

3 Work with Tables and Database Records

LESSON SKILL MATRIX

| Skill | Exam Objective | Objective Number |
|---|----------------------------------|------------------|
| Navigating Among Records | | |
| Entering, Inserting, Editing, and Deleting Records | Add New Records. | 2.3.2 |
| | Navigate to Specific Records. | 1.3.1 |
| | Update Records. | 2.3.1 |
| | Delete Records. | 2.3.3 |
| Working with Primary Keys | Set Primary Key Fields. | 1.2.3 |
| Finding and Replacing Data | Find and Replace Data. | 2.3.5 |
| Attaching and Detaching Documents | | |
| Sorting and Filtering Data and Setting Field Viewing Options within a Table | Sort Records. | 2.3.6 |
| | Filter Records. | 2.3.7 |
| | Hide Fields in Tables. | 2.2.1 |
| Understanding Table Relationships | Enforce Referential Integrity. | 1.2.4 |
| | Set Foreign Keys. | 1.2.5 |
| | Create and Modify Relationships. | 1.2.2 |
| | Edit References Between Tables. | 1.2.1 |
| | View Relationships. | 1.2.6 |

KEY TERMS

- ascending
- composite key
- descending
- filter
- foreign key
- innermost field
- outermost field
- referential integrity
- sort
- wildcard



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Fourth Coffee is a national chain of coffee shops. A new store recently opened in your neighborhood. You were able to get a part-time job working in the office, helping the office manager organize data on the computer. In addition to being a traditional neighborhood coffee shop, the store has also started selling coffees to companies for use at their business sites. It is your job to manage the inventory, customers, and order tables in Access. In this lesson, you learn to navigate among records; enter, edit, and delete records; find and replace data; sort and filter data; attach and detach documents; and define, modify, and print table relationships.

NAVIGATING AMONG RECORDS

The Bottom Line

Database tables can be very large, and contain useful information that can be manipulated in different ways. When a table contains many records and fields, it is important to be able to navigate among them.

Navigating Using the Keyboard

Access users who prefer using the keyboard to navigate records can press keys and key combinations to move among records in Datasheet view. In Datasheet view, you can navigate among records using the up, down, left, and right arrow keys to move to the field you want. You can also use the Tab key to move from field to field in a record and from the last field in a record to the first field of the next record. If you prefer to use the mouse, you can move among records by clicking the navigation buttons, which you will do in a later exercise. However, in this exercise, you use the keyboard to navigate among records.

STEP BY STEP

Use the Keyboard to Navigate among Records



GET READY. Before you begin these steps, be sure to turn on and/or log on to your computer and start Access.

1. **OPEN** *Fourth Coffee* from the data files for this lesson.
2. Click the **FILE** tab, then click the **Save As** option on the left side of the Backstage view.
3. Click the **Save As** command. The Save As dialog box appears. Key **FourthCoffeeXXX** (where XXX is your initials) in the File name box. Find the location where you will save the solution files for this lesson and click **Save**.



Troubleshooting

If you are asked to enable the content, click the Enable Content button on the Security Warning Message Bar. By default, Access blocks potentially harmful content that might contain viruses or present other security issues. This content should only be enabled if the database is downloaded from a trustworthy site, like Office.com.

4. In the Navigation Pane, double-click **Coffee Inventory: Table** to open the table.
5. Notice that the first cell of the first record is selected.
6. Press the **Down Arrow** key to move down to the next row. Notice that the first cell is selected.
7. Press the **Right Arrow** key to move to the Product Name field.
8. Press the **Tab** key to move to the next cell.
9. Press the **Tab** key to move to the next cell.
10. Press the **Tab** key to move to the next row.
11. Press **Ctrl+Down Arrow** to move to the first field of the last record.

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

Table 3-1 lists keys and key combinations for moving among records.

Table 3-1

Keyboard Commands for Navigating Records

| Commands | Results |
|---------------------------|--|
| Tab or Right Arrow | Moves cursor to the next field |
| End | Moves cursor to the last field in the current record |
| Shift + Tab or Left Arrow | Moves cursor to the previous field |
| Home | Moves cursor to the first field in the current record |
| Down Arrow | Moves cursor to the current field in the next record |
| Ctrl + Down Arrow | Moves cursor to the current field in the last record |
| Ctrl + End | Moves cursor to the last field in the last record |
| Up Arrow | Moves cursor to the current field in the previous record |
| Ctrl + Up Arrow | Moves cursor to the current field in the first record |
| Ctrl + Home | Moves cursor to the first field in the first record |

Using Navigation Buttons

Access users who prefer to use the mouse can move among records by clicking the navigation buttons. In this exercise, you use the mouse to navigate among records.

The record navigation buttons are displayed at the bottom of the screen in Datasheet view. Click the First record, Previous record, Next record, Last record, and New (blank) Record buttons to go to those records. Key a record number into the Current Record box and press Enter to go to that record. Key data into the Search box to find a match in the table. The Filter Indicator shows whether a filter has been applied to the table, which will be covered later in this lesson.

STEP BY STEP

Use Navigation Buttons

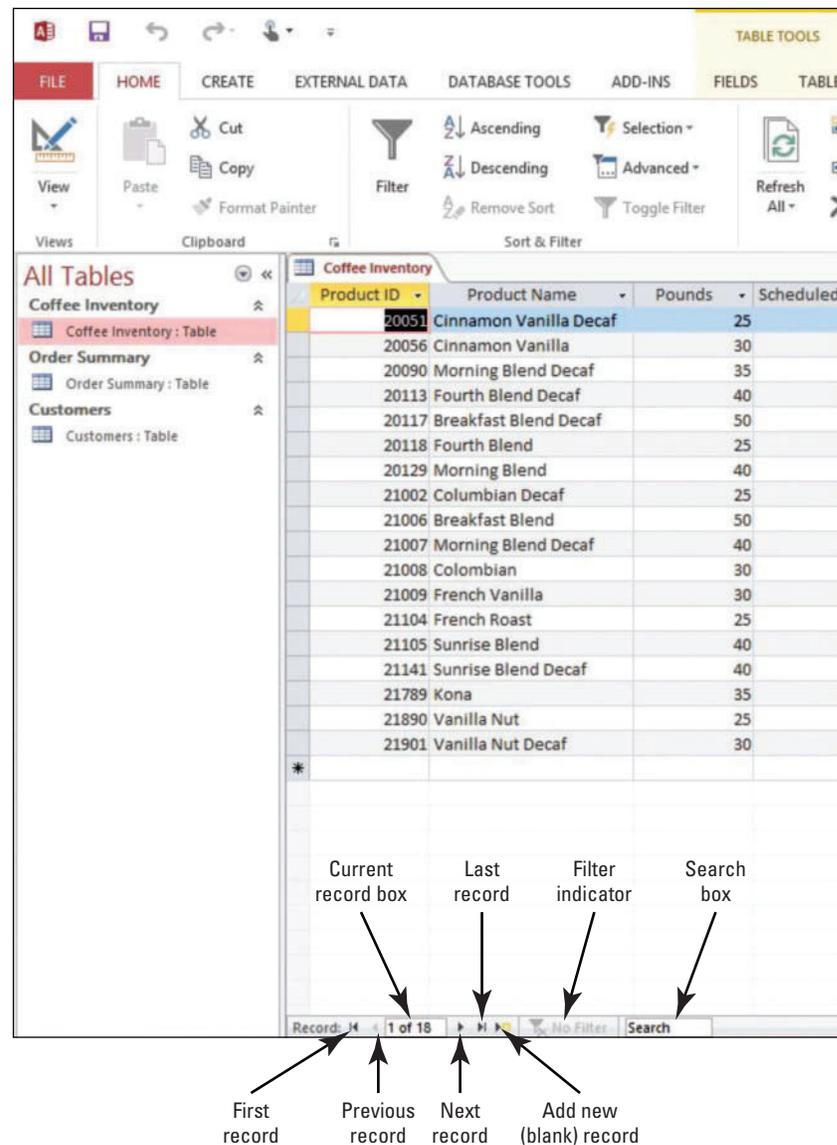


USE the database open from the previous exercise.

1. Click the **First record** button (see Figure 3-1). The selection moves to the first record.

Figure 3-1

Record navigation buttons



2. Click the **Next record** button. The selection moves to the next record.
3. Select and then delete the number **2** in the Current Record box. Key **5** and press **Enter**. The selection moves to the fifth record.
4. Click the **Search** box to position the insertion point. Key **sunrise** into the Search box. Notice that the selection moves to the first occurrence of the word Sunrise.
5. Press **Enter**. The selection moves to the next occurrence of the word Sunrise.
6. Click the **New (blank) record** button. The insertion point moves to the first column and last row of the table.

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

SOFTWARE ORIENTATION

Records Group, Record Selector Box, and Record Shortcut Menu

There are a few ways you can enter record data, delete data from individual fields of records, and insert and delete entire records, using the Records group, Record Selector box, and commands in the Record shortcut menu (accessed by right-clicking on the Record Selector box) (see Figure 3-2). Refer to this figure as a reference throughout this lesson as well as the rest of this book.

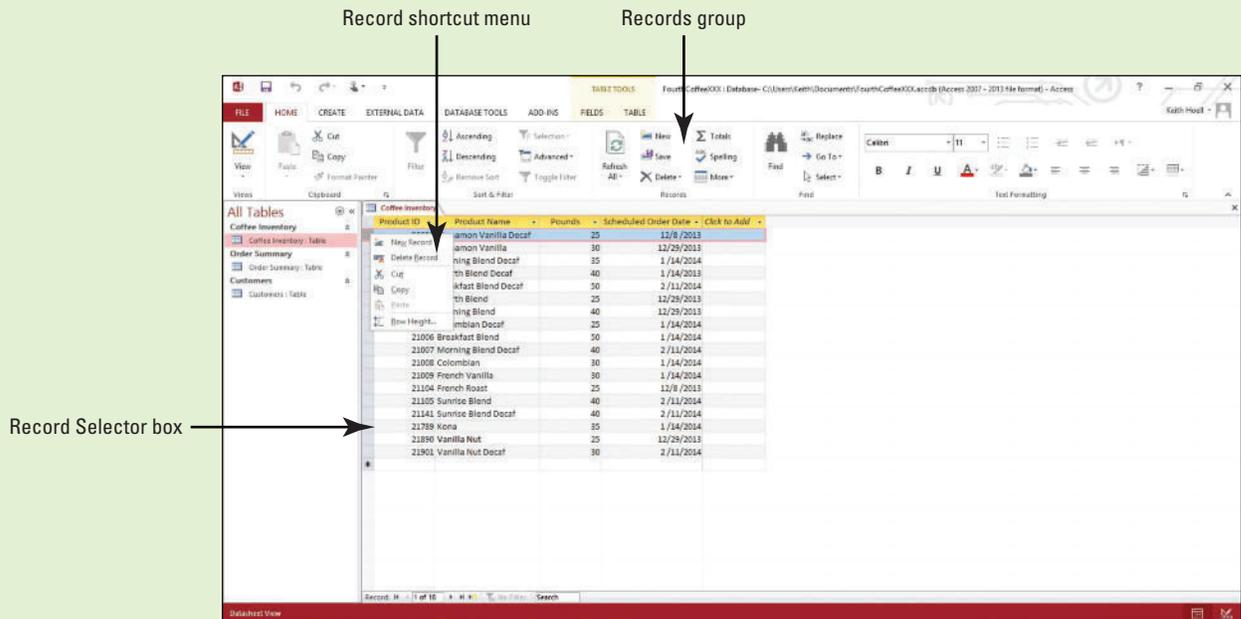


Figure 3-2
Records Group, Record Selector Box, and Record Shortcut Menu

Use the commands in the Records group and the Record shortcut menu, as well as the Record Selector box (a blank square to the left of a record), to assist you in entering record data and inserting and deleting records.

ENTERING, INSERTING, EDITING, AND DELETING RECORDS

The Bottom Line

Keeping a database up-to-date and useful is an ongoing process. You can easily enter data by positioning the insertion point in the table cell where you want to add data and begin keying. To insert a new record, select any record in the table and click the New button on the HOME tab in the Records group. You can also click the Record Selector box, then right-click the selected record and select New Record from the shortcut menu. A new record is added to the end of the table. Select existing data to edit or delete it.

Entering, Editing, and Deleting Records

To enter new data, in Datasheet view, position the insertion point in the first empty cell of a record and begin keying the data. After you enter data and move to a new field, Access automatically saves the data in the table. Each field in a table is formatted with a specific data type, so you must enter that kind of data in the field. If you do not, you will get an error message. To delete information from an individual field of a record, highlight the field data and press the Delete key or click the Delete button on the HOME tab in the Records group. If you change your mind after you delete information from a field, you can undo the action by clicking the Undo button on the Quick Access Toolbar. In this exercise, you enter a new record as well as edit and delete existing records.

You can delete an entire record or several records at once from a database. Just select the row or rows using the Record Selector box, and then press the Delete key or click the Delete button on the HOME tab in the Records group. You can also right-click and select Delete Record from the shortcut menu. After you delete a record, you cannot undo it.

