MIN-ORDER
 CNT-ORDER






 -----------------------------------------------------------------------------
 <PF1>  HELP       <PF2>  RETURN     <PF3>  NOT USED    <PF4>  NOT USED
 <PF5>  NOT USED   <PF6>  NOT USED   <PF7>  BACKWARD    <PF8>  FORWARD
```

For information about defining variables and lists of valid replacements, see Defining the Dialog (see page 338)

WHEN/DO Term Definitions

Here are the definitions for several terms that could be placed at the end of the query in place of a WHEN/DO statement.

Averaging

```
=>
CREATION PANEL
--------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR            CURRENT TABLE:  _____
--------------------------------------------------------------------------------
NAME:         avg-order_____                 TYPE: term__  STATUS: private
DESCRIPTION:  _____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. =========================== T O P ================================
..
..    WHEN SLMN-ID BREAKS
..     DO 'AVERAGE ORDER AMOUNT' AVG ORDER-TOTAL
..
..
..
..
..
..
      ====================== B O T T O M ===========================
--------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Totaling

```
=>
CREATION PANEL
--------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR            CURRENT TABLE:  _____
--------------------------------------------------------------------------------
NAME:         sum-order_____                 TYPE: term__  STATUS: private
DESCRIPTION:  _____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. =========================== T O P ================================
..
..    WHEN SLMN-ID BREAKS
..     DO 'TOTAL ORDER AMOUNT' SUM ORDER-TOTAL
..
..
..
..
..
..
      ====================== B O T T O M ===========================
--------------------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN      <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD         <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Minimum

```
=>
CREATION PANEL
-------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  _____
--------------------------------------------------------------------------------
NAME:         min-order_____                    TYPE: term__   STATUS: private
DESCRIPTION:  _____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
..
..    WHEN SLMN-ID BREAKS
..     DO 'MINIMUM ORDER AMOUNT' MIN ORDER-TOTAL
..
..
..
..
..
..
      ======================= B O T T O M ============================
--------------------------------------------------------------------------------
<PF1> HELP         <PF2>  RETURN     <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL  <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
<PF9> TEMPLATE     <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Counting

```
=>
CREATION PANEL
-------------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR              CURRENT TABLE:  _____
--------------------------------------------------------------------------------
NAME:         cnt-order_____                    TYPE: term__   STATUS: private
DESCRIPTION:  _____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
..
..    WHEN SLMN-ID BREAKS
..     DO 'NUMBER OF ORDERS' CNT ORD-ID
..
..
..
..
..
..
      ======================= B O T T O M ============================
--------------------------------------------------------------------------------
<PF1> HELP         <PF2>  RETURN     <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL  <PF6>  LIST TABLES <PF7> BACKWARD        <PF8>  FORWARD
<PF9> TEMPLATE     <PF10> VALIDATE    <PF11> RIGHT/LEFT      <PF12> PROCESS MODE
```

Example 4: SET Statement

Question

I always use the same complicated calculation in my queries. Can I define it as a term?

Answer

You could create a term that includes several SET statements and calculations that everyone in your group could share whenever they want to print the results of calculations.

Your term definition looks like this:

```
=>
CREATION PANEL
----------------------------------------------------------------------------DQD10
DATAQUERY:  EDITOR            CURRENT TABLE:  _____
--------------------------------------------------------------------------------
NAME:         sales-net_____        TYPE: term__  STATUS:  public_
DESCRIPTION:   figure net income after taxes_____
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
.. ========================= T O P ================================
.. SET NET = YTD-COMMISSION + YTD-WAGES
.. SET SALARY (6.2) = NET - YTD-TAX
..
..
..
..
..
..
..
    ======================= B O T T O M ==============================
--------------------------------------------------------------------------------
<PF1> HELP           <PF2>  RETURN     <PF3>  DISPLAY COLUMNS <PF4> DISPLAY KEYS
<PF5> DISPLAY ALL   <PF6>  LIST TABLES <PF7> BACKWARD          <PF8>  FORWARD
<PF9> TEMPLATE      <PF10> VALIDATE    <PF11> RIGHT/LEFT       <PF12> PROCESS MODE
```

Note that the term status is PUBLIC so that other users can share it. All users can now use the calculations in any query that reads tables containing the column names used in the SET statements.

Examples

Here are two different queries that use the SALES-NET term:

```
FIND ALL PERSONNEL ROWS
     WITH CITY = 'DALLAS'
RELATED BY NUMBER TO PAYROLL ROWS
     WITH YTD-COMMISSION > 100
SALES-NET
PRINT FROM PERSONNEL NAME
                    ADDRESS
                    SALARY


FIND ALL SALESMEN ROWS
     WITH CITY = 'DALLAS'
RELATED BY SLMN-ID TO PAYROLL ROWS
     WITH YTD-COMMISSION > 100
     SALES-NET
SET BONUS = NET * .10
PRINT FROM SALESMEN NAME
                    SALARY
                    BONUS
```

Other Things You Can Do

If you are authorized to update the database with CA Dataquery, you can use the commands provided by your CA Dataquery Administrator in a term. See your CA Dataquery Administrator for authorization and instructions.

Chapter 26: Introducing the Personal Database Facility

Selecting PDB from the Main Menu of CA Dataquery accesses the Personal Database Facility.

To use personal tables, the SQL option of CA Datacom/DB must be installed at your site and you must be authorized by your CA Dataquery Administrator to access the Personal Database Facility. The Facility is not available to users of products accessing A Datacom/AD. Select PDB when you want to create, delete, and maintain personal tables as needed without coding programs with CA Datacom/DB.

Personal tables are associated with your private authorization ID. Your private authorization ID designates a specific set of tables. If you share a private authorization ID with other users, they also have access to your personal tables.

You can query the personal tables by using their names as you would any other table.

