

Create and Modify Queries 7

LESSON SKILL MATRIX

Skill	Exam Objective	Objective Number
Creating a Query	Save queries	3.1.6
	Run queries	3.1.1
	Rename queries	3.2.1
	Delete queries	3.1.7
	Create multi-table queries	3.1.5
Modifying a Query	Hide fields	3.2.4
	Create parameter queries	3.1.3
Sorting and Filtering Data within a Query	Sort data within queries	3.2.5

WILEY



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KEY TERMS

- field list
- null value
- parameter query
- query criterion
- select query



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You work for Northwind Traders, a mountain climbing apparel company dedicated to producing high-quality and technically innovative products. The company has a program called industry friends that offers discount purchasing privileges for employees and other outdoor professionals and friends who qualify. As operations coordinator, you are responsible for approving applications for the program and entering related information into the database. You often need to pull specific data from the database. In this lesson, you learn how to create queries from a single table, including a simple query and a find duplicates query, and how to create queries from multiple tables, including a find unmatched query; how to modify a query

by adding a table, removing a table, and adding criteria to a query; how to sort and filter data within a query; and how to rename and delete a query.

SOFTWARE ORIENTATION

Queries Group

The Queries group (Figure 7-1) on the CREATE tab contains the commands used to create queries. The Query Wizard button launches the Query Wizard, which helps you create a simple query, a crosstab query, a find duplicates query, or a find unmatched query. The Query Design button creates a new, blank query in Design view. Use this figure as a reference throughout this lesson as well as the rest of this book.

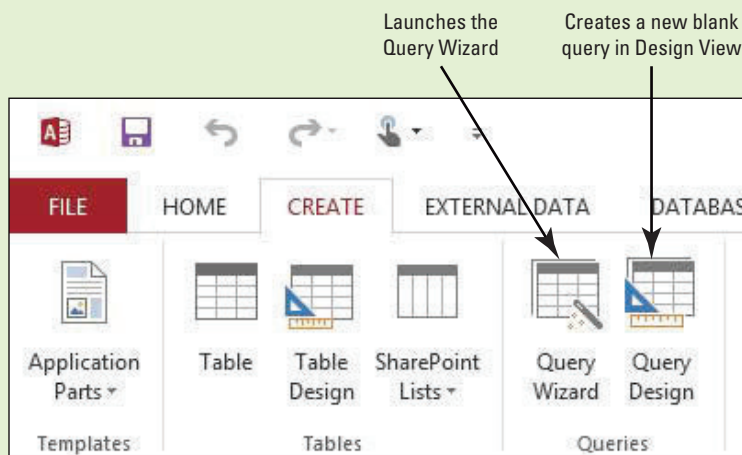


Figure 7-1
Queries group

CREATING A QUERY

The Bottom Line

A query is a set of instructions used for working with data. Creating a query is like asking the database a question. Running a query performs these instructions and provides the answers. The results that a query returns can be sorted, grouped, or filtered. There are several different types of queries. Basic queries can be used to extract useful information from one or more tables in the database, while more advanced queries can be used to manipulate data in tables (e.g., create, copy, modify, delete or find duplicate or unmatched table data). A **select query** is the most basic type of Access query. It creates subsets of data that you can use to answer specific questions or to supply data to other

database objects such as forms and reports. The data is displayed in Datasheet view without being changed. A query is a powerful and versatile database tool. Queries differ from sort or filter commands because they can be saved for future use and can utilize data from multiple tables or other queries.



**Cross
Ref**

You learn more about advanced queries that can manipulate table data in Lesson 12.

Creating a Query from a Table and Deleting a Query

A query can get its data from one or more tables, from existing queries, or from a combination of the two. The tables or queries from which a query gets its data are referred to as its record source. When one table provides the information that you need, you can create a simple select query using the Query Wizard. You can also use a query to find records with duplicate field values in a single table. You can delete a query to remove it permanently from the database and rename a query if you want to modify the previous name. In this exercise, you create a simple select query that searches the data in a single table and rename the query. You also delete a pre-existing query using the Delete command.

To create a simple select query, click the Query Wizard button in the Queries group on the CREATE tab. Click Simple Query Wizard and then click OK. Specify the table you want to use as the record source and the fields that you want to show. Name the query and click Finish. When you close the query, it is automatically saved.

To run a query after it has been created, simply double-click it in the Navigation Pane to open it in Datasheet view and see the results.

You can also permanently delete a query from the database by using the Delete command in the Records group on the HOME tab. You can delete a query if you erroneously created it or simply want to unclutter the database by removing preexisting queries you no longer use.

Finally, you can rename a query by right-clicking on it in the Navigation Pane, choosing the Rename command from the shortcut menu that appears, and keying in the new name.

STEP BY STEP

Create a Simple Query

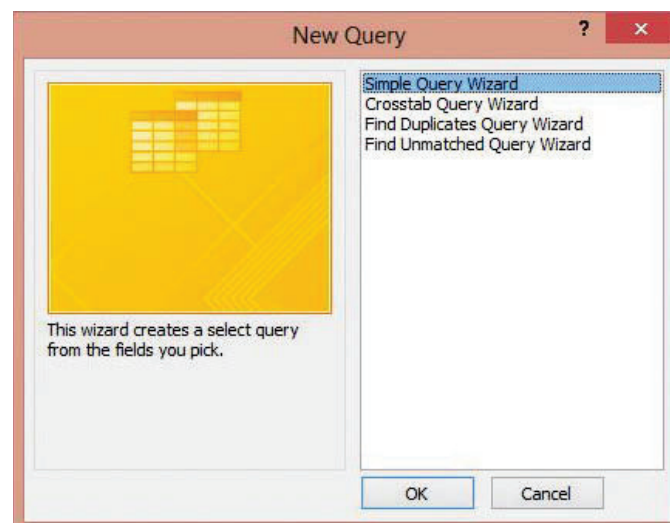
GET READY. Before you begin these steps, be sure to **LAUNCH** Microsoft Access.



1. **OPEN** the **Northwind** file from the data files for this lesson.
2. **SAVE** the database as **NorthwindXXX** (where XXX is your initials).
3. On the CREATE tab, in the Queries group, click the **Query Wizard** button. The New Query dialog box appears, as shown in Figure 7-2.

Figure 7-2

New Query dialog box



- Click **Simple Query Wizard** and then click **OK**. The Simple Query Wizard appears, as shown in Figure 7-3.

Figure 7-3

Simple Query Wizard, screen 1

- In the Tables/Queries drop-down list, **Table: Employees** should be selected by default. If it is not, select it.
- Under Available Fields, double-click **Last Name**, **First Name**, **E-mail Address**, **Mobile Phone**, and **Position** to move them to the Selected Fields box.

Take Note To remove a field from the Selected Fields box, double-click the field. This moves it back to the Available Fields box.

- Click the **Next >** button. The second screen in the Simple Query Wizard appears, as shown in Figure 7-4.

Figure 7-4

Simple Query Wizard, screen 2

**CERTIFICATION
READY?** 3.1.6

How do you save queries?

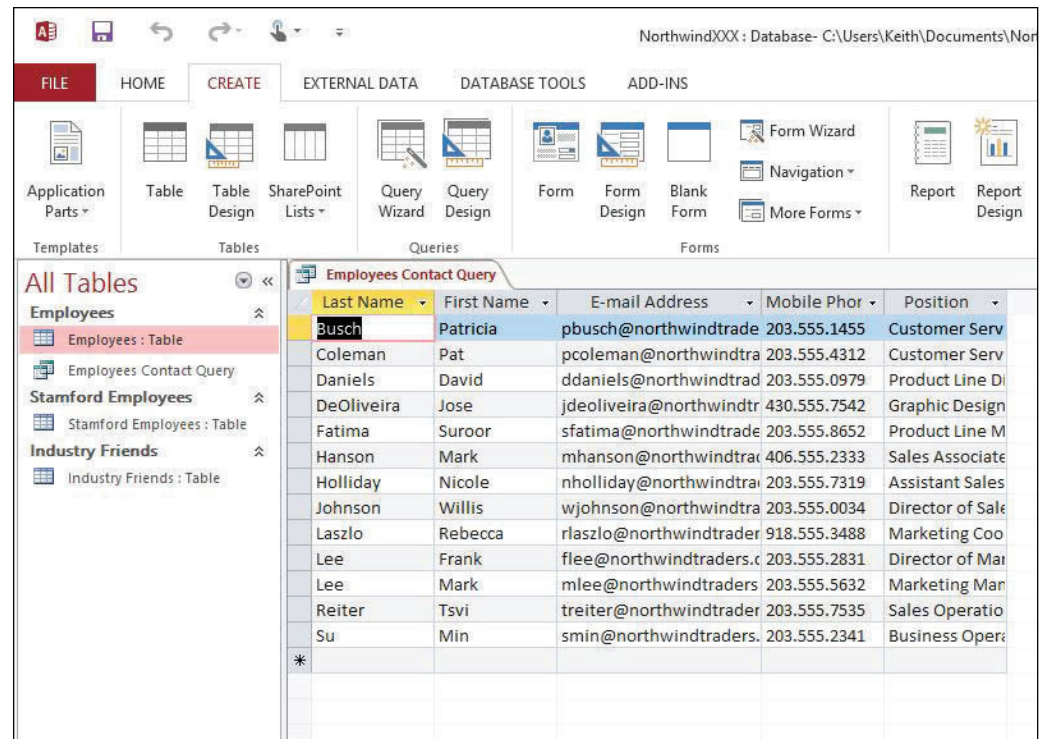
**CERTIFICATION
READY?** 3.1.1

How do you run queries?

- Name the query **Employees Contact Query**. *Open the query to view information* should be selected.
- Click the **Finish** button to accept the default selection and complete the query. The Employees Contact Query is displayed, as shown in Figure 7-5. The results show all of the records, but show only the five fields that you specified in the Query Wizard.

Figure 7-5

Simple select query

**Another Way**

You can also delete a query or any other object by right-clicking it in the Navigation Pane and choosing Delete from the shortcut menu that appears, or clicking the object and just simply pressing the Delete key on the keyboard.

CERTIFICATION READY? 3.2.1

How do you rename queries?

CERTIFICATION READY? 3.1.7

How do you delete queries?

10. Click the **Close** button on the Employees Contact Query window to close the query.
11. In the Navigation Pane, double-click the **Employees Contact Query** to run it. The query results are displayed in Datasheet view.
12. Click the **Close** button on the Employees Contact Query window to close the query.
13. In the Navigation Pane, right-click the **Employees Contact Query** to select it.
14. On the shortcut menu that appears, click the **Rename** command.
15. In the query name box, key **Employees Contact Info Query** to rename it and press **Enter**. The query has been renamed.
16. In the Navigation Pane, click the **Marketing Employees** query to select it.
17. On the HOME tab, in the Records group, click the **Delete** button arrow and then click the **Delete** command on the menu that appears.
18. Click **Yes** on the dialog box asking you if you want to permanently delete the Marketing Employees query. The query is now permanently deleted from the database.

PAUSE. LEAVE Access open to use in the next exercise.

Creating a Find Duplicates Query

As a general rule, duplicate data should be eliminated from a database whenever possible to minimize redundancy and increase accuracy. The first step in this process is finding duplicate data. Two or more records are considered duplicates only when all the fields in your query results contain the same values. If the values in even a single field differ, each record is unique. In this exercise, you use the Find Duplicates Query Wizard to find duplicate records.

You can also use the Find Duplicates Query Wizard to find records that contain *some* matching field values. You should include the field or fields that identify each record uniquely, typically the primary key. The query returns matching records where the values in the specified fields match character for character.

