

Module 5

Queries

Materials Required for Module 5

- r *Microsoft Access Getting Started* manual
- r *Microsoft Access User's Guide*
- r Address Book database

Materials Required for Instructor-Led Class

- r *One or two solutions to the lab*

Module Objectives

Lesson 1 - Creating a Query

Upon completion of this lesson, you will be able to:

- r Create, save, and print a new query.
- r Join tables.

Lesson 2 - Finding the Data You Want

Upon completion of this lesson, you will be able to:

- r Find specific records, create, and apply filters.
- r Save a filter as a query.
- r Correctly use wild cards to exclude specified records from searches.

Lesson 3 - Designing Select Queries

Upon completion of this lesson, you will be able to:

- r Set criteria, sort records, and show totals in a Select query.
- r Create computed columns in select queries.
- r Add totals to select queries.

r Set query properties.

Lesson 1

Creating a Query

Reading Assignment

- r *Microsoft Access Getting Started*
Chapter 6: *Creating a Query*

As You Read

- r When you designed the New Record Entry form you brought related data in your database together so that you could enter and view information about each person and their dependents. What are some other views that you might want to utilize?

Hint: Who, besides MariEsther, lives in Seattle?

Exercises

- 1) Define the term dynaset.

See page 102- The set of records that the query defines.

- 2) When you create and save a query, are the records that make up a dynaset stored in the query?

See page 102- ..No, from the tables where the data is stored.

- 3) When must you enclose a criteria within quotation marks in the QBE grid?

See page 103- When the text value contains quotes or commas. If the criteria contains spaces quotation marks are added automatically.

- 4) Can you update the data on the "one" side of a one-to-many join?

See page 103- No, this would affect the records incorrectly. The update would affect more records than were intended.

- 5) If you set the sort order for more than one field in your query, which field is sorted first: the one you first assigned a sort order to or the one that appears left-most in the QBE grid?

See page 107- The one in the left most column in the QBE grid.

Try This

- 1) Open the NWIND database.

- 2) Start a new query and add the tables Employees and Orders and join them.

- 3) Drag Employee ID and Order ID to the query grid.

- 4) Click on the Totals button. Change Group By to Count for the Order ID column to find the number of Orders each employee made. Run the query to verify the results.

- 5) Now limit the query to only those orders made in 1990. Add Order Date to the QBE grid and enter the criteria "*/*/90". Perform the query again.

- 6) Does your query show the total number of orders made by each employee during 1990? Why or why not?

No, because all records are being shown for 1990 in the Order date field.

- 7) Remove the check mark from the Show box under Order Date. Perform the query again.

- 8) Access can only group records that are identical. Even though the dates all fall in 1990, they are not identical. Change the field, Order Date, to the expression "=YEAR([Order Date])" and the criteria to "1990". Perform the query again. You should now see a count of the

number of sales made by each employee during 1990.

Hint: See Help for more on creating expressions.

- 9) Check the Show box to display the date. Remove the criteria so that you can see the number of sales made by each employee in each year.

Lesson 2

Finding The Data You Want

Reading Assignment

- r *Microsoft Access Getting Started*
Chapter 7: *Finding the Data You Want*

As You Read

List two ways you can work in Datasheet view and have the ability to limit the number of records you see?

Work with a query on the data in datasheet view

Apply a filter to a form in datasheet view.

Exercises

Answer This

- 1) Which of the following criteria could you use in the Search dialog to find the part numbers E20100, E20146, and E20199?

- a) E201##
- b) E201*
- c) both

See page 116- C)

- 2) What search criteria would you use to find both E20199a and E201995 but exclude E2019ab?

*See page 116 - E201##? or E201##**

- 3) What criteria would you use to find E201995, E201992, and E201998 but exclude E20199a?

See page 116 - E201###

- 4) If you are searching for a customer located in Vancouver, BC could you use the Find command, design a filter, or both?

See page 121- You could do both. A filter would show everyone if you did not know the customer exactly. If you knew the customer exactly, use find.

- 5) What if you wished to exclude customers in Vancouver, WA and only see those in BC?

See page 120- Set a filter with city in ("Vancouver") and country not in ("wa")

Try This

- 1) Open the NWIND database.
- 2) Open the form Order Review. Why might this form take longer than some others to open?
Because it is based on a query.
- 3) Choose Edit Filter/Sort from the Records menu or check the new filter button.
- 4) Add the field Order Date to the grid.
- 5) How many records are in the dynaset if you place the following criteria on the Order Date column and choose apply the filter:

//90 _____ ?

###/###/90 _____ ?

??/??/90 _____ ?

296, 65, 65

Exercises

Try This

- 1) Open the Products table and select the product name column.
- 2) Choose Find from the Edit menu.
- 3) Enter "Ch???" in the Find What box and press Find First. What Product Name is

found? _____

Chang

- 4) Enter "Ch??" in the Find What box and press Find First. What Product Name is

found? _____

Chai

- 5) What criteria would you use to select both "Chai" and "Chang"?

*Ch**

Points to Ponder

How do you save a filter if you wish to reuse the criteria later?

page 124- Save the filter as a Query.

Lesson 3

Designing Select Queries

Reading Assignment

- r *Microsoft Access User's Guide*
Chapter 6: *Designing Select Queries*

As You Read

- r While you add fields and criteria to the QBE grid, Access maintains a Structured Query Language statement equivalent to the graphical query you are making. You may view the SQL statement from Design mode by choosing SQL from the View menu. The syntax that you

see is a dialect of SQL specific to Access. You do not need to learn SQL or the Access dialect right now but you may want to look at the statements created by Access whenever you are working with simple queries so that you become familiar with the syntax.