Uses for Personal Tables

You may want to create a table containing data that you need for specialized reports and that does not currently exist in the form you need it. In this way you are not limited to using only existing data. You do not have to depend on someone else to create a table just for you.

You may need the ability to manipulate data so you can forecast or plan for the future. If all the data in your personal tables are generated by you, you are completely in charge of what you do with it.

Facility Overview

To access the Personal Database Facility, select PDB from the Main Menu. When the DIRECTORY OF TABLES panel appears, select one of the following:

- DISPLAY TABLE definitions.

- Create new tables.

- Delete tables and the data they contain.

- Add, delete, or change data in an existing table.

Chapter 27: Displaying Personal Table Definitions

Use the PDB function on the Main Menu to see a list of your personal tables. You can also see a list of the columns in any table. In addition, the panel that appears when you select PDB allows access to all other available Personal Database features.

Listing Personal Tables

Selecting PDB from the Main Menu displays a list of all tables with your authorization ID on the DIRECTORY OF TABLES (DQT10) panel. The names displayed may be slightly different when they are listed on a directory listing, since CA Datacom Datadictionary sometimes adjusts names to make them unique. A table name is made up of the creator's authorization ID and the assigned table name. If you do not see a table name listed that you need, see your CA Dataquery Administrator.

Use the DIRECTORY OF TABLES panel to create, delete, display or maintain a personal table.

Panel

The following is an example of the DIRECTORY OF TABLES (DQT10) panel.

```
   =>
  PLACE THE CURSOR BY THE DESIRED NAME AND PRESS THE APPROPRIATE PFKEY
  ----------------------------------------------------------------------DQT10
  DATAQUERY:  DIRECTORY OF TABLES              DATADICTIONARY BASE ID: 002
                                               START WITH:  _____
  ----------------------------------------------------------------------------
       TABLE NAME                    | DESCRIPTION
  ----------------------------------------------------------------------------
    ORG                             | ORGANIZATION INFORMATION
    STAFF                           | STAFF DATA
    PERSONNEL                       | EMPLOYEE INFORMATION
    RETIREMENT                      | RETIREMENT PLANNING
    BENEFITS                        | BENEFIT RECORDS
    QUOTAS                          | QUOTA PER SALES REP
    CLIENTS                         | CLIENT NAMES AND ADDRESSES
    BUDGET                          | DEPARTMENTAL BUDGET
    COMPETITORS                     | COMPETITOR PRODUCT INFORMATION
                                    |
                                    |
                                    |
  - LAST PAGE ----------------------------------------------------------------
  <PF1> HELP          <PF2> RETURN      <PF3> CREATE        <PF4> DROP
  <PF5> DISPLAY       <PF6> INSERT ROWS <PF7> BACKWARD      <PF8> FORWARD
```

The DIRECTORY OF TABLES panel displays the CA Datacom Datadictionary database ID containing your personal tables. It lists the names of all of the personal tables for your authorization ID with a description of each one (if a description was entered). The PF key menu at the bottom of the panel allows selection of other Personal Database features.

Operation

The following shows functions and the actions required to perform these functions, when using the DIRECTORY OF TABLES panel.

Move a table name to the top of the list.

> Enter the first unique characters of a table name in the Start With field and press Enter.

To scroll the list forward

> Press <PF8> FORWARD.

To scroll the list backward

> Press <PF7> BACKWARD.

Other Things You Can Do

The PF keys at the bottom of the DIRECTORY OF TABLES (DQT10) panel also allow access to other features.

Define a new personal table.

> Press <PF3> CREATE. See Defining a New Personal Table (see page 366) for instructions.

Delete an existing personal table and its data.

> Press <PF4> DROP with the cursor on a table name. See Deleting a Table.

See column definitions for a specific personal table.

> Press <PF5> DISPLAY with the cursor on a table name. See Display a Personal Table Definition (see page 359) for an understanding of the panel.

> See Copying a Personal Table Definition (see page 363) for instructions on **copying** the resulting definition.

> See Maintaining Personal Databases on **maintaining** data within the table whose definition you display.

Add a row to a personal table.

> Press <PF6> INSERT ROWS with the cursor on a table name. Maintaining Personal Databases tells how to add, update, and delete rows in the table selected.

Display a Personal Table Definition

You can see the definitions of all the columns making up any personal table. Use the DISPLAY TABLE panel as an aid to understanding table structure when creating a query or dialog that references the table.

Action

Follow these steps to display a table definition.

Step 1

Display DIRECTORY OF TABLES panel (DQT10).

Step 2

Position cursor on a table name.

Step 3

Press <PF5> DISPLAY.

CA Dataquery displays a DISPLAY TABLE (DQT20) panel for the table chosen.

Panel

The following shows a typical DISPLAY TABLE (DQT20).

```
 =>

 -------------------------------------------------------------------------DQT20
 DATAQUERY:  DISPLAY TABLE          TABLE NAME:  STAFF
 --------------------------------------------------------------------------------
 COLUMN NAME                     |   TYPE   | LENGTH
 --------------------------------------------------------------------------------
 ID                              | SMALLINT |      7
 NAME                            | CHARACTER |     9
 DEPT                            | SMALLINT |      7
 JOB                             | CHARACTER |     5
 YRS                             | SMALLINT |      3
 SALARY                          | DECIMAL  |   (7,2)
 COMM                            | DECIMAL  |   (7,2)
                                 |          |
                                 |          |
                                 |          |
                                 |          |
                                 |          |
                                 |          |
  - LAST PAGE -------------------------------------------------------------------
 <PF1> HELP           <PF2> RETURN        <PF3> NOT USED      <PF4> DROP
 <PF5> COPY           <PF6> INSERT ROWS   <PF7> BACKWARD      <PF8> FORWARD
 <PF9> MAINTAIN ROWS
```

The DISPLAY TABLE panel shows the table name along with the name of each column, its type, and its length.

