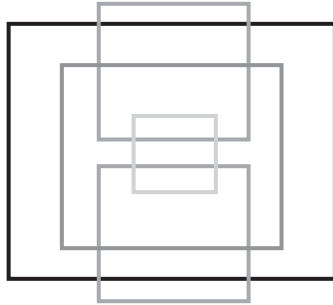


DISCOVERING Microsoft Office 2016



WORD
EXCEL
ACCESS
POWERPOINT

Includes Windows 7, 8 and 10

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Wiley Custom Learning Solutions

JOHN WILEY & SONS, INC.

DATABASE MODULE

ACCESS

OUTLINE

Lesson 1: Launching Access
Lesson 2: Creating a Table Structure
Lesson 3: Entering Data and Exiting
Quick Review #1
Lesson 4: Adding New Records
Lesson 5: Editing Records
Lesson 6: Viewing Table Data
Lesson 7: The Query Command
Access Practice Sheet

Lesson 8: Deleting Records
Lesson 9: Sorting Records
Lesson 10: Finding Records
Quick Review #2
Lesson 11: Creating a Report Template
Lesson 12: Printing a Report
Lesson 13: Modifying a Report Template
Database Management Projects
Continuing on Your Own—Things to Consider
Command Summary—Access 2016

LESSON 1: LAUNCHING ACCESS

This module examines some basic techniques in Microsoft Office 2016's database management system—Access. A database is like a large electronic filing cabinet. It contains data that you have chosen to gather about employees, clients, inventory, or other items. Access lets you design sophisticated filing systems and reports that make record keeping easy, and provides an extensive menu system that lets you create files, edit and update their data, and develop reports. You can also ask questions (queries) concerning any data in the database.

Access offers many powerful commands, but you'll examine only the basic ones to get started. Once you've mastered the basics of Access, you may want to examine its many other features.

The startup instructions for your computer were presented in the introductory module. Refer back to the appropriate instructions as needed to remind you how to start your computer system.

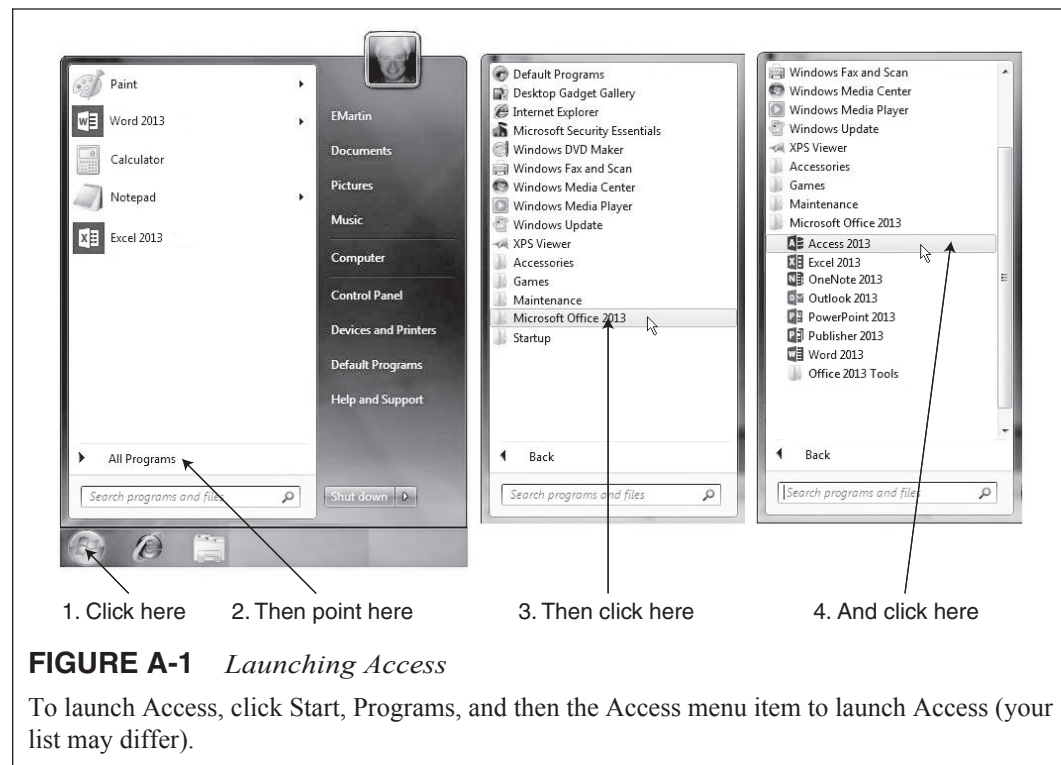
1. If needed, start Windows.
2. If you are using Windows 8 (or 10), get to the Start screen, click the Access 2016 tile if it appears, or type Access and continue with Step 8.



- The easiest way to launch a program is to use a desktop or taskbar icon (if one exists).
- If your desktop (or taskbar) displays an Access icon, double-click it now and continue with the next section—the Access Program Window.

If there is no icon, or if you prefer, you can always launch Access through the Start menu. Try this approach, using Figure A-1 as a reference:

- Click the Start button to access the Windows menu.
- Point to *All Programs* to access its menu.
- If the Microsoft Access menu item appears in the next menu, skip to step 8.
- Point to the menu item that contains Microsoft Access. This is often Microsoft Office. If a different menu item contains Access, write its title here for future reference: _____.
- Click the Microsoft Access menu item to launch it, as in Figure A-1.

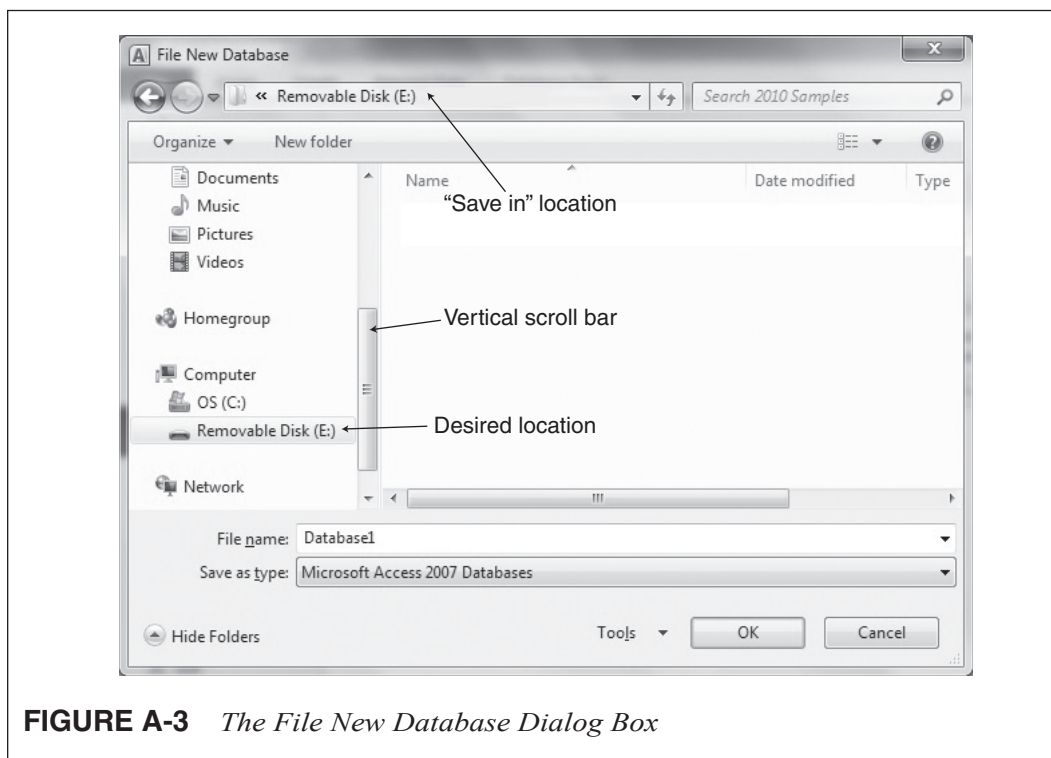
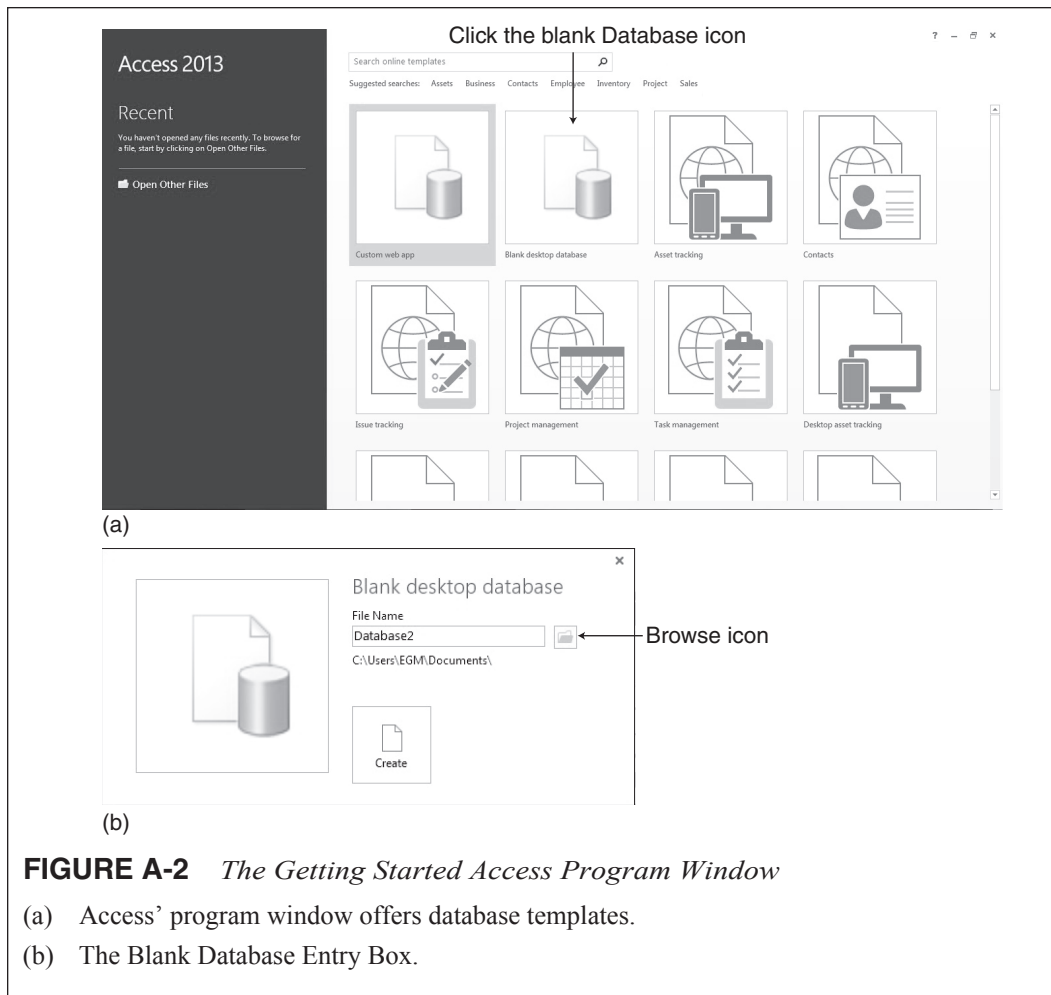


The Access Program Window

An “Access 2016” program window now appears, similar to Figure A-2a. Examine this screen for a moment. This screen offers database *templates* that are available online. Templates contain professionally-prepared database components that can be modified to your particular needs. In the future, you may want to explore these, but for now, you will create your own database to learn the techniques.

- Click the *Blank desktop database* option (2nd in top row).
A blank desktop database entry box appears, as shown in Figure A-2b.
- Examine the location beneath the filename. (If it is correct, you could type a filename and click the *Create* button.) But, for now,
- Click the *Browse* icon to the right of the filename (typically “Database1”).





A File New Database dialog box appears, as shown in Figure A-3. *Dialog boxes* allow the computer to “talk” to you. You can make changes in the items, accept what’s there, or cancel the command.

Checking the Save in Location

Access must know where to place new files that you create and older files that you’ve previously used. Although you can specify a location every time you identify a file in the File name box, it is wiser to inform Access where to find all your needed files. To do this, examine the *Save in* box and complete the following steps:

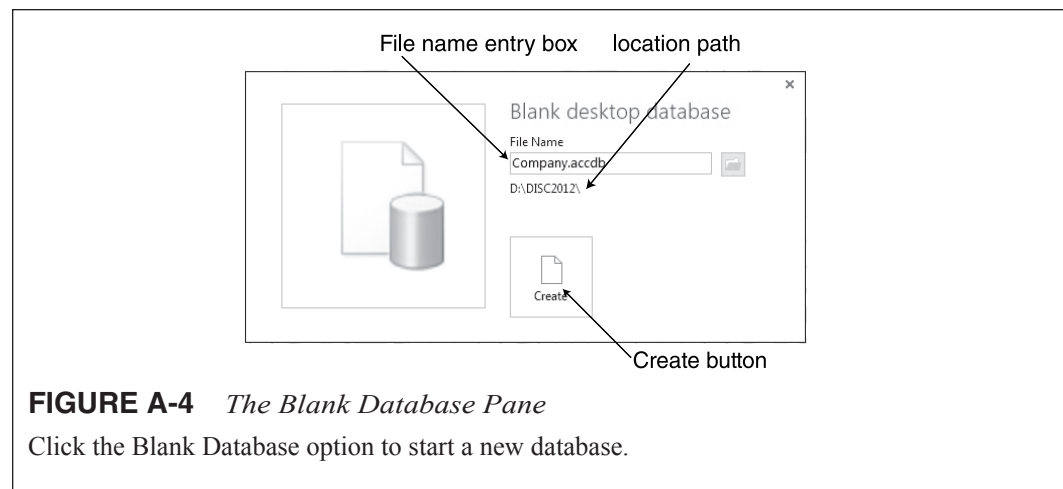
4. Examine the entry shown in the *Save in* box. If it shows the correct disk drive or folder, skip to step 7 now.
5. If it is incorrect, drag the vertical scroll bar down until you see the desired location.
6. Click the flash drive or folder you want to use.

NOTE: Get into the habit of checking the *Save in* box when you start Access. Once it is correct, you need not check it again. If you are using a LAN, it is likely that the correct location has already been set for you.

You can now name the database:

7. Click in the *File name* entry box and delete its contents.
8. Type **Company**.
9. Click the *OK* button to continue.

The entry box appears, as shown in Figure A-4.



The filename (“Company.accdb”) appears in the File Name entry box; its location (path) appears beneath it. (Since 2007, Access adds the “accdb” extension to identify the file, in this case as an Access 2016 database.)

10. Click the *Create* button beneath the filename.

The Access window now reflects the as yet empty database, as shown in Figure A-5. The database file serves as a container for all the various objects—such as tables, forms, and reports—that you will place in it.

Take a moment to examine the components of this window:

- a. **Title bar:** The screen's top line displays the typical window items: a title bar displaying Microsoft Access in the center with two resizing buttons and a close button at the right. If you are not sure of the functions of these items, review the introductory module.

NOTE: If the window is not full size, maximize it now by clicking the maximize button in the upper-right corner of the screen.



- b. **File tab:** The purple tab in the upper-left corner is the File tab. Clicking it opens a file menu with commands for saving, printing, closing a file, and exiting the program. It also provides access to many Access options settings.
- c. **Quick Access Toolbar:** Access's Quick Access toolbar ("QAT")—just above the File tab—contains often-used command buttons such as save, undo, and redo. You can customize this toolbar to include any other commands you wish to add.
- d. **Ribbon:** Beneath the title bar is the heart of Access's menu system—the ribbon (the four-line band across the top of the window). The *ribbon* is divided into core tasks, each represented by a *tab*, which is subdivided into *groups*, and *command buttons* that can be clicked by mouse to perform needed tasks. The command buttons remain in view and are always available for immediate use. (By default, the Home tab—as shown in Figure A-5—appears when you open a database, since it is the one you will use most often.) Access's ribbon includes seven "standard" tabs. At times, based on your actions, "contextual" tools will be added as temporary tabs (shown in a different color accent). When you finish your task, the contextual tab will disappear from the ribbon.

NOTE: Although you can leave any ribbon tab active, it is a good idea to click the "Home" tab when you are finished using a set of commands, so it is always available.