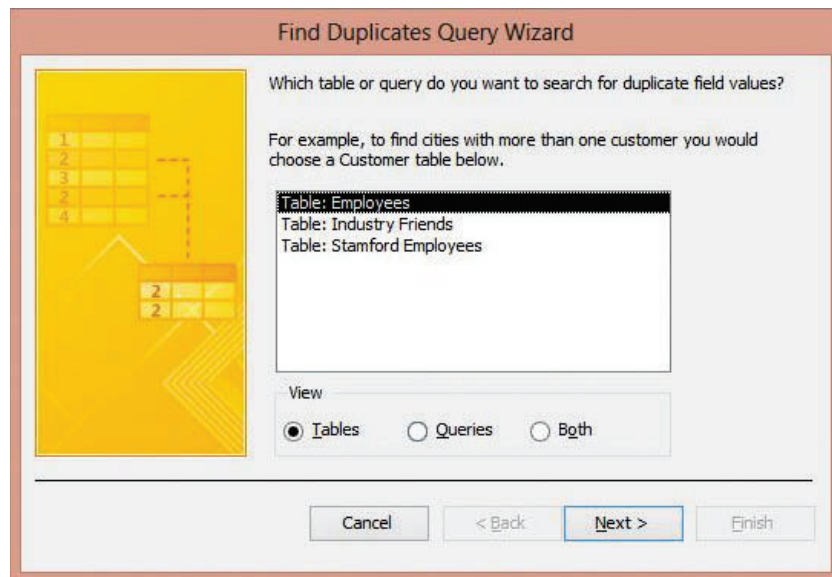
STEP BY STEP**Create a Find Duplicates Query**

USE the database that is open from the previous exercise.

1. On the CREATE tab, in the Queries group, click the **Query Wizard** button. The New Query dialog box appears.
2. Click **Find Duplicates Query Wizard** and then click **OK**. The Find Duplicates Query Wizard appears, as shown in Figure 7-6.

Figure 7-6

Find Duplicates Query Wizard, screen 1



3. Click **Table: Industry Friends** and then click **Next >**. The next screen in the Find Duplicates Query Wizard appears, as shown in Figure 7-7.

Figure 7-7

Find Duplicates Query Wizard, screen 2



4. Double-click **Last Name**, **First Name**, and **E-mail Address** to move them to the Duplicate-value fields box. These are the fields that you think may include duplicate information.

5. Click **Next >** to display the next screen in the Find Duplicates Query Wizard, shown in Figure 7-8. This screen asks if you want to show other fields of the duplicate record besides just the ones with the duplicate data.

Figure 7-8

Find Duplicates Query Wizard, screen 3

6. Double-click **Company** and **Referred By** to move them to the Additional query fields box.
7. Click **Next >** to display the final screen in the Find Duplicates Query Wizard, shown in Figure 7-9.

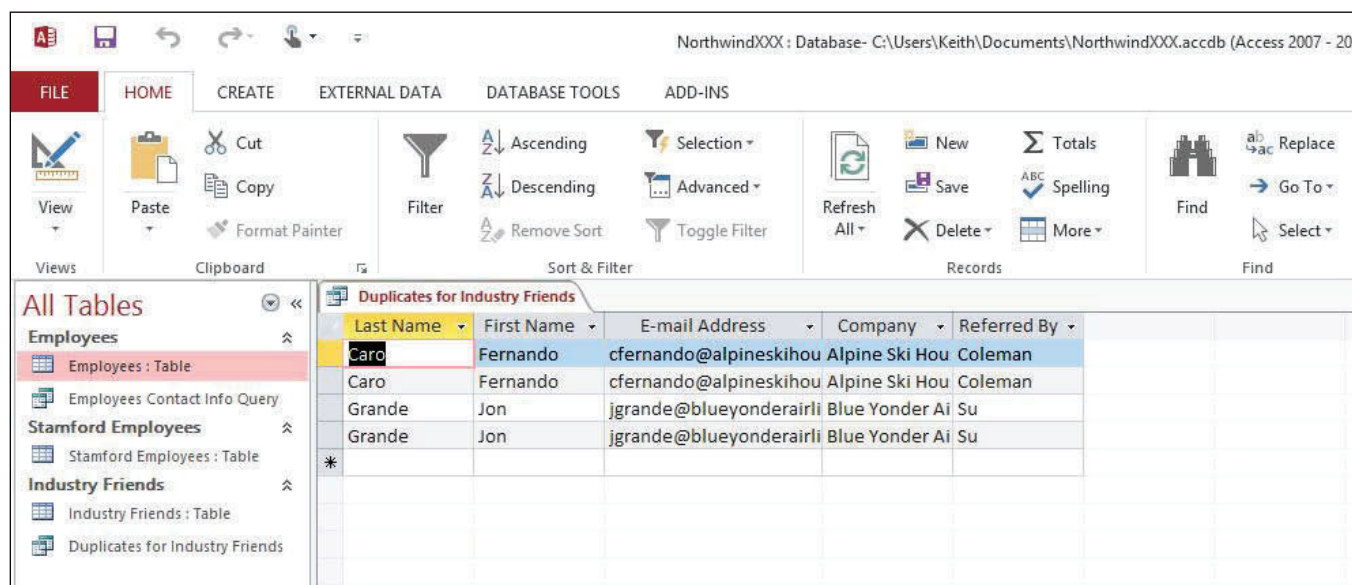
Figure 7-9

Find Duplicates Query Wizard, final screen

8. Name the query **Duplicates for Industry Friends** and click **Finish**. The query showing duplicate records in the table is displayed, as shown in Figure 7-10.

Figure 7-10

Duplicates for Industry Friends query



9. Click the **Close** button on the Duplicates for Industry Friends tab to close the query.

PAUSE. LEAVE Access open to use in the next exercise.

Creating a Query from Multiple Tables

If the data you need is spread out in more than one table, you can build a query that combines information from multiple sources. You can also create a query that finds records in one table that have no related records in another table. When you need to include multiple tables in your query, you can use the Simple Query Wizard to build a query from a primary table and a related table. The process is similar to creating a query from a single table, except that you include fields from additional tables. In this exercise, you create a simple query to display related data from two tables.

Sometimes using data from a related table would help make the query results clearer and more useful. For example, in this activity, you could pull the name of the industry friends and the employee who referred them from one table. But to get additional information about the referring employees, you need to pull data from the related Employees table.

Before creating a query from multiple tables, you must first ensure that the tables have a defined relationship in the Relationships window. A relationship appears as a line connecting the two tables on a common field. You can double-click a relationship line to see which fields in the tables are connected by the relationship.



Cross Ref

You can also create ad hoc (temporary) relationships from within queries. You learn about ad hoc query relationships in Lesson 12.

STEP BY STEP

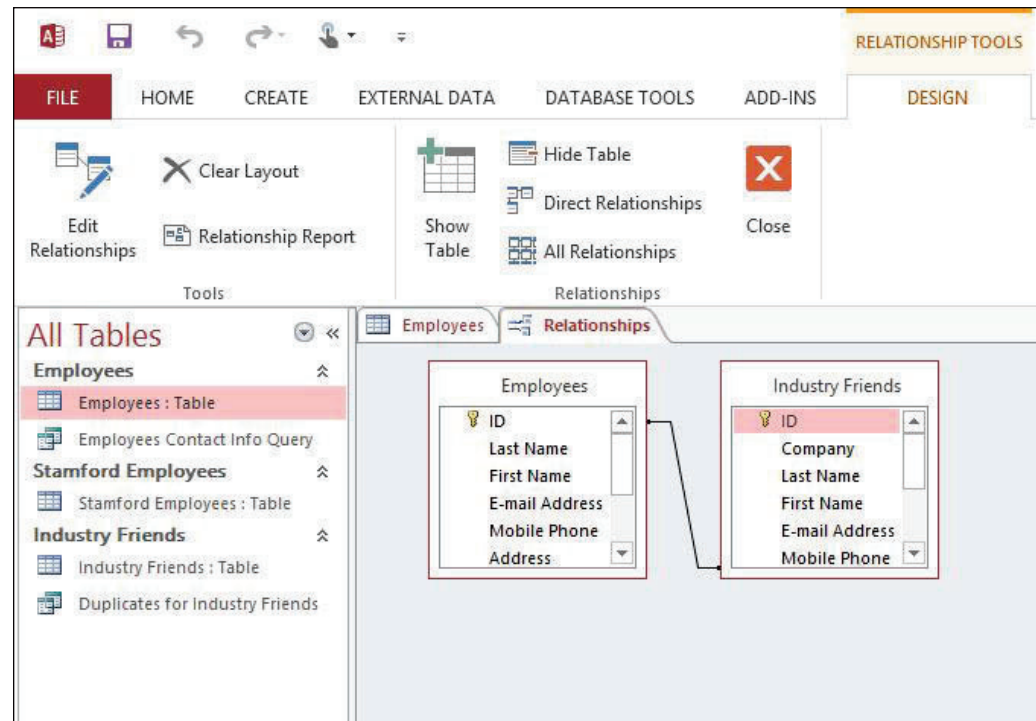
Create a Query from Multiple Tables

USE the database that is open from the previous exercise.

1. In the Navigation Pane, double-click **Employees: Table** to open the table.
2. On the DATABASE TOOLS tab, in the Relationships group, click the **Relationships** button to display the table relationship, as shown in Figure 7-11. The Employees table has a defined relationship with the Industry Friends table as indicated by the relationship line connecting the two tables.

Figure 7-11

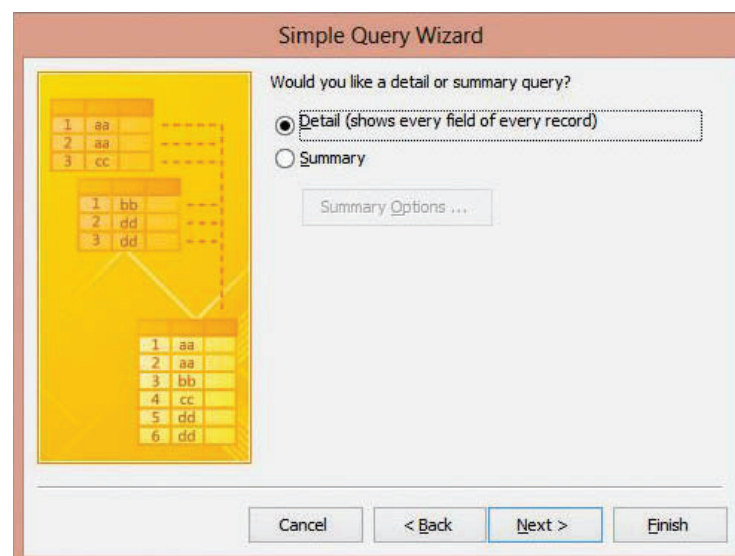
Relationships for Employees table



3. Click the **Close** button in the Relationships group on the Ribbon to close the Relationships window and click the **Close** button on the Employees tab to close the Employees table.
4. On the CREATE tab, in the Queries group, click the **Query Wizard** button to display the New Query dialog box.
5. Click **Simple Query Wizard** and then click **OK** to display the Simple Query Wizard.
6. In the Tables/Queries drop-down list, click **Table: Industry Friends**.
7. Under Available Fields, double-click **Last Name**, **First Name**, and **Referred By** to move them to the Selected Fields box.
8. In the Tables/Queries drop-down list, click **Table: Employees**.
9. Under Available Fields, double-click **Position** and then **E-mail Address** to move them to the Selected Fields box.
10. Click the **Next >** button to display the next screen, as shown in Figure 7-12. The *Detail* option should be selected by default.

Figure 7-12

Simple Query Wizard for multiple tables





**Cross
Ref**

If you want your query to perform aggregate functions like those used to sum or average data, you would choose a summary query. You will learn about aggregated functions in Lesson 12.

11. Click the **Next >** button to display the final screen, shown in Figure 7-13.

Figure 7-13

Simple Query Wizard for multiple tables, final screen

12. Click the **Finish** button to accept the default settings in this screen and display the query, shown in Figure 7-14. This query shows the name, position, and e-mail address of the employee who referred each industry friend.