The following describes the information displayed.

COLUMN NAME

Contains a one-word name for each column named on the table.

TYPE

Shows the type of data the column listed to the left can contain. Data may be:

- CHARACTER -- all displayable characters.

- NUMERIC -- signed numeric data with zoned decimals.

- DECIMAL -- packed decimal numeric data.

- FLOAT -- floating-point.

- SMALLINT -- small integer numbers.

- INTEGER -- large integer numbers.

The most commonly used data types are character or numeric. See the *CA Dataquery Reference Guide* for more information on data types.

LENGTH

Shows the maximum number of characters per row for a column. If two numbers are separated by a comma, read the first number as the total length and the second number as the number of decimal places.

Operation

Scroll backward and forward on the list of columns using <PF7> BACKWARD and <PF8> FORWARD.

Other Things You Can Do

The PF keys at the bottom of the DISPLAY TABLE (DQT20) panel allow access to other features.

Delete this personal table and its data.

Press <PF4> DROP with the cursor on a table name. See Deleting a Table for instructions.

Create a new personal table by copying an existing definition of a table that has less than 99 columns.

Press <PF5> COPY while viewing the DISPLAY TABLE panel. See Copying a Personal Table Definition (see page 363) for instructions.

Add a row to a personal table.

Press <PF6> INSERT ROWS with the cursor on a table name.

Maintain rows in a personal table.

Press <PF9> MAINTAIN ROWS with the cursor on a table name. See Updating Rows for instructions.

Chapter 28: Creating Personal Tables

Use one of the following methods to create a personal table:

- Copy an existing table definition if it has fewer than 99 columns.

- Use PDB to create a new personal table definition.

- Use the STORE command to create a personal table with data.

The following chapter explains how to create a new table using these methods.

Copying a Personal Table Definition

You can create a new personal table by copying an existing table that has your authorization ID and fewer than 99 columns. The new table contains all the same column names, types, and lengths. You can change or delete any part of the definitions or add new columns.

Action

To begin copying a personal table definition, follow these steps:

Step 1

Display DIRECTORY OF TABLES (DQT10) panel.

Step 2

Select a table to copy by positioning the cursor on its name. It must have fewer than 99 columns.

Step 3

Press <PF5> DISPLAY.

Step 4

View DISPLAY TABLE (DQT20) panel.

Step 5

Press <PF5> COPY.

The CREATE TABLE (DQT30) panel appears containing the copied definition.

Panel

Following is an example of the CREATE TABLE (DQT30) panel as it appears when an existing table has been copied with <PF5> COPY.

```
=>
 Enter information for table columns and press appropriate PF key
 --------------------------------------------------------------------------------DQT30
 DATAQUERY:  CREATE TABLE          TABLE NAME:  _____
 --------------------------------------------------------------------------------
 COLUMN NAME                     |   TYPE    | LENGTH
 --------------------------------------------------------------------------------
 CUST-ID                         | CHARACTER |  5
 IND-CD                          | CHARACTER |  1
 CUST-NO                         | CHARACTER |  4
 NAME                            | CHARACTER |  30
 ADDR-1                          | CHARACTER |  30
 ADDR-2                          | CHARACTER |  30
 CITY                            | CHARACTER |  15
 STATE                           | CHARACTER |  2
 ZIP                             | CHARACTER |  9
 CRED-IND                        | CHARACTER |  1
 PHONE                           | CHARACTER |  10
 AREA-CD                         | CHARACTER |  3
 PH-EXCH                         | CHARACTER |  3
 PH-NO                           | CHARACTER |  4
 --------------------------------------------------------------------------------
 <PF1> HELP           <PF2> RETURN          <PF3> ADD TABLE     <PF4> NOT USED
 <PF5> INSERT COLUMN  <PF6> DELETE COLUMN  <PF7> BACKWARD       <PF8> FORWARD
```

Action

You can change any part of the definition copy.

Use the Tab key to move the cursor from one field on the panel to another. Do not press <PF3> ADD TABLE until changes are complete. Otherwise, you will be unable to make further changes.

To edit the new table definition, follow these instructions:

Change a column name, type, or length.

> Type the new definition over the existing definition.

Delete a column.

> Place the cursor on a column name and press <PF6> DELETE COLUMN.

Add a new column.

Place the cursor on the name of the column you want the new column to follow and press <PF5> INSERT COLUMN. A blank line appears for entering a name, type, and length in the appropriate panel fields.

Change column order.

Use the INSERT COLUMN and DELETE COLUMN PF keys to manually change the order of columns.

Procedure

To add the new table to your database, follow these steps during display of the CREATE TABLE (DQT30) panel.

Step 1

Enter a unique table name in the field called TABLE NAME. Be careful not to duplicate the name of an existing table in your database.

The table name should begin with an alphabetic character. You can use letters, numbers, and underscores as part of the name. The maximum name length is 32 characters. After creation, CA Datacom Datadictionary assigns the table an entity-name and that name appears on directories. Where duplicate names occur, CA Datacom Datadictionary may modify a name to make it unique. Also, any table you create is stored under your permanent SQL authorization ID, maintained by your CA Dataquery Administrator. Changing the ID on your User Profile does not affect this storage. Check with your CA Dataquery Administrator for a table name if yours does not appear on a directory.

Step 2

Press <PF3> ADD TABLE to create the new table.