- e. **Database Objects Pane:** The left window pane contains all the objects—such as tables, forms, and reports—associated with the current database. At the moment, only a single table appears.
- f. **Active Objects Window:** The central portion of the window displays any objects that are currently active. Each is identified with its own tab at the top of the pane, such as "Table1" in Figure A-5. (You can right-click this tab to access a menu to save or close the object as needed.)
- g. **Status bar:** The status bar appears at the bottom of the screen (currently displaying "Datasheet View" at the left). It displays important messages about your database, including explanations and the status of various objects.
- h. **View selector:** To the right of the status bar are two small command buttons that allow you to change how the workbook appears on your screen. The Access views (at present) include: datasheet and design view. Others will be added to the selector as needed.
- i. The Windows **taskbar** appears at the bottom of the screen. You can click its Start button to launch other programs or Windows features, as you have seen in the introductory module.

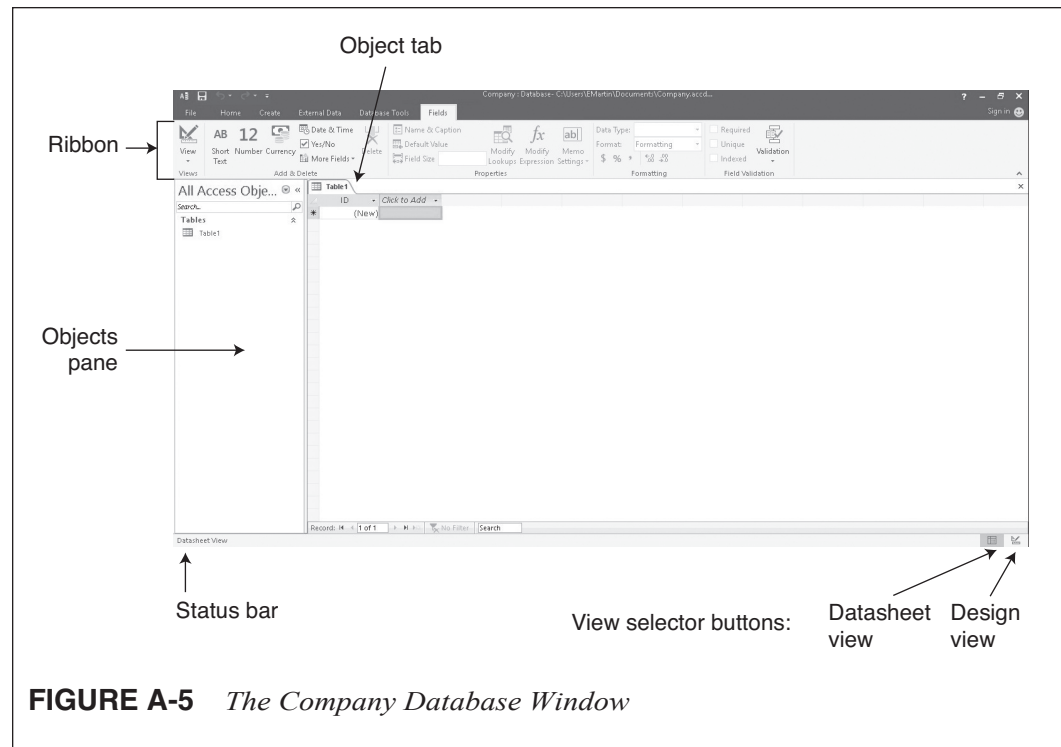


FIGURE A-5 *The Company Database Window*

The Help Feature

Access provides an extensive Help reference menu that can answer many of your questions. To invoke the Help menu, click the *Help* command button in the left list. Once in the Help menu, you can select the index or other feature to locate the information you desire. To close the Help menu, click the Help window's close button.

Note that Lesson 2 will take some time to complete. Do not continue for now unless you have the time to finish the entire lesson.



1. To exit for now, click the Close button (“X”) in the upper-right corner of the window.

LESSON 2: CREATING A TABLE STRUCTURE

In Access, data are grouped into a database hierarchy of fields, records, and tables. A *field* contains an individual piece of data and is identified by a unique field name, such as “STUDENT ID NUMBER.” Related fields are grouped together to form a *record* that typically contains the data relevant to one particular person or thing, such as data about one student. Groups of records form a *table*. A school might have a student table that contains all the biographical data (name, address, phone number, etc.) for all its students. A set of tables and related objects, in turn, comprises one *database*. A school's database, for example, may include separate tables for student biographical data, student grades, alumni, employee payroll, inventory, and all the reports related to them.

Because this is your first use of a database, you must start by opening a new database and then designing its first table *structure*, or layout, of the data you want to place into each record. In general, you can design as many table structures as you want or need in a database. For this example, you will create a database called COMPANY and then enter the structure for one table named SALES, as shown in Table A-1.

Field Name	Data Type	Size	Description
ID	Text	3	Customer ID Number
LAST	Text	15	Customer's Last Name
FIRST	Text	10	Customer's First Name
PHONE	Text	14	Phone: (999) 999-9999
AMOUNT	Currency	Auto	Amount of Invoice
INVDATE	Date/Time	Auto	Date of Invoice
PAID	Currency	Auto	Amount Paid

TABLE A-1 *The Structure for the SALES Table*

NOTE: In an actual office environment, you might also include fields for Company, Address, Items Purchased, Payment Dates, Terms, and so on. In general, field names should be short and remind you of the data being stored in that field. For example, the last name field might be called LAST, LASTNAME, LNAME, or something similar.

1. If needed, launch Access by following the steps 1-10 in Lesson 1.
2. If asked to replace the “Company” file, click *Yes*.

You will now create a new table object within the Company database. Access provides a number of ways to do this. You can import data from another source or simply name desired fields and have Access format them as you enter data. A more direct approach (and the one you will use here) is to create the table yourself. Since this must be done in Design view, do the following:

3. Click the *Design* view button (at the extreme lower-right corner). If you are not sure which button is correct, point to it with the mouse and wait. A “tool tip” box will appear identifying the button.
A Save As dialog box appears, as shown in Figure A-6a.
4. Type **SALES** (as shown in Figure A-6b) and click OK to accept it.

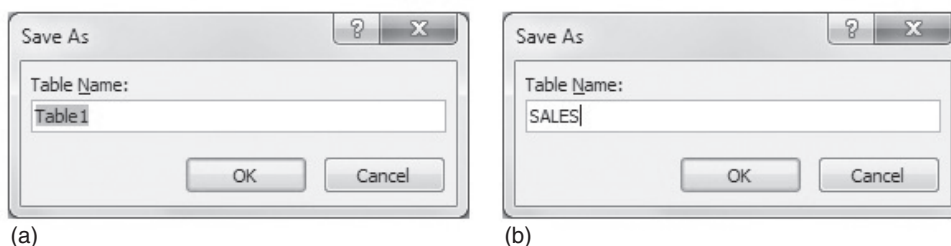


FIGURE A-6 *Saving a Table*

The Save as dialog box enables you to specify a table name.

- (a) A record displayed as a form.
- (b) The new data has been entered in the PAID field for TYME's record.

An empty table window appears as in Figure A-7. The tab title shows that the table is currently called SALES.

The top section (or pane) of the window awaits entries for field name, data type, and description. The bottom pane lets you adjust size and set limits, or checks, on the data that the program will accept (as you will soon see). The insertion point is now waiting for you to define a field name. A triangle pointer also indicates the current field line.

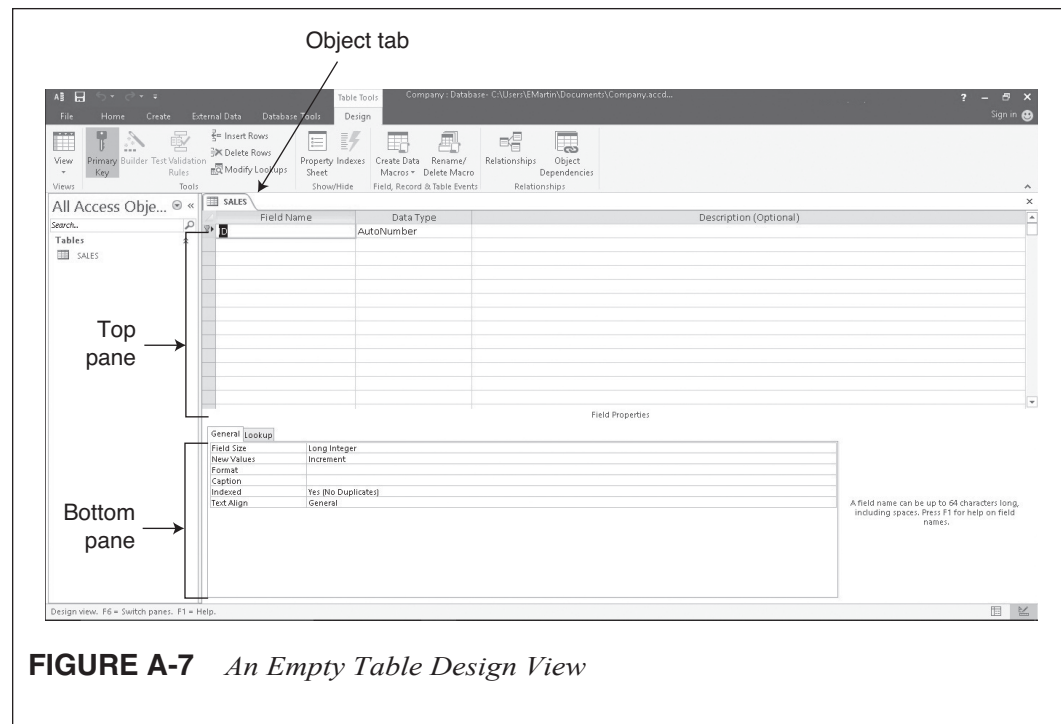


FIGURE A-7 *An Empty Table Design View*

NOTE: Access saves changes as you enter them. For this reason, if you are using a diskette or flash drive to store your data, never remove it until the database you are using has been closed (or Access has been exited).

Filling in the Table Structure

Now you need to fill in a row for each field in your table. First, a field name:

1. Using Table A-1 (on p. A-7) as a guide, type **ID** and press . The insertion point moves to the *Data Type* column. (Field names can contain up to sixty-four characters.)

You can choose from among eleven data types in Access. The ones of interest at the moment are text, number, currency, and date/time. *Text* fields can contain any combination of up to 255 characters (letters, numbers, or special symbols). *Number* fields contain numbers on which you intend to perform math. *Currency* fields are number fields with special formatting: They typically display two decimals, a currency symbol, and commas (when needed). *Date/Time* fields contain any valid date (and time if desired) from the year 100 to 9999.

There are a number of ways you can set the desired data type. You can simply type its first letter (“T” for “Text,” “N” for “Number,” and so on) and then press the key to accept it. If you’d rather select the field type from a list, you can click the drop-down

arrow at the right of the *Data Type* field to open a data type list as shown in Figure A-8 and then click on the desired type. You'll try both techniques here.

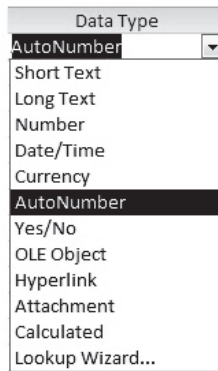


FIGURE A-8 *The Data Type Drop-Down List*

2. We want the ID field to be a short text field, so type *S* (for short text) and then press .

The insertion point now moves to the third column and awaits an optional description. For now, you'll skip it. Since you want to change the suggested field size, you must now move to the lower pane on the window. As indicated in the status bar:

3. Press (the F6 function key located at the top of your keyboard) to switch panes or click the *Field Size* box in the lower pane list.

The insertion point now moves to the Field Size box. By default, all text fields are set to 255 characters wide—an immense waste of space for our purposes. In this case, you want the ID field (as listed in Table A-1) to be three characters wide.

4. if needed to remove the current size, type **3** and press as shown in Figure A-9.
5. Because this is the only change you want to make, click the first row of the Description column in the top pane (to the right of the *Short Text* entry).



FIGURE A-9 *Modifying a Field Size*

Delete the default entry and retype as needed.

NOTE: If you make a mistake, use the arrow keys (→, ↓, ←, ↑) or F6 as needed to change location and correct it.

6. For the first field description, type **Customer ID Number** and press (↵) to continue.
7. Now, create the next three text fields (LAST, FIRST, and PHONE) with the same technique. Using Table A-1 as a guide, type each *Field Name* (↵) (F6) *Size* (↵) click the top pane and type the *Description* (↵) until the insertion point is on the fifth field line, as shown in Figure A-10. Make sure that you enter each field size appropriately.
8. For Field 5, type the field name **AMOUNT** and press (↵).

Field Name	Data Type	Description (Optional)	Size
ID	Short Text	Customer ID Number	255
LAST	Short Text	Customer's Last Name	255
FIRST	Short Text	Customer's First Name	255
PHONE	Short Text	Phone (999) 999-9999	255

FIGURE A-10 *A Partially Completed Structure*

Field names, data types, descriptions, and sizes (not shown) have been entered for the first four fields.

You must now set the field type to *Currency*. Of course, you could simply type the C mnemonic, but try the list approach, as follows:

9. Click the drop-down arrow in the *Data Type* column to open the list as you've seen in Figure A-8.
10. Click the *Currency* choice and then press (↵).
Currency is automatically defined to include a \$ symbol and two decimal places.

NOTE: The size of numeric and date fields (as you will see) is automatically set by Access. There is no need (or opportunity) to set the field size as you did with text fields.

11. Type **Amount of Invoice** in the Description column and press (↵) to complete the AMOUNT column.
12. For Field 6, type **INVDAT** and press (↵).
13. To set a field type, press D for *Date/Time* and press (↵). or select it from the list as you learned in steps 9–10.
You must now select an appropriate date format, as follows:
14. Press (F6) to switch to the lower pane.
15. Click the drop-down arrow at the extreme right of the Format row.
A set of date/time format options appears, as shown in Figure A-11.

General Date	11/12/2015 5:34:23 PM
Long Date	Thursday, November 12, 2015
Medium Date	12-Nov-15
Short Date	11/12/2015
Long Time	5:34:23 PM
Medium Time	5:34 PM
Short Time	17:34

FIGURE A-11 *Date/Time Format Options*

16. Click the *Short Date* option in the list.
17. Now, click the Description column in the appropriate row, type **Date of Invoice** and press to complete the Invdate field.
18. Enter the PAID currency field by typing **PAID** **C** **Amount Paid** .

The field list should contain the field names and data types shown in Figure A-12. If not, use the arrow keys to scroll (if needed) and then go back and change as necessary.

Field Name	Data Type	Description (Optional)
ID	Short Text	Customer ID Number
LAST	Short Text	Customer's Last Name
FIRST	Short Text	Customer's First Name
PHONE	Short Text	Phone (999) 999-9999
AMOUNT	Currency	Amount of Invoice
INVDATE	Date/Time	Date of Invoice
PAID	Currency	Amount Paid

FIGURE A-12 *The Completed Table Field List*

Validity Checks

While you're in this window, you can practice using the Access validity checks, which let you control the range and appearance of data. Although these checks are optional, they help keep data consistent by eliminating many common entry errors. Validity checks include:

- *Input Mask*: a format that standardizes data appearance.
- *Default Value*: a value that is used automatically if no data are entered in this field.
- *Validation Rule*: sets lower and/or upper limits for acceptable field data.
- *Required*: Access will not accept the record unless this field contains data.

It is a good idea to use validity checks whenever possible—simply identify the field and then specify the validity check. For example, let's say you want to ensure that the LAST field is entered in each record.

Setting a Required Field

1. Click the LAST name field.
2. Click the *Required* field box in the bottom pane.
3. Click the *Required* row's drop-down arrow to access the choice list.
4. Click *Yes*.
5. Click any field in the upper pane (or press).

Setting a Validation Rule

Let's say the *AMOUNT* field data should not exceed \$5,000. You can specify this using the *validation rule* validity check as follows:

6. Click the *AMOUNT* field name in the upper pane.
7. Click the *Validation Rule* entry line in the lower pane.
8. Type **<=5000** to indicate "less than or equal to 5000."

When you set a validity check, you should also provide a message that will appear when the rule specified by the check is broken. Do this as follows:

9. Click the *Validation Text* row (just beneath the *Validation Rule*).
10. Type **AMOUNT cannot exceed \$5,000**. Your screen should resemble Figure A-13. Change it if it does not.