STEP BY STEP Enter, Edit, and Delete Records

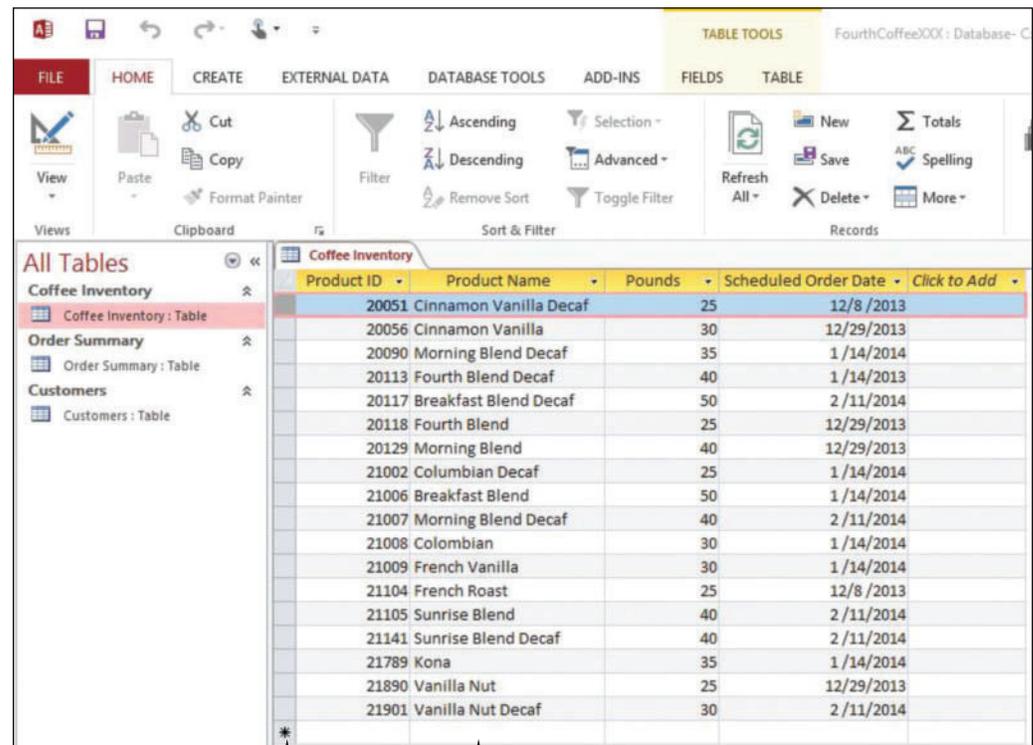


USE the database you used in the previous exercise.

1. The insertion point should be positioned in the first field of the new, blank row at the bottom of the datasheet (see Figure 3-3). Notice the asterisk in the Record Selector box, which indicates that this is a new record, ready for data.

Figure 3-3

Blank Record in Datasheet View



Record Selector box New record

CERTIFICATION READY? 2.3.2

How do you add new records?

CERTIFICATION READY? 1.3.1

How do you navigate to specific records?

CERTIFICATION READY? 2.3.1

How do you update records?

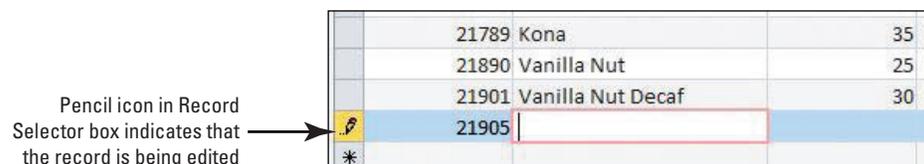
CERTIFICATION READY? 2.3.3

How do you delete records?

2. Key **21905** and press **Tab**. Notice that the asterisk has changed to a pencil icon (see Figure 3-4), indicating that the record is being edited.

Figure 3-4

Entering data into a record





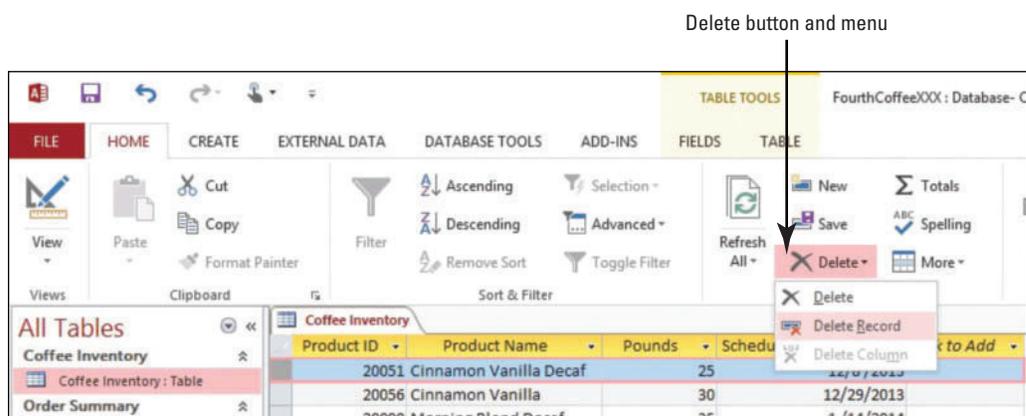
Another Way

An easy way to select an entire record is to click the Record Selector box. If you need to select other records above or below it, you can drag the mouse up or down to include those in the selection.

3. Key **Hazelnut** and press **Tab**.
4. Key **30** and press **Tab**.
5. Key **02112014** and press **Enter**.
6. Highlight **sunrise** in the Search box and key **Kona** to locate the Kona record.
7. Click **Kona** in the record to position the blinking insertion point there. Delete **Kona** and key **Hawaiian** and press **Tab**.
8. Click the **Undo** button on the Quick Access Toolbar. Notice Hawaiian disappears and Kona reappears.
9. Press **Tab**. Key **01142013** and press **Tab**.
10. Click the **Record Selector** box to the left of the Product ID field of the first record, 20051.
11. On the HOME tab, in the Records group, click the **Delete button drop-down arrow**. Select **Delete Record** from the menu (see Figure 3-5).

Figure 3-5

Delete menu



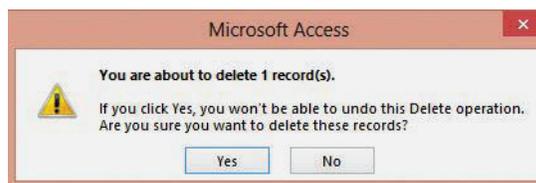
Another Way

To delete a record without selecting it, place the cursor in one of the fields of a record and click the Delete menu on the HOME tab in the Records group. Select Delete Record from the menu.

12. A dialog box appears (see Figure 3-6), asking if you are sure you want to delete the record. Click **Yes**.

Figure 3-6

Confirm deletion dialog box



13. Notice that the Undo button on the Quick Access Toolbar is not available because you cannot undo a record deletion. **CLOSE** the table.

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

Take Note You should be cautious when deleting record data. You cannot undo the deletion of a record.



Cross Ref

As you become more advanced in your knowledge of Access, you may want to create a delete query that can delete multiple records at once. You learn more about queries in Lesson 7.

The Bottom Line

As you learned in Lesson 1, a primary key is a column that uniquely identifies a record or row in a table. Customer IDs, serial numbers, or product IDs usually make good primary keys. Each table should have a primary key, and some tables might have two or more. When you divide information into separate tables, the primary keys help Access bring the information back together again.

Defining a Primary Key

You can define a primary key for a field in Design view by selecting the row that contains the field for which you want to assign a primary key and clicking the Primary Key button on the DESIGN tab in the Tools group on the Ribbon. When you create a new database, Access creates a primary key field named “ID” by default and sets the data type for the field to AutoNumber. If you do not have a field in an existing database that you think will make a good primary key, you can use a field with the AutoNumber data type. It does not contain factual information (such as a telephone number) about a record, and it is not likely to change. In this exercise, you define a primary key.

Once a primary key is defined, you can use it in other tables to refer back to the table with the primary key. When a primary key from one table is used in another table, it is called the **foreign key**. The foreign key is used to reference the data from the primary key to help avoid redundancy.

You can modify a primary key by deleting it from one field and adding it to another field. To remove a primary key in Design view, select the row and click the Primary Key button on the DESIGN tab in the Tools group on the Ribbon to remove it.

CERTIFICATION
READY? 1.2.3

How do you set primary key fields?

STEP BY STEP

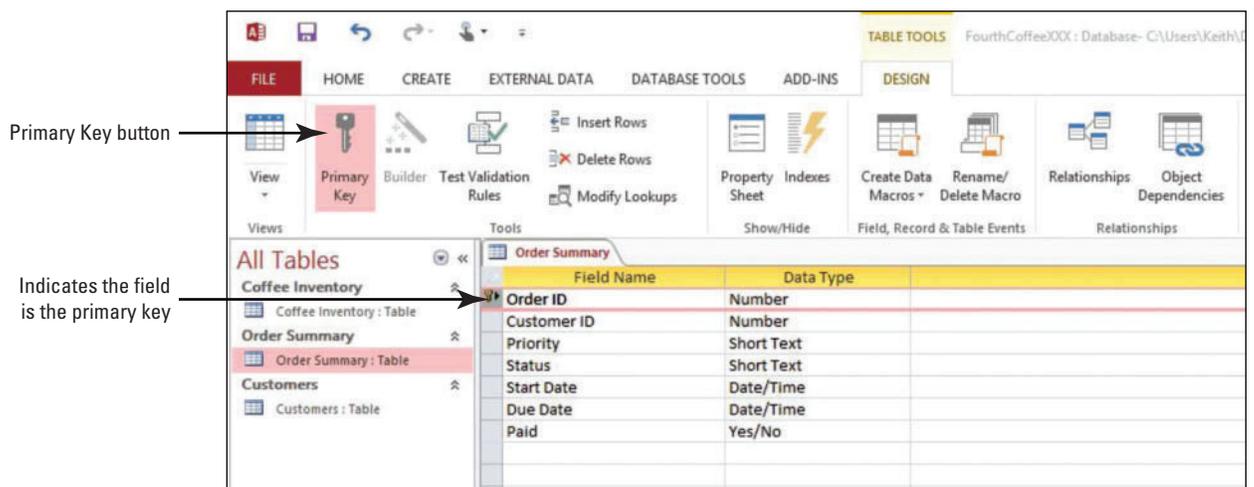
Define a Primary Key

USE the database you used in the previous exercise.

1. In the Navigation Pane, double-click **Order Summary: Table** to open the table.
2. On the HOME tab, in the Views group, click the bottom half of the **View** button, and from the menu that appears, select **Design View**.
3. Click the **Row Selector** box beside the Order ID row to select the row.
4. On the DESIGN tab, in the Tools group, click the **Primary Key** button. The Primary Key button is highlighted. A key icon appears on the Order ID row to designate the field as a primary key (see Figure 3-7).

Figure 3-7

Primary Key





Another Way

To add or remove the primary key from a field, you can also select the row, right-click, and select Primary Key from the shortcut menu.

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

Defining and Modifying a Multifield Primary Key

In some cases, you may want to use two or more fields that, together, provide the primary key of a table. In Design view, select the rows you want to designate as primary keys and click the Primary Key button. To remove multiple primary keys, select the rows and click the Primary Key button. In this exercise, you practice defining and modifying a multifield primary key.

Two or more primary keys in a table are called the **composite key**. Composite keys are useful in unique situations when a combination of data from two fields needs to provide a unique identifier in a table. For example, area code field data and phone number field data can be combined to create a unique combination of numbers that cannot be duplicated. Separate, neither the area code data nor the phone number data is unique and can be duplicated; however, together they form a unique set of numbers that cannot be duplicated. Likewise, a business can repeat both order identification number field data and customer identification number field data for multiple customers; however, these numbers become unique when combined resulting in a composite key for each customer.

STEP BY STEP

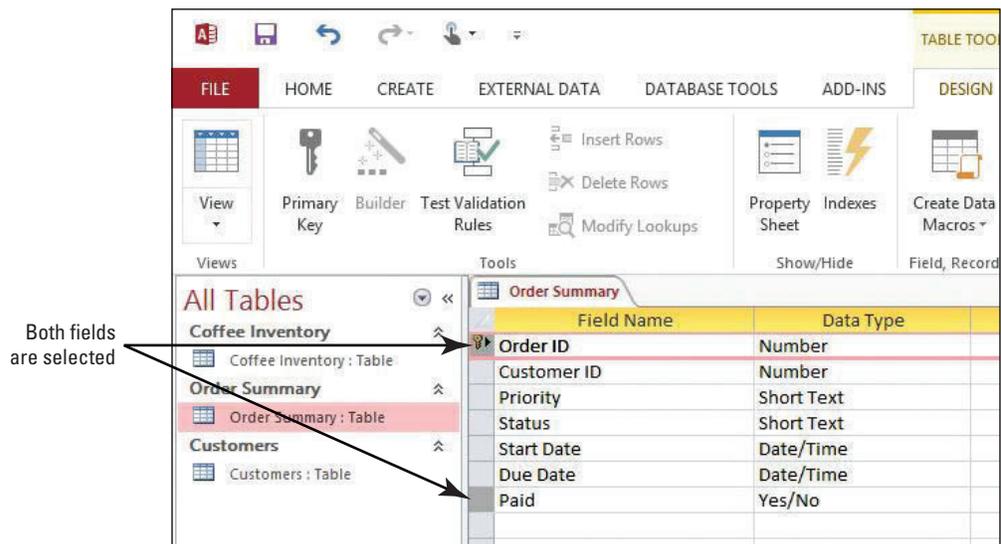
Define and Modify a Multifield Primary Key

USE the database open from the previous exercise.