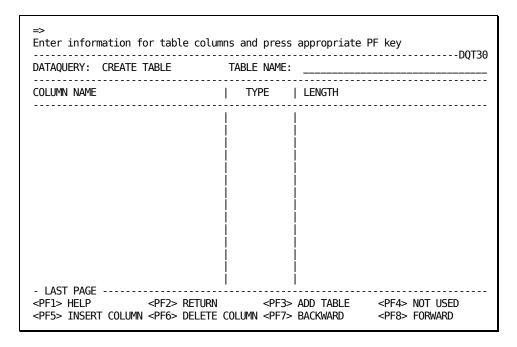# Defining a New Personal Table

You can create a new personal table by typing in all of the column names, types, and lengths yourself. As you work, you can change or delete any part of the definitions or add new columns.

Action

Displays the DISPLAY TABLE (DQT10) panel by selecting PDB from the Main Menu. When the panel appears, press <PF3> CREATE.

Panel

Following is an example of the CREATE TABLE (DQT30) panel as it appears after pressing <PF3> CREATE during display of the DISPLAY TABLE panel.

```
  =>
  Enter information for table columns and press appropriate PF key
  ------------------------------------------------------------------------DQT30
  DATAQUERY:  CREATE TABLE           TABLE NAME:  _____
  ------------------------------------------------------------------------------
  COLUMN NAME                     |   TYPE   | LENGTH
  ------------------------------------------------------------------------------
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
                                  |          |
  - LAST PAGE ------------------------------------------------------------------
  <PF1> HELP           <PF2> RETURN           <PF3> ADD TABLE      <PF4> NOT USED
  <PF5> INSERT COLUMN <PF6> DELETE COLUMN <PF7> BACKWARD       <PF8> FORWARD
```

Action

Use the Tab key to move the cursor from one field on the panel to another and type in column names, types, and lengths. You can also add or delete columns by using PF keys. Do not press <PF3> ADD TABLE before your entries are correct and complete. Otherwise, you will be unable to make further changes.

Following are valid entries on the CREATE TABLE (DQT30) panel.

COLUMN NAME

Enter a one-word name for the column beginning with an alphabetic character. You can use letters, numbers and underscores (_) as part of the name. The maximum column name length is 32 characters.

TYPE

Shows the type of data the column can contain. Data may be:

- CHARACTER -- all displayable characters.

- NUMERIC -- signed numeric data with zoned decimals.

- DECIMAL -- packed decimal numeric data.

- FLOAT -- floating-point.

- SMALLINT -- small integer numbers.

- INTEGER -- large integer numbers.

You can enter only the first character of each of these data types.

The most commonly used data will be character or numeric. See the *CA Dataquery Reference Guide* for more information on data types.

LENGTH

(Not required for FLOAT, SMALLINT, or INTEGER types.) Shows the maximum number of characters per row for a column. To define a numeric or decimal column, enter two numbers. The first number is the total length and the second number is the number of decimal places. For instance, if the total column length is to be 5 characters and two decimal places (-999.99) enter (5,2). Do not allow places for a sign or the decimal point.

For a numeric or decimal column, if you enter only one number, the number of decimal places is assumed to be zero.

PF Keys

Following is a guide to using the CREATE TABLE (DQT30) panel PF keys to edit the definitions entered. Do not press <PF3> ADD TABLE until all entries are correct and complete. Otherwise, you cannot make further changes.

Delete a column.

Place the cursor on a column name and press <PF6> DELETE COLUMN.

Add a new column.

Place the cursor on the name of the column you want the new column to follow and press <PF5> INSERT COLUMN. A blank line appears for entering a name, type, and length in the appropriate panel fields.

Change column order.

Use the INSERT COLUMN and DELETE COLUMN PF keys to retype the input to change the order of columns.

Procedure

To add the new table to your personal tables, follow these steps during display of the CREATE TABLE (DQT30) panel.

Step 1

Enter a unique table name in the field called TABLE NAME. Be careful not to duplicate the name of a table in your database.

The table name should begin with an alphabetic character. You can use letters, numbers, and underscores (_) as part of the name. The maximum name length is 32 characters. After creation, CA Datacom Datadictionary assigns the table an entity-name and that name appears on directories. Where duplicate names occur, CA Datacom Datadictionary may modify a name to make it unique. Also, any table you create is stored under your permanent SQL authorization ID, maintained by your CA Dataquery Administrator. Changing the ID on your User Profile does not affect this storage. Check with your CA Dataquery Administrator for a table name if yours does not appear on a directory.

Step 2

Assure that the table definition is complete and accurate.

Step 3

Press <PF3> ADD TABLE to create the new table. (Once the table is added, you cannot change its structure.)

STORE Data

Use the STORE command during display of query or dialog output to create a new personal table, complete with data. The correct format for the command is:
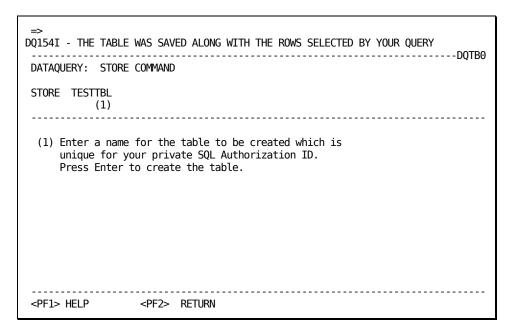
STORE table-name

Use a unique table name for the new table. The table name should begin with an alphabetic character. You can use letters, numbers, and underscores as part of the name. The maximum name length is 32 characters.