General	Lookup
Format	Currency
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	<= 5000
Validation Text	AMOUNT cannot exceed \$5,000
Required	No
Indexed	No
Text Align	General

FIGURE A-13 *Setting a Validation Rule*

The *Validation Rule* and *Text* rows have been entered.

11. Return to the upper pane (as you did in step 5).

Setting an Input Mask

Suppose you want the phone data to be entered in a consistent format. You can do this by specifying an input "mask" or picture for the data. A mask is simply a pattern into which data will be placed.

12. Click the *PHONE* field in the upper pane.
13. Click the *Input Mask* entry line in the lower pane.
14. Type **(999) 999-9999** to indicate that data will automatically include parentheses and a hyphen as shown.

NOTE: You may want to read the Access Help screens on "Input Mask properties" to see a list of all possible mask symbols and their uses.

15. Press  to accept the input mask.

Access will insert some additional formatting characters into the mask. Do not be concerned.

16. Click anywhere within the upper pane.

NOTE: To see if a validity check has been set for a given field or to change it, simply click or highlight the desired field and then review the settings on the bottom pane of the window.

In the future, you might also want to set a default value to be used for *all* records. To do this, simply identify the field, select *Default*, type the desired value, and press the  key.

Saving the Table Structure

When you've finished creating a table structure, you must save it for future use. Complete the following steps to save the table:

1. Right-click the *SALES* tab at the top of the design screen and then click *Save* in the list that appears. (You could also click the *File* tab and then the *Save* option.)
The table structure will be saved on your diskette, flash drive or folder. Now, to close the table and database, complete these steps:
2. Close the Table Structure window by right-clicking the *SALES* tab and then *Close* (or click its *Close* button at the extreme right of the tab row).
3. Close the Database window by clicking the *File* tab and then *Close*.

NOTE: If you want to stop, you can exit Access now by clicking the program *Close* button, or you can go on to the next lesson.

LESSON 3: ENTERING DATA AND EXITING

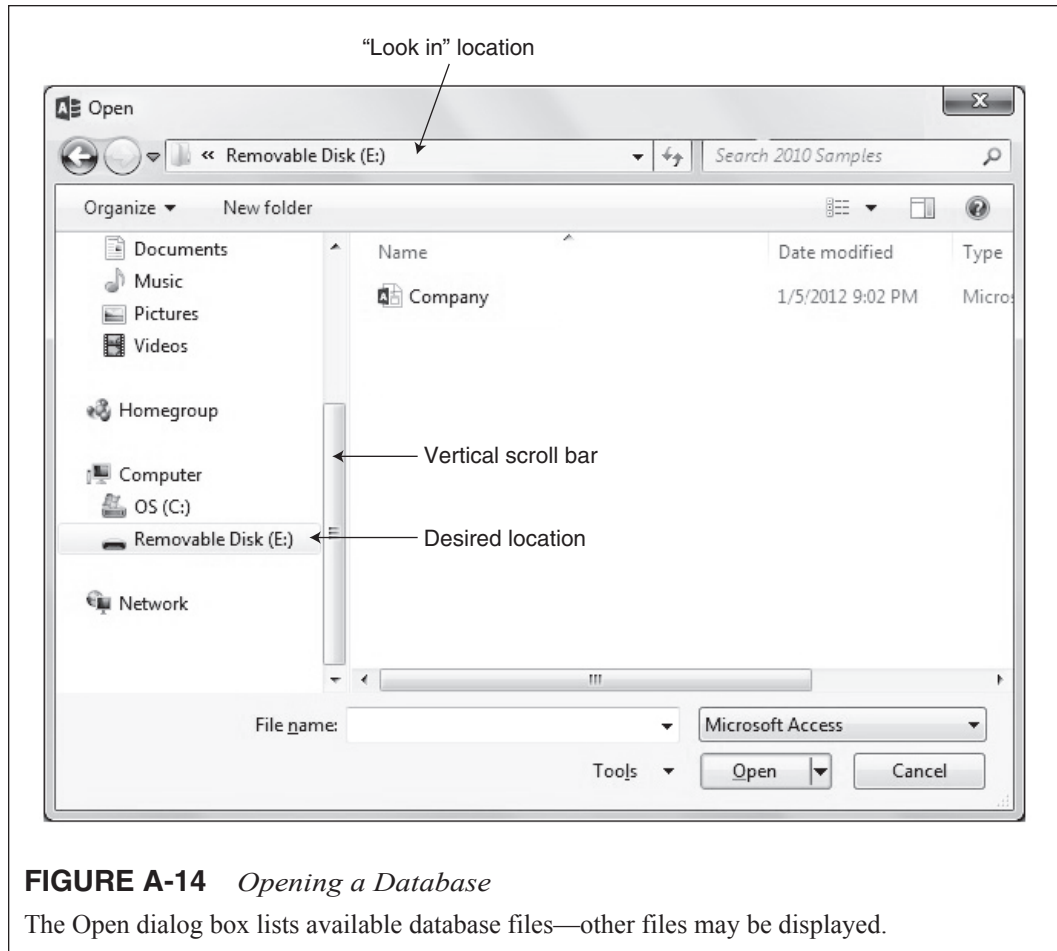
Now that you've created a database and table structure, your next task is to enter data for individual records into the table.

1. If you've exited from Access, launch it now (if needed, review Lesson 1).
You must now open the *Company* database and its subordinate *SALES* table for use.
2. If the *Recent Database* pane displays the correct "Company" database, simply click *Company* now. Go to step 8.
3. If the "Company" database does not appear in the pane, click the *Open other files* option in the left list.

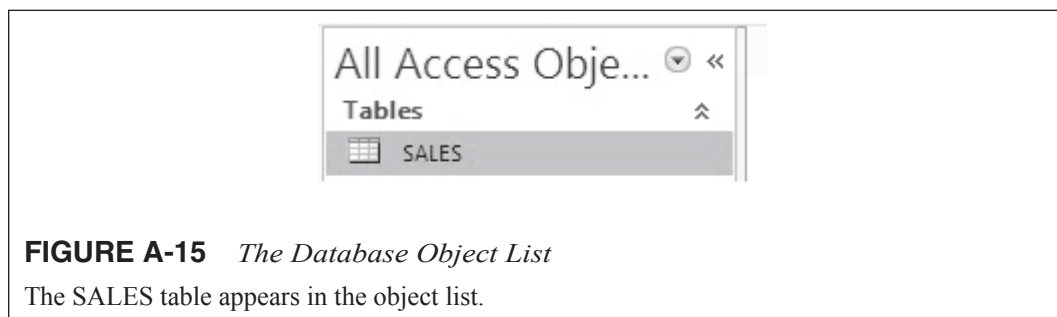
NOTE: If you're not sure which button to use, point to the button for a moment with your mouse and wait. The button's title appears below it in a "tool tip" box. Once you confirm that the button is correct, click it.

4. Double-click the *Computer* option in the *Places* list.

An *Open* dialog box appears as in Figure A-14.



5. Check the entry in the *Look in* box. If it is not the appropriate folder, change it now (use the vertical scroll bar and click the desired location).
6. Click the desired database—*Company*—to highlight it.
7. Click *Open*.
8. If a Security Warning appears on the screen, check with your instructor as to the proper procedure. Typically, click the *Enable Content* button.
9. Examine the object list for the *Company* database, which appears in the left pane, as shown in Figure A-15. Each item in the pane is an object associated with the *Company* database file. (As you create each, it will appear in the list.)



10. Double-click the *SALES* table to open it.

An empty table appears, as shown in Figure A-16. The column sequence and headings match the fields you specified in your table structure. Note that your screen's status bar shows that you will be working on Record 1 of 1—all tables contain one blank record.

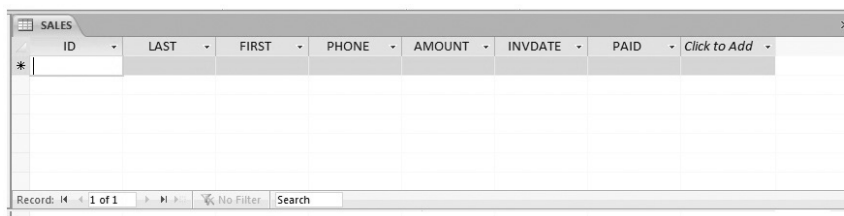
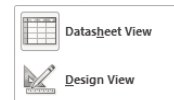


FIGURE A-16 *The Empty SALES Table*

NOTE: You can view a table in *Design view* or *Datasheet view*. As you have seen, in Design view you work with a table's *structure*—you can create, view, or modify it in this view. In Datasheet view, you work with the table's *data*—and can view, add, delete, or edit as needed. In Datasheet view, data are presented in column and row format (fields are columns and records are rows). To switch from one view to the other, click the appropriate *View* button in the lower-right corner of the window.



11. You may want to type everything in capital letters as it is shown in this manual. If so, press the **CAPS LOCK** key now.

Table A-2 contains the data you will enter for the first six records that you want to place in your SALES table. For instance, the first record shows Lionel Twain, whose ID is 005, PHONE is (213) 555-1234, AMOUNT is 234.65, and DATE is 10/7/10. Note that there is no value listed for the PAID field, which will come later in the module.

ID	LAST	FIRST	PHONE	AMOUNT	INVDAT
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/16
008	PARKER	CARR	(212) 555-9876	\$1,256.80	7/6/16
034	KERCHIEF	HANK	(212) 555-1023	\$130.95	4/25/16
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/16
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/16
086	ROSKOPE	MIKE	(213) 555-1458	\$1,045.35	2/17/16

TABLE A-2 *Data for the First Six Records*

Entering Data into a Table

An insertion point appears in the first column, showing where your entry will be placed. An asterisk pointer in the left margin shows the new record. The status bar displays the

field definition you entered earlier as a prompt for data entry—in this example, “Customer ID Number.” Entering data into the table couldn’t be easier. Simply type the data and then press . If the entry exceeds a specified field width (or violates a validity check), Access will not let you enter it. An error message will appear in a window advising you of the mistake and expecting you to take some corrective action. Otherwise, the entry will be accepted and the insertion point will move to the next field.

NOTE: To fix an error, use an arrow key or backspace to move to the error, re-type it, and press  to accept the correction. You can also use  and  +  to move among the field columns.

Refer to Table A-2 as you work to see what data you must enter into each record. You will also get a chance to see how the validity checks help with data entry. The first item is an ID of 005.

1. To place 005 into the first record, type **005** and press .

The value is accepted, and the insertion point moves to the next column.

2. Type **TWAIN** and press .

The insertion point moves again. Remember, the LAST name field is required. Access will not let you proceed unless you enter a last name.

3. Next, type **LIONEL** and press .

The insertion point moves to the PHONE column. Because you created an input mask for this field, you need only type its numerals. The parentheses and hyphen will be added automatically. Try the following steps:

4. Type **213** with *no* parentheses.

Note that the parentheses are automatically added to your data. Now continue with the remaining digits as follows:

5. Type **5551234** and press . Do *not* type any hyphen.

The input mask automatically adds the hyphen in the proper position. You’re now in the AMOUNT column. Recall that you set a maximum limit for this field. To see how this validity rule works, enter a number that exceeds \$5,000 as follows:

6. Type **8000** and press .

Note that the insertion point does not move and the error message you created earlier appears, as shown in Figure A-17.

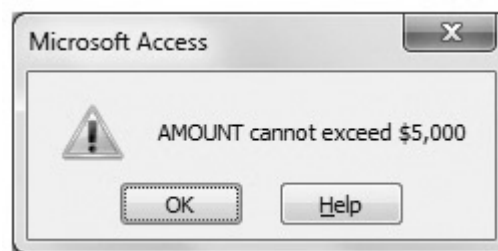


FIGURE A-17 *Testing a Validity Check*

The error message you entered earlier explains the current error.

You cannot proceed until the error is corrected. To do this, you must acknowledge the error, erase the entry, and then retype it as follows:

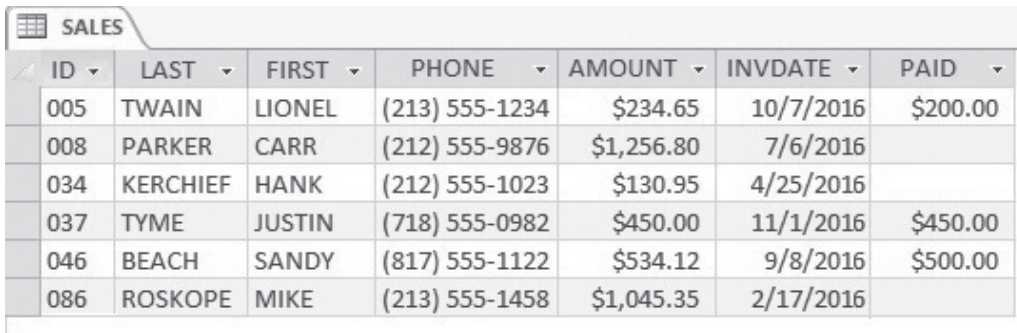
7. Click the *OK* button to acknowledge the message and remove the dialog box from the screen.
8. Press **BACKSPACE** four times to erase the incorrect entry.
9. Type the correct entry of **234.65** (decimal point but no dollar sign) and press **↵**.
The entry is now accepted, and the insertion point now moves to the next field.
10. Type **10/7/10** in the DATE field and press **↵**.

NOTE: If the typed date is invalid (the month is not between 1 and 12 or the day exceeds the allowable number for the month), Access' built-in validity check will not accept it. To correct this, click the *OK* button, press **BACKSPACE** and then re-enter the date.

11. Press **↵** to skip the PAID field for now.

Because PAID is the last field, Access takes you to a new blank row and awaits the second record. The asterisk pointer shows you the new record location.

12. Using Table A-2 as a guide, enter the remaining records (one to a row), typing all data as you did for TWAIN. Remember, type phone number digits *only*. When you finish the last record (ROSKOPE), the pointer should show the next record as shown in Figure A-18.



ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	\$200.00
008	PARKER	CARR	(212) 555-9876	\$1,256.80	7/6/2016	
034	KERCHIEF	HANK	(212) 555-1023	\$130.95	4/25/2016	
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	\$450.00
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	\$500.00
086	ROSKOPE	MIKE	(213) 555-1458	\$1,045.35	2/17/2016	

FIGURE A-18 The SALES Table with Six Records Entered

Although you can leave the table on the screen, it is wiser to clean up by closing windows when you no longer need them.

13. Close the datasheet window for the SALES table by clicking its Close button (on the extreme right of the tab row) or by right-clicking the SALES table tab and clicking Close.

Records are saved when you move the insertion point to another column or row. In addition, when you close a table's window, all its records are saved to your diskette, flash drive, or folder.

14. You can also close the main Company database window now by clicking the File tab and then the *Close* option.

Exiting Access

Leaving Access is easy. However, be sure you *always* leave the program by following the steps listed below. Otherwise, you may find that your tables have not been closed correctly.

1. Click the Access Close button. (If you are using a flash drive, *never* remove it while you are exiting Access.)

You will return to the Windows desktop. You could now shut down Windows using your routine procedure, if you wish to stop for now.

Quick Review #1

1. List the step-by-step procedure for launching the Access program.

2. How can you tell which table is in use?

3. What does setting the *Look in* entry accomplish?

4. What happens to data entry if you omit a required field?

5. Why is it important to close a database properly?

LESSON 4: ADDING NEW RECORDS

Adding new records to an existing table is almost identical to entering the original set. Practice adding records as follows:

1. If your computer is off, follow the Access launch procedure in Lesson 1. If appropriate, make sure your diskette or flash drive is properly placed before launching Access.
2. Open the Company database. (Click *Company* in the “Recent Database” pane or use the Open Other Files procedure.)
3. Open the SALES table. (Double-click *SALES* in the object list.)

Your screen should appear in Datasheet view, displaying a table that contains all six records. The asterisk “New Record” symbol (*) should appear in the bottom row indicating that the table is available for editing.

You must now position the record pointer at the end of the table so that you can add more records. In a small table, you can simply press **PGDN** or **↓** to move to the desired record. In a larger table, however, you should learn to use the record location menu, as follows:



4. Click the *New (Blank) Record* button on the status bar to move there immediately. The status bar shows that Access will add a seventh record to the table.
5. Using the data in Table A-3, enter the data for the four new records, as you did before. Remember to press **↵** to skip the PAID field and go on to the next record. You can use **←** to return to a previous field.