1. Press and hold the **CTRL** key.
2. Click the **Row Selector** box beside the Paid row. Continue to hold down the **CTRL** key, and then click the **Order ID Row Selector** box. Both fields should be selected (see Figure 3-8). If not, continue to hold the **CTRL** key, and then click the **Paid Row Selector** box again.

Figure 3-8

Primary Key row and another row selected



3. On the DESIGN tab, in the Tools group, click the **Primary Key** button. A key icon should be displayed beside both of the two selected fields. The combination of data from these two fields *do not* make a sensible composite key, and this designation will be removed.
4. With the rows still selected, click the **Primary Key** button again to remove the primary key designation from both fields.

5. Click on any field name to remove the selection.
6. Click the **Row Selector** box beside the Order ID row. Press and hold the **CTRL** key, and then click the **Row Selector** box beside the Customer ID row. Both fields should be selected.
7. On the DESIGN tab, in the Tools group, click the **Primary Key** button. Both rows should have a key displayed beside them. The resulting composite key is more valid.
8. Click the **Save** button on the Quick Access Toolbar.
9. **CLOSE** the table.

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



Workplace Ready

CREATING PRACTICAL COMPOSITE KEYS TO UNIQUELY DEFINE DATA

Occasionally, your table may not have one field that can be used as a unique identifier for each record. This may be the case if you never initially designed your table with good database design principles in mind and never chose a primary key. Instead of creating a new field to serve as a primary key and then entering the data for each record—which can be a very time-consuming process—you can instead combine two or more fields in your table to create a multifold primary key, or composite key. Another reason you may want to use a composite key is if you want to choose a unique identifier that is more inherently meaningful instead of using a random unique number to serve as a primary key.

For example, you may have preexisting fields in an orders table named Order_ID (a number that can be repeated for orders) and Customer_ID (a number that can be repeated for customers). Each of these fields cannot serve as a standalone primary key since the record data for each repeats. However, when the data in each field is combined into a composite key, it is highly unlikely that this combination of data will be duplicated. You can even include a third or additional fields to create the composite key and further ensure uniqueness.

It will be up to you to determine what makes practical sense for your database. Keep in mind that composite keys can further complicate your database design. For example, all child tables related to the parent table with the composite key must contain the same composite key fields as the parent. However, using composite keys may make sense in cases where you may need to quickly add a primary key where one never existed or may need a composite key that contains more meaningful data.

FINDING AND REPLACING DATA

The Bottom Line

A big advantage of using a computer database rather than paper and pencil for recordkeeping is the ability to quickly search for and/or replace data. These features may be accessed from the Find and Replace dialog box. The Find and Replace commands in Access work very much like those in Word or other Office applications you might have used. You can use the Find command to search for specific text in a table or to move quickly to a particular word or number in the table. The Replace command can be used to automatically replace a word or number with another.

In the Find and Replace dialog box, key the text or numbers that you want to search for into the Find What box and click Find Next to locate the record containing the data. If you want to replace the data, key the new data into the Replace With box and click Replace or Replace All.

Take Note When replacing data, it is usually a good practice to click **Replace** instead of **Replace All** so that you can confirm each replacement to make sure that it is correct.

Finding and Replacing Data

The Find and Replace dialog box searches only one table at a time; it does not search the entire database. The Look In menu allows you to choose to search by field or to search the entire table. By default, Access searches the field that was selected when you opened the Find and Replace dialog box. If you want to search a different field, select the field while the dialog box is open; you do not have to close it first. In this exercise, you find and replace table data.

Remember these points when finding and replacing data in Access 2013:

- In the Match menu, you can specify where you want Access to look in a field. Select **Any Part of Field** for the broadest search.
- Sometimes, Access selects the **Search Fields As Formatted** check box. When it does, do not clear the check box, or your search probably will not return any results.
- Click the **Match Case** box to search for text with the same uppercase and/or lowercase capitalization of text.
- You can use **wildcard** characters such as a question mark or asterisk to find words or phrases that contain specific letters or combinations of letters. Key a question mark (?) to represent a single character—for example, keying *b?t* will find *bat*, *bet*, *bit*, and *but*. Key an asterisk (*) to represent a string of characters—for example, *m*t* will find *mat*, *moment*, or even *medium format*.
- If you key a wildcard character in the **Replace With** box, Access will insert that character just as you keyed it.

STEP BY STEP

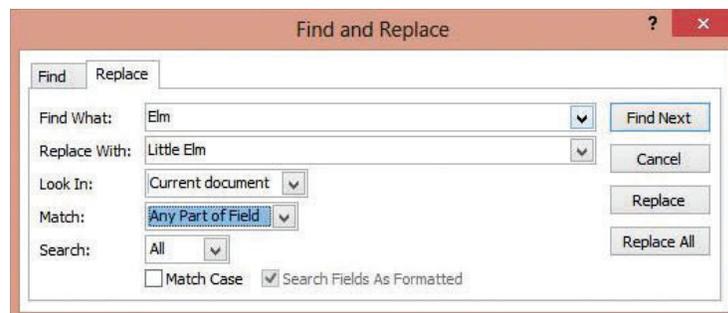
Find and Replace Data

USE the database open from the previous exercise.

1. **OPEN** the **Customers** table.
2. On the **HOME** tab, in the **Find** group, click the **Find** button. The Find and Replace dialog box appears with the **Find** tab displayed.
3. Click the **Replace** tab in the Find and Replace dialog box.
4. Key **Elm** into the Find What box.
5. Key **Little Elm** into the Replace With box.
6. Click the **down arrow** beside the Look in menu, and then select **Current document**, so that the entire table will be searched instead of just the Customer ID field.
7. Click the **down arrow** beside the Match menu and select **Any Part of Field** if it already is not selected to broaden the search (see Figure 3-9).

Figure 3-9

Find and Replace dialog box



**CERTIFICATION
READY? 2.3.5**

How do you find and
replace data?

**Another Way**

To open the Find tab in the Find and Replace dialog box using the keyboard, press Ctrl+F. To open the Replace tab, press Ctrl+H.

Take Note

8. Click the **Find Next** button. Access searches the table, finds, and selects the word *Elm*.
9. Click the **Replace** button. Access replaces *Elm* with *Little Elm*.
10. Click the **Find Next** button. Access finds *Elm* in the new text that was just inserted.
11. Click **Find Next** again. Access displays a message saying that no more occurrences of the word have been found. Click **OK**.
12. Click **Cancel** to close the Find and Replace dialog box.
13. Press the **down arrow** to remove the selection and allow Access to save the change.
14. **CLOSE** the table.

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

If you want to use the Find and Replace dialog box to search for characters that are used as wildcards, such as a question mark, you must enclose that character in brackets, for example [?]. Follow this rule when searching for all wildcard characters except exclamation points (!) and closing brackets (]) where you would simply search for these without any surrounding brackets.

ATTACHING AND DETACHING DOCUMENTS

The Bottom Line

Access 2013 allows you to attach documents, such as Word documents or photo files, to records in a database. For example, the human resources department of a large company could keep a photo, a resume, and employee evaluation documents with each employee record. These attached files can also be easily detached, if necessary. The Attachments dialog box allows you to manage the documents attached to records.

Take Note

You cannot attach files to databases created in versions of Access prior to Access 2007. You cannot share attachments with a database created in these prior versions of Access.

Attaching and Detaching Documents

Before you can start attaching documents, you must create a field in a table and format it with the Attachment data type. You can add the field in Datasheet view or in Design view. Access displays a paper clip icon in the header row and in every record in the field along with a number in parentheses indicating the number of attached files in the field. In this exercise, you create a new field and format it with the Attachment data type, then remove the attachment from your database records.

Double-click the record in the Attachments field to display the Attachments dialog box where you can add, remove, open, or save multiple attachments, such as images, documents, and spreadsheets, for a single record. You can save attached files to your hard disk or network drive so that you can save changes to documents there before saving them to the database.

Take Note

You can attach a maximum total of 2 gigabytes of data, but each individual file cannot exceed 256 megabytes in size.

If the program that was used to create the attached file is installed on your computer, you can open and edit the file using that program. For example, if you open a Word resume that is attached to a record, the Word program starts and you view the document in Word. If you do not have the program that was used to create a file, Access prompts you to choose a program you do have to view the file.

**Another Way**

You can also right-click in the Attachments field to display a shortcut menu. Select Manage Attachments from the menu to display the Attachments dialog box.

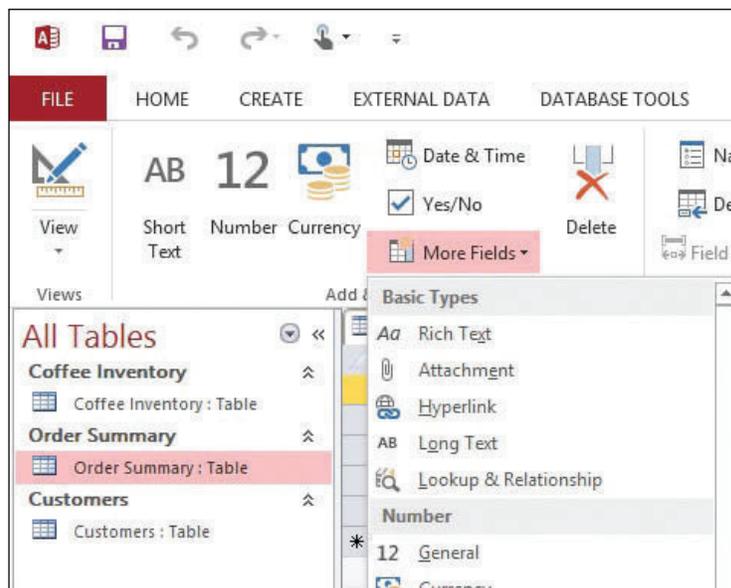
STEP BY STEP Attach and Detach Documents

USE the database open from the previous exercise.

1. OPEN the **Order Summary** table.
2. Click the **header** row of the Due Date field to select it.
3. In the Add & Delete group on the TABLE TOOLS FIELDS contextual tab, click the **More Fields** button. The More Fields menu appears.
4. Click **Attachment** under Basic Types (see Figure 3-10). The Attachment field is inserted in the table.

Figure 3-10

More Fields menu

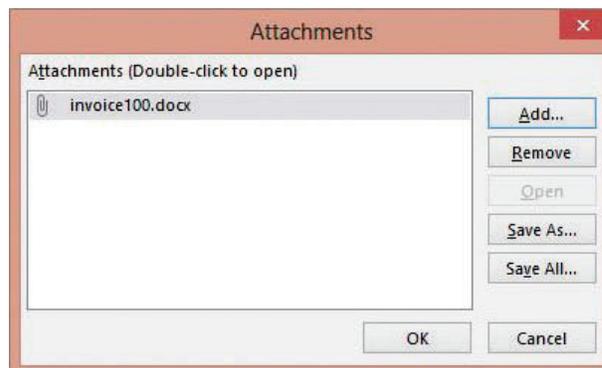


5. Double-click the first row of the Attachments field. The Attachments dialog box appears.
6. Click the **Add** button. Navigate to the data files for this lesson and select **invoice100.docx**. Click **Open**. The document appears in the Attachments dialog box (see Figure 3-11).



Figure 3-11

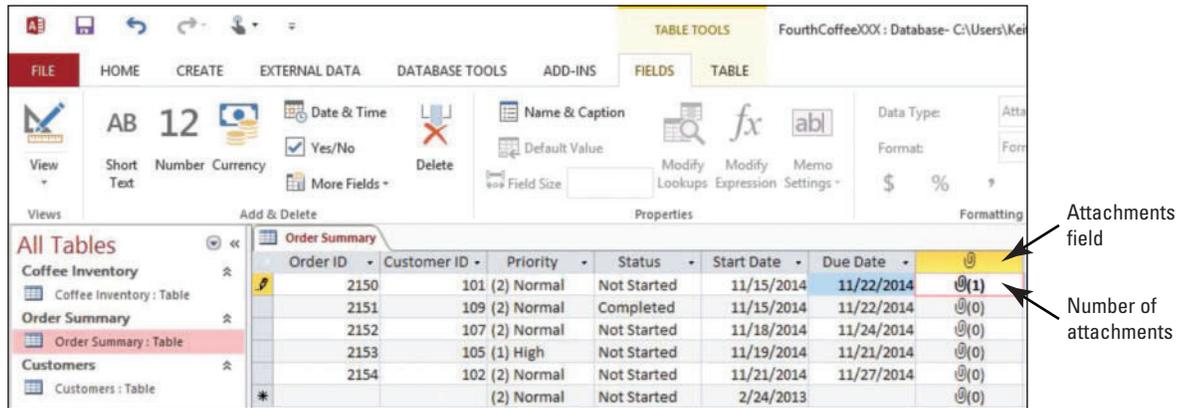
Attachments dialog box



- Click **OK**. The number of attachments in the first record changes to 1 (see Figure 3-12).

Figure 3-12

Attachments field displaying the number of attachments



- Double-click the **attachment number** in the Attachment field. The Attachments dialog box appears.
- Click the **Open** button. The attachment, an invoice document, opens in Microsoft Word.
- Click the **Close** button to close the invoice document.
- Click the **Access** button on the taskbar, if necessary, to return to Access.
- In the Attachments dialog box, click the **Remove** button, and click **OK**. The attachment is removed from the record.
- CLOSE** the Order Summary table.