Example

Enter the STORE command during output display:

```
 => store\testtbl
 DQ471I - ROWS FOUND: 000037
05/01/11                      DATAQUERY DEVELOPMENT                    PAGE    1
15:53:49                         EMPLOYEE REPORT                            DETAIL


                           TOTAL
 DEPARTMENT      YRS    COMPENSATION
 ----------    -------  --------------
        7         7        $18,647.30

 MAXIMUM YRS            7


       10        10        $20,010.00
                  7        $22,959.20
                  5        $19,260.25
                 12        $21,234.25

 MAXIMUM YRS            12

-------------------------------- MORE .... -------------------------------------
<PF1>  HELP          <PF2>  RETURN    <PF3>  TOTALS ONLY    <PF4>  DETAIL
<PF5>  NO TOTALS     <PF6>  STATS     <PF7>  BACKWARD       <PF8>  FORWARD
<PF9> NOT USED       <PF10> NOT USED  <PF11> LEFT           <PF12> RIGHT
```

Press Enter and see the following display.

```
 =>
DQ154I - THE TABLE WAS SAVED ALONG WITH THE ROWS SELECTED BY YOUR QUERY
 ------------------------------------------------------------------------DQTB0
 DATAQUERY:  STORE COMMAND

 STORE  TESTTBL
            (1)
 -----------------------------------------------------------------------------

  (1) Enter a name for the table to be created which is
      unique for your private SQL Authorization ID.
      Press Enter to create the table.




 -----------------------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN
```

Access the new table just as you would any other personal table.

Populating a New Personal Table

After adding a new table to your personal tables, enter as many rows of data as you like, whenever you like. For data entry instructions, see Maintaining Personal Databases.

Chapter 29: Maintaining Personal Tables

Unless you share an authorization ID with other users, you are in charge of the personal tables that appear on the DIRECTORY OF TABLES (DQT10) panel. You can decide to delete (drop) a table or make any necessary changes to keep your database up to date and conserve the space reserved for you.

Deleting a Table

You can delete a table from your personal database. Deleting a table deletes its data and the CA Datacom Datadictionary definitions and frees the disk storage space.

Action

Delete a table from either of two panels in the Personal Database Facility or by using the DROP command documented in the *Panel and Command Reference*.

Step 1

Display the DIRECTORY OF TABLES (DQT10) panel and place the cursor on a table name. *Or*, display the DISPLAY TABLE (DQT20) panel for the table to be deleted.

Step 2

Press <PF4> DROP.

CA Dataquery displays the DROP TABLE CONFIRMATION (DQTA0) panel.

Panel

Following is an example of the DROP TABLE CONFIRMATION (DQTA0) panel containing typical data.

```
=>
Press PF3 to CONFIRM the DROP TABLE or PF4 to CANCEL
------------------------------------------------------------------------DQTA0
DATAQUERY: DROP TABLE CONFIRMATION
-------------------------------------------------------------------------------
TABLE NAME: CA_CUST_TBL                           DATADICTIONARY BASE ID:
-------------------------------------------------------------------------------

A DROP TABLE request was made for table CA_CUST_TBL                   .






                    



     -------------------------------------------------------------------------
     <PF1> HELP        <PF2> RETURN        <PF3> CONFIRM      <PF4> CANCEL
```

Operation

To confirm deletion of the table, press <PF3> CONFIRM. CA Dataquery displays a message saying the table has been dropped.

To cancel the impending deletion, press <PF4> CANCEL, <PF2> RETURN, or the Clear key.

Changing a Table That Contains Data

You cannot change a table's actual structure once that table has been added to your personal database. To create a table that is somewhat different from an existing table, you can copy the definition to a new table and reenter the data.

Although you cannot change the structure of a table, there is a way to make some minimal changes without having to re-type data. Define a new table and use SUBSELECT to copy the data into it. Using this feature, you can, in effect, rename, add or delete columns in the new table. Or, use the STORE command to create a personal table from query output. See the *CA Dataquery Reference Guide* for instructions on using this SQL keyword.

Chapter 30: Adding Data to Personal Tables

Once a personal table exists for your authorization ID, you can add data to it. You can:

- Add rows to populate the table.

- Add a row to a table that already contains data.

The following tells how to do these tasks beginning with using the INSERT ROWS (DQT50) panel.

Entering Data

The INSERT ROWS (DQT50) panel presents a listing of all defined columns of a particular table, along with their data types and lengths. It also provides blank fields for entering data. Use the panel to enter new data.

Action

To display the INSERT ROWS (DQT50) panel, follow these steps:

Step 1

Display the DIRECTORY OF TABLES (DQT10) panel and place the cursor on a table name. *Or,* display the DISPLAY TABLE (DQT20) panel for the table needed.

Step 2

Press <PF6> INSERT ROWS.

CA Dataquery displays the INSERT ROWS (DQT50) panel.

Following is an example of the INSERT ROWS (DQT50) panel.

INSERT ROWS (DQT50) Panel

```
   =>
 ENTER VALUE(S) IN THE VALUE COLUMN AND PRESS PF3 TO INSERT THE ROW
 -----------------------------------------------------------------------DQT50
 DATAQUERY:   INSERT ROWS          TABLE NAME:  STAFF
 ---------------------------------------------------------------------------
  COLUMN NAME                     |    TYPE   | LENGTH  | VALUE
 ---------------------------------------------------------------------------
 ID                               | SMALLINT  |      5  |
 NAME                             | CHARACTER |      9  |
 DEPT                             | SMALLINT  |      5  |
 JOB                              | CHARACTER |      5  |
 JOB_DESCRIPTION                  | CHARACTER |     50  |
                                  |           |         |
 YRS                              | SMALLINT  |      5  |
 SALARY                           | DECIMAL   |   (7,2) |
 COMM                             | DECIMAL   |   (7,2) |
                                  |           |         |
                                  |           |         |
                                  |           |         |
                                  |           |         |
 - LAST PAGE -----------------------------------------------------------
 <PF1> HELP          <PF2>  RETURN       <PF3>  INSERT       <PF4>  NOT USED
 <PF5> NOT USED      <PF6>  NOT USED     <PF7>  BACKWARD     <PF8>  FORWARD
```

The INSERT ROWS panel represents one row of a table you select. Use it to add rows to a table. The first three panel columns are for display only. The last panel column, titled VALUE, contains entry fields for each column listed in the panel column titled Column Name.