ID	LAST	FIRST	PHONE	AMOUNT	INVDAT
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/16
660	FEGIVIN	ALICE	(213) 555-6464	\$1,443.50	3/17/16
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/16
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/16

TABLE A-3 *Records to Be Added to the SALES Table*

6. After you've entered the VALE record, add one more record using an ID of 111, your own last and first names, any phone number, an amount of 100, and any date. Press  to skip the PAID field.

Your screen should resemble Figure A-19, which displays the completed table. Your name will appear in the final record (as mine does in the example).

SALES						
ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	
008	PARKER	CARR	(212) 555-9876	\$1,256.80	7/6/2016	
034	KERCHIEF	HANK	(212) 555-1023	\$130.95	4/25/2016	
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	
086	ROSKOPE	MIKE	(213) 555-1458	\$1,045.35	2/17/2016	
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/2016	
660	FEGIVIN	ALICE	(213) 555-6464	\$1,443.50	3/17/2016	
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/2016	
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/2016	
111	MARTIN	EDWARD	(212) 555-0000	\$100.00	1/1/2016	

FIGURE A-19 *The Complete SALES Table*

7. Close the table (right-click the SALES tab and click Close or click the *Close button* to the extreme right of the tab).
8. If you want to stop for now, close the database. Otherwise, continue to the next section.

LESSON 5: EDITING RECORDS

There are times when records must be edited to correct errors or reflect changes that have occurred since the time they were entered (updated). To practice the edit technique, you will now update the PAID field to show payments that have been made since the records were originally entered.

NOTE: The edit procedure can change the data in any field as needed. Use it to correct any typing errors you may have made.

1. If needed, launch Access following the procedure in Lesson 1.
2. Open the Company database and its SALES table.
You must position the pointer at the proper record for editing. In this case, you want to edit the first record. If the pointer is already on record 1, do nothing. Otherwise, position the pointer as follows:
3. Click the *First Record* button on the status bar.
The pointer should now indicate the first record.

NOTE: You can also press **PGUP**, **PGDN**, **↑**, or **↓** to move to any record from your current location in the table.

You can now change any data on the screen. Use the mouse or arrow keys to move the insertion point to the item, type the new information (using **BACKSPACE** or **DELETE** to erase any characters you do not need), and press **↵**. Use the edit technique to update the PAID field to reflect the amounts listed in Table A-4.

REC	LAST	FIRST	Change PAID to:
1	TWAIN	LIONEL	\$200.00
2	PARKER	CARR	\$1,000.00
3	KERCHIEF	HANK	\$130.95
4	TYME	JUSTIN	\$450.00
5	BEACH	SANDY	\$500.00
6	ROSKOPE	MIKE	\$1,045.35

TABLE A-4 Data to Be Updated in the PAID Field

4. Move to the PAID field with **→**. (Keep an eye on the FIRST name or status bar record number to be sure that you're editing the correct record.)
5. Look up the PAID value for record 1 in Table A-4. In this case, it's 200, so type **200** and, this time, press **↓**.

NOTE: Pressing **↓** keeps your insertion point in the same field column. You could press the **↵** key, but that would move you to the next field or, if you are at the end of a record, to the start of the next record.

6. Repeat this process to change the PAID field for the next two records only (PARKER and KERCHIEF).
Use the arrow keys to move from one record to another.
7. When you arrive at record 4 (JUSTIN TYME), stop.
You are going to try another entry technique with the remaining records. Access allows you to view or edit records either as a complete datasheet (as you have been doing) or as individual forms. In Datasheet view, records appear in separate rows. In Form view,

each record is given its own screen. It doesn't matter which view you use, and you can switch between them whenever you want. Try the following exercise:

8. Click the *Create* tab in the ribbon.
Your ribbon should now resemble Figure A-20.
9. Click the *Form* command button (in the Forms group) as shown in Figure A-20. (If a dialog box appears, asking you to Save, click the *Yes* button.)



As shown in Figure A-21a, a form displaying the data for a single record will appear in a window on the screen.

10. Click the *View* drop-down button (at the extreme left of the ribbon) and then Form View.

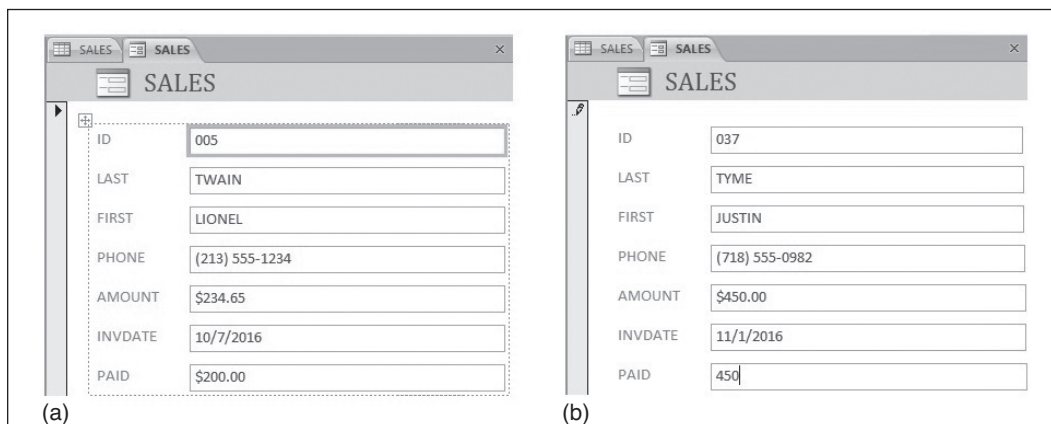


FIGURE A-21 Entering Data into a Form

- (a) A record displayed as a form.
- (b) The new data has been entered in the PAID field for TYME's record.

The highlighted bar shows the current entry position, as shown in Figure A-21a. Now continue to enter the remaining data as follows:

11. Move to Tyme's record. (Press **PGDN** three times or click Next on the status bar.)
12. Click the PAID field to move the highlight to it.
13. Type **450** as in Figure A-21b, and press **↵**.

NOTE: The data in the PAID field is updated, and the next record appears.

14. Click the next PAID field (or click ↓ to move to it).
15. Type **500** and press .
16. Click the PAID field for ROSKOPE and enter his data (**1045.35**) in the same manner.

Now that you're done, you can save this form so that it will be available to you in the future, or simply re-create it each time it is needed. In actual use, you will want to save customized forms with the following procedure. To save the form:

17. Click the File tab and then Save.
A Save As dialog box appears to save the new form.
18. Type **SALES1** and then click *OK* to save the form with this name.
19. Close the *Form* window (click its Close button or right-click the SALES1 tab and click Close).

You should now be back in the Datasheet (table) view again. Examine the table, noting the added data now displayed in the PAID field. You may have to press the arrow keys to move to the PAID field column. Now that you're done, clear the entire desktop as follows:

20. Close the table (click its Close button or right-click the SALES tab and click Close).
21. Close the Database (File tab, *Close*). You can exit Access for now or continue.

LESSON 6: VIEWING TABLE DATA

What good are tables, records, and data unless you can view them on the screen in a useful format? At times, you will want to move around a table to see specific data or to view your data in a format different from the one you used to enter them.

Access allows you to adjust the on-screen appearance of your data by offering options to change justification, type style, size, and color. Although you are encouraged to examine these options, they are beyond the scope of this brief manual.

In this section, you'll practice moving around a datasheet table and adjusting some characteristics (properties) of its component parts (objects). To prepare to do this, complete the following steps:

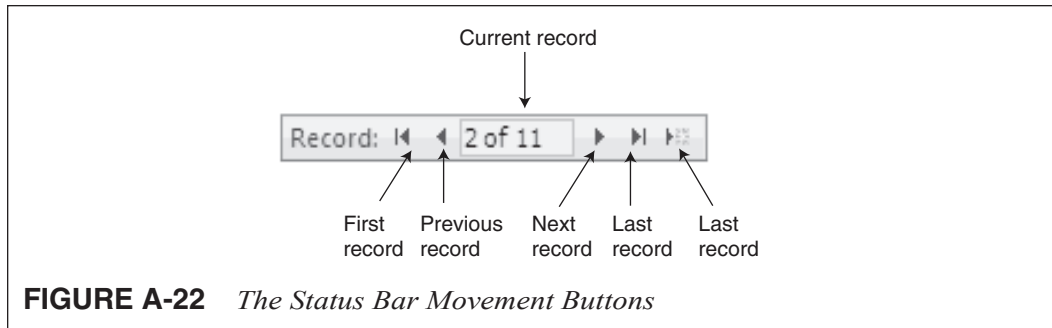
1. Launch Access and open the Company database.
2. Open the SALES table.

Although there are only eleven records in the SALES table, you can practice techniques applicable to moving around tables of any size.

Status Bar Movements

As you have seen, the status bar offers mouse shortcuts that allow you to reposition the pointer at various records within the table. Refer to Figure A-22, which displays the appropriate buttons, as you try some of these quick table movements.

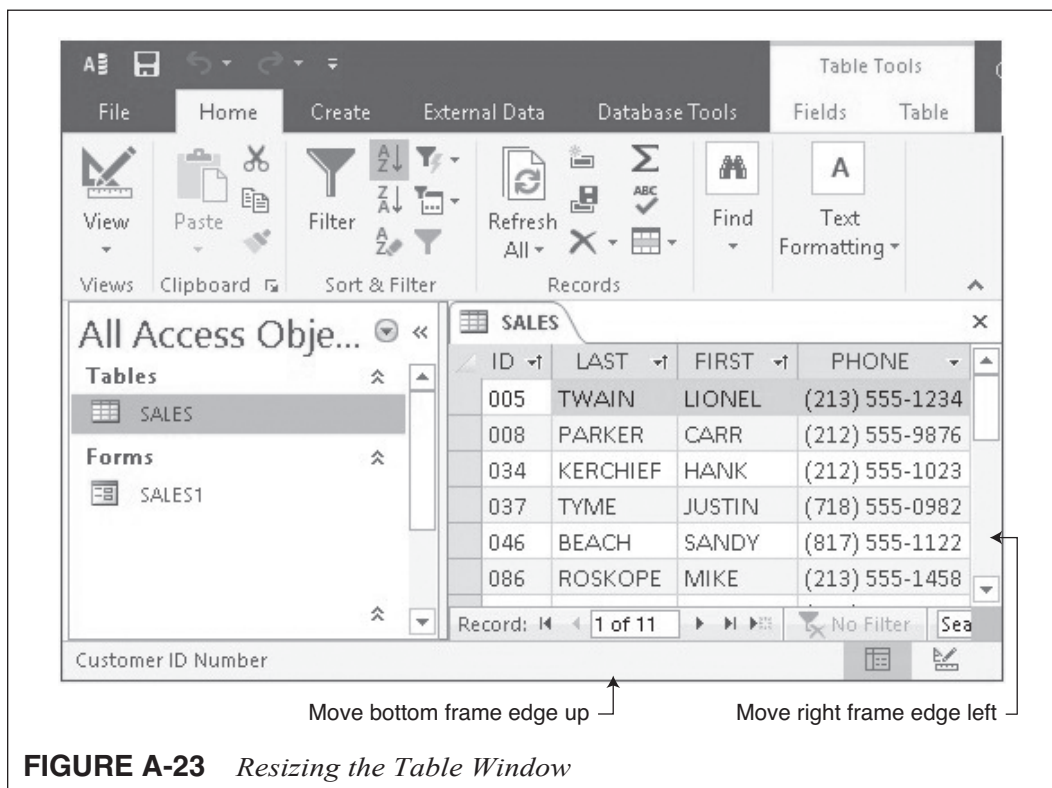
-  1. Click the *Last Record* button to position the highlight at the last record in your table.
-  2. Click the *First Record* button to move to the first record.
-  3. Click the *Next* button to move down one record (or press .
-  4. Click the *Previous* button to move up one record (or press .



Techniques with Larger Tables

Although you can maximize any table window to see more of its contents, there will be times when your table will contain more fields or records than the screen can display at any given time. The **PGDN** and **PGUP** keys are useful when this situation occurs. **PGUP** moves the pointer a full screen of records upward, whereas **PGDN** moves a full screen of records down the list. You can also use the vertical or horizontal scroll bars (as in any window) to view additional records as needed. To see this more clearly, you will now resize the table to simulate a window that cannot show all records or fields, as follows:

1. Click the *Restore Down* button on the program window (second button at the upper-right).
2. Point to the bottom frame of the table window, just below the status bar. Click and drag the frame upward so that only about six records are displayed, as in Figure A-23. Then, release the mouse button.



- Now drag the right frame of the table window to the left until the AMOUNT field is no longer visible (as in Figure A-23). Release the mouse button.

A Vertical scroll bar now appears in the window. First, you will practice some vertical moves by following these steps:

- Press **PGDN** to see the next screenful of records.
- Press **PGUP** to move back up one screenful.

Now try using the scroll bar:

- Click the *down arrow* at the bottom of the vertical scroll bar to scroll down the list of records; then click the *up arrow* at the top to scroll upward. (Of course, as in any window, you can also move by dragging the vertical box in the scroll bar.)

Now, try the following horizontal move:

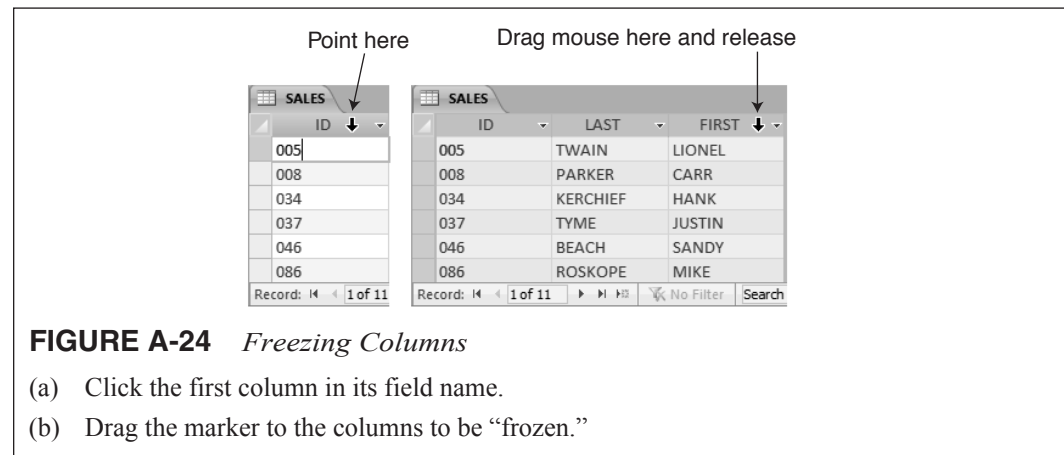
- Press **→** to scroll right through the columns until you see the PAID field.

Note that the ID and LAST fields have disappeared. Don't worry; they are still part of the table, but are just not visible in the window at the moment. This is a typical problem in tables with a large number of fields—you may not be able to view all of the fields you need at the same time. Fortunately, there are two ways to fix this: Use field freeze or reposition the fields. You'll look at both techniques now.

Field Freeze

Freezing a field column means marking it so it remains on the screen as you scroll horizontally through a table. You can freeze one or more fields at the left of a table and then move to view others at the right. You do this by invoking the freeze command at the desired position. Here's how:

- Press **←** until you are in the leftmost column, which displays the ID field.
- Point to the ID field name at the top of the column, so that the mouse pointer changes to a downward arrow, as shown in Figure A-24a.