Figure 7-14

Industry Friends query

Last Name	First Name	Referred By	Position	E-mail Address
Archer	Karen	Su	Business Oper	smin@northwindtraders.
Berglund	Andreas	Laszlo	Marketing Co	rlaszlo@northwindtrader
Carmargo	Gustavo	Fatima	Product Line M	sfatima@northwindtrade
Caro	Fernando	Coleman	Customer Serv	pcoleman@northwindtra
Contreras	Linda	Lee	Marketing Mar	mlee@northwindtraders
Culp	Scott	Fatima	Product Line M	sfatima@northwindtrade
Galvin	Janice	Busch	Customer Serv	pbusch@northwindtrade
Grande	Jon	Su	Business Oper	smin@northwindtraders.
Kaliyath	Sandeep	Holliday	Assistant Sales	nholliday@northwindtra
Mu	Zheng	DeOliveira	Graphic Design	jdeoliveira@northwindtr
Nash	Mike	Lee	Director of Mar	flee@northwindtraders.c
Ralls	Kim	Holliday	Assistant Sales	nholliday@northwindtra
Sawyer	Ciam	Coleman	Customer Serv	pcoleman@northwindtra
Spoon	Candy	Johnson	Director of Sale	wjohnson@northwindtra
Tiedt	Danielle	Daniels	Product Line D	ddaniels@northwindtrad
Ting	Hung-Fu	Coleman	Customer Serv	pcoleman@northwindtra
Valdez	Rachel	Johnson	Director of Sale	wjohnson@northwindtra
West	Paul	Holliday	Assistant Sales	nholliday@northwindtra
Grande	Jon	Su	Business Oper	smin@northwindtraders.
Caro	Fernando	Coleman	Customer Serv	pcoleman@northwindtra

13. Click the **Close** button on the Industry Friends Query tab to close the query.

PAUSE. LEAVE the database open to use in the next exercise.



You learned about defining and modifying table relationships in Lesson 3.

Finding Unmatched Records

To view only the records in one table that do not have a matching record in another table, you can create a Find Unmatched query. On the CREATE tab, in the Queries group, click Query Wizard, and then click Find Unmatched Query Wizard to start the wizard. In this exercise, you run a Find Unmatched query to display the employees who do not live in Stamford.

STEP BY STEP

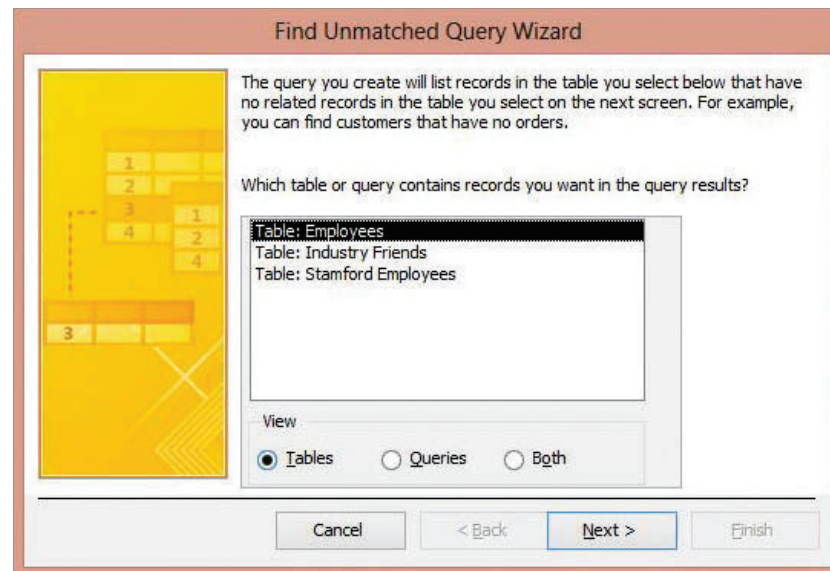
Find Unmatched Records

USE the database that is open from the previous exercise.

1. On the CREATE tab, in the Queries group, click the **Query Wizard** button. The New Query dialog box appears.
2. Click **Find Unmatched Query Wizard** and then click **OK**. The Find Unmatched Query Wizard appears, as shown in Figure 7-15.

Figure 7-15

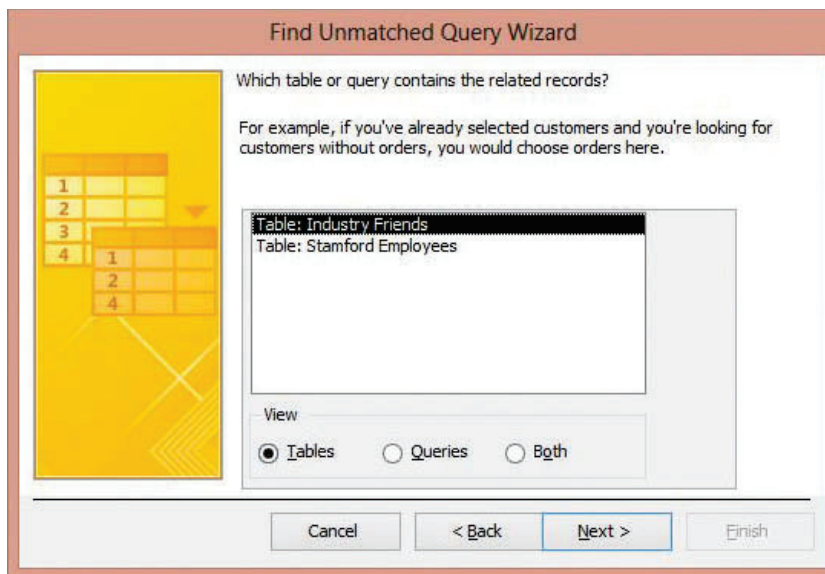
Find Unmatched Query Wizard, screen 1



3. Table: Employees is the default selection in this screen. This table will contain the records you'll want to display. Click the **Next >** button to display the next screen in the Find Unmatched Query Wizard, shown in Figure 7-16.

Figure 7-16

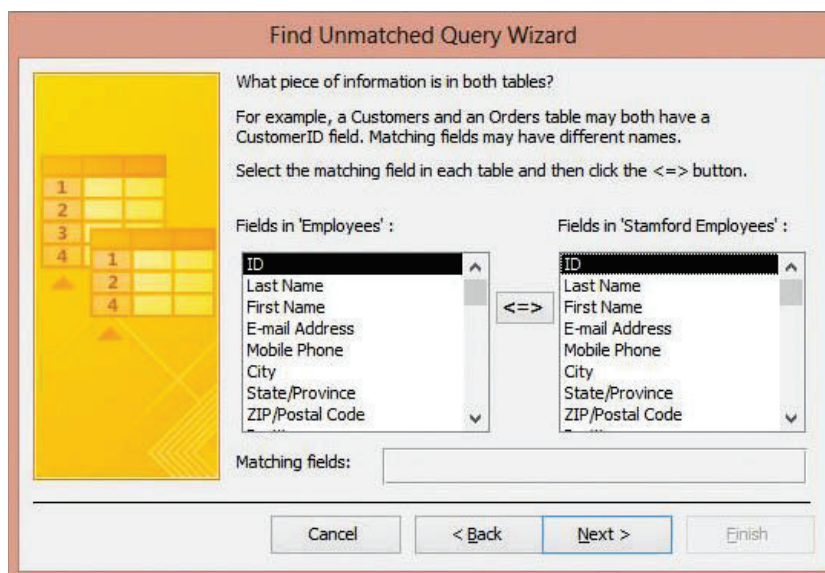
Find Unmatched Query Wizard, screen 2



4. Select **Table: Stamford Employees** to select the table that is related to the Employees table and contains the records you *don't* want to display. Click the **Next >** button to display the next screen in the Find Unmatched Query Wizard, shown in Figure 7-17.

Figure 7-17

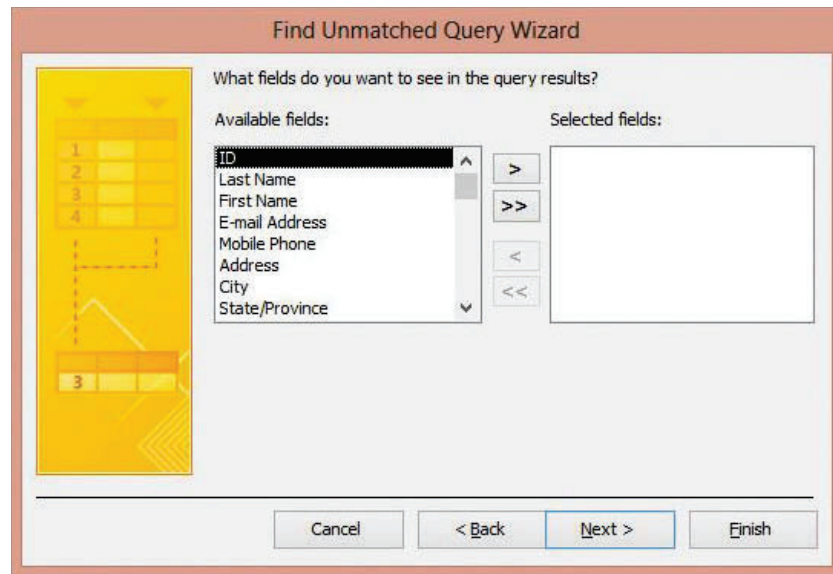
Find Unmatched Query Wizard, screen 3

**CERTIFICATION
READY?****3.1.5**How do you create
multi-table queries?

5. Click **E-mail Address** in the Fields in "Employees" list. Click **E-mail Address** in the Fields in "Stamford Employees" list. Click the **<=>** button to display them in the Matching fields box. These fields contain data that is in both tables.
6. Click the **Next >** button to display the next screen in the Find Unmatched Query Wizard, shown in Figure 7-18.

Figure 7-18

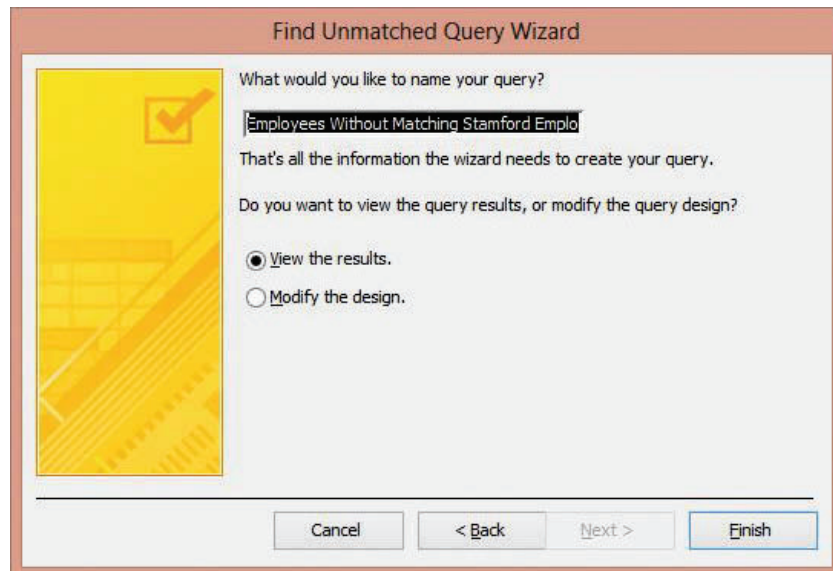
Find Unmatched Query Wizard, screen 4



7. In the Available fields box, double-click **Last Name**, **First Name**, **Position**, and **City** to move them to the Selected fields box.
8. Click the **Next >** button to display the final screen in the Find Unmatched Query Wizard, shown in Figure 7-19.