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

Take Note Once a field has been set to the Attachment data type, it cannot be converted to another data type.



The Add & Delete group and the More Fields menu will be covered in greater detail in Lesson 4.

SORTING AND FILTERING DATA AND SETTING FIELD VIEWING OPTIONS WITHIN A TABLE

The Bottom Line

It is often helpful to display data in order, display similar records, or hide and freeze certain fields without affecting the preexisting data. Sorting allows you to order records. For example, an office contact list that displays employees in alphabetical order by last name would help the user find information for a particular employee quickly. If you wanted to view only the records of employees in a particular department, you could create a filter to display only those records. You could also hide or freeze certain fields. For example, in a table that has several fields, you can hide or freeze fields to help you concentrate on certain data.

SOFTWARE ORIENTATION

Sort & Filter Group

The Sort & Filter group is located on the HOME tab in the Ribbon (see Figure 3-13). Use the Sort & Filter group of commands to sort and filter records in tables.

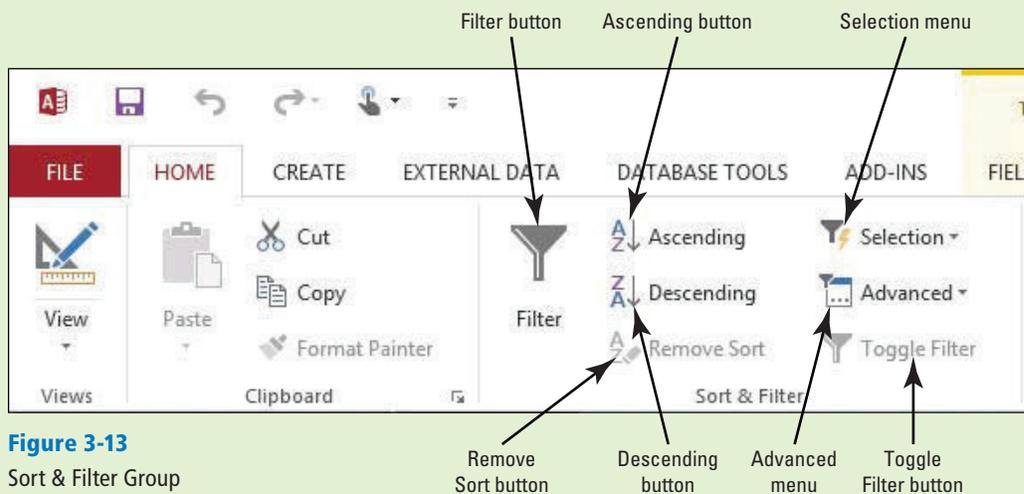


Figure 3-13
Sort & Filter Group

Sorting Data within a Table

To **sort** data means to arrange it alphabetically, numerically, or chronologically. Sorting within a table displays all the records in the table in the order that you select. You can easily sort by one or more fields to achieve the order that you want. Access can sort text, numbers, or dates in ascending or descending order. **Ascending** order sorts data from beginning to end, such as from A to Z, 1 to 10, and January to December. **Descending** order sorts data from the end to the beginning, such as from Z to A, 10 to 1, and December to January. In this exercise, you sort data using multiple fields and then remove the sort.

To sort text, numbers, dates, or other data types in a column, you first need to select the column. Then click the Ascending or Descending button in the Sort & Filter group of the HOME tab. You can also right-click a selected column and choose a Sort command from the shortcut menu. The available sort commands in the shortcut menu vary depending on the type of data in the column (see Table 3-2).

Table 3-2

Sort Commands on the shortcut menu

| Type of Data | Sort Commands on the Shortcut Menu |
|---------------------------------|--|
| Number, Currency, or AutoNumber | <div style="border: 1px solid black; padding: 2px;"> A↓ Sort Smallest to Largest Z↓ Sort Largest to Smallest </div> |
| Text, Memo, or Hyperlink | <div style="border: 1px solid black; padding: 2px;"> A↓ Sort A to Z Z↓ Sort Z to A </div> |
| Yes/No | <div style="border: 1px solid black; padding: 2px;"> A↓ Sort Selected to Cleared Z↓ Sort Cleared to Selected </div> |
| Date/Time | <div style="border: 1px solid black; padding: 2px;"> A↓ Sort Oldest to Newest Z↓ Sort Newest to Oldest </div> |

You can also sort records on multiple fields. When you are using multiple fields, determine in which order you want them to be sorted. The primary sort field is called the **outermost field**. A secondary sort field is called an **innermost field**. For example, if you want to sort a contact list so that each employee's last name is sorted primarily and first name is sorted secondarily, Last Name would be the outermost field and First Name would be the innermost field. In your completed sort, Smith, Lauren, would be listed before Smith, Mark, in an A to Z (ascending) sort. When designating the sort order, however, you select the innermost field first and choose the type of sort you want from the shortcut menu. Then select the outermost field and select the type of sort that you want.

After you sort one or more columns, Access inserts sort arrows in the header row to show that the field is sorted. These sort commands remain with the table until you remove them. When you want to remove a sort order, click the Remove Sort button from the Sort & Filter group on the HOME tab. This removes the sorting commands from all the fields in the table. In a table with more than one sorted field, you cannot remove just one sort.

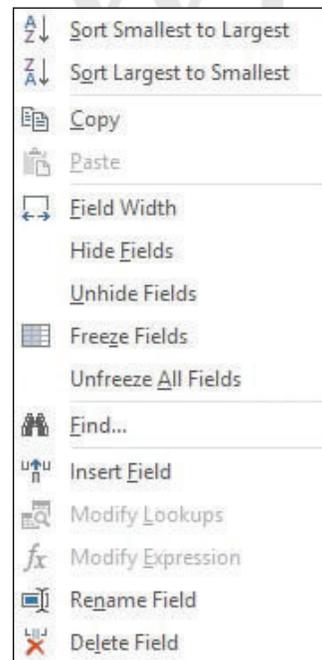
STEP BY STEP

Sort Data within a Table

USE the database you used in the previous exercise.

1. **OPEN** the Customers table.
2. Click the header row of the Customer ID field to select it.
3. Right-click in the field to display the shortcut menu (see Figure 3-14). Select **Sort Largest to Smallest**.

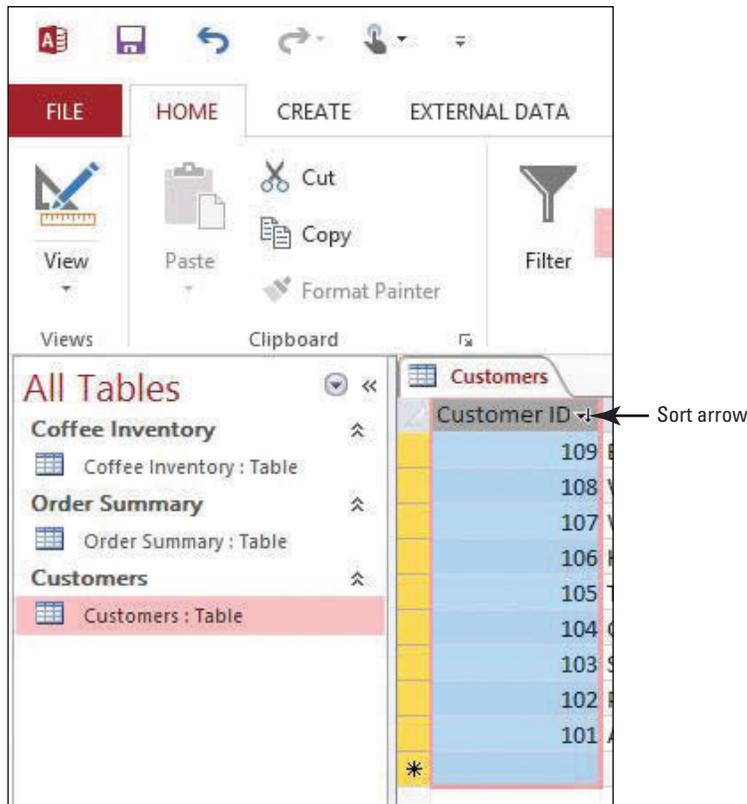
Figure 3-14
Shortcut menu



4. The data is sorted and an arrow is inserted in the header row (see Figure 3-15), indicating that the data is displayed in sort order.

Figure 3-15

Sorted column



5. On the HOME tab, in the Sort & Filter group, click the **Remove Sort** button. The sort is removed from the Customer ID field.
6. Select the **First Name** field. On the HOME tab, in the Sort & Filter group, click the **Ascending** button. The data in the First Name field is sorted in ascending order.
7. Select the **Last Name** field. On the HOME tab, in the Sort & Filter group, click the **Ascending** button. The data in the Last Name field is sorted in ascending order.
8. On the HOME tab, in the Sort & Filter group, click the **Remove Sort** button. The sort is removed from both the First Name and Last Name fields.
9. Close the **table**. If a dialog box appears asking if you want to save changes to the table, click **No**.

**CERTIFICATION
READY?** 2.3.6

How do you sort records?

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

Filtering Data within a Table

A **filter** is a set of rules for determining which records will be displayed. When you apply a filter, Access displays only the records that meet your filter criteria; the other records are hidden from view. Once the filtered records are displayed, you can edit and navigate the records just as you would without a filter applied. Filters remain in effect until you close the object. You can switch between views, and the filter settings will stay in effect. To make the filter available the next time you open the object, save the object before closing it. You can then reapply the filter the next time you open the object by clicking the Toggle Filter button in the Sort & Filter group on the Ribbon. In this exercise, you practice creating filters in several different ways.

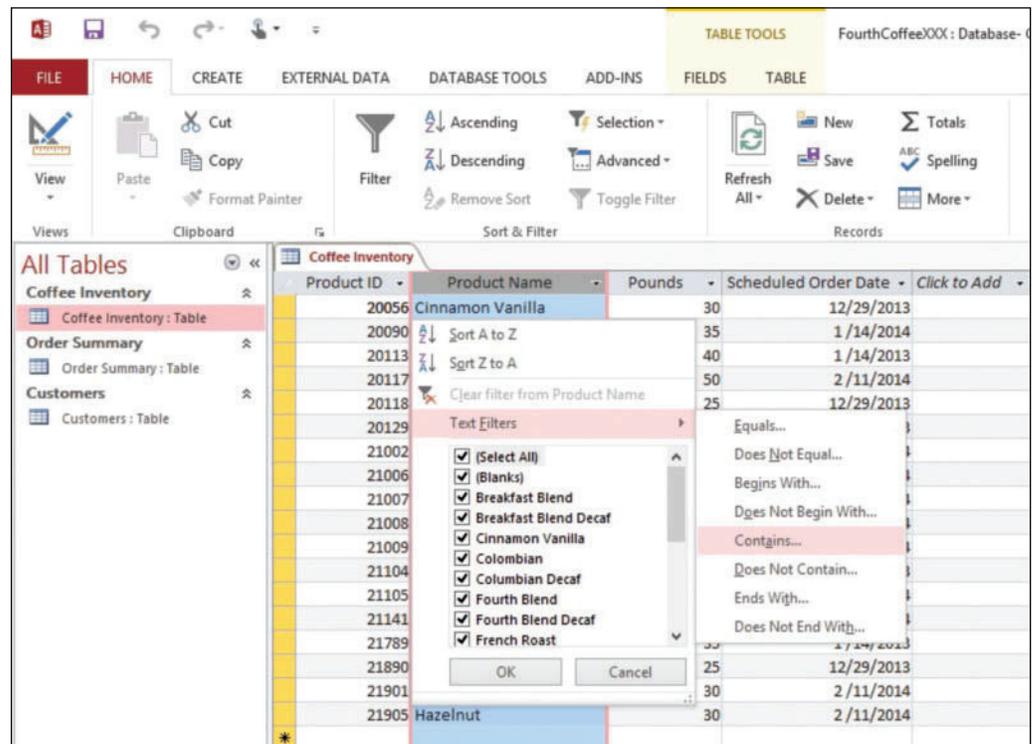
STEP BY STEP**Apply a Filter**

USE the database you used in the previous exercise.

1. **OPEN** the Coffee Inventory table.
2. Select the **Product Name** field. On the HOME tab, in the Sort & Filter group, click the **Filter** button. A menu appears.
3. Point to **Text Filters**. A second menu appears. Select **Contains** (see Figure 3-16).

Figure 3-16

Filter menu with Contains selected



4. The Custom Filter dialog box appears. Key **Decaf** (see Figure 3-17), and click **OK**. Access filters the database to display only the records containing the word Decaf. A filter icon is displayed in the header row of the field (see Figure 3-18).