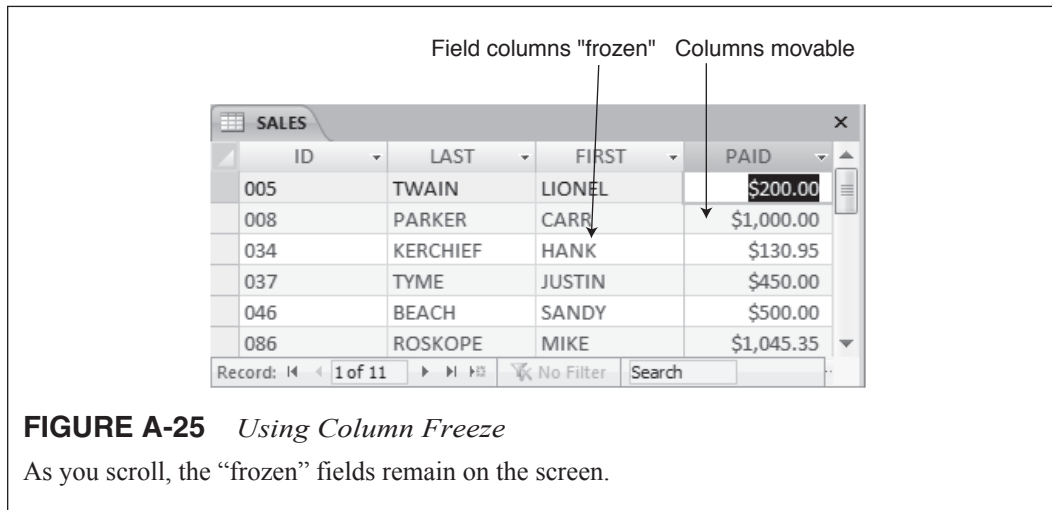


- Click and then drag the new pointer to the right until it points to the FIRST name column, as in Figure A-24b. The ID, LAST, and FIRST fields should appear highlighted. Release the mouse button.
- Right-click at the top of the "FIRST" column to open a shortcut menu.
- Click the *Freeze Fields* option in the list. The three field columns are now "frozen."
- Scroll right (press **→**) to see the PAID field.

As shown in Figure A-25, the column freeze keeps the three columns in place, allowing you to view other fields as needed. You can set the freeze at any column, including as many (or as few) fields as you want.

To shut off the field freeze, complete the following steps:

- Right-click at the top of the “FIRST” column and then click *Unfreeze All Fields* in the list.

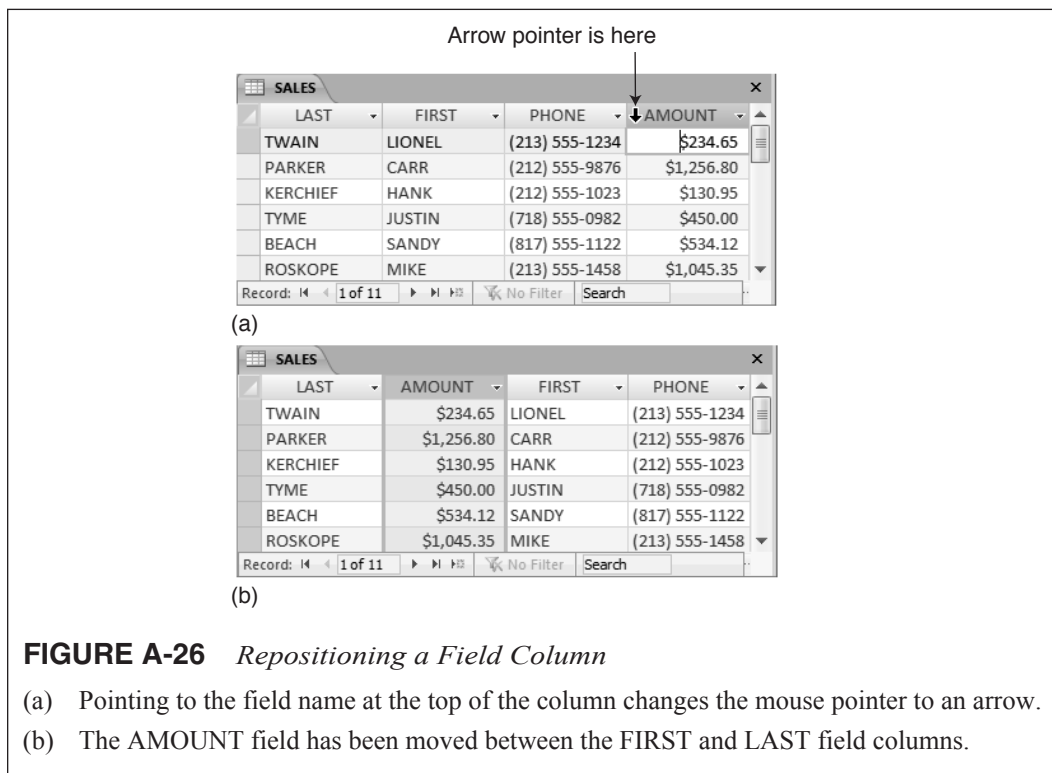


Because there are now no frozen columns, the window will scroll normally again.

Repositioning Fields

The second technique that allows you to view desired fields together simply repositions them on the screen exactly where you want them. For example, you will now move the AMOUNT column next to the LAST column.

- Move to the AMOUNT column. (Use the arrow keys or simply click it if it is visible.)
- Move the mouse pointer to the top of the AMOUNT column until its shape changes to a small arrow, as in Figure A-26a.



3. Click the mouse button. Note that the AMOUNT column is highlighted.
4. Now, point to the AMOUNT field name (in the top row). Then, click and drag the pointer left, until it is to the left of the FIRST name field. The screen will automatically scroll as you move.
5. Release the mouse button.

As shown in Figure A-26b, the AMOUNT field will now appear to the left of the FIRST name field.

NOTE: You can reposition fields as often as you want. The changes will not affect the table's operation and will not be saved, unless you accept them when you close the window.

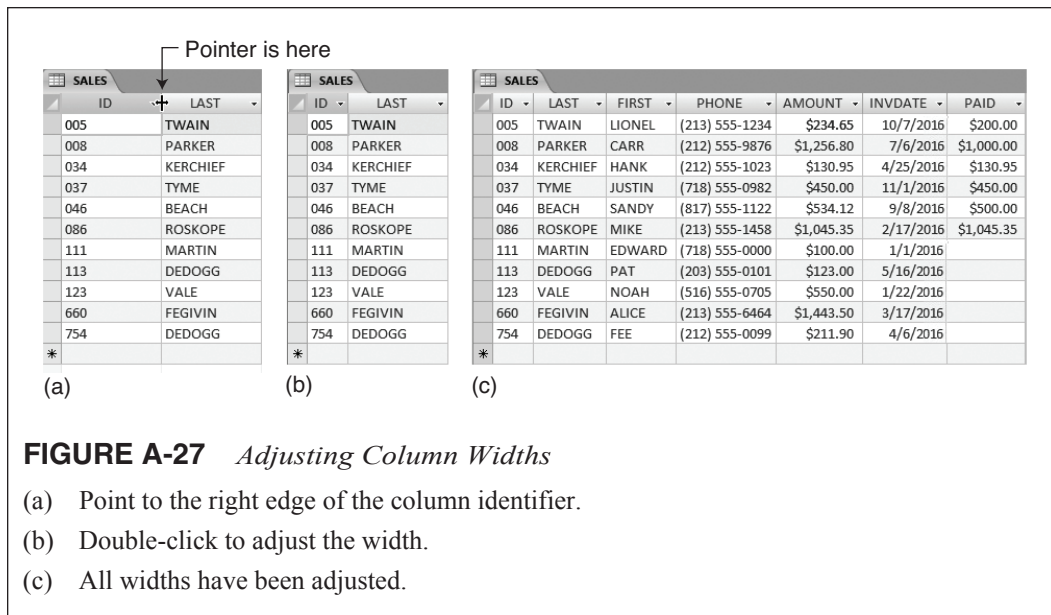
Practice using the status bar, arrow keys, scroll bars, field column freeze, and field repositioning. When you have mastered these techniques, close the table as follows:

6. Maximize the window. (Click its Maximize button.)
7. Close the table. (Right-click the SALES tab and click Close.)
Because you have changed the table's properties, a dialog box will ask if you want to save the changed layout.
8. Click the *No* button to leave the table in its original format, prior to the changes you made.

Adjusting Column Width

At times, your columns will be too wide for your data. Although this is not harmful, you may want to automatically adjust them to save space and more easily view the data on the screen. Try this:

1. Open the SALES table for use. (Double-click the SALES:Table object.)
2. As shown in Figure A-27a, point to the right side of the ID column frame. (When positioned correctly, the mouse pointer changes to a horizontal line with two arrows.)
3. Double-click this place in the frame.
The width of the column is automatically adjusted to fit the largest data in the column (in this case, three characters), as shown in Figure A-27b.
4. Repeat this procedure on the six remaining columns, so that your screen resembles Figure A-27c.
5. Right-click the SALES tab and then click *Save* to save these changes.
6. Close the table.



Printing a Table

Tables are easy to print. Although you will learn how to generate a formal report of table data later in this module, the following technique shows you how to print the table for immediate use.

1. Open the SALES table for use.
It is always a good idea to preview your printing before actually sending it to paper. This avoids wasted paper and time. Try this:
2. Click the File tab, click the *Print* option, and then click *Print Preview* in the list that appears on the right.
A small screen image of your data appears as it will look when printed.
3. Click the *Zoom In* button (the “+” at the extreme right of the status bar) five times to set a 90% zoom.
The image enlarges to resemble Figure A-28.
4. You could scroll around this image to examine it if desired. For now,
5. Click the *Close Print Preview* button in the ribbon to close Print Preview.
When you want to print the data:
6. Make sure your printer is ready.
7. Click the File tab and then *Print*.
8. Click the Print option in the list that appears.

A Print dialog box appears. This box allows you to specify the number of copies and pages that will be printed. You could print one copy of the table by clicking OK. But for now, continue as follows:

9. Click *Cancel*.

SALES						
ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	\$200.00
008	PARKER	CARR	(212) 555-9876	\$1,256.80	7/6/2016	\$1,000.00
034	KERCHIEF	HANK	(212) 555-1023	\$130.95	4/25/2016	\$130.95
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	\$450.00
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	\$500.00
086	ROSKOPE	MIKE	(213) 555-1458	\$1,045.35	2/17/2016	\$1,045.35
111	MARTIN	EDWARD	(718) 555-0000	\$100.00	1/1/2016	
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/2016	
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/2016	
660	FEGVIN	ALICE	(213) 555-6464	\$1,443.50	3/17/2016	
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/2016	

FIGURE A-28 *The Printed Version (and Preview) of the SALES Table*

Viewing the Table Structure

At times, you may want to review the exact arrangement of your table: its field names, types, sizes, and validity checks. This is useful when you are considering modifying its structure (adding or deleting fields) or preparing reports.

To view a table structure on the screen, complete the following steps:

1. Open the Company database and SALES table for use if needed.
2. Click the *Design View* button (right edge of status bar).



The table structure window appears on the screen (as you've seen in Figure A-12), displaying your field list. You can move the pointer down through the listed fields to examine their individual validity checks.

3. When you are finished, close the table.
4. Close the main database as well.

NOTE: RESTRUCTURING THE TABLE—To *restructure* the table itself, move the insertion point to the appropriate field. You can change field names, type, or size. To add new fields, move to the row where you want the new field to appear and press **INSERT**; then fill in the new information. To delete an old field, right-click its row and click *Delete Row*. When you finish making changes, close the window and then accept the changes as desired.

LESSON 7: THE QUERY COMMAND

One of the advantages of a database program is its ability to search through a table to select those records that meet certain criteria. At times, you will want to see only specific records—for example, those with phone numbers in the 213 area code or records with a last name of SMITH. Other times, you will want to view only selected fields.

In these instances, you can create a *query* that will allow you to designate specific criteria to be used when searching for records to be viewed. Queries are questions you ask of a table. You can use queries temporarily and then discard them, or save as many queries as you want, and then open each one for use whenever you need it. Assume you want to create a query that will include only those records whose AMOUNT field exceeds \$500.

Creating a Query

1. Launch Access if needed and open the Company database.
2. Click the *Create* tab in the ribbon.
3. Click the *Query Design* command button (*Queries* group).

A Show Table dialog box appears. Here you must indicate the table name that the query will use in developing its answer. Although you can type field names directly, specifying a table name will make it easier to select fields as you need them.

4. Click the *SALES* table if needed to highlight it.
5. Click the *Add* button to add this table to the query.
6. Now click its close button to remove this dialog box from the screen.

A Query window appears, as in Figure A-29. A table box with field names appears at the upper left. Empty field columns appear at the bottom of the window. These columns control what fields will appear in the final result and how records will be selected.

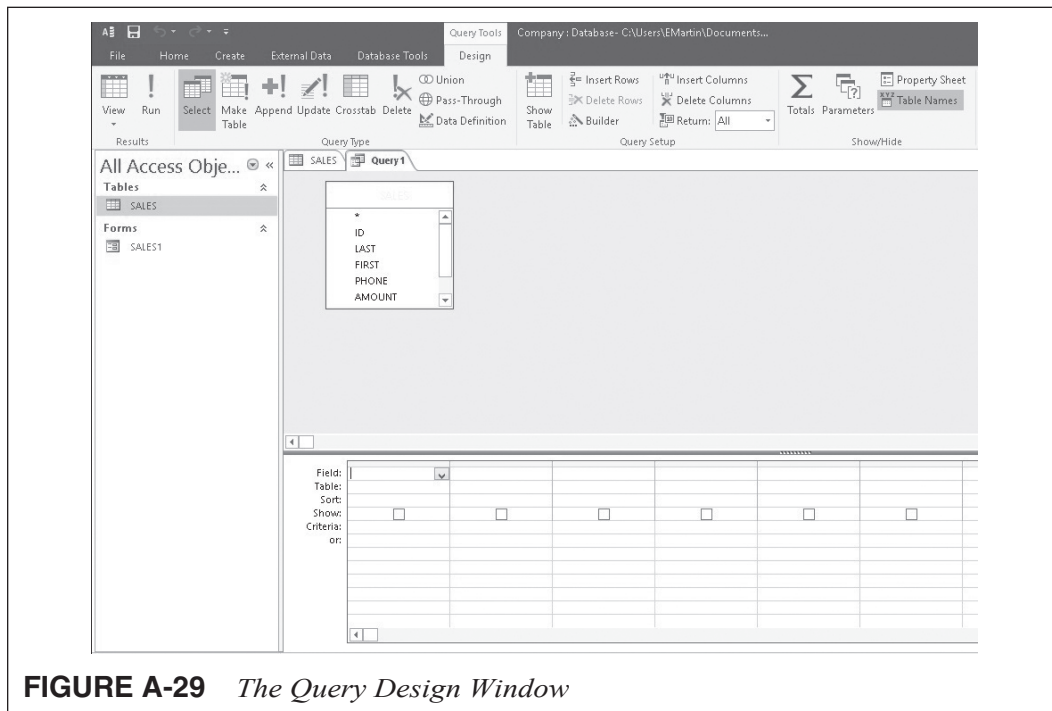


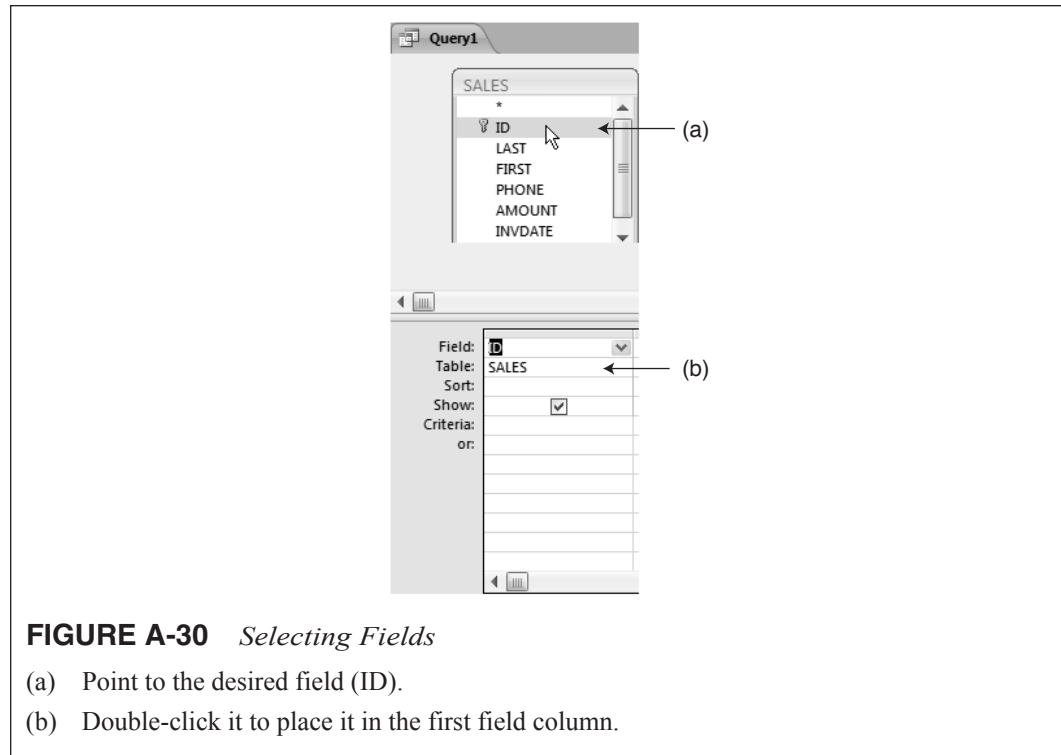
FIGURE A-29 *The Query Design Window*

Access uses a Query-by-Example or QBE technique. In QBE, you move to a field column, select a field, and then type an example of what you are seeking. You can also type a search condition (criterion) that explains the acceptable data limits. When the query is run, Access finds the records that meet your search pattern. Although you can create very sophisticated searches, you will examine only the basic ones here.