Figure 7-19

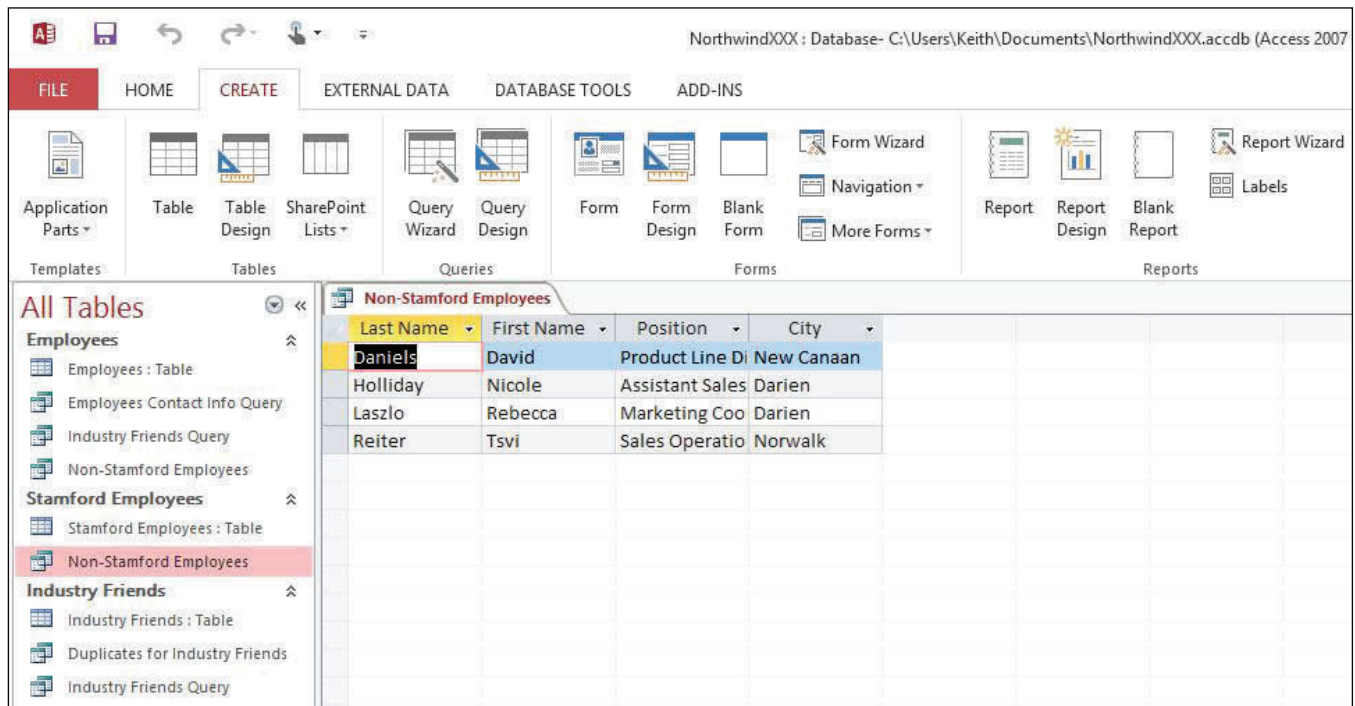
Find Unmatched Query Wizard, final screen



9. Click in the text box at the top of this screen and key **Non-Stamford Employees** to name your query, then click the **Finish** button. The query is displayed, as shown in Figure 7-20.

Figure 7-20

Non-Stamford
Employees query



10. Click the **Close** button on the Non-Stamford Employees tab to close the query.

PAUSE. LEAVE the database open to use in the next exercise.

SOFTWARE ORIENTATION

QUERY TOOLS DESIGN Tab

By switching to Design view, you can access all the tools needed to modify your query on the QUERY TOOLS DESIGN tab, shown in Figure 7-21. Use this figure as a reference throughout this lesson as well as the rest of this book.

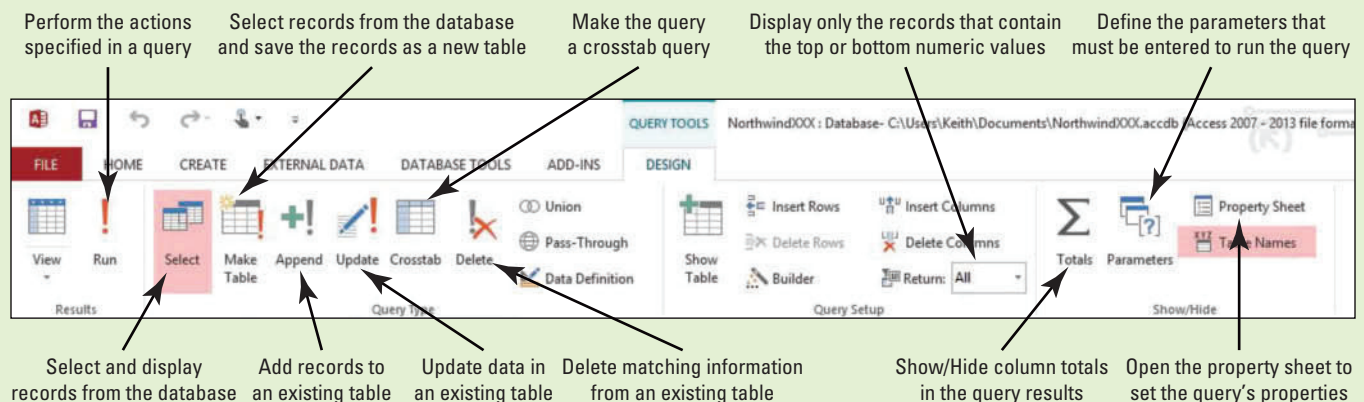


Figure 7-21

QUERY TOOLS DESIGN tab

MODIFYING A QUERY

The Bottom Line



Another Way

You can also add a table to a query by clicking and dragging the table from the Navigation Pane to the Query Design window.

Adding a Table to a Query

To add a table to a query, you must be in Design view. Run the query and click Design View on the lower half of the View button. On the QUERY TOOLS DESIGN tab, in the Query Setup group, click the Show Table button to display the Show Table dialog box. There is a tab that contains the tables in the database, a tab with the queries, and a tab that displays both. Select the object you want to add to the query and click the Add button. If you add a second copy of a table to the query, it is indicated by a “1” in the title. In this exercise, you add additional tables to a query using the Show Table dialog box.

STEP BY STEP

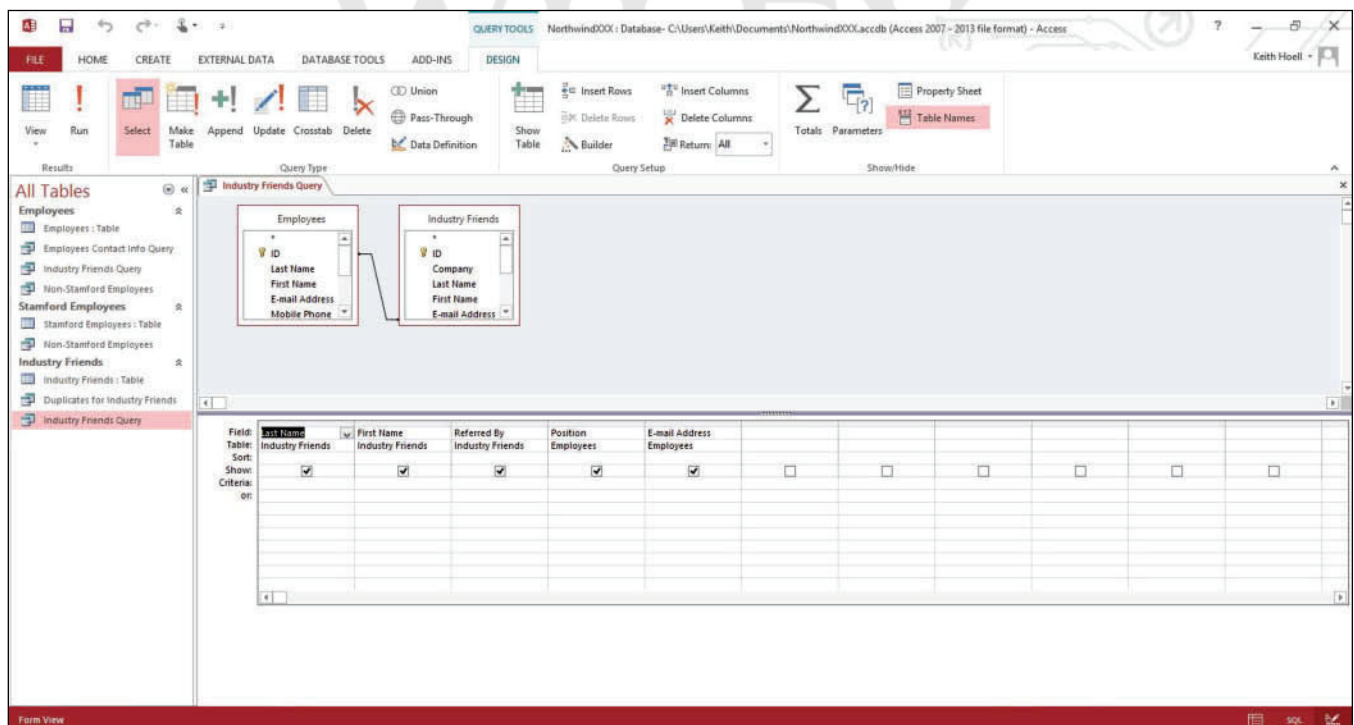
Add a Table to a Query

USE the database that is open from the previous exercise.

1. Double-click the **Industry Friends Query** in the Navigation Pane to open it.
2. On the HOME tab, in the Views group, click the lower half of the **View** button and then click **Design View**. The query appears in Design view, as shown in Figure 7-22.

Figure 7-22

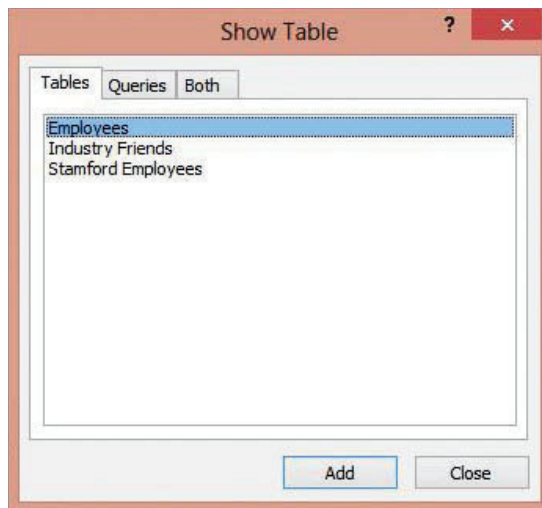
Query in Design view



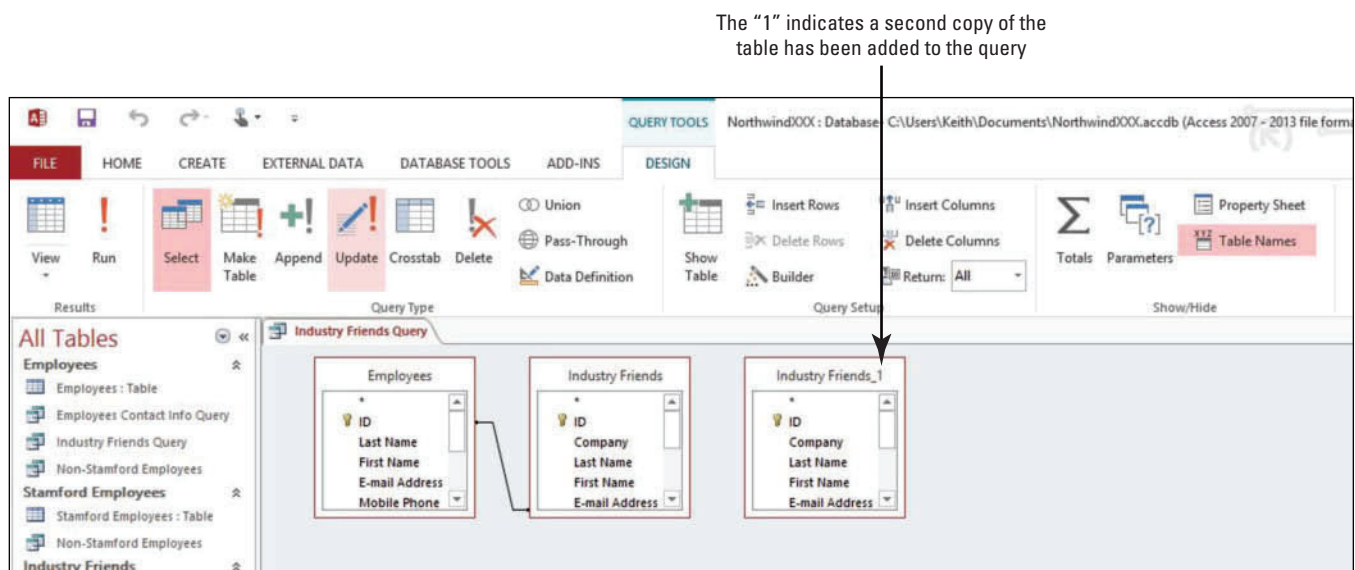
3. On the QUERY TOOLS DESIGN tab, in the Query Setup group, click the **Show Table** button to display the Show Table dialog box, shown in Figure 7-23.