Figure 3-17

Custom filter dialog box

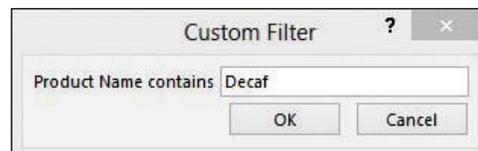
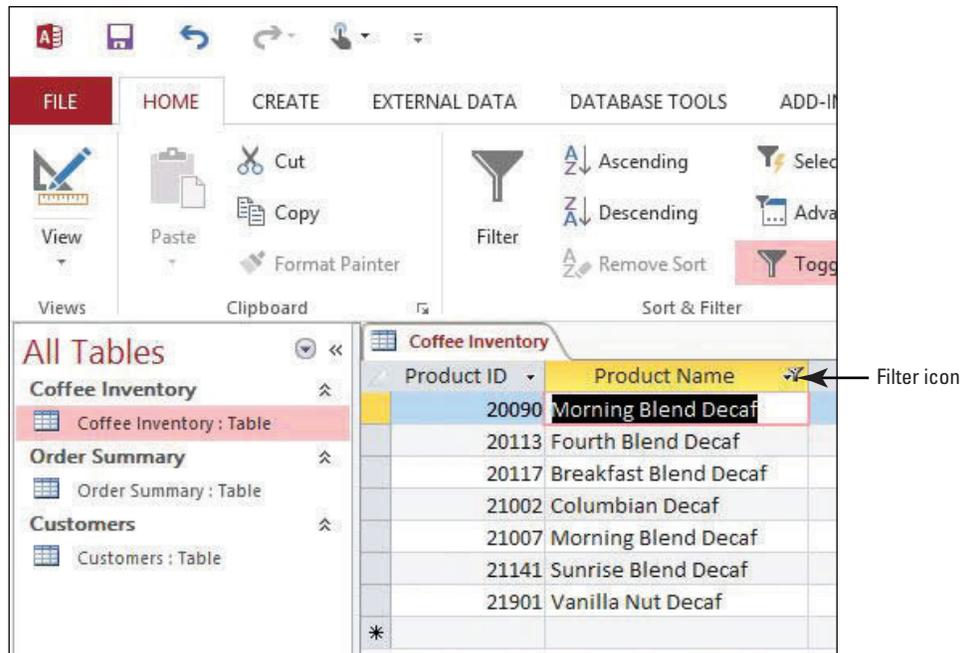


Figure 3-18

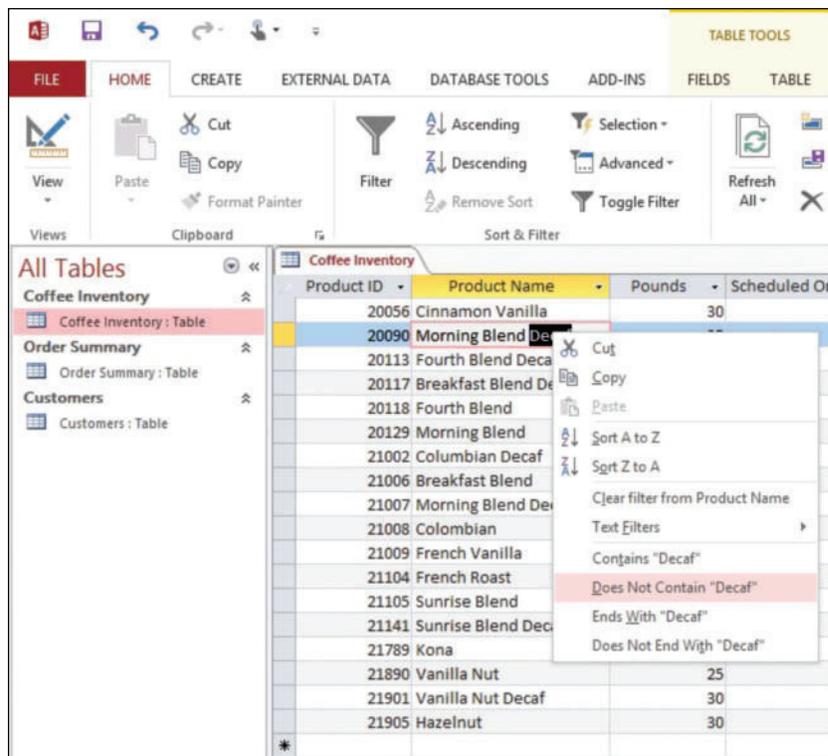
Filtered records



5. Click the **Toggle Filter** button in the Sort & Filter group to display the records without the filter.
6. In the second record in the Product Name field, double-click the word **Decaf** to select it.
7. Right-click the word **Decaf** to display the shortcut menu. Select **Does Not Contain "Decaf"** (see Figure 3-19). Notice that the records are filtered to show only those that do not contain the word Decaf.

Figure 3-19

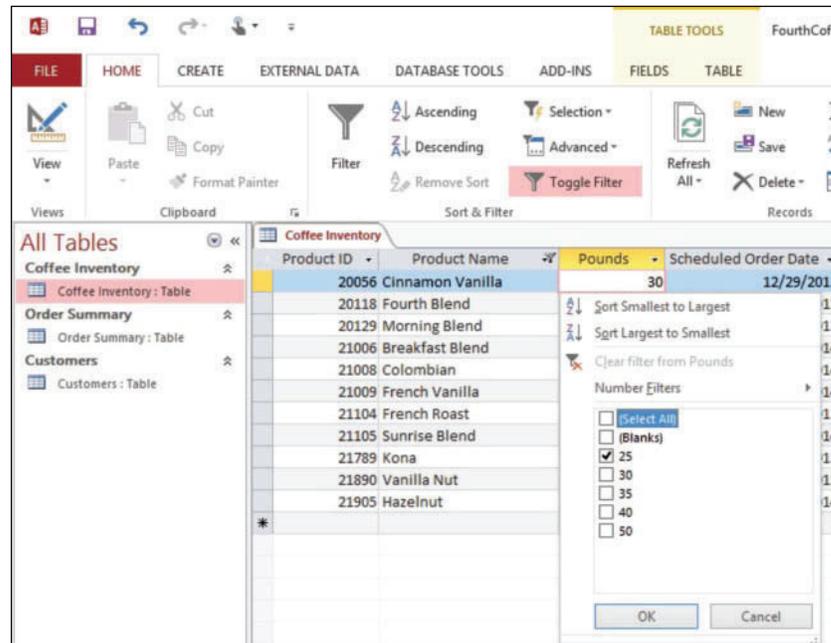
Shortcut menu with Does Not Contain "Decaf" option selected



8. Click in the **Pounds** field of the first record.
9. On the HOME tab, in the Sort & Filter group, click the **Filter** button.
10. Click the check boxes to remove the check marks beside (**Blanks**), **30**, **35**, **40**, and **50** (see Figure 3-20). Only the check mark beside 25 should remain.

Figure 3-20

Filter menu selected to show only 25 in the Pounds column



11. Click **OK**. Access filters the records to show only those containing the number 25 in the Pounds field.
12. Click the **Toggle Filter** button.
13. In the second row of the Scheduled Order Date field, highlight **1/14/2014** by clicking and dragging the mouse. Notice a '#' appears after the '1' in the month part of the selected date. This is a placeholder character that is part of the input mask field property for this field.



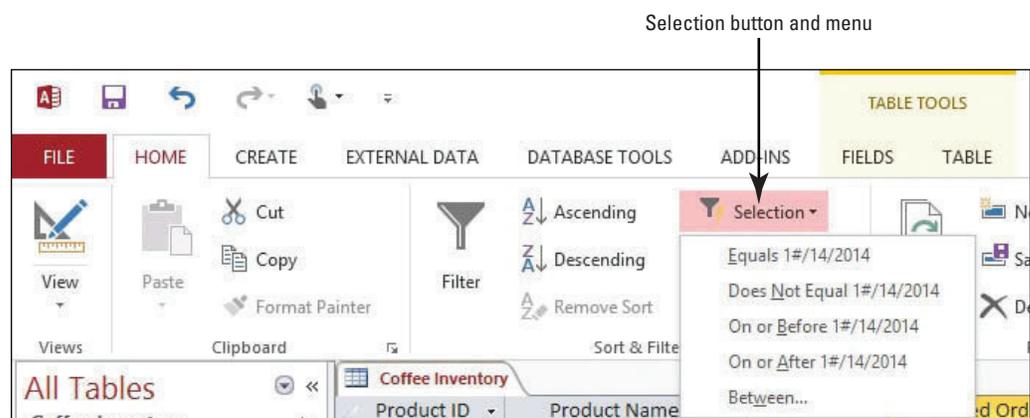
Cross
Ref

You learn more about input masks and how they help conform data to various formats in Lesson 4.

14. On the HOME tab, in the Sort & Filter group, click the **Selection** button. A menu appears (see Figure 3-21).

Figure 3-21

Selection button and menu



**CERTIFICATION
READY? 2.3.7**

How do you filter records?

Take Note Only one filter can be applied per column. When you apply a filter to a column that is already filtered, the previous filter is removed and the new filter is applied.

Take Note You cannot apply a case-specific filter. For example, filtering a table for “Decaf” will find all occurrences of the word “decaf” including “Decaf”, “decaf”, “deCaf” etc.

15. Select **On or After 1/14/2014**. The data is filtered to show only those records with content in the Scheduled Order Date field that matches the filter selection.
16. In the seventh row of the Pounds field, select **30**.
17. On the HOME tab, in the Sort & Filter group, click the **Selection** button. Select **Less Than or Equal to 30**. The records are filtered accordingly.

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

Removing a Filter

After applying a filter, you may need to return to records not displayed by the filter. The Toggle Filter button lets you switch between viewing the filtered records and viewing the table without the filter. Note that the purpose of this button changes accordingly—when the records are filtered the button is used to remove the filter, and when the filter is removed the button is used to apply the filter. When you are finished using the filter, you can permanently remove it. In this exercise, you permanently remove the filter you previously applied.

STEP BY STEP

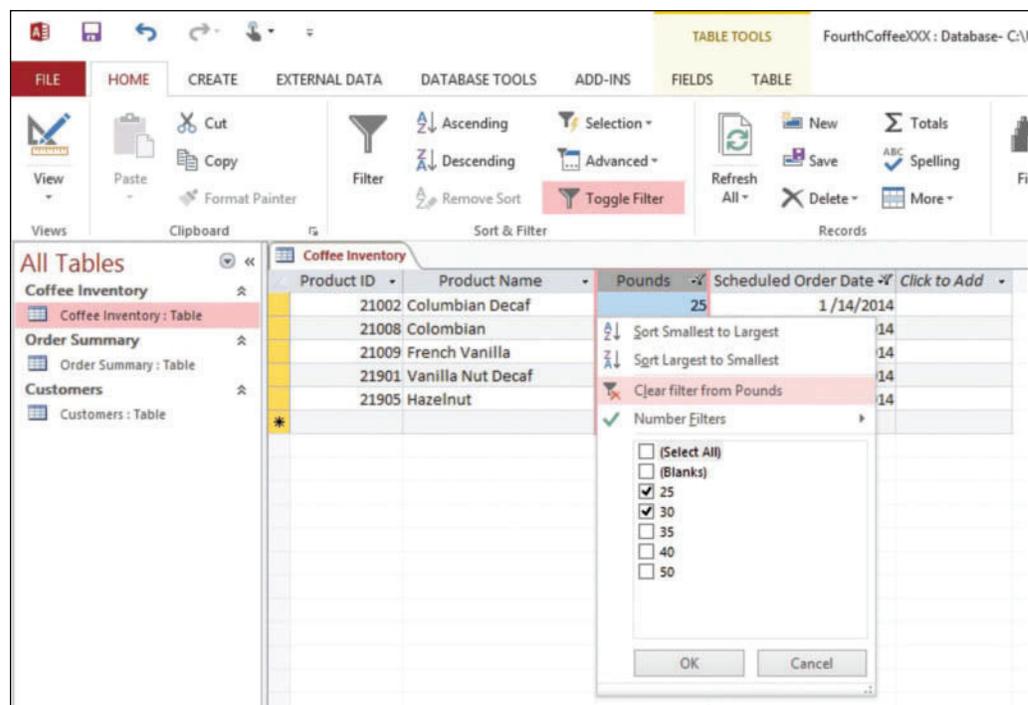
Remove a Filter

USE the table you used in the previous exercise.

1. Select the **Pounds** field. On the HOME tab, in the Sort & Filter group, click the **Filter** button. A menu appears.
2. Select **Clear filter from Pounds** (see Figure 3-22).

Figure 3-22

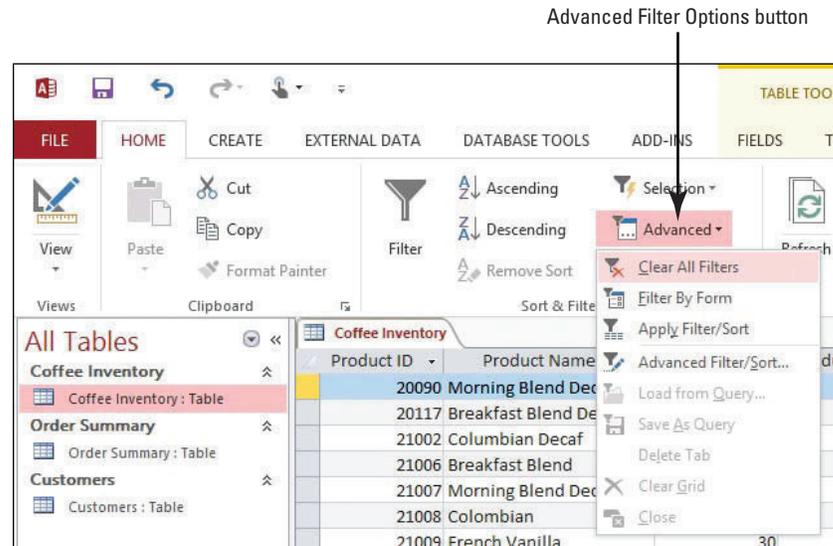
Removing filter from the Pounds column



3. On the HOME tab, in the Sort & Filter group, click the **Advanced** button. A menu appears.
4. Select **Clear All Filters** from the menu (see Figure 3-23).