Selecting Fields

If you want all fields to appear in the query's answer, you need only double-click the asterisk in the *SALES* table list. In this example, however, you will learn how to select individual fields, to control the fields (and order) that will be used in response to the query. In this query, you'll include ID, FIRST, LAST, and AMOUNT. Here's an easy way to do this:

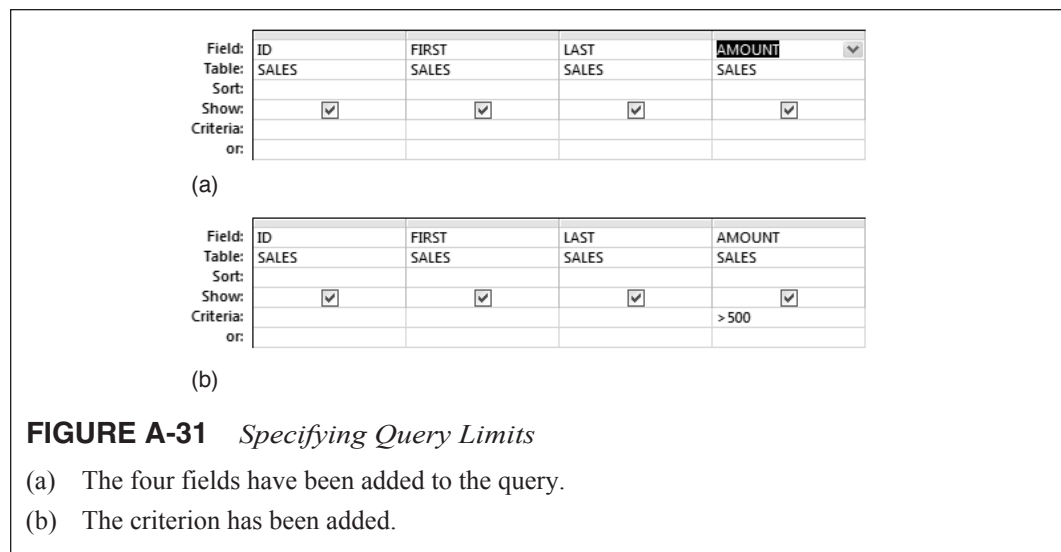
1. Point to the ID field in the *SALES* table list as shown in Figure A-30a.
2. Double-click the *ID* field.



The field is copied into the first field column, as shown in Figure A-30b. Note that a check mark appears in the Show box, indicating that this field will be displayed.

3. Double-click *FIRST* in the *SALES* table list to place it into the second column.
4. Double-click *LAST* in the *SALES* table list to place it into the third column.
5. Double-click *AMOUNT* in the *SALES* table list to place it in the fourth column.

The bottom portion of your screen should resemble Figure A-31a.



NOTE: You can add fields in any order in a query—they need not match the order of the table.

To specify query limits for one (or more) fields, you can simply move to the appropriate field column, and type in an example or a search condition, as you will see next.

NOTE: If you do not specify at least one search criterion, all records will be included.

For example, to restrict the query search to all records whose AMOUNT field exceeds \$500, complete the following steps:

6. Click the *Criteria* row of the AMOUNT column.
7. Type >500 and press  as in Figure A-31b.

NOTE: You can use many different relational operators to set conditions. These include operators such as: = (equal to), > (greater than), < (less than), <> or NOT (not equal to), <= (less than or equal to), >= (greater than or equal to), and LIKE (pattern match).

8. You can now click the *Run* command button (*Results* group).

As shown in Figure A-32, a Query table appears on the screen displaying those records with AMOUNTs greater than 500. This list, known as a *dynaset* (short for dynamic set), is the response to a query. If you save the query, you can use it and its dynaset in the future.



Query1			
ID	FIRST	LAST	AMOUNT
008	CARR	PARKER	\$1,256.80
046	SANDY	BEACH	\$534.12
086	MIKE	ROSKOPE	\$1,045.35
660	ALICE	FEGIVIN	\$1,443.50
123	NOAH	VALE	\$550.00
*			

FIGURE A-32 The Resultant Query Dynaset

9. Close the Query table (right-click its tab and then click *Close*, or click the Close button at the extreme right of the tab row).

A dialog box appears, asking if you want to save the query. Most queries are one-of-a-kind in nature and need not be saved. However, you can save a specific query if you plan to use it again. In this example, save the query as follows:

10. Click the *Yes* button.
11. In the *Query Name* entry box that appears, type **SALES Q1** and click *OK*.
The query is saved for future use and will appear in the Database's object list.

Using a Query

Whenever you want to search for certain records, you need only invoke the specific query you want, and then view or use the dynaset it generates. Only the records that match the query condition will be included. Here's an example:

1. Open the Company database if needed.

2. Double-click the *SALES Q1* object.

The dynaset response to the query you created earlier returns to the screen.



NOTE: You can switch between query design and datasheet by clicking the *View* drop-down arrow and then the view selector buttons as needed.

When you no longer need a search condition, you can close the query table and then open the table from which it was generated. When you open the original table, all the records will reappear, as follows:

3. Close the query table.
4. Open the SALES table (double-click *SALES:Table*). Note that all the records are still in the database.
5. Close the table.

Editing a Query

You can edit queries as your needs change. For example, you will now change the SALES Q1 query to show FIRST, LAST, and PHONE fields only for AMOUNTs that are \$1,000 or less.

1. Open the SALES Q1 query in design view from the Company database dialog box. (Double-click *SALES Q1*, then click the *View* drop-down arrow in the ribbon and then the *Design View* selector button.)

The Query Design window reappears. Unlike a blank query screen, a retrieved query retains whatever settings were placed in it when it was last saved.

Changing a Criterion

2. Click in the criteria row of the AMOUNT column (where it currently shows >500).
3. **DELETE** the >500, type <=1000 and then press **↵**.

Of course, you can assign any condition to the appropriate columns in the future.

Changing Fields in the Query Table

You can also add or remove fields to control which will be included when the query dynaset is generated. First, you will remove the ID column. Here's how:

4. Select the desired column (namely, ID) by pointing to the bar above the field row, as shown in Figure A-33a.

As you have seen earlier, the mouse pointer changes to a down arrow.

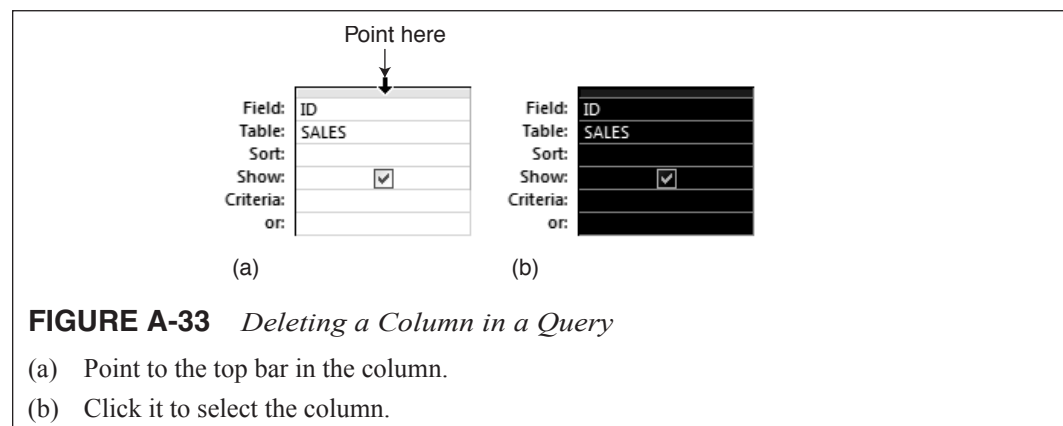


FIGURE A-33 *Deleting a Column in a Query*

- (a) Point to the top bar in the column.
- (b) Click it to select the column.

5. Click the mouse to highlight the column, as in Figure A-33b.

6. Press **DELETE**.

The column disappears, showing that this field will no longer be included in the dynaset. (Remember, this does not change the original data—it just removes this column from the display.)

You can also add fields to be displayed in the dynaset. For example, to add the PHONE field in the third column, do the following:

7. Click the *Field* row in the third column—it currently contains AMOUNT.

8. Click the *Insert Columns* command button in the ribbon (*Query Setup* group) to insert a new field column.

You can now select a field to display here.

9. Access the field list for this column by clicking the drop-down arrow in the Field row, as shown in Figure A-34a.

10. Click the *PHONE* field, as shown in Figure A-34b.

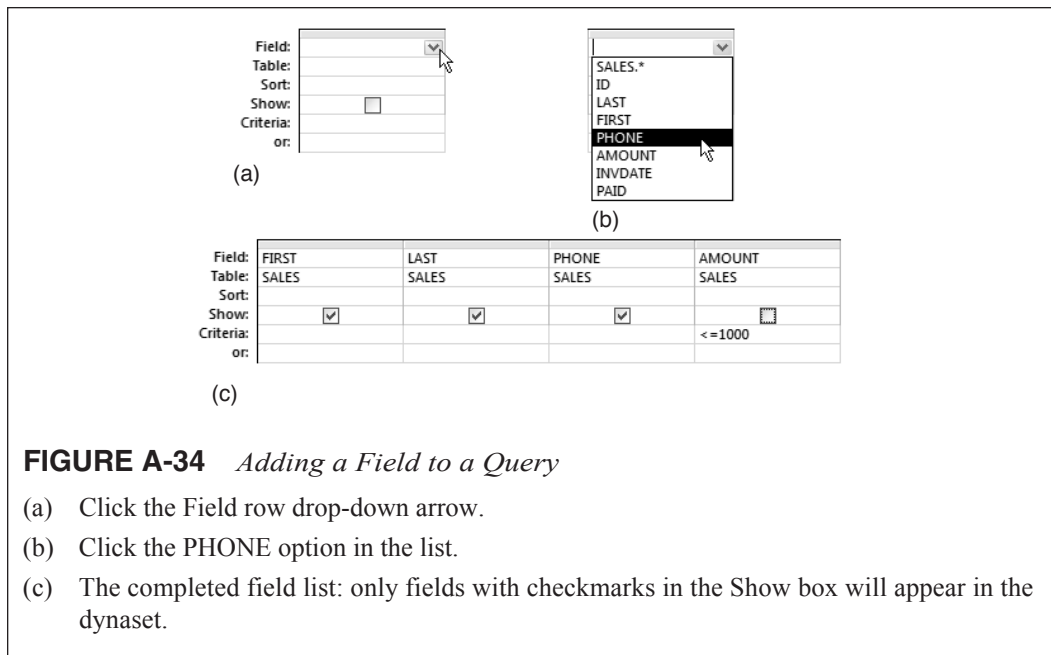


FIGURE A-34 Adding a Field to a Query

(a) Click the Field row drop-down arrow.

(b) Click the PHONE option in the list.

(c) The completed field list: only fields with checkmarks in the Show box will appear in the dynaset.

NOTE: If you were to double-click the *PHONE* field in the SALES table list, Access would place it in the next available column at the right. Steps 7–10 are only necessary when you want to place a field somewhere other than at the end.

One more change. Let's say you did not want to display the AMOUNT in the dynaset even though it will be used to select records. You can easily control which fields are displayed through the Show box in each column.

11. Click the *check mark* in the Show box of the AMOUNT column to remove the check from the box.

The check marks in the Show boxes now indicate that only the fields FIRST, LAST, and PHONE will be included, as in Figure A-34c. If your screen is different, change it now to match.



12. Run the query (click the *Run* command) to generate the dynaset shown in Figure A-35.

This query yields the FIRST, LAST, and PHONE for records in which AMOUNT is less than or equal to \$1,000.

SALES Q1		
FIRST	LAST	PHONE
LIONEL	TWAIN	(213) 555-1234
HANK	KERCHIEF	(212) 555-1023
JUSTIN	TYME	(718) 555-0982
SANDY	BEACH	(817) 555-1122
PAT	DEDOGG	(203) 555-0101
FEE	DEDOGG	(212) 555-0099
NOAH	VALE	(516) 555-0705
Your name appears here		(718) 555-0000
*		

FIGURE A-35 *The Query Dynaset with Restricted Fields*

As expected, only three fields are listed in the dynaset.

13. When you are finished looking at the dynaset, close it.

A dialog box will appear, asking if you want to save the modified query.

14. Click *Yes* to save the modified query as SALES Q1.

The query will be saved again for future use. You can create or modify as many queries as you like. You can give each new query a different name, or use an existing name to replace an old query with the new one.

Creating Multiple Criteria

You can also create multiple criteria that allow you to ask more than one question in the query. For example, if you type two criteria on the same row in different fields (as in Figure A-36a) or in the same field, separated by an “and” (as in Figure A-36b), both criteria must be met for the records to be included in the resulting table. This is called an AND connector, because both the first criterion *and* the second criterion must be met. If you type criteria on separate lines (Figure A-36c), either one can be met to include records. This is called an OR connector, because either the first criterion *or* the second must be met, but not necessarily both.

(a)

Field:	FIRST	AMOUNT
Table:	SALES	SALES
Sort:		
Show:	☒	☒
Criteria:	"M"	>100
or:		

(b)

Field:	FIRST	AMOUNT
Table:	SALES	SALES
Sort:		
Show:	☒	☒
Criteria:	>100 and <=500	
or:		

(c)

Field:	FIRST	AMOUNT
Table:	SALES	SALES
Sort:		
Show:	☒	☒
Criteria:	>100	
or:	"M"	

FIGURE A-36 *Creating Multiple Criteria*

- (a) “AND” in two fields.
 (b) “AND” in same field.
 (c) “OR” in two fields.

Access Practice Sheet

Your Name: _____

Class: _____ Date: _____

For questions 1 through 4, fill in an appropriate field name, type, and width in the blanks on the right. Be sure to correctly identify the type of data (number, date, or alphanumeric). Then, in the last blank, write a sample of how you might expect the data to appear. Your example should reflect the characteristics you defined. Use the sample as a guide:

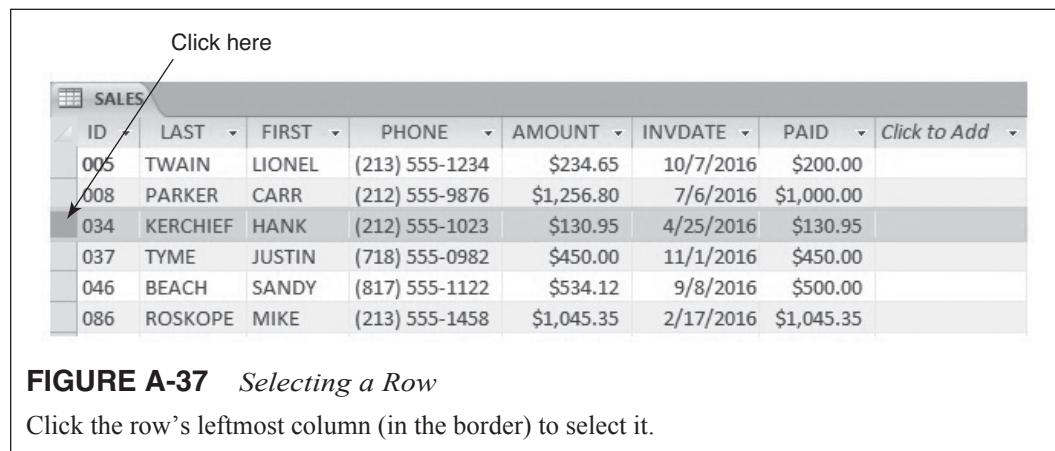
	FIELD	NAME	TYPE	SIZE	EXAMPLE
	Sample: First Name	FIRST	Text	10	EDWARD
1.	Phone number	_____	_____	_____	_____
2.	Date of birth	_____	_____	_____	_____
3.	Social Security #	_____	_____	_____	_____
4.	Amount owed	_____	_____	_____	_____
5.	How are currency fields different from number fields?	_____			
6.	What commands can you invoke to tell Access to begin the procedure to ADD new records?	_____			
7.	How does Access indicate the field in which you are currently typing?	_____			
8.	What condition should be placed in the PAID column of a query design to find records whose PAID field equals zero?	_____			

LESSON 8: DELETING RECORDS

At times, you will want to delete records from your table. Deleting records is easy, but can have dire consequences. Once you delete a record, it is gone forever. So, be careful! First, you will practice deleting record 3 for HANK KERCHIEF.