Figure 7-23

Show Table dialog box



4. Click **Industry Friends** and click the **Add** button. A second copy of the Industry Friends table is added to the query, as indicated by the “1” in the title, as shown in Figure 7-24.

Figure 7-24Second copy of table
in a query

5. Click **Stamford Employees** and click the **Add** button. The table is added to the query.
6. Click the **Close** button in the Show Table dialog box.

PAUSE. LEAVE the database open to use in the next exercise.

Removing a Table from a Query

To remove a table from a query, first open the query in Design view. In the upper portion of Query Design view, select the table you want to remove by clicking anywhere in its field list—a **field list** is a window that lists all the fields in the underlying record source or database object—then press the Delete key. The table is removed from the query, but it is not deleted from the database. In this exercise, you remove a table from a query.

STEP BY STEP**Remove a Table from a Query**

USE the database that is open from the previous exercise.

1. Click anywhere in the **Industry Friends_1** field list.
2. [Press the **Delete** key] to remove the table.
3. Click anywhere in the **Stamford Employees** field list.
4. [Press the **Delete** key] to remove the table.
5. Click the **Close** button on the Industry Friends Query tab to close the query. If a message asks you if you want to save the changes, click **Yes**.

PAUSE. LEAVE the database open to use in the next exercise.

Adding Criteria to a Query

Not all queries must include criteria, but if you are not interested in seeing all the records that are stored in the underlying record source, you can add criteria to a query when designing it. A **query criterion** is a rule that identifies the records you want to include in the query result. A criterion is similar to a formula. Some criteria are simple and use basic operators and constants. Others are complex and use functions, special operators, and include field references. Criteria can look very different from each other, depending on the data type of the field to which they apply and your specific requirements. You can also run a **parameter query**, in which the user interactively specifies one or more criteria values. This is not a separate query; it extends the flexibility of another type of query, such as a select query, by prompting the user for a parameter value when it is run. In this exercise, you add criteria to queries to display certain records, use the Show check box, and create and run a parameter query which will prompt the user for a city name and display matching records.

To specify one or more criteria to restrict the records returned in the query results, open the query in Design view. Select the field and type the condition that you want to specify in the Criteria row. To see the results, switch to Datasheet view. The results will show each field, including the one where the criterion was specified.

Sometimes, you may want to show only certain fields (while hiding others) from the records that match the criterion to get a more concise view of the resulting data. In this case, deselect the Show row check box above the Criteria row for those fields you don't want to display in the results. The fields that you choose not to show, except the field with the criterion, will be hidden from the results after you switch to Datasheet view.

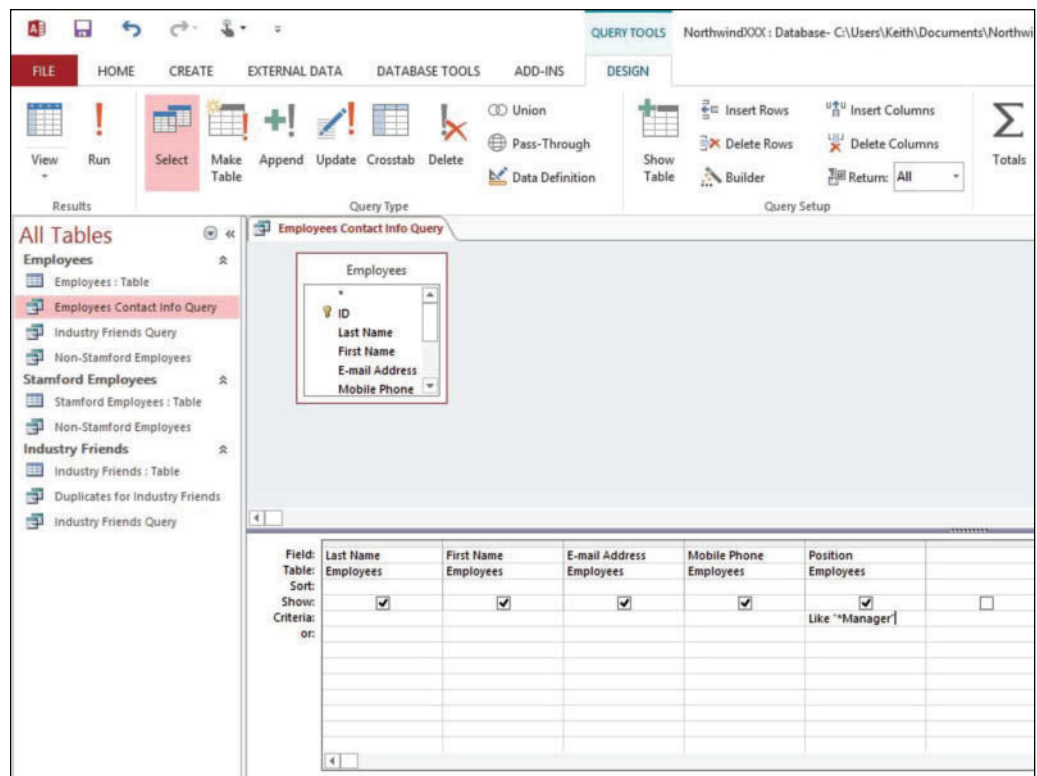
STEP BY STEP**Add Criteria to a Query**

USE the database that is open from the previous exercise.

1. In the Navigation Pane, double-click the **Employees Contact Info Query** to open it.
2. On the HOME tab, in the Views group, click the lower half of the **View** button and click **Design View**.
3. In the Criteria row of the Position field, key **Like "*Manager"** as shown in Figure 7-25 to display all records that end with the string "Manager" in the Position field (e.g., Assistant Manager, Sales Manager, Product Manager, etc.).

Figure 7-25

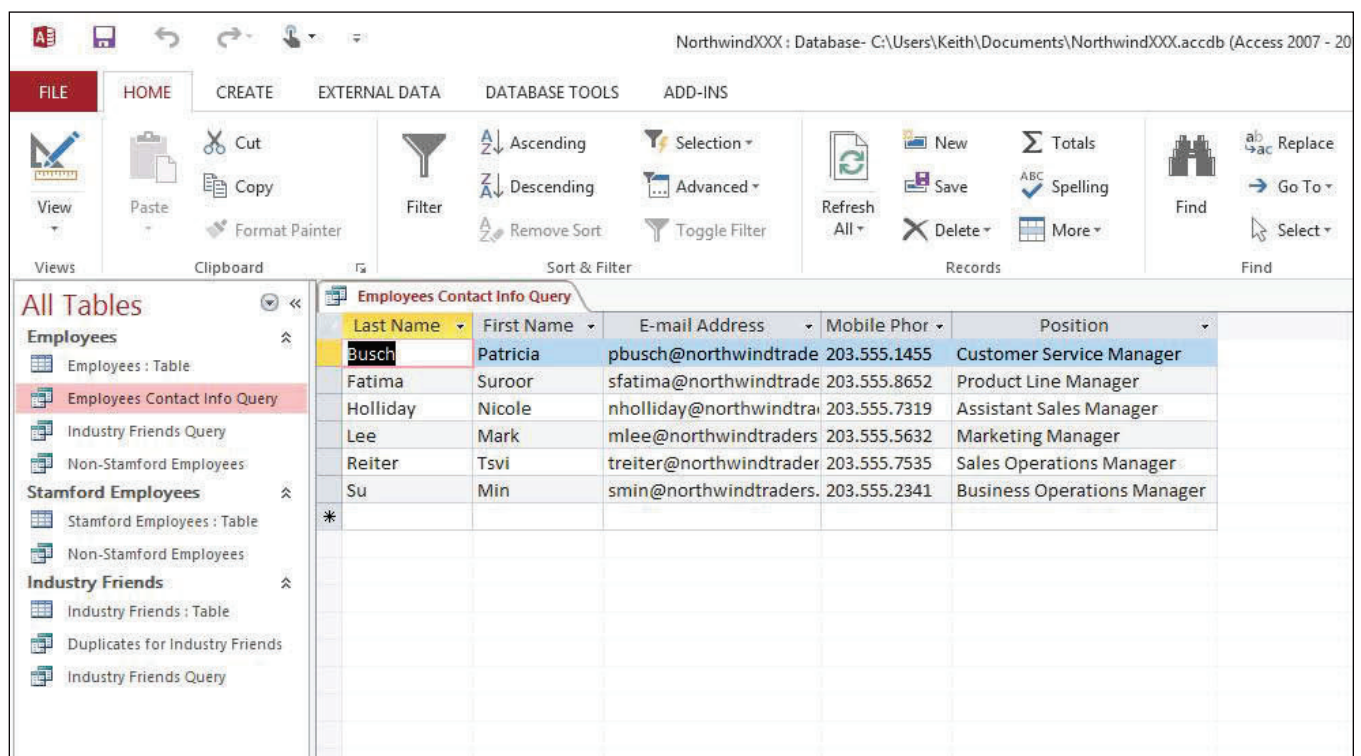
Query criterion



4. On the QUERY TOOLS DESIGN tab, in the Results group, click the lower half of the **View** button and click **Datasheet View**. The query results display all records that end with the string "Manager" in the Position field, as shown in Figure 7-26. (You may have to increase the width of the Position field to completely view the data within it.)

Figure 7-26

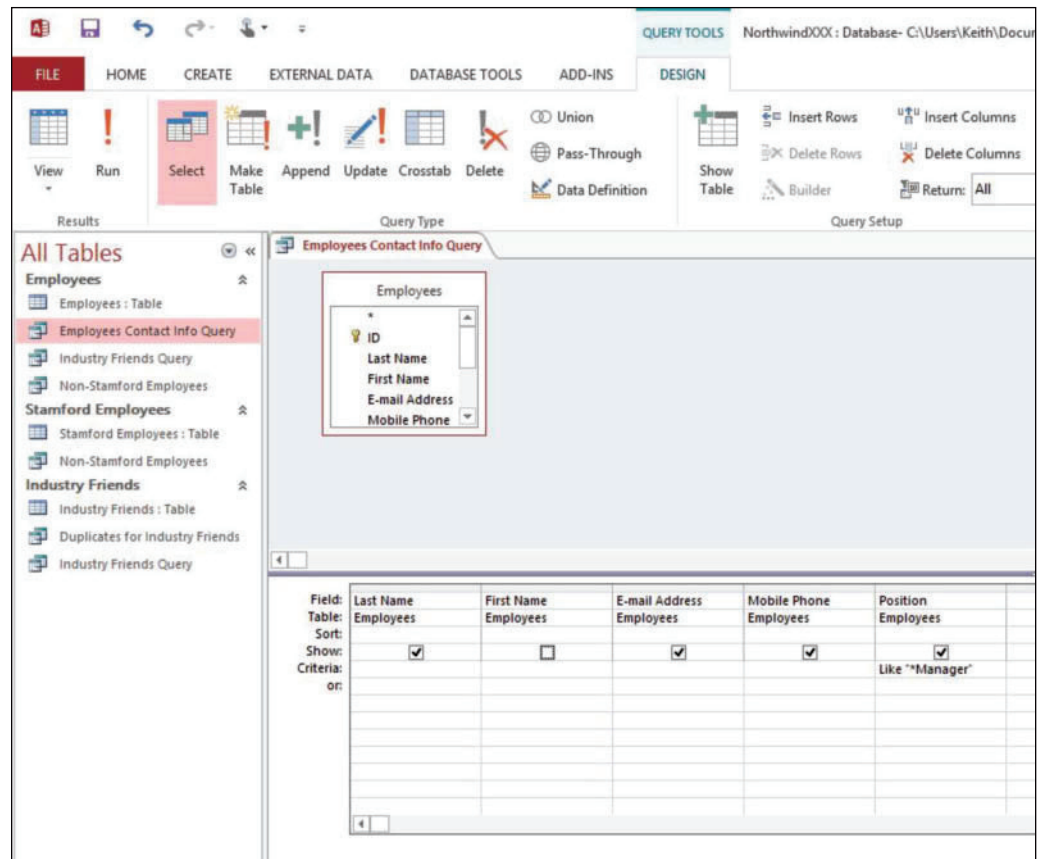
Results with query criteria applied



5. On the HOME tab, in the Views group, click the lower half of the **View** button and click **Design View**.
6. In the Show row, under the First Name field, click the **Show** check box to deselect it, as shown in Figure 7-27. The First Name field data will not appear in the query results.