Description

Following is a description of the panel.

COLUMN NAME

(Display only)

Contains the name of a column in the current table.

TYPE

(Display only)

Shows the type of data the column can contain. Data may be:

■   CHARACTER -- all displayable characters.

■   NUMERIC -- signed numeric data with zoned decimals.

■   DECIMAL -- packed decimal numeric data.

- FLOAT -- floating-point.

- SMALLINT -- small integer numbers.

- INTEGER -- large integer numbers.

The most commonly used data will be character or numeric. See the *CA Dataquery Reference Guide* for more information on data types.

LENGTH

(Display only. No length for FLOAT, SMALLINT OR INTEGER types.)

Shows the maximum length of a value for the named column. If there are two numbers, the first number is the total length and the second number is the number of decimal places. The number given does not include the spaces needed for a sign, commas or the decimal point.

VALUE

(Data entry fields.)

Provides an entry field for each table column named on the panel. If a column's length exceeds one line of the VALUE column, the entry field wraps to occupy as many lines as needed.

Inserting a New Row

Use the procedure that you use to populate a new table to add data to a table that already contains data. To add a new row, complete the INSERT ROWS panel representing that row and then *insert* it into the table.

Step 1

Display the INSERT ROWS (DQT50) table as discussed in <u>Entering Data</u> (see page 373).

Step 2

Use the Tab or arrow keys to move the cursor to the first position of each field in the VALUE column that you want to complete.

Step 3

Enter valid data according to the type and length specifications shown for each column.

Step 4

Press <PF3> INSERT to insert the new row in the table.

Step 5

View the message that says the row has been added.

To add another row, follow steps one through five and type over some, all, or none of the data remaining on the panel.

To stop adding rows, press <PF2> RETURN after inserting the last new row in the table.

Chapter 31: Maintaining Personal Databases

Maintenance tasks you can perform on your personal tables are:

- Find all rows of a table.

- Find a specific row or group of rows based on search criteria.

- Scroll back and forth from one row to another.

- Change data on any row.

- Delete a Row.

The following tells how to do all of these tasks beginning with using the MAINTAIN ROWS (DQT40) panel.

Finding Personal Table Rows

When you find a row in any personal table, you can change (update) any value or delete the whole row. Finding rows of data in a personal table requires that you display the MAINTAIN ROWS (DQT40) panel. Follow these steps:

Step 1

Display the DIRECTORY OF TABLES (DQT10) panel and place the cursor on a table name. *Or,* display the DISPLAY TABLE (DQT20) panel for the table needed.

Step 2

Press <PF9> MAINTAIN ROWS.

CA Dataquery displays the MAINTAIN ROWS (DQT40) panel.

Panel

The MAINTAIN ROWS (DQT40) panel presents a listing of all defined columns of a particular table, along with their data types and lengths. It also provides entry fields for comparison operators and comparison data. Use the panel to find specific rows of data or all rows of data.

Following is an example of the MAINTAIN ROWS (DQT40) panel.

MAINTAIN ROWS (DQT40)

```
  =>
 ENTER COMPARISON OPERATOR(S) AND VALUE(S) AND PRESS PF3 TO SELECT ROWS
 -------------------------------------------------------------------------DQT40
 DATAQUERY:  MAINTAIN ROWS          TABLE NAME:  STAFF
 ---------------------------------------------------------------------------
  COLUMN NAME                    |  TYPE  | LENGTH|COMP|     VALUE
 ---------------------------------------------------------------------------
 ID                             |SMALLINT|     5|    |
 NAME                           |CHAR    |     9|    |
 DEPT                           |SMALLINT|     5|    |
 JOB                            |CHAR    |     5|    |
 JOB_DESCRIPTION                |CHAR    |    50|    |
                                |        |      |    |
 YRS                            |SMALLINT|     5|    |
 SALARY                         |DECIMAL |  (7,2)|   |
 COMM                           |DECIMAL |  (7,2)|   |
                                |        |      |    |
                                |        |      |    |
                                |        |      |    |
                                |        |      |    |
 - LAST PAGE ---------------------------------------------------------------
 <PF1> HELP        <PF2>  RETURN      <PF3>  SELECT       <PF4>   NOT USED
 <PF5> NOT USED    <PF6>  NOT USED    <PF7>  BACKWARD     <PF8>   FORWARD
```

The MAINTAIN ROWS panel represents one row of a table you select. Use it to find existing rows. The first three panel columns are for display only. The last two panel columns contain entry fields.

Following is a description of the display columns on this panel.

COLUMN NAME

(Display only)

Contains the name of a data entry column for the current table.

TYPE

(Display only)

Shows the type of data the column can contain. Data may be:

■   CHARACTER -- all displayable characters.

■   NUMERIC -- signed numeric data with zoned decimals.

■   DECIMAL -- packed decimal numeric data.

■   FLOAT -- floating-point.

■   SMALLINT -- small integer numbers.

■   INTEGER -- large integer numbers.

The most commonly used data will be character or numeric. See the *CA Dataquery Reference Guide* for more information on data types.

LENGTH

(Display only). No entry for FLOAT, SMALLINT OR INTEGER types.)

Shows the maximum number of characters per row for a column. If there are two numbers, the first number is the total length and the second number is the number of decimal places. The number given does not include the spaces needed for a sign, commas or the decimal point.

Action

To find all of the data in a personal table, follow these steps using the MAINTAIN ROWS (DQT40) panel.

Step 1

Display the MAINTAIN ROWS (DQT40) panel for the table needed, as discussed in Finding Personal Table Rows (see page 377).

Step 2

Press <PF3> SELECT to display DATA DISPLAY (DQT60), representing the first row of the table.