Deleting One Record at a Time

1. Launch Access, open the Company database, and open the SALES table for use.
2. Select the third record (ID 034) by clicking the row's leftmost column (left of the ID field) as shown in Figure A-37.



Make sure that you have identified the correct record, because the next step will remove the record from the table *permanently*. You should look at the status bar to verify the record number and visually check the pointer at the left of the record. The entire row will be highlighted. If you marked the wrong row, click anywhere within the table (or press an arrow key) and then select the correct record.

3. Press **DELETE**.
A warning message appears. At this point, you could cancel the delete or accept it.
4. Click the Yes button.
The record is gone! It is no longer included in the list. Note that the records beneath it have been moved up and renumbered to reflect the change. The status bar also shows that only ten records remain.
5. Close the table.

Deleting a Group of Records

Using a more powerful query technique, you can delete those records that match certain criteria. For example, you might delete all records with AMOUNTs greater than \$600, or those records whose area code is 212. This procedure requires careful thought, for *every record that matches your criteria* will be deleted. Try the following technique:

1. Open a new query (Click *Create* tab, *Query Design* button) and add the SALES table for use with the query, then close the "Show Table" dialog box. (Review the technique in Lesson 7 if needed.)
A blank Query window appears. You can now specify the conditions that will select the records to be deleted.

2. Click the Deleate button (in the *Query Type* group of the ribbon).

As shown in Figure A-38a, the labels in the bottom screen have changed somewhat from the typical query.

NOTE: If a security warning appears below the ribbon, click *Options, Enable the Content, OK*, and then repeat from Step 1.

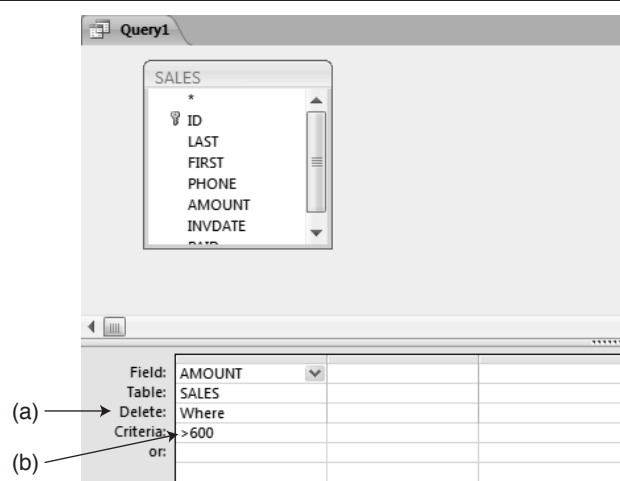


FIGURE A-38 *Setting the Delete Query*

- (a) The *Delete Query* label.
- (b) Type the desired criteria.

Now assign the criteria as you would in any query, by following these steps:

3. Place the AMOUNT field in the first column (double-click it in the SALES list—double-clicking from the table places the selected field in the next available column).
4. Click the *Criteria* row in the same column.
5. Type >600 and press (↵) as in Figure A-38b. This assigns the criterion that will be used to find the records.

WARNING! If you do not specify at least one search criterion, *all records* will be deleted.

It is always wise to check the results of a delete query *before* you actually invoke it. (You can actually use this technique to see the results of any query.) To do this:

6. Click the *View* drop-down arrow and then the *Datasheet View* button (in the *Results* group in the ribbon). Note that three records will be deleted as expected.
7. Click the *Design View* button (in the *Results* group) to return to the Delete Query window.
8. Now, run the query by clicking the Run command button.

A warning appears noting that three rows (records) will be removed. You could cancel the procedure to retain the records, but for this exercise, delete the records as follows:

9. Click *Yes* and then close the query window *without* saving it (right-click the Query1 tab, click *Close* and then *No*).



10. Open the SALES table and note that there are now only seven records in it.
11. Close the table.

LESSON 9: SORTING RECORDS

Access allows you to rearrange records into other sequences without having to retype data. An easy way to do this is to sort the data in a table. The sort command can temporarily rearrange the records in a table, or it can copy the sorted records into a completely new table. This is useful if you want to retain the original order of the data. You can sort a table as often as you like. Before you sort, however, let's examine another technique for arranging records that you encountered briefly in Lesson 2—the primary key.

Using a Primary Key

Much of Access's power comes from its ability to locate and combine data from one table or from many separate tables. To do this more efficiently, each table should include a primary key—a field (or set of fields) that uniquely identifies each record in the table (and rearranges the records in this order). There are three types of primary keys: autonumber, single-field, and multiple-field. An autonumber primary key is an additional field added by Access that will automatically enter a sequential number each time you add a new record. Using an autonumber primary key keeps the records in the order that they were entered. If you have a field in your table that contains unique values (such as ID), you may want to designate it as the primary key instead. For example, to use the ID field as the primary key, do the following:

1. If needed, launch Access and open the SALES table.
2. Click the *Design View* command button (*Views* group).
Using Figure A-39a as a guide:
3. Click the extreme left margin of the ID field to select the row.
Examine the left column. If a “key” icon appears, the ID field is already set as the primary key.
4. If there is no key icon, click the *Primary Key* command button to designate the ID field as the primary key.
A key icon appears in the left margin of the ID field row, as shown in Figure A-39a.
5. Save the table (right-click the *Sales* tab and click *Save*).
6. To see the effect, click the *Datasheet View* command button (*Home* tab, *Views* group) to return to the table.
Note that the records are now arranged in ID order, as shown in Figure A-39b. To deactivate a primary key, do the following:
7. Repeat steps 2–5 to remove the key icon from the left margin of the ID field.

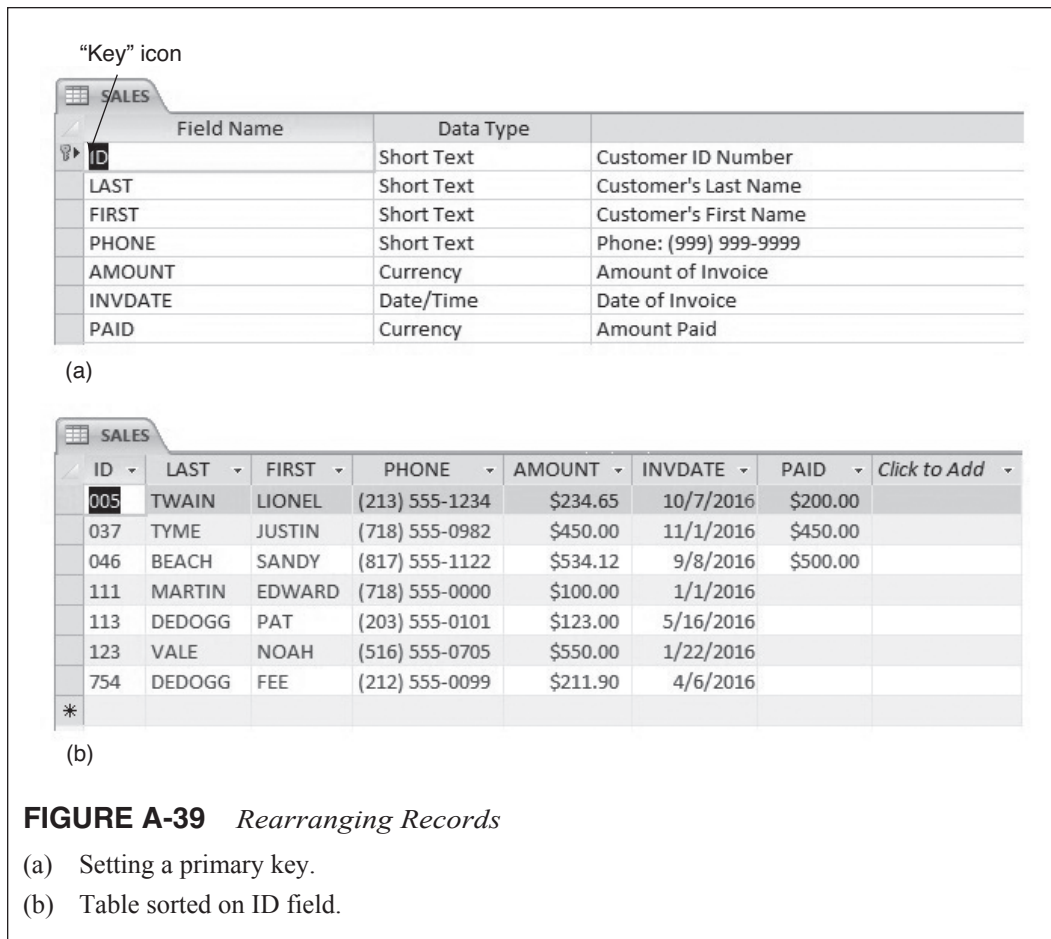


FIGURE A-39 *Rearranging Records*

NOTE: In this table, the LAST field would not be appropriate to be used as a primary key, because it is not unique—there are records with the same last name. If table records have no identical LAST names, you could use the field as a primary key.

Sorting with One Field

The easiest sort to create is one based on a single field. Unlike a primary key, a sorted field need not contain unique values. In this example, you will sort records by the AMOUNT field.

1. If needed, launch Access and open the SALES table in Datasheet view.
2. Click the first (topmost) data cell in AMOUNT field, as shown in Figure A-40a.
3. Click the *Ascending* command button (*Sort & Filter* group).

The records now appear in ascending (increasing) order by AMOUNT. You can select any single field in this manner and reorganize the table, as shown in Figure A-40b.

 Ascending

ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/2016	
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/2016	
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/2016	
111	MARTIN	EDWARD	(718) 555-0000	\$100.00	1/1/2016	
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	\$200.00
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	\$450.00
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	\$500.00

(a)

ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
111	MARTIN	EDWARD	(718) 555-0000	\$100.00	1/1/2016	
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/2016	
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/2016	
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	\$200.00
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	\$450.00
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	\$500.00
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/2016	

(b)

FIGURE A-40 *Sorting With One Field*

- (a) Click the topmost record in the desired column.
 (b) The table has been sorted on the AMOUNT field.

Sorting with Multiple Fields

You can also sort on any combination of fields. This technique uses a *filter*, much like a query, that specifies all the fields and orders for the sort. In this example, you will sort on LAST and FIRST name fields.

- In the SALES table, click the *Advanced* command button (*Sort & Filter* group) and then the *Advanced Filter/Sort* option in the list that appears. A query-like screen appears, as shown in Figure A-41.

SALES SALESFilter1

SALES

ID
LAST
FIRST
PHONE
AMOUNT
INVDAT

Field: AMOUNT
Sort: Ascending
Criteria: or:

(a)

SALES SALESFilter1

SALES

ID
LAST
FIRST
PHONE
AMOUNT
INVDAT

Field: LAST
Sort: Ascending
Criteria: or:

Field: FIRST
Sort: Ascending
Criteria: or:

(b)

FIGURE A-41 *The Filter/Sort Window*

- (a) Set the primary sort field.
 (b) Set the secondary sort field.

In much the same way that you use a query, you can now select fields and specify the sort orders. Using Figure A-41a as a guide, do the following:

2. In the first column, select the LAST name field. (Click the drop-down arrow in the first field column and then click LAST.)

The order in which you select fields determines their precedence in the sort: The first selected field will be sorted first and so on.

3. In the second row of the same column, select Ascending order if needed. (Click the cell, then its drop-down arrow, and then click *Ascending*.)

NOTE: You can change the order from ASCENDING (normal) to DESCENDING (reverse) order by selecting Descending from the list.

4. Click in the Field row of the second column, select the FIRST name field, and then select Ascending order in the Sort row (as you did in step 3), as shown in Figure A-41b.

The column order will sort the table by LAST name first, and then by FIRST name, for those records whose LAST names are identical.

5. To sort the table, click the *Toggle Filter* command button (*Sort and Filter* group).

The sorted SALES table will appear as in Figure A-42. The records have been rearranged as you specified. Note that the records are in LAST name order. Where LAST name is identical (as in DeDogg), the records are further sorted by FIRST name. You can sort on as many fields as you want.

ID	LAST	FIRST	PHONE	AMOUNT	INVDAT	PAID
046	BEACH	SANDY	(817) 555-1122	\$534.12	9/8/2016	\$500.00
754	DEDOGG	FEE	(212) 555-0099	\$211.90	4/6/2016	
113	DEDOGG	PAT	(203) 555-0101	\$123.00	5/16/2016	
111	MARTIN	EDWARD	(718) 555-0000	\$100.00	1/1/2016	
005	TWAIN	LIONEL	(213) 555-1234	\$234.65	10/7/2016	\$200.00
037	TYME	JUSTIN	(718) 555-0982	\$450.00	11/1/2016	\$450.00
123	VALE	NOAH	(516) 555-0705	\$550.00	1/22/2016	
*						

FIGURE A-42 *The Sorted Table*

NOTE: To return to the original (or natural) order, you can click the *Clear All Sorts* command button, which cancels the sort. If the original record order must be maintained, you might also create a number field in the original table structure (before sorting) and then type an order number for each record that shows its position in the sequence (such as 1,2,3, and so on). Then, no matter how many times you sort the table, you can return to the original order simply by sorting on the order number field. (You could also create an autonumber field to keep track of the original order.)

6. Save the table and then close it.
7. You can exit Access for now or continue.

NOTE: You can also specify sort order directly in a query so that when a query is used, the records appear in the desired order automatically.

LESSON 10: FINDING RECORDS

At times, you will want to quickly find a specific record to view its contents or edit it. In a small table, such as SALES, you can simply use the arrow keys or the view techniques you have learned to find data quickly. However, in large tables that contain hundreds or thousands of records, you will need a more efficient method. The Find command serves this purpose. The Find command lets you search by any field and quickly move to the first record that matches your search.

For example, to find a record with a FIRST name of PAT, complete the following steps:

1. If needed, open the SALES table.

The *Find* technique consists of moving to the column that you want to search, invoking the command, and setting the search criterion.

2. Click in the title row of the column for FIRST name (typically, third column).
3. Click the *Find* button (*Find* group).



A Find and Replace dialog box appears as in Figure A-43.

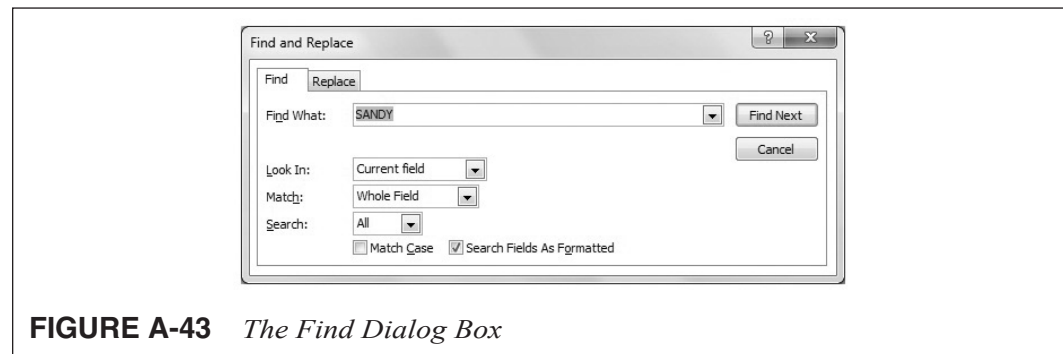


FIGURE A-43 The Find Dialog Box

Examine the screen for a moment. You can simply type the desired search for an exact match, or click the drop-down arrow in the Match entry box to use some of the additional Match settings in the dialog box as follows:

- Any Part of Field—looks for matches anywhere within the field data.
 - Whole Field—matches text exactly with no wildcards used. You'll learn more about wildcards in a moment.
 - Start of Field—looks for matches starting with the leftmost character of the field data.
 - You can also click the *Match Case* check box, which instructs Access to search for text that matches capitalization exactly as you typed it. Otherwise, any text that matches (regardless of capitalization) will be included.
4. If the dialog box covers your data, you might want to click its title bar and drag it down slightly so that you may see the effects of these exercises.