- r You can modify the SQL statement that Access is maintaining for you. Once you have made changes and closed the SQL window the changes you made will be reflected in the QBE grid.

Exercises

Answer These

- 1) Is between 2/7/91 and 10/10/91 equivalent to $>2/7/91$ and $<10/10/91$ or $\geq 2/7/91$ and $\leq 10/10/91$?

See page 117- The statement is equivalent to $\geq 2/7/91$ and $\leq 10/10/91$. Because Between is INCLUSIVE and the second statement includes the two dates?

- 2) Can you make changes to data in a calculated field from Datasheet view?

See page 127- No, Except by changing data in the fields it is getting data from.

- 3) What is an equi-join?

See page 130- Selecting records from both tables where the same value is in a field that is joined between the tables.

- 4) What other types of joins are there?

See page 136- Outer Joins - Page 138- Self Joins

- 5) What type of join will display information on all customers in the NWIND database and display information on any orders they may have placed?

See page 137- An outer join of type 2.

- 6) How do you specify that you only want to perform a specified calculation on records that meet a criteria?

See page 145-146- Use a criteria (WHERE) in the Total cell.

- 7) Can you update a dynast that contain aggregate functions?

See page 157- No

Exercises

Try This

- 1) Create a new query on the Northwind Products table.
- 2) Create a calculated field that shows the Unit Price increased 10%.
- 3) Change the name from *Expr1* to *Mark Up* and format it as currency.
- 4) Add a new calculated field which shows the price calculated in the field *Mark Up* plus sales tax of 8.1%? _____
- 5) Which of the following is valid? _____
 - a) Total:[Mark Up]*1.081
 - b) Total:([Unit Price]*1.10)*1.081

Both

Try This

- 1) Open the query *Sales Totals Query*.
- 2) Note that the CountofOrder ID for Janice Leverling is 166 and her SumofOrder Amount is \$251,190.18.
- 3) Switch to design mode.
- 4) Add another instance of the field Order ID, inserting it BEFORE the calculated field Subtotal of Orders.
- 5) Select WHERE for the Total line, set the criteria to ">10999", and uncheck the Show check box.
Hint: Search in Help for more information on setting criteria when calculating totals.
- 6) Switch to Datasheet view.
- 7) What order are the fields calculated in: Are the Count, Where, and Total expressions calculated in the order they appear in the QBE grid or does the Where criteria affect all other calculations in the query?

It should affect only the Totals column because it is to the left of that column.

On-Your-Own Lab

Now you are ready to create sophisticated queries on the data in your database. In this lab you will create queries to answer the first three questions that were listed during the Table Design lab:

- 1) Who in your Address Book has a birthday in February?
 - a) Open your Address Book Database and start a new query.
 - b) Add the table Main Contact.
 - c) Last Name, First Name, and Date of Birth from Main Contacts to the QBE grid.
 - d) Add a criteria to the Date of Birth column limiting the dynaset to only those with birthday's in January.
 - e) Run the query to verify that your criteria is correct

- 2) How many cats, dogs, and birds does each family have?
 - a) Start a new query and add the tables Main Contact and Pets.
 - b) Add Last Name from Main Contact and Pet Type from Pets.
 - c) Run the query.
 - d) Joins in Access are, by default, inner joins. This means that your dynaset only contains information about people who have at least one pet. To change this, double-click on the join line. In the Join Property box you have the choice of inner join, or two types of outer joins. To see a list of all people in your Main Contact table plus information about pets if they have any, choose 2.
 - e) Run the query again.
 - f) Now modify the query so that you see a Count of each type of pet. You need to Group By Last Name and Count Pet Type. Run the query.
 - g) You see a count of each type but now you can't see what the type is. Switch back to design mode and add the field Pet Type again. Set the Total to Group By and rerun your query.

- 3) How many musicians are there in your database? (You need to find a cheap band for your sister's wedding)
 - a) Create a query on Main Contact, Hobbies, and Hobby Assignments.

b) Repeat the steps for the previous query.

The PSS Challenge

Create a One to Many relationship between Orders and Order details and enforce Referential Integrity. Add a new record to the Orders table with the Order ID 99999. Create a new query on Orders and Order Details. Add Order ID from the Orders Table and Product ID from the Order Details Table. Run the query. Why can you change the Product ID but not the Order ID. Switch back to design mode. Remove Product ID from the Query grid. Run the Query. What message do you get if you try to change the first Order ID?

Because you can only update the most many side of a query.

Can't Delete or Change Record since Related Records Exist in Table 'Order Details', Referential Integrity Rules Would be Violated.

Why isn't the new order you just entered in the dynaset? Change the join type so that it will be included and rerun the query.

Because the Join type is only for those Order ID's that are also in Order details.

Why are you allowed to delete Order ID 99999?

Because it has no related records in Order Details.

Instructor Led Module Review

1) Answer Questions

If you are searching for a customer located in Vancouver, BC could you use the Find command, design a filter, or both?

See page 121- You could do both. A filter would show everyone if you did not know the customer exactly. If you knew the customer exactly, use find.

What are the default properties of a query?

Restrict Available fields and Run with Owner's permission are set.

What order are the fields calculated in: Are the Count, Where, and Total expressions calculated in the order they appear in the QBE grid or does the Where criteria affect all other calculations in the query?

It should affect only the Totals column because it is to the left of that column.

2) Review As You Read and Points to Ponder

List two ways you can work in Datasheet view and have the ability to limit the number of records you see?

Work with a query on the data in datasheet view

Apply a filter to a form in datasheet view.

How do you save a filter if you wish to reuse the criteria later?

page 124- Save the filter as a Query.

3) Present one or two possible lab solutions.

4) Discuss various participant solutions