To find specific data, use the MAINTAIN ROWS (DQT40) panel to enter operators and values on the panel to specify the data you want found. Follow these steps:

Step 1

Display the MAINTAIN ROWS (DQT40) panel for the table needed, as discussed in Entering Data (see page 373).

Step 2

Put the cursor in the COMP field for a column you want to search and enter a valid relational operator. The operator tells CA Dataquery how to compare the values it reads on each row to a value to be entered in the corresponding VALUE field. Rows containing values that meet the search criteria will be selected for display.

Choose from these operators:

Equal

= or EQ

Less than

< or LT

Greater than

> or GT

Less than or greater than

<> or LOG

Less than or equal

<= or LTE

Greater than or equal

>= or GTE

Not equal

¬= or NE

Not less than

¬< or NLT

Not greater than

¬> or NGT

Step 3

Move the cursor to the following VALUE field and enter a value for comparison to the values in the table column. If a VALUE entry field is longer than 22 characters, the entry field wraps to the next line. You can enter search criteria for any or all columns as long as a comparison operator is also entered in the preceding COMP field.

Step 4

Press <PF3> SELECT to display DATA DISPLAY (DQT60), representing the first row found that matches the search criteria.

Panel

Following is an example of the DATA DISPLAY (DQT60) panel containing typical data.

```
=>
DQ471I - RECORDS FOUND: 000038
--------------------------------------------------------------------------DQT60
DATAQUERY:  DATA DISPLAY             TABLE NAME:  STAFF
                                     ROWS SELECTED: 00038 ROW DISPLAYED: 00001
--------------------------------------------------------------------------------
 COLUMN NAME                        |   TYPE   | LENGTH  | VALUE
--------------------------------------------------------------------------------
ID                                  | SMALLINT |      5  | 0
NAME                                | CHARACTER|      9  |
DEPT                                | SMALLINT |      5  | 0
JOB                                 | CHARACTER|      5  |
YRS                                 | SMALLINT |      5  | 0
SALARY                              | DECIMAL  |   (7,2) | 0.00
COMM                                | DECIMAL  |   (7,2) | 0.00
                                    |          |         |
                                    |          |         |
                                    |          |         |
                                    |          |         |
                                    |          |         |
 - LAST PAGE --------------------------------------------------------------------
<PF1> HELP          <PF2>  RETURN     <PF3>  NOT USED     <PF4>   UPDATE ROW
<PF5> DELETE ROW    <PF6>  NOT USED   <PF7>  BACKWARD     <PF8>   FORWARD
<PF9> NOT USED      <PF10> NOT USED   <PF11> PREV ROW     <PF12>  NEXT ROW
```

The DATA DISPLAY (DQT60) panel displays the total number of rows found and also tells which sequential row is currently displayed.

Operation

The following shows how to use PF keys to view the rows found by CA Dataquery.

Scroll forward to see additional lines for this row.

   Press <PF8> FORWARD.

Scroll back to see previous lines for this row.

   Press <PF7> BACKWARD.

Display the next sequential row of the rows found.

   Press <PF12> NEXT ROW.

Display the previous sequential row of the rows found.

   Press <PF11> PREV ROW.

Additional PF keys allow you to update and delete displayed records.

Updating Rows

You can change the data on any row in a personal table. All you do is display the row to be changed, type the new data in the appropriate entry field for the column, and update the row.

Action

Follow these steps to change data in a personal table.

Step 1

Display the DATA DISPLAY (DQT60) panel representing the row to be changed as discussed in <u>Finding Personal Table Rows</u> (see page 377).

Step 2

Type entries in the appropriate entry fields of the VALUE column as discussed in <u>Entering Data</u> (see page 373).

Step 3

Press <PF4> UPDATE.

When a message appears saying the row has been updated, you can change another row by scrolling to it with the NEXT ROW or PREV ROW PF key.

To discontinue updating, press <PF2> RETURN to exit to the previous panel.

Deleting Rows from a Personal Table

You can delete any row in a personal table. Just display the row to be deleted and press a key to delete it.

Action

Follow these steps to delete data from a personal table:

Step 1

Display the DATA DISPLAY (DQT60) panel representing the row to be changed as discussed in <u>Finding Personal Table Rows</u> (see page 377).

Step 2

Press <PF5> DELETE.

When a message appears saying the row has been deleted, you can view another row by scrolling to it with the NEXT ROW or PREV ROW PF key.

To exit, press <PF2> RETURN to exit to the previous panel.

Appendix A: Comparing DQL and SQL Modes

When you operate in SQL Mode, most CA Dataquery features function the same way they do when you operate in DQL Mode. Each mode offers some features that are not available in the other mode and minor differences in panels and functionality exist.

Each mode allows you to use its own language to create queries and also allows you to use queries stored in its libraries. If you are familiar with using CA Dataquery in either mode, you only need to know about these differences:

Feature	DQL Mode	SQL Mode
Tables	Queries can access all CA Datacom/DB tables.	Queries can only access tables that are relationally correct.
Saving Found Sets	KEEP command allows you to create a saved set during output display. See Saving and Using DQL Mode Sets (see page 119) for details.	STORE command allows you to create a personal table during output display. See the *CA Dataquery Reference Guide* for details.
Terms	Available.	Not available.
Syntax	Uses DQL syntax (including keywords such as FIND, SET, SORT, PRINT, DISPLAY). Keys can be used as PRINT columns and to join tables.	Uses SQL syntax (including keywords such as SELECT, WHERE, GROUP BY, ORDER BY). CA Datacom/DB keys are not used in SQL queries.
Precision	A number like 13.2 means there are 13 integer positions and 2 decimal positions.	A number like (13,2) means there are 11 integer positions and 2 decimal positions.
Security	Uses CA Dataquery table and column security in addition to CA Datacom/DB security.	Uses only CA Datacom/DB table and column security and Grant and Revoke privileges.
Reporting	Report specifications are included in the query. Some formatting changes are possible during execution, such as inclusion or omission of totals.	Reports appear in default format unless you specify otherwise at execution. To sort, the query must contain an ORDER BY clause so that rows are retrieved in sorted order.