Figure 7-27

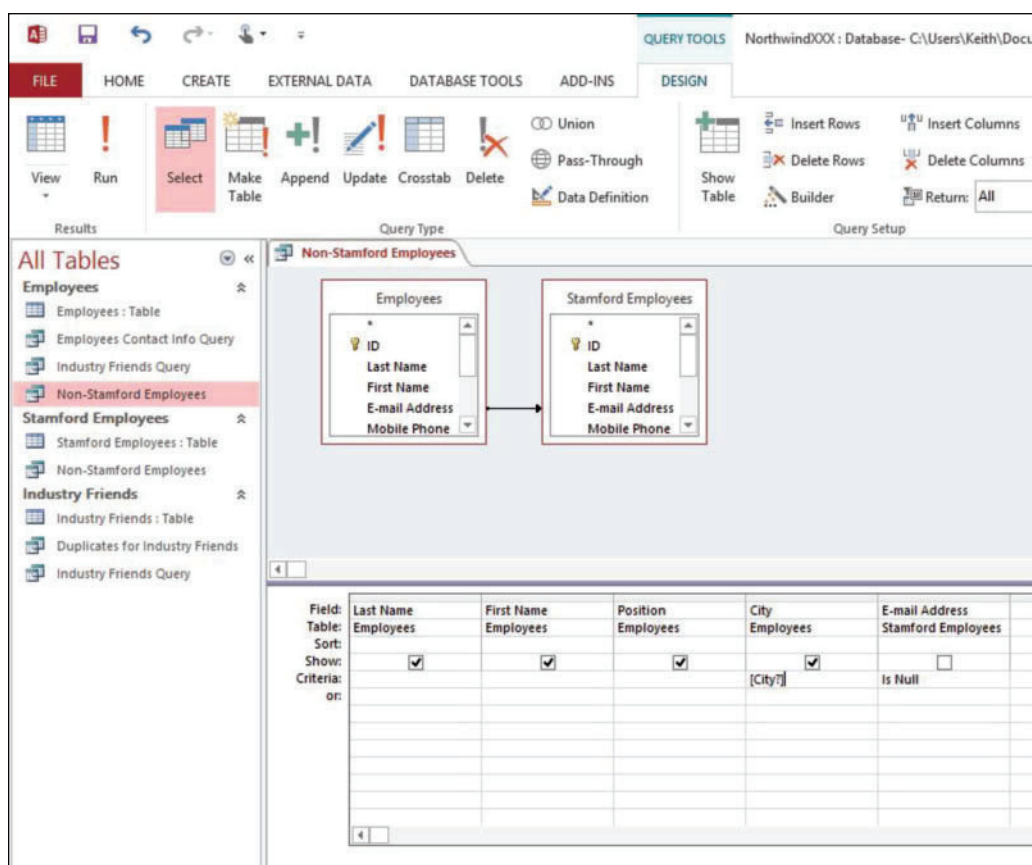
Show check box deselected for First Name field



7. On the HOME tab, in the Views group, click the lower half of the **View** button and click **Datasheet View**. Notice that the First Name field doesn't appear.
8. Click the **Close** button on the Employees Contact Info Query tab to close the query. When prompted to save, click **Yes**.
9. In the Navigation Pane, double-click the **Non-Stamford Employees Query** to open it.
10. On the HOME tab, in the Views group, click the lower half of the **View** button and click **Design View**.
11. In the Criteria row of the City field, key **[City?]** as shown in Figure 7-28. This will create the parameter and require you to enter a city name when the query is run.

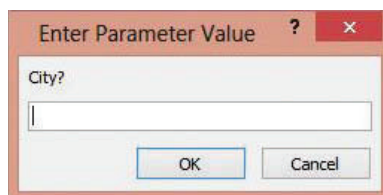
Figure 7-28

Parameter query criteria



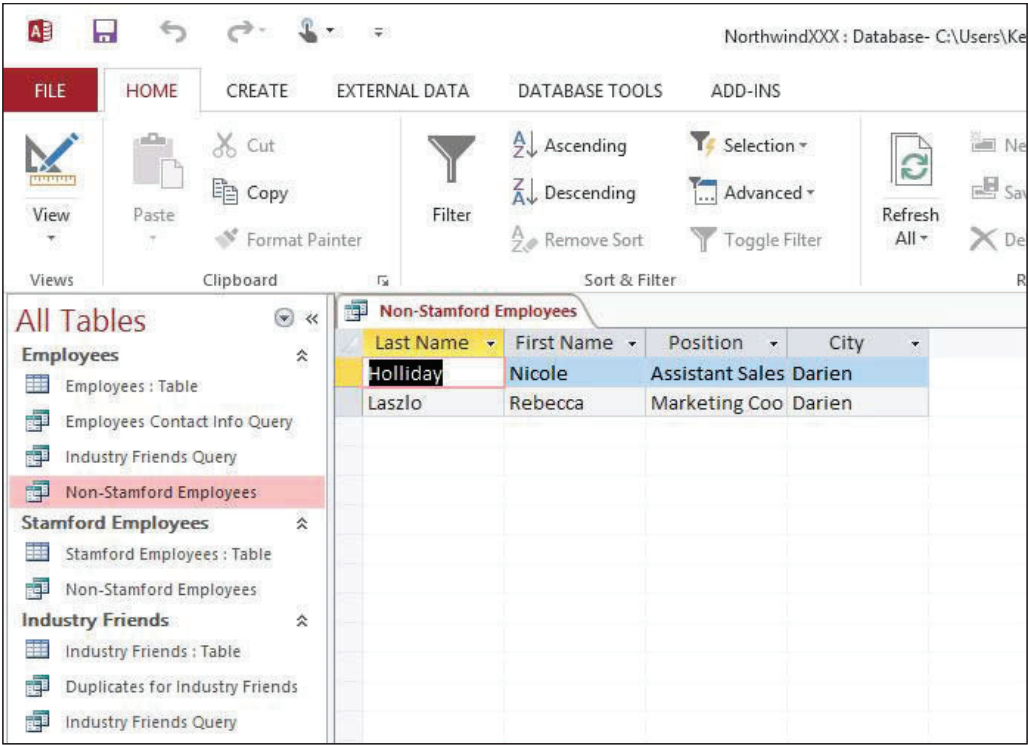
12. On the HOME tab, in the Views group, click the lower half of the **View** button and click **Datasheet View**. The prompt appears in the Enter Parameter Value dialog box, as shown in Figure 7-29.

Figure 7-29

Enter Parameter Value
dialog box

13. Key **Darien** in the City? box.
14. Click **OK**. The records for non-Stamford employees who live in Darien are displayed in the results, as shown in Figure 7-30.

Figure 7-30
Parameter query result



**CERTIFICATION
READY?** 3.2.4

How do you hide fields?

**CERTIFICATION
READY?** 3.1.3

How do you create
parameter queries?

15. Click the **Close** button on the Non-Stamford Employees tab to close the query. When prompted to save, click **Yes**.

PAUSE. LEAVE the database open to use in the next exercise.

Table 7-1 shows some sample criteria and explains how they work. Table 7-2 shows the query results that are returned when a specific criterion is used.

Table 7-1
Criteria examples

Criteria	Description
>25 and <50	This criterion applies to a Number field, such as Inventory. It includes only those records where the Inventory field contains a value greater than 25 and less than 50.
DateDiff ("yyyy", [BirthDate], Date()) > 21	This criterion applies to a Date/Time field, such as BirthDate. Only records where the number of years between a person's birth date and today's date is greater than 21 are included in the query result.
Is Null	This criterion can be applied to any type of field to show records where the field value is null. (A null value is a marker that a value does not exist for a field and is differentiated from a value that has been missed being entered by a user.)

Table 7-2

Query result examples

To Include Records That...	Use This Criterion	Query Result
Exactly match a value, such as Manager	"Manager"	Returns records where the given field is set to Manager.
Do not match a value, such as Chicago	Not "Chicago"	Returns records where the given field is set to a value other than Chicago.
Begin with the specified string, such as B	Like B*	Returns records for the given field where the value starts with "B," such as Boston, Bakersfield, and so on.
Do not begin with the specified string, such as B	Not Like B*	Returns records for the given field where the value starts with a character other than "B."
Contain the specified string, such as Sales	Like "*Sales*"	Returns records for the given field that contain the string "Sales."
Do not contain the specified string, such as Sales	Not Like "*Sales*"	Returns records for the given field that do not contain the string "Sales."

SORTING AND FILTERING DATA WITHIN A QUERY

The Bottom Line

Sorting and filtering data within a query allows you to display only the records you want and/or display records in a particular order.

Sorting Data within a Query

Sorting data in a query can help organize data efficiently and make it easier for users to review and locate the records they want without having to browse the data. Data can be sorted in the Datasheet view of a query. Right-click the field on which you want to sort and click the sort order you want—ascending or descending—from the shortcut menu. The records are rearranged to match the sort order. In this exercise, you sort data using the Datasheet view of a query.

To sort by more than one field, on the **HOME** tab, in the **Sort & Filter** group, click the **Advanced** button and click **Advanced Filter/Sort** to open a tab where you can specify more than one field by which to sort and the sort order.



Cross Ref

You learned about sorting data within a table in Lesson 3, sorting data within a form in Lesson 5, and sorting data within a report in Lesson 6.

STEP BY STEP

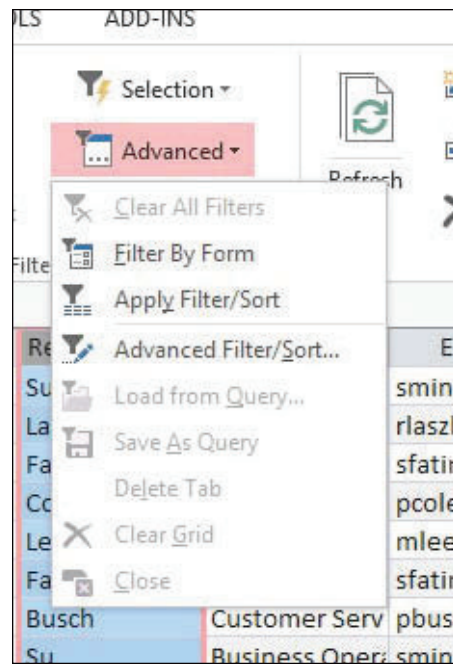
Sort Data within a Query

USE the database that is open from the previous exercise.

1. In the Navigation Pane, double-click the **Industry Friends Query** to open it.
2. Right-click the **Referred By** field to display the shortcut menu shown in Figure 7-31.