Figure 3-23

Advanced button and menu



5. **SAVE** and **CLOSE** the table.

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

Freezing/Unfreezing and Hiding/Unhiding Fields

Sometimes you may need to change the view of a table's data to more efficiently find the information you are looking for. For example, it may be helpful to freeze First Name and Last Name fields so you can keep them fixed on the screen and then horizontally scroll and view other pertinent fields, like E-mail or Telephone Number, to get a better view of your data. You can also hide those fields that may distract you from getting a better view of the data. For example, if you are interested in viewing just a person's name and telephone number, you may decide to hide all fields except First Name, Last Name, and Phone Number. In this exercise, you practice freezing and unfreezing fields, as well as hiding and unhiding them.

STEP BY STEP

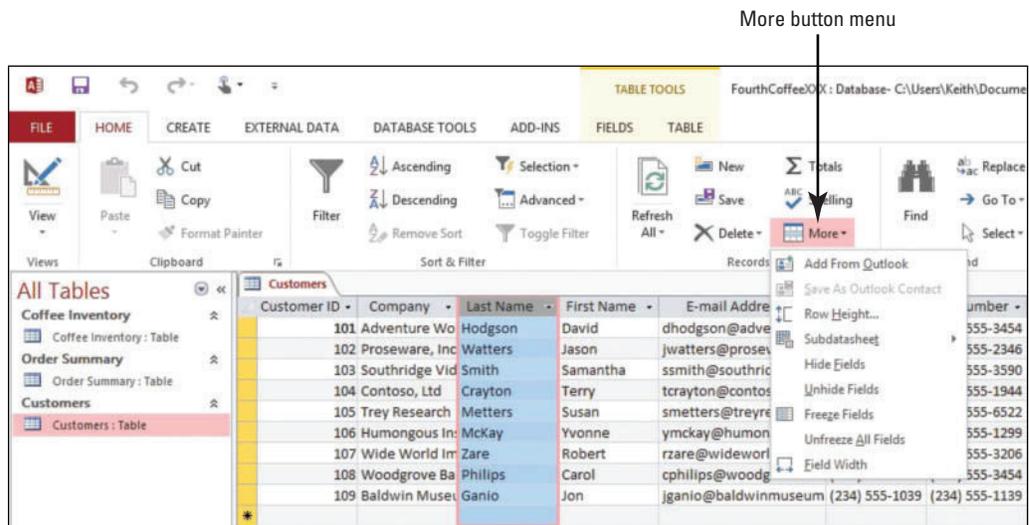
Freeze/Unfreeze and Hide/Unhide Fields

USE the database you used in the previous exercise.

1. **OPEN** the Customers table.
2. Select the **Last Name** field. On the HOME tab, in the Records group, click the **More** button. A menu appears (see Figure 3-24).

Figure 3-24

More button menu



3. Select **Freeze Fields**. Notice that the Last Name field moves to the first field position in the table.
4. Click the **Restore Down** button on the application window (see Figure 3-25). The Restore Down button now becomes the Maximize button. Press the **Right Arrow** key to scroll the table's fields to the left, and stop when you reach the ZIP/Postal Code field. Notice that the Last Name field stays fixed as the other fields scroll.

Figure 3-25

Restore Down button



5. Click the **More** button again and select **Unfreeze All Fields**. Notice how the Last Name field remains in the table's first field position. Press the **Right Arrow** key several times until the Last Name field scrolls off from view. Notice how the Last Name field moved with the other fields when the Right Arrow key was pressed several times.

Take Note Fields can be rearranged in Datasheet view by clicking on the field name headers and dragging them to where you want to move them.

6. Click the **Maximize** button on the application window.
7. Select the **Customer ID** field. Click the **More** button and select **Hide Fields**. Notice the Customer ID field is now hidden from view (see Figure 3-26).

Figure 3-26

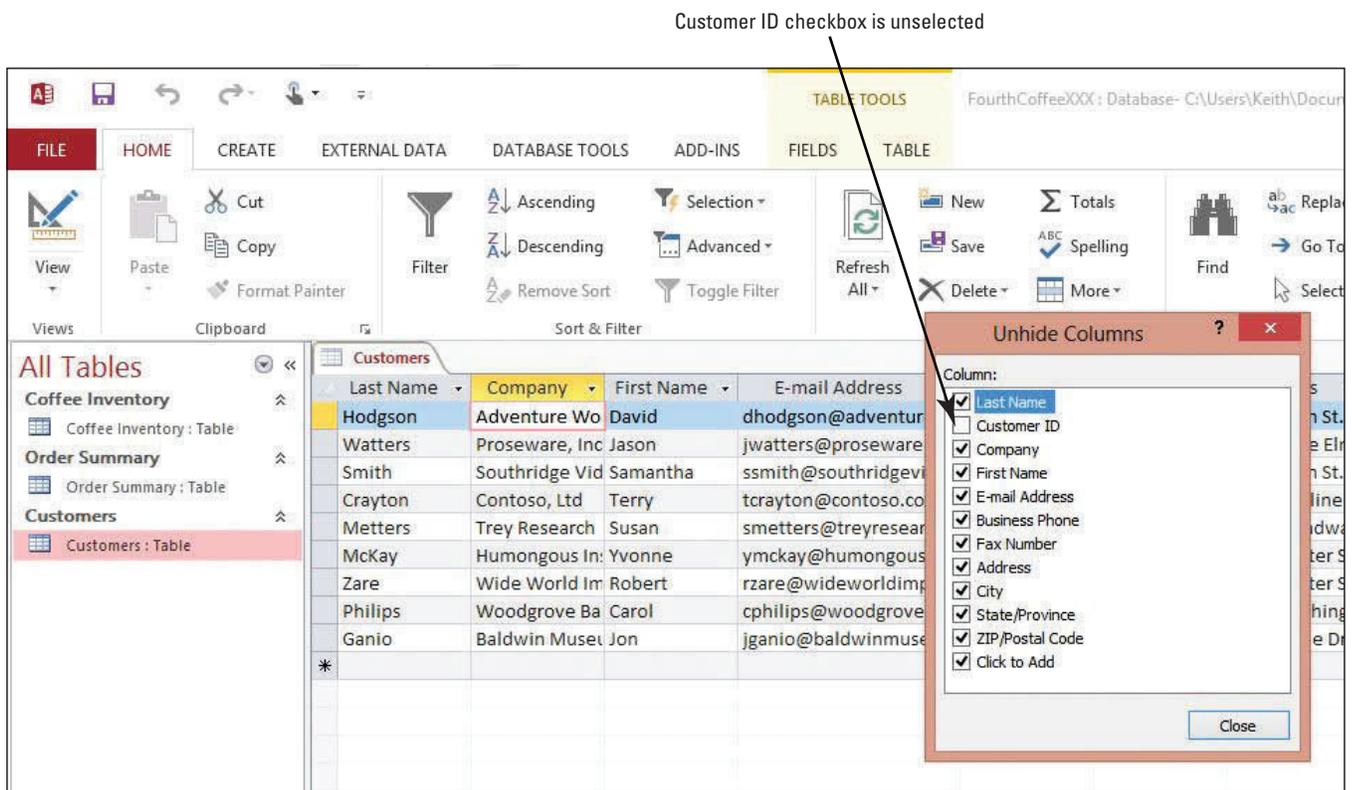
Hidden Customer ID field

| Last Name | Company | First Name | E-mail Address | Business Ph | Fax Number | Address | City | State/Provin | ZIP/Postal C | Click to Add |
|-----------|----------------|------------|--------------------------|----------------|----------------|-----------------|--------------|--------------|--------------|--------------|
| Hodgson | Adventure Wo | David | dhodgson@adventure-w | (234) 555-3453 | (234) 555-3454 | 2345 Main St. | Round Rock | TX | 75901 | |
| Watters | Proseware, Inc | Jason | jwatters@proseware.com | (234) 555-2345 | (234) 555-2346 | 3456 Little Elm | Round Rock | TX | 75901 | |
| Smith | Southridge Vid | Samantha | ssmith@southridgevideo | (234) 555-3598 | (234) 555-3590 | 3456 Main St. | Round Rock | TX | 75901 | |
| Crayton | Contoso, Ltd | Terry | tcrayton@contoso.com | (234) 555-1945 | (234) 555-1944 | 3211 Beltline A | Austin | TX | 75990 | |
| Metters | Trey Research | Susan | smetters@treysresearch.r | (257) 555-6521 | (257) 555-6522 | 6798 Broadway | Lakeway | TX | 75989 | |
| McKay | Humongous In | Yvonne | ymckay@humongousinsl | (254) 555-1296 | (254) 555-1299 | 2345 Center St. | Lago Vista | TX | 75960 | |
| Zare | Wide World Im | Robert | rzare@wideworldimport | (224) 555-3205 | (224) 555-3206 | 8908 Center St. | Elgin | TX | 75987 | |
| Phillips | Woodgrove Ba | Carol | cphillips@woodgroveban | (257) 555-3455 | (257) 555-3454 | 4567 Washing | Pflugerville | TX | 75923 | |
| Ganio | Baldwin Musei | Jon | jganio@baldwinmuseum | (234) 555-1039 | (234) 555-1139 | 1234 Circle Dr. | Austin | TX | 75990 | |

- Click the **More** button and select **Unhide Fields**. The Unhide Columns dialog box should appear as shown in Figure 3-27. Notice the check mark is missing from the Customer ID check box, signifying that it is hidden.

Figure 3-27

Unhide Columns dialog box



- Deselect the check boxes next to all the other field representations except Last Name and Business Phone, and then click the **Close** button in the Unhide Columns dialog box. Notice the only fields now displayed in Datasheet view are the Last Name and Business Phone fields.
- CLOSE** the Customers table without saving the changes to the layout.

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

**CERTIFICATION
READY? 2.21**

How do you hide fields in tables?

Take Note You can save your table so it retains your formatting the next time you open it.

Take Note To select more than one field to freeze or hide, hold down the Shift key while selecting adjacent fields.



Another Way

You can also access the Hide/Unhide and Freeze/Unfreeze options from the shortcut menu that appears after you right-click a field name.

SOFTWARE ORIENTATION

Relationship Tools on the Ribbon

When you click the Relationships button on the DATABASE TOOLS tab, the Relationships window appears and the Relationship Tools are displayed in the Ribbon (see Figure 3-28).

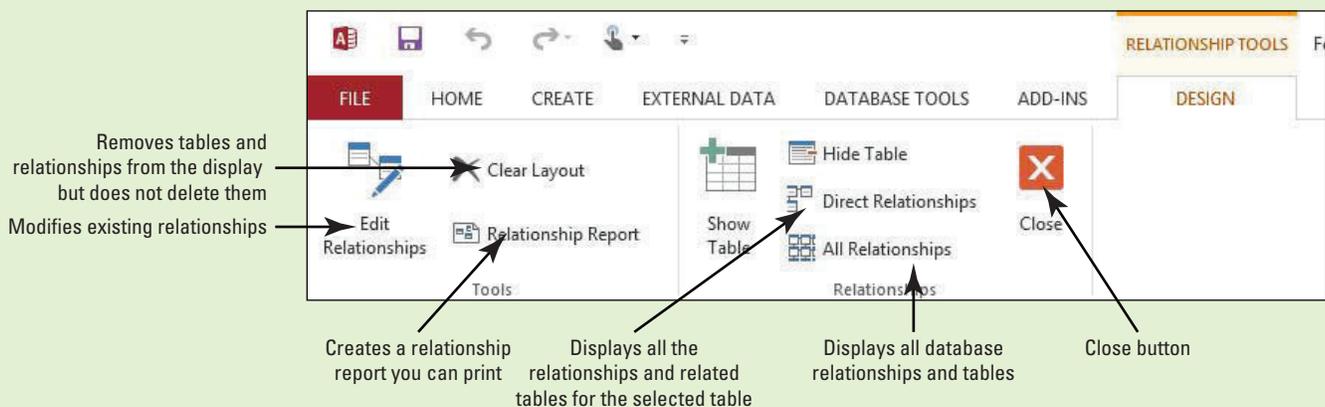


Figure 3-28

Use the Relationship Tools to define and modify table relationships

UNDERSTANDING TABLE RELATIONSHIPS

The Bottom Line

As you have already learned, most databases have more than one table. Creating relationships among these tables allows Access to bring that information back together again through objects such as reports and queries so that you can display information from several tables at once. It is much easier to create effective reports and queries when you start out with well defined table relationships.

Defining Table Relationships

In relational database applications like Access, you can store information in separate tables that are connected by a defined relationship that ties the data together. You define a table relationship in the Relationships window. To create that relationship, you place common fields in tables and define the relationships between the tables. Common fields used in different tables do not have to have the same names, but they usually do. They must have the same data type, though. In this exercise, you use a table that already has a primary key field to create a relationship with another table.

You can create three types of relationships in Access tables: one-to-one, one-to-many, and many-to-many.

In a one-to-one relationship, both tables have a common field with the same data. Each record in the first table can only have one matching record in the second table, and each record in the second table can have only one matching record in the first table. This type of relationship is not common, because information related in this way is usually stored in the same table.

