Introduction to Queries

Queries allow you to ask questions of your database. You can combine data from different tables, permanently find or sort data, do calculations or produce interactive dialogue boxes to allow a user to enter search data.

There are many different types of Queries, in this chapter you will be introduced to the most common type, SELECT QUERIES.

A sample database has been prepared for you. It records employee information in two tables. One table records the employee's personal details, the second table records the employee's pay details. The following diagram summarises the structure of the two tables.

Personal Details
Employee ID
First Name
Surname
Address
Date

Pay Details
Employee ID
Position
Section
Weekly Hours
Pay Rate

Notice that the field EMPLOYEE ID is present in both tables. This field is called the PRIMARY KEY and it enables two tables to be linked so that data can be used from both of them in the Query.

Loading the Sample File

1   Copy the CHAPTER 3 folder from the ACCESS SUPPORT FILES to your ACCESS STORAGE folder. Refer to pages 2-1 and 2-2 if you have forgotten how to do this.

2   Load Microsoft Access and click on the OPEN button in the *toolbar*, or close the current file and click on the OPEN button in the *toolbar*.

3   Access your ACCESS STORAGE folder and open the CHAPTER 3 folder.

4   Open the CHAPTER 3 WAGES file.

Looking at the Tables

1   Open each of the two tables in turn to become familiar with the data stored in them.

2   Close the tables to return to the DATABASE WINDOW.

Creating a Query

1   Click on the QUERIES button and you should receive the QUERIES window. At present this database has no queries.

2   CREATE QUERY IN DESIGN VIEW should be highlighted so click on the OPEN button at the top of the window to start the query.

3   You should receive the QUERY with the SHOW TABLE dialogue box displayed.

4   Before the Query can be constructed the tables used by the Query need to be set. Click on the PERSONAL DETAILS table followed by the ADD button to add it to the Query.
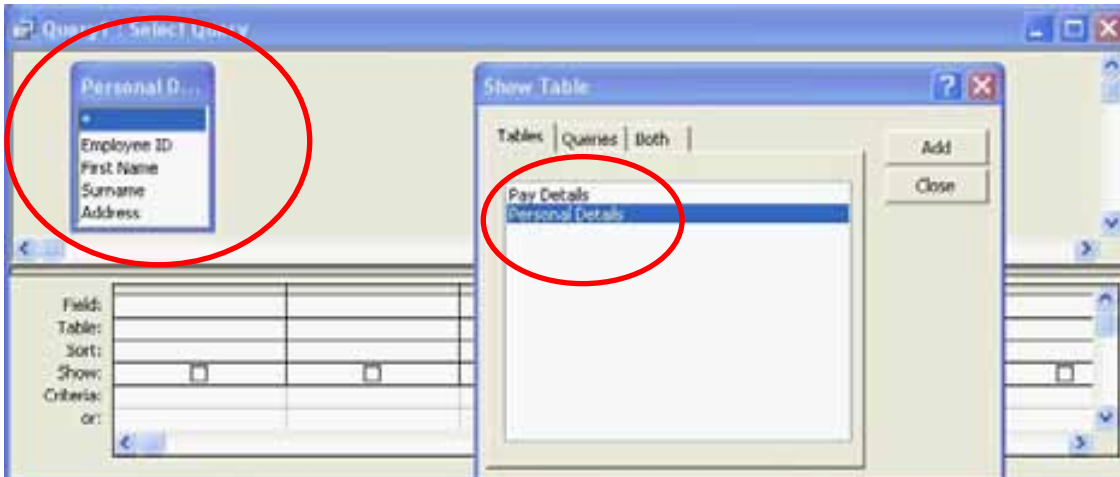
5   Click on the PAY DETAILS table and ADD it to the Query frame.

6   Close the SHOW TABLE dialogue box by clicking in its *close box*.

A   Linking the Tables

We can link the tables together using the PRIMARY KEY fields EMPLOYEE ID which is present in both tables. This could have been done in the TABLES section, however to show you how to do it the tables have been left unlinked.

1   Click on the EMPLOYEE ID in the PERSONAL DETAILS table. With the *pointer* still over EMPLOYEE ID, hold down the mouse button and drag the field over the EMPLOYEE ID field in the PAY DETAILS table.

2   Release the mouse button and a line connecting the PRIMARY KEY fields should be displayed.
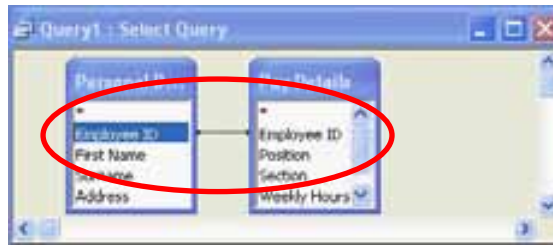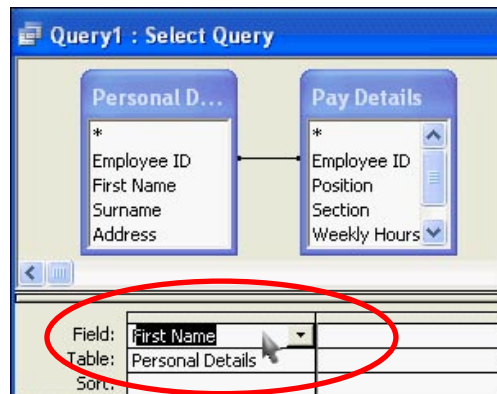
B   Building the Query

Let's create a query that displays the employee's name, weekly hours and pay rate.