Figure 7-33

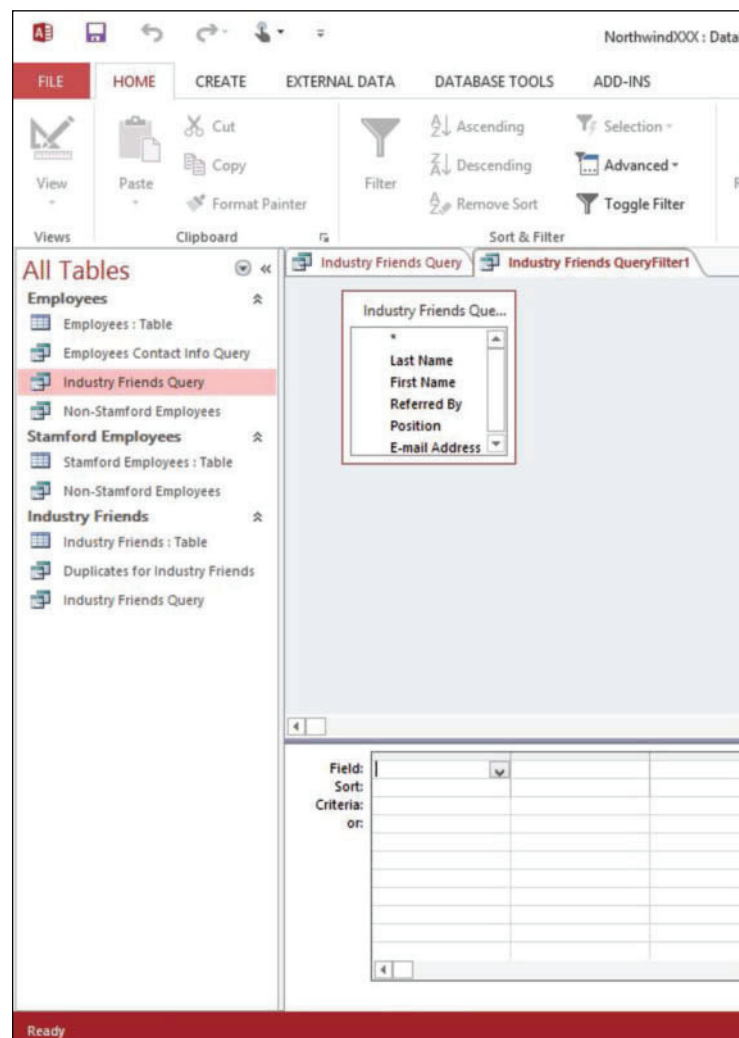
Advanced menu



6. Click **Advanced Filter/Sort**. An Industry Friends QueryFilter1 tab appears, as shown in Figure 7-34.

Figure 7-34

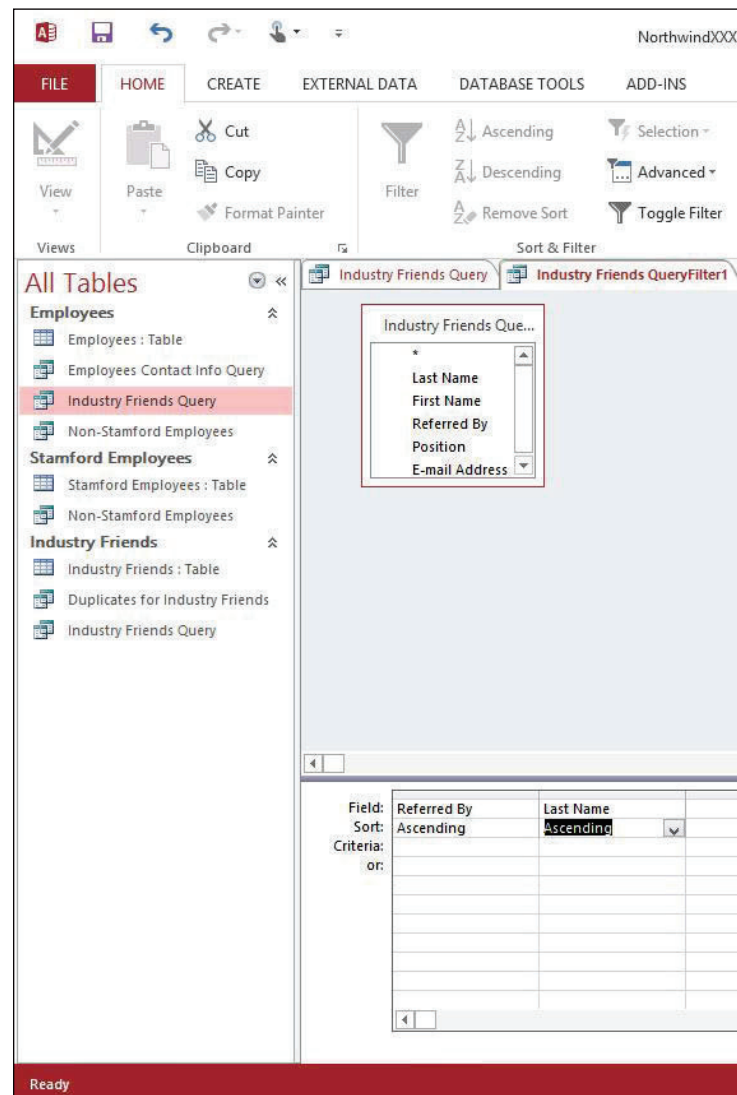
Industry Friends QueryFilter1 tab



7. Click the **Field cell** in the first column, click the **down arrow**, and click **Referred By** on the drop-down menu.
8. Click the **Sort cell** in the first column, click the **down arrow**, and click **Ascending** on the drop-down menu.
9. Click the **Field cell** in the second column, click the **down arrow**, and click **Last Name** on the drop-down menu.
10. Click the **Sort cell** in the second column, click the **down arrow**, and click **Ascending** on the drop-down menu. Your screen should look similar to Figure 7-35.

Figure 7-35

Advanced sort criteria



11. On the HOME tab, in the Sort & Filter group, click the **Advanced** button and click **Apply Filter/Sort**. The query is sorted by the Referred By field in ascending order and then by the Last Name field in ascending order, as shown in Figure 7-36.

Figure 7-36

Sorted query

Last Name	First Name	Referred By	Position	E-mail Address
Galvin	Janice	Busch	Customer Serv	pbusch@northwindtrade
Caro	Fernando	Coleman	Customer Serv	pcoleman@northwindtra
Caro	Fernando	Coleman	Customer Serv	pcoleman@northwindtra
Sawyer	Ciam	Coleman	Customer Serv	pcoleman@northwindtra
Ting	Hung-Fu	Coleman	Customer Serv	pcoleman@northwindtra
Tiedt	Danielle	Daniels	Product Line Di	ddaniels@northwindtrad
Mu	Zheng	DeOliveira	Graphic Design	jdeoliveira@northwindtr
Carmargo	Gustavo	Fatima	Product Line M	sfatima@northwindtrade
Culp	Scott	Fatima	Product Line M	sfatima@northwindtrade
Kaliyath	Sandeep	Holliday	Assistant Sales	nholliday@northwindtra
Ralls	Kim	Holliday	Assistant Sales	nholliday@northwindtra
West	Paul	Holliday	Assistant Sales	nholliday@northwindtra
Spoon	Candy	Johnson	Director of Sale	wjohnson@northwindtra
Valdez	Rachel	Johnson	Director of Sale	wjohnson@northwindtra
Berglund	Andreas	Laszlo	Marketing Coor	rlaszlo@northwindtrader
Nash	Mike	Lee	Director of Mar	flee@northwindtraders.c
Contreras	Linda	Lee	Marketing Mar	mlee@northwindtraders
Archer	Karen	Su	Business Operi	smin@northwindtraders.
Grande	Jon	Su	Business Operi	smin@northwindtraders.
Grande	Jon	Su	Business Operi	smin@northwindtraders.

**CERTIFICATION
READY?** 3.2.5

How do you sort data within queries?

12. On the HOME tab, in the Sort & Filter group, click the **Remove Sort** button.

PAUSE. LEAVE the database open to use in the next exercise.

Take Note The same tab is used to perform an advanced filter for the query.

Filtering Data within a Query

A filter limits a view of data to specific records without requiring you to alter the design of the underlying query. If the criteria are temporary or change often, you can filter the query results instead of frequently modifying the query criteria. A filter is a temporary criterion that changes the query result without altering the design of the query. In this exercise, you filter data within a query.

To filter data within a query, click the field you want to filter. On the HOME tab, in the Sort & Filter group, click the Filter button. The filters available depend on the type and values of the field. When you apply the filter, only records that contain the values in which you are interested are included in the view. The rest are hidden until you remove the filter by clicking the Toggle Filter button.



**Cross
Ref**

You learned about filtering data within a table in Lesson 3, filtering data within a form in Lesson 5, and filtering data within a report in Lesson 6.

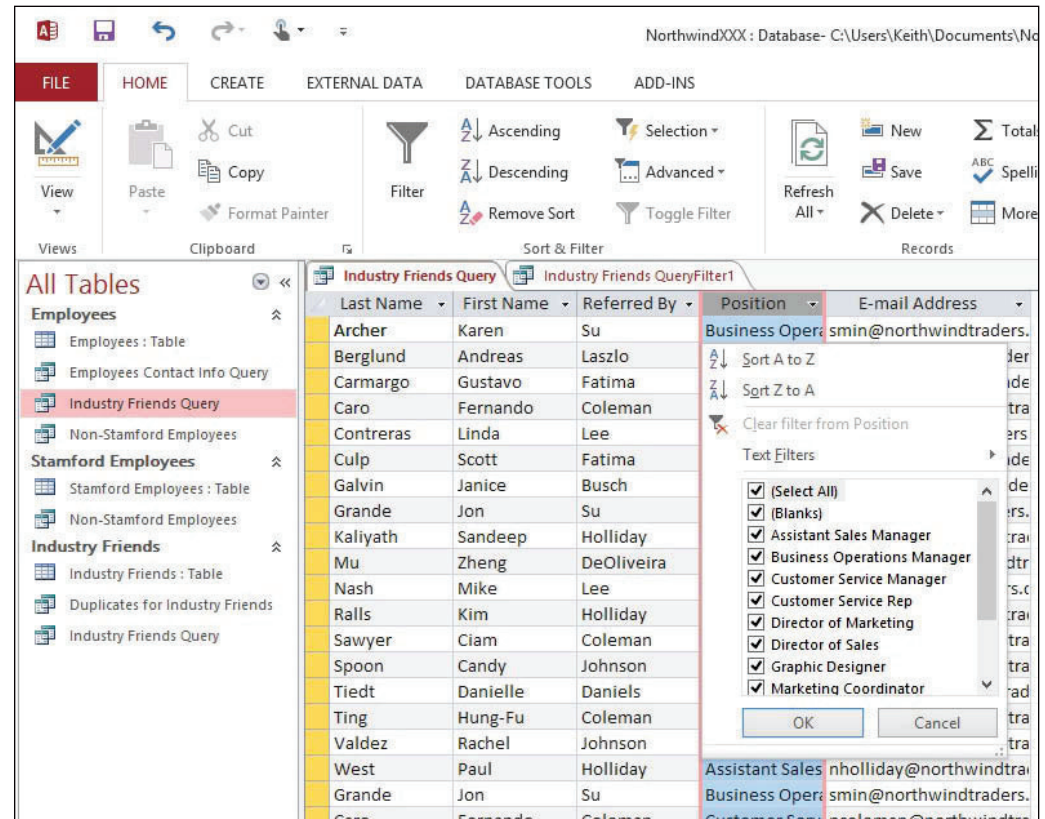
STEP BY STEP**Filter Data within a Query**

USE the database that is open from the previous exercise. The Industry Friends Query should be open.

1. Click the **Position** header to select the field.
2. On the HOME tab, in the Sort & Filter group, click the **Filter** button. A menu appears on the field, as shown in Figure 7-37.