A one-to-many relationship is more common, because each record in the first table can have many records in the second table. For example, in a Customers table and an Orders table, one customer could have many orders. The Customer ID would be the primary key in the Customers table (the one) and the foreign key in the Orders table (the many).

In a third type of relationship, called a many-to-many relationship, many records in the first table can have many records in the second table.

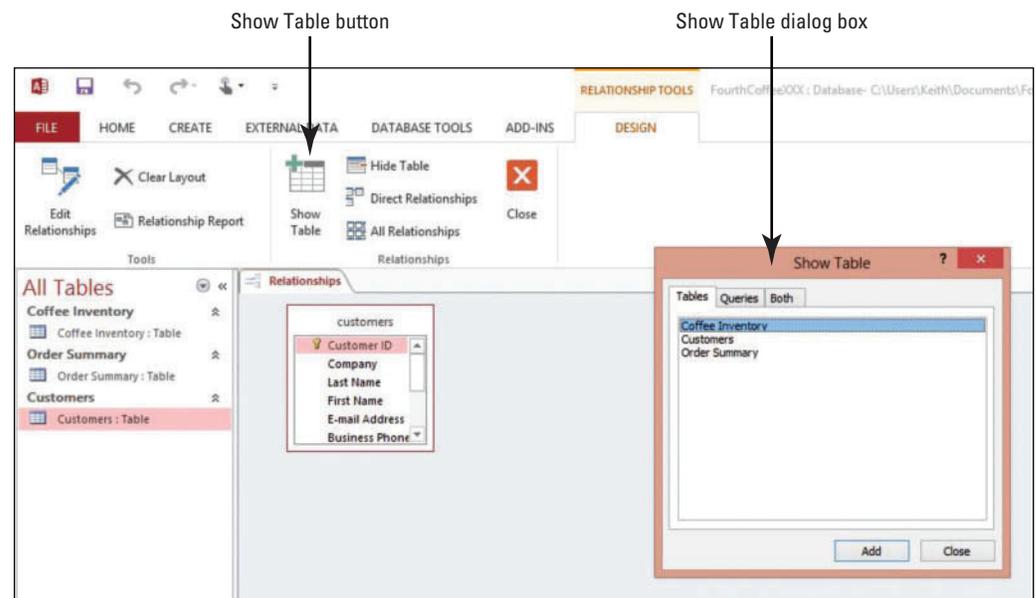
STEP BY STEP Define Table Relationships

USE the database you used in the previous exercise.

1. On the DATABASE TOOLS tab in the Relationships group, click the **Relationships** button. The Relationships view appears with the Customers table represented.
2. Click the **Show Table** button. The Show Table dialog box appears (see Figure 3-29).

Figure 3-29

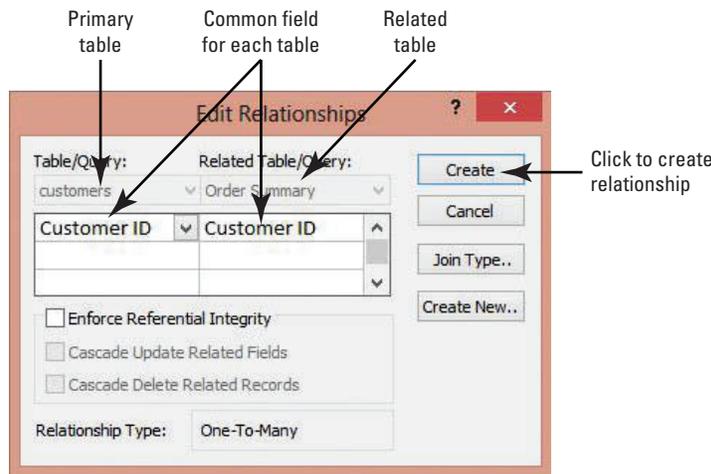
Show Table button and dialog box



3. Select **Order Summary** and click **Add**.
4. Click **Close**. The Customer table and Order Summary table are represented in Relationships view.
5. Click the **Customer ID** primary key field in the Customers table, and then drag it to the Customer ID field of the **Order Summary** table and release the **mouse button**. The Customer ID field represents the common field between the two tables. The Customer ID field of the Order Summary table is now set as the foreign key. The Edit Relationships dialog box appears (see Figure 3-30).

Figure 3-30

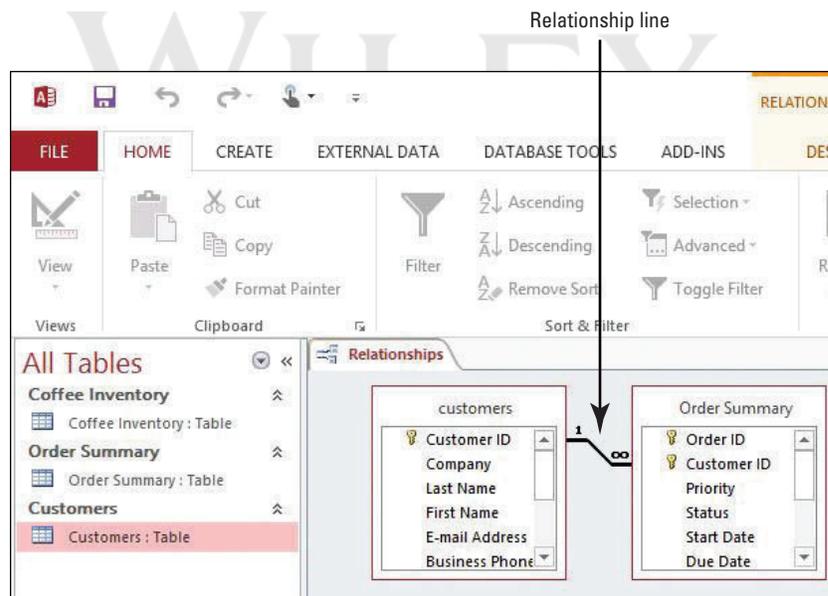
Edit Relationships dialog box



6. Select the **Enforce Referential Integrity** check box. Then select the **Cascade Update Related Fields** and **Cascade Delete Related Records** check boxes.
7. Click **Create**. A relationship line representing the one-to-many table relationship of the Customers and the Order Summary tables is displayed (see Figure 3-31). You just created a one-to-many relationship between these tables using Customer ID, the common field. The one-to-many relationship type signifies that each customer record in the Customers table can have many order records in the Order Summary table.

Figure 3-31

One-to-many relationship



CERTIFICATION READY? 1.2.4

How do you enforce referential integrity?

CERTIFICATION READY? 1.2.5

How do you set foreign keys?

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

Modifying Table Relationships

A table relationship is represented by the line that connects the tables in the Relationships window. To modify the relationship, you can double-click the line to display the Edit Relationships dialog box or delete the line to delete the relationship. The Edit Relationships dialog box allows you to change a table relationship. You can change the tables on either side of the relationship or the fields on either side. You can also perform actions like enforcing referential integrity and choosing cascade options. In this exercise, you delete the relationship you previously created, and then recreate and edit the relationship to enforce referential integrity.

Referential integrity is an option that you can select in the Edit Relationships dialog box to prevent orphan records. An orphan record is a record in one table that references records in another table that no longer exist. For example, when referential integrity is enforced, Access will not permit a Customer ID value as the foreign key in the Order Summary table that does not have a matching Customer ID value as the primary key in the Customers table. In this way, referential integrity ensures your tables contain logically related data. If an operation that violates referential integrity is performed once this option is selected, Access will display a dialog box with a message stating that referential integrity is being violated and therefore will not permit the operation. You can also choose one or both types of cascade options—cascade update related fields or cascade delete related records—in the Edit Relationships dialog box once referential integrity has been selected. For example, if the cascade update related fields option is selected, Access will update the Customer ID value in the Order Summary table if the Customer ID value in the Customers table is updated. This ability to update related fields automatically ensures consistent Customer ID values in the related tables. Similarly, if the cascade delete related records option is selected, Access will delete all Customer ID records from the Order Summary table if the related Customer ID record is deleted from the Customers table, therefore preventing orphaned records. When you enforce referential integrity between tables, the line connecting the tables becomes thicker. The number 1 is also displayed on the line on the one side of the relationship and an infinity symbol (∞) appears on the other side, to represent the “many” field values that can be included in this side of the relationship.

To remove a table relationship, you must delete the relationship line. You can select the line by pointing to it and clicking it. When the relationship line is selected, it appears thicker. Press the Delete key to delete the line and remove the relationship or right-click the line to display the shortcut menu.

STEP BY STEP

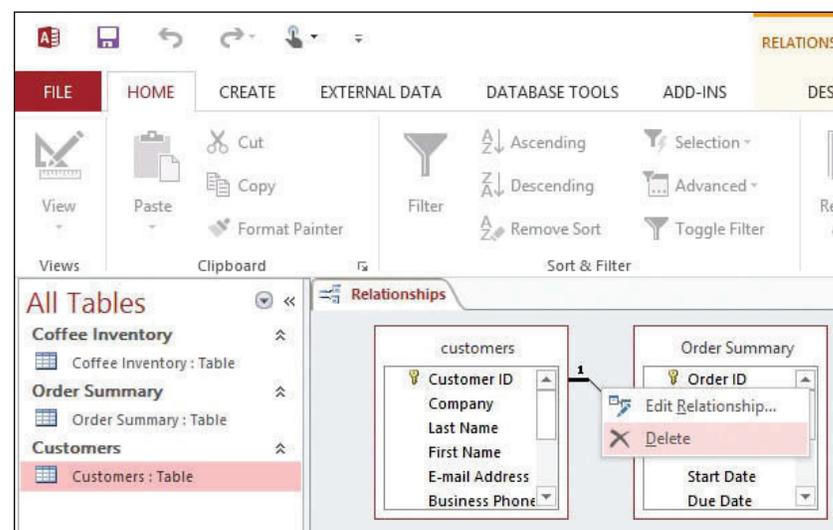
Modify Table Relationships

USE the database you used in the previous exercise.

1. Right-click the center section of the relationship line connecting the two tables. A shortcut menu appears (see Figure 3-32).

Figure 3-32

Edit/Delete shortcut menu

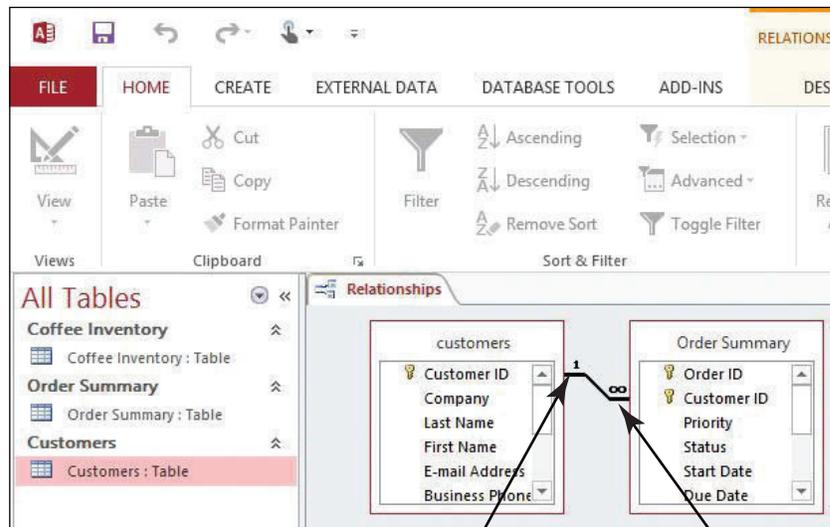


2. Select **Delete**. A message appears asking if you are sure you want to delete the relationship. Click **Yes**. The line disappears.

3. Select the **Customer ID** field in the first table. Drag the mouse to the Customer ID field in the second table and release the mouse button. The Edit Relationships dialog box appears.
4. Click the **Create** button. A line appears, creating the relationship.
5. Double-click the center section of the relationship line. The Edit Relationships dialog box appears again, listing the tables and the Customer ID fields on each side.
6. Click the **Enforce Referential Integrity** box and click **OK**. The line appears thicker, with the number 1 beside the first table and the infinity symbol (∞) beside the second (see Figure 3-33).

Figure 3-33

Relationship displaying enforced referential integrity



Relationship line with the number 1 on the "one" side

Infinity symbol displayed on the "many" side

CERTIFICATION READY? 1.2.2

How do you create and modify relationships?

CERTIFICATION READY? 1.2.1

How do you edit references between tables?

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

Viewing and Printing Table Relationships

You may want to print a table relationship to save for your records or to discuss with a colleague. The Relationship Report command makes this easy. When you choose to print the relationship report, the PRINT PREVIEW tab will appear with options for viewing and printing the report. After you make any changes to the layout of the report, click the Print button to start printing. After printing the report, you can choose to save it. In this exercise, you view and print table relationships without saving the relationship report.