1   Move the *pointer* over the FIRST NAME field in the PERSONAL DETAILS table. Hold down the mouse button, drag the field to the first field cell in the query and release the mouse button.

      Notice that the table that the field came from is listed in the TABLE row of the query.

2   Repeat step 1 to add the SURNAME field to the query.

3   Move the *pointer* over the WEEKLY HOURS field in the PAY DETAILS table and drag it into the third field cell in the query.
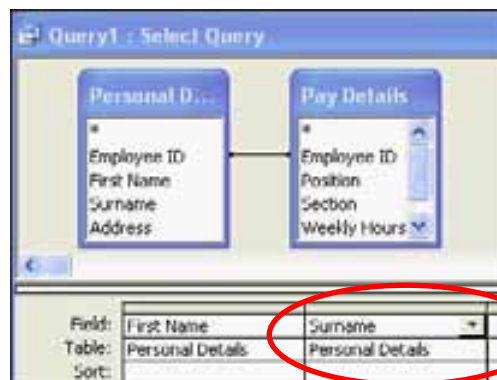
4   Scroll down the PAY DETAILS table and double click on the PAY RATE field. This is another way of inserting a field into the next column of a query.
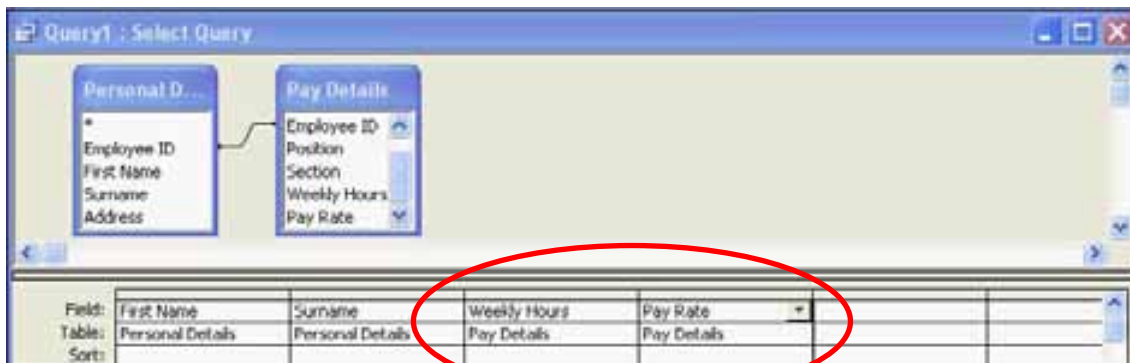
C Looking at the Query

1 Click on the VIEW button [⊞] at the top left of the *toolbar* (not the arrow next to the button).

2 The screen should change to DATASHEET VIEW showing data from both tables.

3 Return to DESIGN VIEW by clicking the VIEW button [◩] again.

D Adding a Calculation Field

We can work out how much pay each employee receives by adding a calculation field in the fifth query field cell.

1 Click in the fifth field cell (next to PAY RATE).

2 We could type the formula directly into the cell, however, the formula will not fit and it becomes difficult to see. To overcome this problem we can zoom in on the cell. Hold down the SHIFT key and press the F2 key to zoom the cell.

3 Enter: Total Pay: [Weekly Hours] * [Pay Rate]
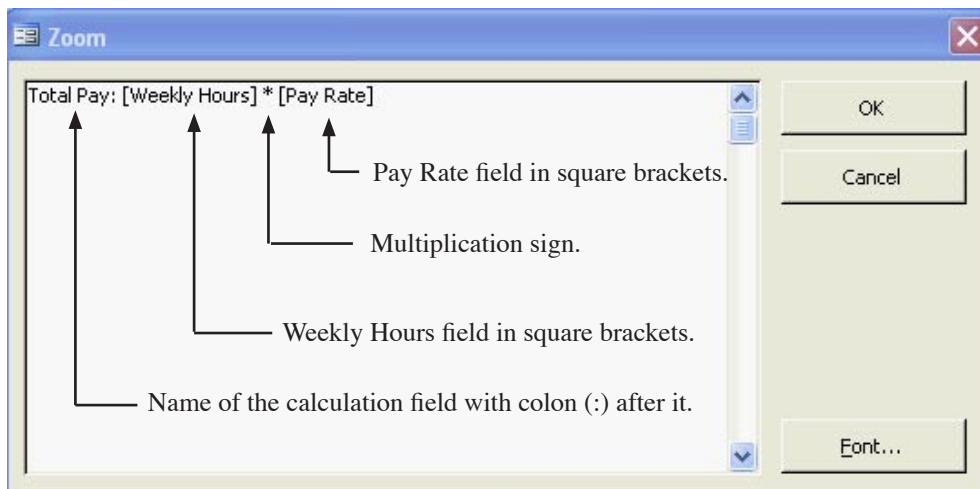
NB: i The calculation field name needs the colon symbol (:) directly after the field name.

ii Fields used within calculation fields are enclosed in square brackets [].

iii Check that you have typed the field names correctly.

4 Select OK to accept the formula.

5 Click on the VIEW button in the *tool bar* to observe the result.

Total Pay has been calculated for each employee.

E Sorting the Query

At the moment the query is sorted into SURNAME order as that is how the PERSONAL DETAILS table was sorted. Let's sort the query into TOTAL PAY order.

1 Return the screen to DESIGN VIEW using the VIEW button in the *toolbar*.

2 Click in the SORT row under the TOTAL PAY column (its third row).

3 Use the down arrow to show the sort options available and select DESCENDING.

4 Return to the DATASHEET VIEW and the query list should be in TOTAL PAY order with the highest pay listed first as shown in the diagram at the top of the next page.