Figure 7-37

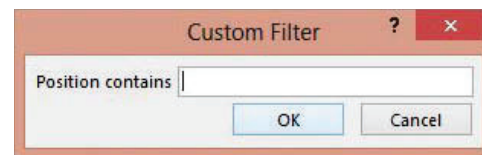
Filter menu



3. On the menu, click **Text Filters** and click **Contains** on the submenu. A Custom Filter dialog box appears, as shown in Figure 7-38.

Figure 7-38

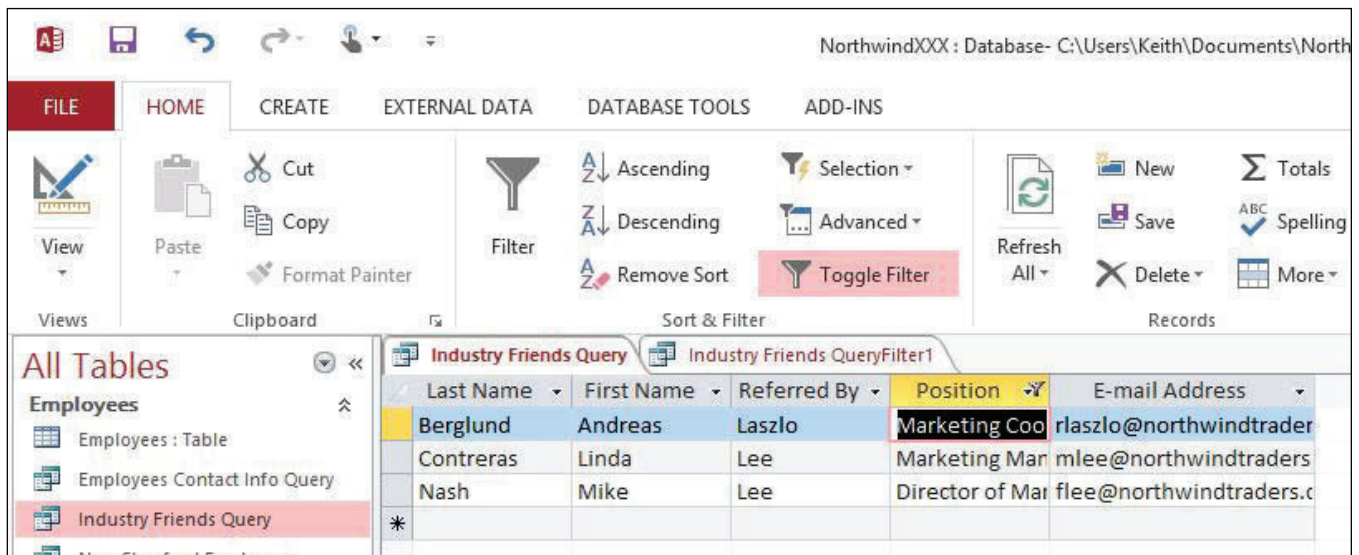
Custom Filter dialog box



4. In the Position contains box, key **Marketing** and click **OK**. The records are filtered to show only those results containing the word "Marketing" in the Position field, as shown in Figure 7-39.

Figure 7-39

Filtered query



- On the HOME tab, in the Sort & Filter group, click the **Toggle Filter** button to remove the filter.
- Click the **Close** button on the Industry Friends Query tab to close the query, and click **Yes** to save changes when prompted.
- Click the **Close** button on the Industry Friends QueryFilter1 tab to close the query.

CLOSE the database.

SKILL SUMMARY

In This Lesson You Learned How To:	Exam Objective	Objective Number
Create a query	Save queries	3.1.6
	Run queries	3.1.1
	Rename queries	3.2.1
	Delete queries	3.1.7
	Create multi-table queries	3.1.5
Modify a query	Hide fields	3.2.4
	Create parameter queries	3.1.3
Sort and filter data within a query	Sort data within queries	3.2.5

Knowledge Assessment

Fill in the Blank

Complete the following sentences by writing the correct word or words in the blanks provided.

- The Queries group on the _____ tab contains the commands used to create queries.
- The _____ button creates a new, blank query in Design view.
- A(n) _____ is the most basic type of Access query.
- The tables or queries from which a query gets its data are referred to as its _____.
- To run a query after it has been created, double-click it in the Navigation Pane to open it in _____ view and see the results.

6. Two or more records are considered _____ only when all the fields in your query results contain the same values.
7. When you need to include multiple tables in your query, use the _____ Wizard to build a query from a primary table and a related table.
8. To view only the records in one table that don't have a matching record in another table, you can create a _____ query.
9. By switching to _____ view, you can access all the tools needed to modify your query.
10. A(n) _____ is a window that lists all the fields in the underlying record source or database object.

Multiple Choice

Select the best response for the following statements or questions.

1. Creating a query is like
 - a. sorting the data.
 - b. asking the database a question.
 - c. creating a new table.
 - d. opening an existing database.
2. The results that a query returns can be
 - a. sorted.
 - b. grouped.
 - c. filtered.
 - d. all of the above.
 - e. none of the above.
3. When one table will provide the information you need, you can create a
 - a. record source.
 - b. simple select query.
 - c. query criterion.
 - d. parameter query.
4. Which query cannot be created using the Query Wizard?
 - a. Parameter query
 - b. Simple query
 - c. Find duplicates query
 - d. Find unmatched query
5. Queries are different from sort or filter commands because they can be
 - a. applied to multiple fields.
 - b. saved.
 - c. modified.
 - d. used on forms.
6. A query can get its data from
 - a. one or more tables.
 - b. existing queries.
 - c. all of the above.
 - d. none of the above.
7. To find records that contain matching field values, you can create a query using which wizard?
 - a. Find Matching
 - b. Matching Fields
 - c. Duplicate Records
 - d. Find Duplicates
8. Before creating a query from multiple tables, you must first ensure that the tables have
 - a. unmatched records.
 - b. a defined relationship.
 - c. a filter applied.
 - d. no related records.
9. To add a table to a query, you must be in what view?
 - a. SQL
 - b. Datasheet
 - c. Normal
 - d. Design

10. A rule that identifies the records you want to include in the query result is called a
- parameter query.
 - query criterion.
 - select query.
 - field list.

Competency Assessment

Project 7-1: Create a Games Select Query

As the manager at Southridge Video, you have stored information in an Access database about each used game that the store has taken in trade. Now that you know how to create queries, you decide to create a select query to list the title, rating, and category, which are the fields that you most often need to view.

GET READY. LAUNCH Access if it is not already running.



1. **OPEN** *Games* from the data files for this lesson.
2. **SAVE** the database as *GamesXXX* (where XXX is your initials).
3. On the CREATE tab, in the Queries group, click the **Query Wizard** button to display the New Query dialog box.
4. Click **Simple Query Wizard** and then click **OK**.
5. In the Tables/Queries drop-down list, Table: Games should be selected.
6. Under Available Fields, double-click **Title**, **Rating**, and **Category** to move them to the Selected Fields box.
7. Click the **Next >** button. The second screen in the Simple Query Wizard appears.
8. Name the query **Games Query**. *Open the query to view information* should be selected.
9. Click the **Finish** button.
10. Click the **Close** button on the Games Query tab to close the query.
11. **LEAVE** the database open for the next project.

LEAVE Access open for the next project.

Project 7-2: Create a Find Duplicates Query

You have taught the night manager at Southridge Video how to enter used game information into the database, but you have not yet developed a reliable system for determining if the game has already been entered. You are concerned there may be duplicate records. Create a Find Duplicates query to determine if there are duplicates.

USE the database that is open from the previous project.

1. On the CREATE tab, in the Queries group, click the **Query Wizard** button.
2. In the New Query dialog box, click **Find Duplicates Query Wizard**, and then click **OK**.
3. Click **Table: Games** and then click **Next >**. The next screen in the Find Duplicates Query Wizard appears.
4. Double-click **Title**, **Platform**, and **Publisher** to move them to the Duplicate-value fields box.
5. Click **Next >** to display the next screen in the Find Duplicates Query Wizard.
6. Double-click **Category** to move it to the Additional query fields box.
7. Click **Next >** to display the final screen in the Find Duplicates Query Wizard.
8. Name the query **Duplicates for Games** and click **Finish** to display the query showing duplicate records in the table.
9. Click the **Close** button on the Duplicates for Games tab to close the query.
10. **CLOSE** the database.

LEAVE Access open for the next project.

Proficiency Assessment

Project 7-3: Create a Query from Multiple Tables

Information about each selection for the Fourth Coffee monthly coffee club is stored in an Access database. Information about regular coffee and decaf coffee is stored in separate tables. In your position as customer service rep, it would be useful to be able to query information from both tables.

GET READY. LAUNCH Access if it is not already running.



1. **OPEN** *Fourth Coffee Club* from the data files for this lesson.
2. **SAVE** the database as *Fourth Coffee ClubXXX* (where XXX is your initials).
3. Open the **Regular Coffee: Table**.
4. Open the **Relationships** window to ensure there is a relationship between the regular coffee and decaf coffee tables. Close the Relationships window.
5. Start the Query Wizard and choose **Simple Query Wizard**.
6. In the Tables/Queries drop-down list, click **Table: Regular Coffee**.
7. Move the Name, Country, Month, and Type fields to the Selected Fields box.
8. In the Tables/Queries drop-down list, click **Table: Decaf Coffee**.
9. Move the Name, Country, Month, and Type fields to the Selected Fields box.
10. Click the **Next >** button.
11. Click the **Next >** button and name the query **Coffee Query**.
12. Click the **Finish** button.
13. Review the information in the query and then close it.
14. **LEAVE** the database open for the next project.

LEAVE Access open for the next project.

Project 7-4: Create a Find Unmatched Query

A decaf coffee and a regular coffee should be selected for each month. To determine if there are any records in the decaf coffee table that don't have a matching record in the regular coffee table, you decide to create a Find Unmatched query.

USE the database that is open from the previous project.

1. Start the **Query Wizard** and choose **Find Unmatched Query Wizard**.
2. Table: Decaf Coffee should be selected. Click **Next >**.
3. Table: Regular Coffee should be selected. Click **Next >**.
4. Click **ID** in the Fields in 'Decaf Coffee' list. Click **ID** in the Fields in 'Regular Coffee' list. Click the **<=>** button to display them in the Matching fields box.
5. Click the **Next >** button.
6. Move the Name, Month, and Type fields to the Selected fields box.
7. Click the **Next >** button.
8. Name the query **Unmatched Month** and click the **Finish** button to display the query results.
9. Close the query.
10. **CLOSE** the database.

LEAVE Access open for the next project.

Mastery Assessment

Project 7-5: Create a Query with Criteria

In your job as a travel agent at Erin's Travel, a client has asked you to provide a list of all the travel packages available to sporting events that start in the month of April or May. You will add criteria to a query to get this information from the database.

GET READY. LAUNCH Access if it is not already running.



1. **OPEN** *Sports Events* from the data files for this lesson.
2. Save the database as *Sports EventsXXX* (where XXX is your initials).
3. Open the *Events* query and switch to Design view.
4. Add criteria that will query the database and display all fields for all events that start between 4/1/2014 and 5/31/2014.
5. Use the Show row to hide the Start Date and End Date fields.
6. Run the query.
7. Close the query and **SAVE** the design changes when prompted.
8. **CLOSE** the database.

LEAVE Access open for the next project.

Project 7-6: Create a Parameter Query

Your brother, who owns Wingtip Toys, wants to pull data from his toy inventory and asks for your help in creating a query. He wants to query the database for toys for specific ages when prompted, so you show him how to create a parameter query.

GET READY. LAUNCH Access if it is not already running.



1. **OPEN** *Toys* from the data files for this lesson.
2. **SAVE** the database as *ToysXXX* (where XXX is your initials).
3. Create a simple query named *Inventory Query* that contains all the available fields in the Inventory table except the ID field.
4. Create a parameter query on the For Ages field that gives you the prompt shown in Figure 7-40 when the query is run.

Figure 7-40

Enter Parameter Value prompt

5. Query the database for all toys intended for ages **10–14 years**.
6. Close the query and **SAVE** when prompted.
7. **CLOSE** the database.

CLOSE Access.