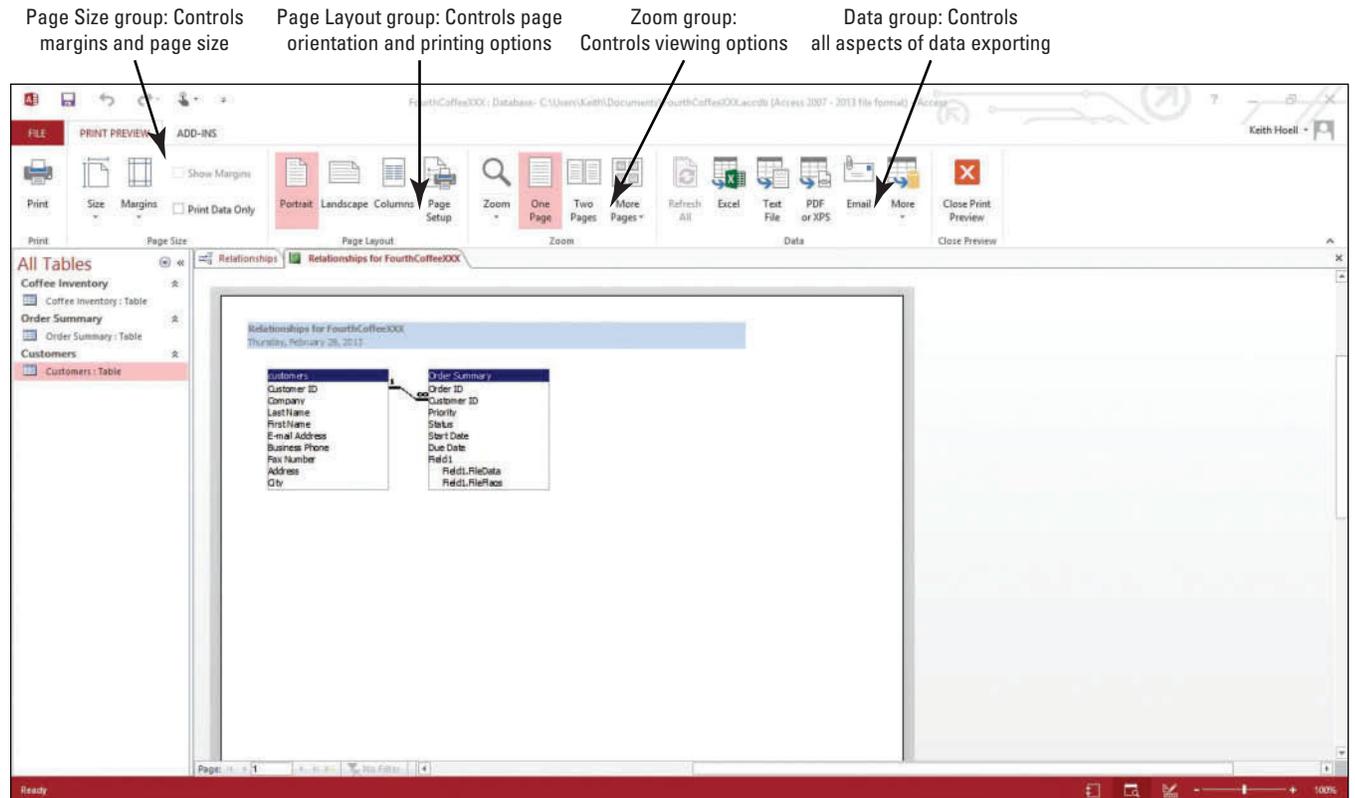
STEP BY STEP**Print Table Relationships**

USE the database you used in the previous exercise.

1. In the Tools group of the RELATIONSHIP TOOLS DESIGN tab, click the **Relationship Report** button. The report is created and the PRINT PREVIEW tab appears (see Figure 3-34).

Figure 3-34

Print preview of Relationship Report



2. Click the **Print** button. The Print dialog box appears, allowing you to select the printer you want to use.
3. Click **OK** to keep the default settings, and then print the report.
4. Click the **Close** button to close the Relationships for FourthCoffee tab. A message appears asking if you want to save changes to the report. Click **No**.
5. **CLOSE** the Relationships tab.

STOP. CLOSE the database.

**CERTIFICATION
READY? 1.2.6**

How do you view relationships?

SKILL SUMMARY

| In This Lesson You Learned How To: | Exam Objective | Objective Number |
|---|----------------------------------|------------------|
| Navigate Among Records | | |
| Enter, Insert, Edit, and Delete Records | Add New Records. | 2.3.2 |
| | Navigate to Specific Records. | 1.3.1 |
| | Update Records. | 2.3.1 |
| | Delete Records. | 2.3.3 |
| Work with Primary Keys | Set Primary Key Fields. | 1.2.3 |
| Find and Replace Data | Find and Replace Data. | 2.3.5 |
| Attach and Detach Documents | | |
| Sort and Filter Data and Set Field Viewing Options within a Table | Sort Records. | 2.3.6 |
| | Filter Records. | 2.3.7 |
| | Hide Fields in Tables. | 2.2.1 |
| Understand Table Relationships | Enforce Referential Integrity. | 1.2.4 |
| | Set Foreign Keys. | 1.2.5 |
| | Create and Modify Relationships. | 1.2.2 |
| | Edit References Between Tables. | 1.2.1 |
| | View Relationships. | 1.2.6 |

Knowledge Assessment

Matching

Match the term in Column 1 to its description in Column 2.

Column 1

1. foreign key
2. composite key
3. outermost field
4. referential integrity
5. wildcards
6. ascending order
7. descending order
8. filter
9. sort
10. innermost field

Column 2

- a. prevents orphan records, to ensure that records do not reference other records that no longer exist
- b. sorts data from beginning to end
- c. sorts data from end to beginning
- d. to arrange data alphabetically, numerically, or chronologically
- e. a primary key from one table that is used in another table
- f. a set of rules for determining which records will be displayed
- g. the secondary sort field in a multifield sort
- h. two or more primary keys in a table
- i. characters used to find words or phrases that contain specific letters or combinations of letters
- j. the primary sort field in a multifield sort

True/False

Circle T if the statement is true or F if the statement is false.

- T F** 1. You can use the Navigation buttons to search for data in a table.
- T F** 2. You can enter any kind of data into any field.

- T F 3.** After you enter data and move to a new field, Access automatically saves the data for you in the table.
- T F 4.** After you delete a record, you can click the Undo button to bring it back.
- T F 5.** The Find and Replace dialog box searches all the tables in a database at one time.
- T F 6.** An AutoNumber field will usually make a good primary key.
- T F 7.** Before you can attach a document, there must be a field in a table formatted with the Attachment data type.
- T F 8.** The outermost field is the primary sort field in a multifield sort.
- T F 9.** The Toggle Filter button lets you permanently remove a filter and switches you back to the original view.
- T F 10.** In a one-to-many relationship, each record in the first table can have many records in the second table.

Competency Assessment

Project 3-1: Charity Event Contacts List

You are working as an intern for Woodgrove Bank. Part of your job is helping your supervisor organize a charity event. Use an Access table to create a contacts list that your supervisor will use to make calls to local businesses requesting sponsorships and donations for the event.

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



- 1. OPEN** the *Charity Event* database.
- 2. SAVE** the database as *CharityEventXXX* (where XXX is your initials).
- 3. OPEN** the Contacts table.
- Enter the records shown in the following table: (Note: Do not type the hyphens when entering the Business Phone data)

| ID | Company | Last Name | First Name | Business Phone |
|----|-----------------|-----------|------------|----------------|
| 17 | Trey Research | Tiano | Mike | 469-555-0182 |
| 18 | Fourth Coffee | Culp | Scott | 469-555-0141 |
| 19 | Wingtip Toys | Baker | Mary | 972-555-0167 |
| 20 | Margie's Travel | Nash | Mike | 972-555-0189 |

- Click the bottom half of the **View** button and choose **Design** View.
- Select the **ID** row. On the DESIGN tab, in the Tools group, click the **Primary Key** button.
- Save the **design** of the table, and then return to **Datasheet** view.
- On the HOME tab, in the Find group, click the **Find** button. The Find and Replace dialog box appears. Key **0177** into the Find What box.
- Select **Current document** from the Look In menu, and then select **Any Part of Field** in the Match menu.
- Click the **Replace** tab. Key **0175** into the Replace With box.
- Click **Find Next** and then click **Replace**.
- Click **Cancel** to close the dialog box.
- Select the **Lucerne Publishing** record.
- On the HOME tab, in the Records group, click the **Delete** button. Click **Yes** to delete the record.
- CLOSE** the database.

LEAVE Access open for the next project.

Project 3-2: Angels Project Wish List

The four kindergarten classes at the School of Fine Art have adopted one boy and one girl “angel” from the community. Children from the classes may purchase holiday gifts for their angels. As an office assistant at the school, you are working with the Angel Project staff to organize information about each angel.

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



1. **OPEN** *Angels* from the data files for this lesson.
2. **SAVE** the database as *AngelsXXX*, where XXX is your initials.
3. **OPEN** the List table.
4. Select the **Gender** field. On the HOME tab, in the Sort & Filter group, click the **Ascending** button.
5. Select the **Age** field. On the HOME tab, in the Sort & Filter group, click the **Descending** button.
6. On the HOME tab, in the Sort & Filter group, click the **Remove Sort** button.
7. In the Gender field, select the **M** in the first record.
8. On the HOME tab, in the Sort & Filter group, click the **Selection** button and select **Equals “M”**.
9. On the HOME tab, in the Sort & Filter group, click the **Toggle Filter** button.
10. Select the **Wants** field. On the HOME tab, in the Sort & Filter group, click the **Filter** button. Select **Text Filters** from the menu, select **Contains** from the next menu, and key **Bike** in the Custom Filter dialog box and press **Enter**.
11. On the HOME tab, in the Sort & Filter group, click the **Advanced** button, and then select **Clear All Filters** from the menu.
12. **SAVE** and **CLOSE** the table.

LEAVE Access open for the next project.

Proficiency Assessment

Project 3-3: Angel Project Contact Information

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

1. The Angels database should be open on your screen.
2. **OPEN** the **Contact Information** table.
3. Enter the following new records:

| ID | Last Name | First Name | Parent's Name | Address | City | State | Zip Code | Home Phone |
|----|-----------|------------|---------------|----------------|----------|-------|----------|--------------|
| 15 | Wright | Steven | Kevin | 2309 Monroe Ct | Marietta | GA | 34006 | 770-555-0142 |
| 16 | Cook | Cathan | Patrick | 1268 Oak Dr | Marietta | GA | 34006 | 770-555-0128 |

4. Switch to Design view. Remove the primary key from the Home Phone field and define the **ID field** as the primary key.
5. **SAVE** the design and return to Datasheet view.
6. Select the **ID** field and sort it in ascending order.
7. On the DATABASE TOOLS tab, in the Relationships group, click the **Relationships** button.

8. Create a one-to-one relationship between the ID field of the List table and the ID field of the Contact Information table.
9. **SAVE** the Relationships view and close it.
10. **CLOSE** the database.

LEAVE Access open for the next project.

Project 3-4: Wingtip Toys Inventory Table

Wingtip Toys, a small manufacturer of wooden toys, has kept most of its records on paper for the last 20 years. The business has recently expanded, and you have been hired to help the company transfer its entire inventory and other administrative data to Office 2013. Edit the table to include all the latest handwritten data you have found.

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



1. **OPEN** the *Wingtip Toys* database and save it as *WingtipXXX*, where XXX is your initials.
2. **OPEN** the Inventory table.
3. On the HOME tab, in the Find group, click the **Replace** button to display the Find and Replace dialog box. Change the following prices:
 - Find all **14.99** and replace with **29.99**.
 - Find all **16.99** and replace with **34.99**.
 - Find all **15.99** and replace with **30.99**.
 - Find all **24.99** and replace with **34.99**.
4. Delete the following records from the database:
 - ID = **13**
 - ID = **19**
 - ID = **16**
5. Edit the following records:
 - ID = **30**, change the number of items in stock to **3**
 - ID = **28**, change the number of items in stock to **6**
 - ID = **6**, change the number of items in stock to **4**
6. Select the **In Stock** field, and then create a filter to display all the records with a value less than or equal to 10 in the field.
7. Remove the filter.
8. **CLOSE** the table.
9. **CLOSE** the database.

LEAVE Access open for the next project.

Mastery Assessment

Project 3-5: Soccer Roster

As coach of your son's soccer team, you have created a database in which to store information about the team. Enter, edit, and delete records to update it.

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



1. **OPEN** the *Soccer* database from the data files for this lesson.
2. **SAVE** the database as *SoccerXXX*, where XXX is your initials.

3. **OPEN** the Roster table.
4. Enter the following record for a new player:
Eric Parkinson, 806-555-0170, uniform number 9
5. One player has quit the team, Russell King. Replace his data with this data for the following new player:
George Jiang, 806-555-0123, uniform number 4
6. In the Size field, enter **XS** for each player, except for uniform numbers 4, 6, and 7, which should be size **S**.
7. Create an Attachment field and attach the Word document **medicalalert.docx** to the record for Garrett Young.
8. Define the **Uniform #** field as the primary key.
9. **SAVE** the table design and **CLOSE** the database.



LEAVE Access open for the next project.

Project 3-6: Donations Table

Donations are starting to come in for Woodgrove Bank's charity event. Track the donation commitments received.

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



1. **OPEN** the **CharityEventXXX** database you created in Project 3-1.
2. **OPEN** the Donations table.
3. Create a filter to display the items in the Needs field without Commitments from a company.
4. Remove the filter.
5. Use Find and Replace to find each occurrence of the word Company in the Needs field and replace it with the word **Volunteer**.
6. Create a relationship between the **ID** field in the Contacts table and the **Committed Company ID** in the Donations table.
7. Print the relationship.
8. **CLOSE** the relationship without saving.
9. **CLOSE** the tables.
10. **CLOSE** the database.

CLOSE Access.