Feature	DQL Mode	SQL Mode
Plan Options	Preset by the CA Dataquery System Option Table for all users. Some storage limits can be altered by the CA Dataquery Administrator.	Defaults can be altered on a query-by-query basis, with CA Dataquery Administrator or DBA approval. Options are coded as CA Dataquery comments on line one of the query. Options of interest to users may be the time and date output formats.

Comparing Features

Both DQL Mode and SQL Mode provide the same basic Preset by the CA Dataquery System functions, such as GUIDE, CREATE (with the EDITOR), syntax templates, Online and Batch execution, and panels that list tables, columns, and so forth. Some differences in appearance or functionality exist between modes. If you are familiar with one mode and not the other, you should find adjustment to the differences relatively simple.

Function:	Similarities:	Differences:
GUIDE	Conceptual operation of GUIDE remains the same. You select the query objectives at the beginning and complete panels that allow CA Dataquery to construct the syntax.	Since syntax differs in each mode, panels are somewhat different. See the *CA Dataquery Reference Guide* for details on panel use.
CREATE Function	Both DQL Mode and SQL Mode CREATE functions operate in the same way.	The syntax template panels are different. The template in DQL Mode shows the syntax for DQL, and the template in SQL Mode shows the syntax for SQL.
Syntax	Both modes provide a query language that accesses database data, can manipulate it, and presents it in a report form.	The keywords for the two languages are different and have somewhat different functions.

Function:	Similarities:	Differences:
Online Execution	Both modes provide for online execution and use similar panels to accomplish it.	SQL Mode allows re-execution only at selection or reporting. Although the DQL Mode totaling option panels are not used, SQL Mode adds to online execution the ability to reformat a report (control breaks, titles, and so forth) for the current execution. Totals-only and No-totals are available with a PF key.
Reports	Both modes allow you to define the report format for a query when you create the query. Both modes also allow you to change the report format of any query in the library.	In DQL Mode, the report format is defined using a combination of syntax and execution options. To change parts of the format, you copy and edit the query and execute the new query and save it in the query library. (The query format for the report is not saved in the query library unless the query is saved. Otherwise it will be built and used only for the active query.)

In SQL Mode, the report format is defined on panels accessed during display of the ONLINE EXECUTION panel for the query in question. To change the format, display and change the reporting panels at execution time. |

Comparing Commands

Some operation commands are available only in DQL Mode, and some only work in SQL Mode.

DQL Mode Only	SQL Mode Only
EXTRACT	DQL
KEEP	FORMAT
SQL	AUTHID

Selecting a Mode

To select a mode for operation in Preset by the CA Dataquery System , (if you have a choice), review the following considerations:

Keywords

DQL Keywords:

FIND, SET, SORT, PRINT, DISPLAY, COUNT, UPDATE, INSERT, ERASE, WITH, WHEN, DO.

SQL Keywords:

SELECT, FROM, WHERE, HAVING, GROUP BY, ORDER BY, INSERT, UPDATE, DELETE, DROP (and others not used in every-day queries).

Advantages

Note the following list of advantages for DQL Mode and SQL Mode.

DQL Mode:

- Permits outer joins.
- Allows 18-digit precision.
- Handles more data types than SQL.
- Reads all accessible data in all tables.
- Can be translated into other languages.
- Has field level and content security without views.
- Queries can be executed in stages and re-executed starting at any stage.
- Offers a catalogued reusable syntax (terms) for use in queries.
- Supports the relational equijoin.
- Saves pointers to retrieved data that can be reused (saved sets).

SQL Mode:

- Allows a table to be related to itself.
- Allows nested SUBSELECTs.
- Supports full relational joins.
- Supports views.
- Supports the dynamic creation and dropping of tables.
- Supports the creation of summarization rows.
- Supports a test for existence, for instance, has complete null support.
- Supports data selection based on column functions.

Comparative Limitations

Note the following list of limitations for DQL Mode and SQL Mode.

DQL Mode limitations include:

- Does not support nested selects.

- Will not relate a table to itself.

- DQL Mode GUIDE permits only:

    - 15 Conditions per table

    - 10 SORT keys

    - 10 Temporary results

    - 10 Columns to be used in the computation of a temporary result

    - 95 Columns in a PRINT or DISPLAY statement

    - 95 Column functions or legends (total of 95 for both)

SQL Mode limitations include:

- Some columns may not be accessible: repeating fields, redefined fields, fields that are not simple or filler. Some data types are treated as character data.

- Uses only CA Datacom/DB security and does not provide for profile-codes or restricted conditions.

- Allows only 15-digit precision.

- Has no Saved Set Facility, although the STORE command permits saving output as a personal table.

- Does not allow queries to be reexecuted from different points in processing, although reports can be reformatted without reselection.

- Allows limited data types.

- Does not permit term creation.

- Permits only limited translation.

- Only one SQL command is allowed per query.

Security Implications

The following lists the security implications for DQL Mode and SQL Mode.

DQL Mode:

■ Allows column level security using profile-codes.

■ Allows conditions and restrictions based on column values.

■ Allows restriction of table usage.

■ Allows individual READ/UPDATE access by table or database.

■ Can run on CA Datacom/DB security or an external security package while maintaining the ability to restrict access to columns..

SQL Mode:

■ Requires use of views or GRANT and REVOKE to restrict user access.

■ Requires authorization ID for each user.

■ Relies on CA Datacom/DB for security.