To practice finding records, try the following:

5. Type **PAT** in the *Find What* entry box and click *Find Next*.

The highlight moves to the first record whose FIRST name is PAT. The find merely locates the record. You can close the Find dialog box and then use any technique to edit the record. You might also press the arrow keys to move to other records as well.

6. Close the Find box (click its close button).

NOTE: You could click the *Find Next* button to move to the next record that matches the condition. You can also use the arrow keys to move to another field and enter a new search condition.

Using Wildcards

A wildcard is a symbol that extends your search capabilities by allowing Access to ignore certain characters in the search. Access's basic wildcards are listed in Table A-5.

Symbol	Example	will find	Matches any:
*	*an	man, woman	number of characters
?	w?ll	wall, well, will	single character
#	4#6	456, 406, 416	single digit
[]	w[ae]ll	wall & well	single character in the list
!	w[ae]ll	will	single character NOT in the list
-	w[a-c]ll	wall	single character in the range

TABLE A-5 Access's Wildcards

You could use the wildcards “?” or “*” in the search condition to look for partial text strings. The “?” symbol stands for one character, whereas the asterisk (*) represents any number of characters. For example, *M** would find a field that starts with an M followed by any number of characters; **M** would find a field with an M anywhere in it. Similarly, *??M* would find a field in which M was the third character, and so on.

NOTE: The asterisk (*) wildcard can be placed only in the first and/or last position of a search condition.

Try some of the following search examples to see how the techniques work.

To find an ID of 754:

1. Click the title row of the ID field.
2. Invoke the *Find* command as before.
3. Type **754** and click *Find Next*.

To find a PHONE within the 212 area code:

1. Click the title row of the PHONE field.
2. In the Find dialog box (still open) type **(212)*** and click *Find Next*.
3. Click *Find Next* again.
4. If a “Finished” notice appears, click *OK* to acknowledge.
5. Close the box.
6. Close the table without saving. You can exit Access or continue.

Quick Review #2

What will *these* searches do? Try them and see.

1. In the LAST column, S* _____

2. In the PHONE column, *12* _____
3. In the PAID column, [!45]* _____
4. In the DATE column, */7* _____

LESSON 11: CREATING A REPORT TEMPLATE

An important reason for using a computer database is the ease with which reports can be created on a screen or a printer. These reports are often designed on paper first to be certain that they fit not only decision-making needs but physical paper or screen size as well.

For practice, you'll create a report displaying each record's ID number, last and first names, invoice date, amount owed, and money paid. You'll also list all records in alphabetical order by last name. Figure A-44 shows how this report might look.

SALES REPORT #1						
LAST	FIRST	ID	PHONE	AMOUNT	INVDAT	PAID
BEACH	SANDY	046	(817) 555-1122	\$534.12	9/8/2010	\$500.00
DEDOGG	FEE	754	(212) 555-0099	\$211.90	4/6/2010	
DEDOGG	PAT	113	(203) 555-0101	\$123.00	5/16/2010	\$450.00
MARTIN	EDWARD	111	(212) 555-0000	\$100.00	1/1/2010	
TWAIN	LIONEL	005	(213) 555-1234	\$234.65	10/7/2010	\$200.00
TYME	JUSTIN	037	(718) 555-0982	\$450.00	11/1/2010	\$450.00
VALE	NOAH	123	(516) 555-0705	\$550.00	1/22/2010	

Friday, September 28, 2012

FIGURE A-44 *The Basic SALES Report*

Creating a Report Template

1. Launch Access if needed and open the Company database.
2. Click the *Create* tab in the ribbon.
Although you could build a report from scratch, it is much easier to let Access lead you through the process by using its Report Wizard.
3. Click the *Report Wizard* command button (*Reports* group).

The Report Wizard, as shown in Figure A-45, now lets you select the fields you want, in the order you want them to appear, by simply selecting the individual fields you want to use.

NOTE: If you enter the name of a query here, the report will include only those records that satisfy the query's conditions.

4. Click *LAST* in the Available Fields list to select it.
5. Click the  button in the center to move the LAST field to the field order list at the right as in Figure A-46a.
6. Now, select and move the *FIRST* field, using the same procedure as described in steps 4–5.

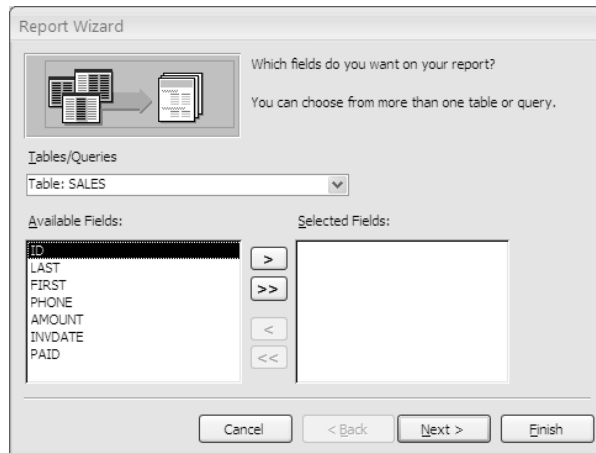


FIGURE A-45 *The Initial Report Wizard Dialog Box*

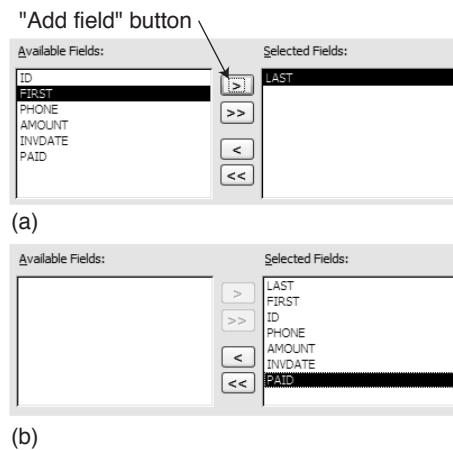


FIGURE A-46 *Selecting Fields with the Report Wizard*

- (a) The LAST field has been selected with the **>** button.
- (b) All remaining fields are selected with the **>>** button.

You could continue to select individual fields in the order you would want them to appear. In this example, the remaining fields can also be selected with one command, as follows:

7. Click the **>>** (double arrow) button in the center to transfer the remaining fields to the report list in their current order.

All fields have now been selected and appear in the field order list, as shown in Figure A-46b.

NOTE: If you make a mistake, use the **<** or **<<** buttons to transfer fields back to the available list and repeat the selection process.

8. Click the *Next* button to continue.

The next Report Wizard dialog box appears, allowing you to specify a grouping (classification) level. For now,

9. Click the *Next* button to skip this step.

Next, the wizard asks you about a sort order. You could name up to four fields and indicate a sort direction. For example, using Figure A-47 as a guide:



FIGURE A-47 *Setting Sort Fields*

10. Click the #1 drop-down arrow to indicate the first sort.
11. Click *LAST*.
12. Click the #2 drop-down arrow to indicate the second sort.
13. Click *FIRST*.

You have indicated that the records should be sorted on the *LAST* name field and, if there are duplicate *LAST* names, on the *FIRST* name field.

14. Click *Next* to continue.

The Next dialog box allows you to specify the general layout and page orientation of your report.

- Columnar reports display one record per page with fields arranged one below the other.
- Tabular reports present data in the traditional rows (records) and columns (fields).
- Justified reports present data in a form.
- Landscape orientation places data across the length of a page, whereas portrait orientation displays data across its width.

15. Click the *Tabular* report button if it is not already selected.
16. Click *Portrait* orientation if it is not already set.
17. Click *Next* to continue.

You now can type an appropriate title that will appear at the top of the report.

18. Click the title box and type **SALES REPORT #1**.
19. Click the *Finish* button to end the Report Wizard process.

Access creates the report according to your specifications and displays it in a Print Preview window, as in Figure A-48. Fields appear in the order they were selected.

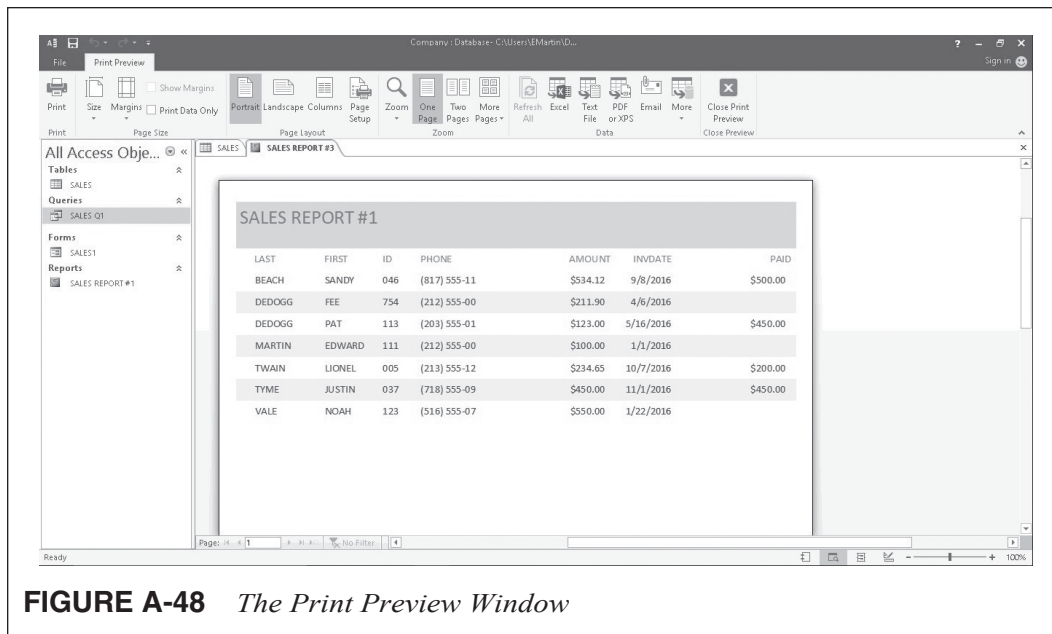


FIGURE A-48 *The Print Preview Window*

The columns are not exactly as we want them in the final report (especially the ID and Phone columns), so we can alter the design to better present the data as follows:

20. Click the *Layout View* button (status bar in the lower-right corner of the window).

A layout window should appear, as shown in Figure A-49.

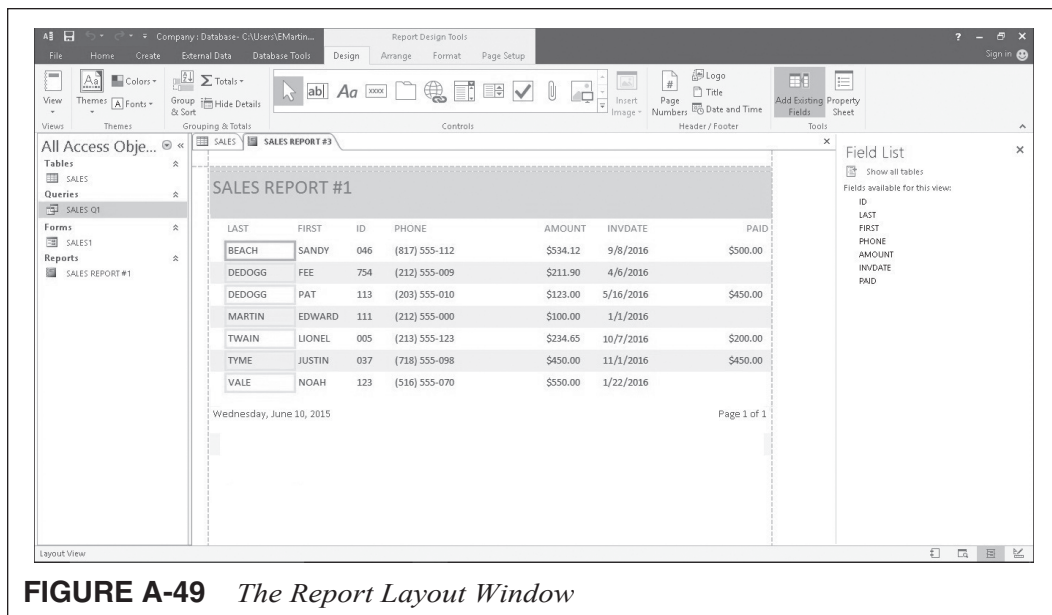
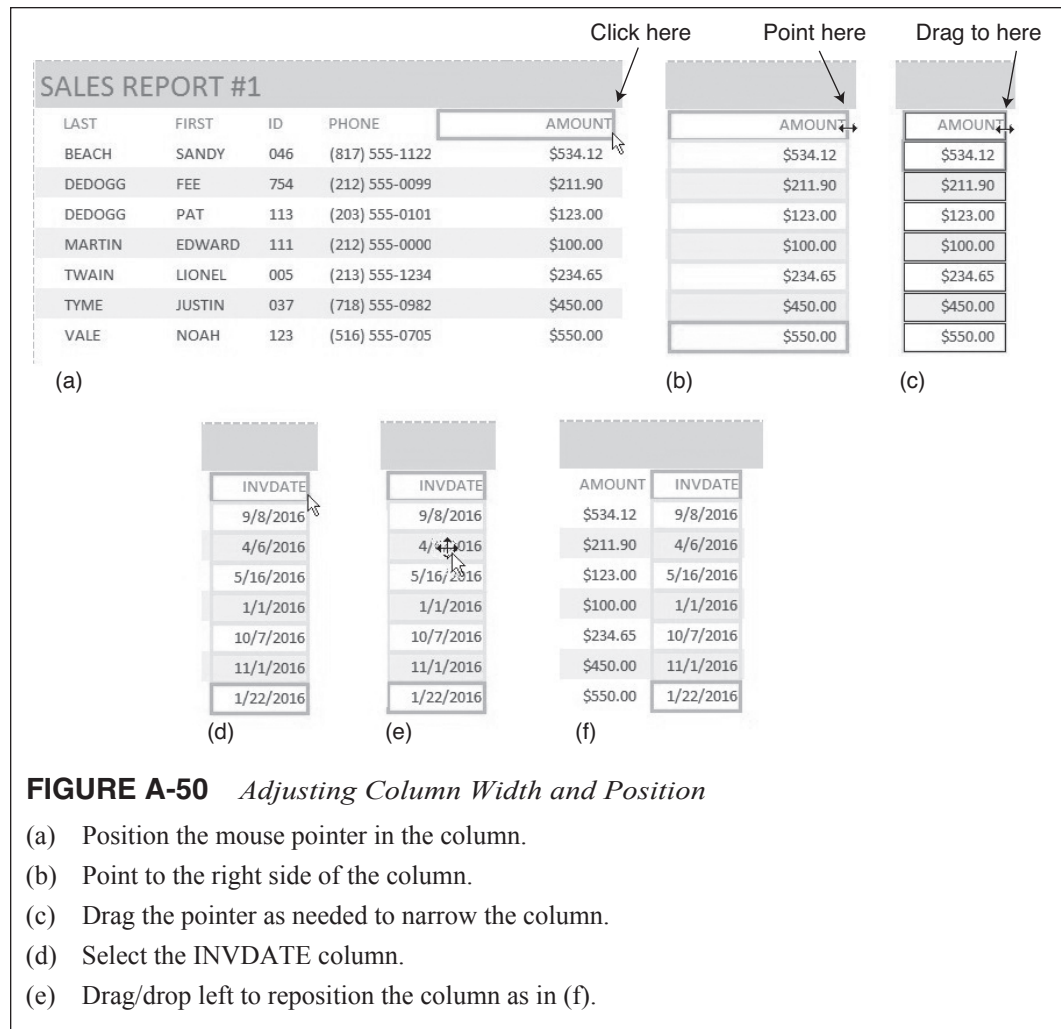


FIGURE A-49 *The Report Layout Window*

First fix the AMOUNT column width:

21. Click the title in the AMOUNT column to select it as shown in Figure A-50a.
22. Shift + Click the bottom entry in the AMOUNT column to select the entire column.
23. Point to the right side of the AMOUNT column (just to the left of "INVDAT") until the pointer appears as a double-pointed arrow, as in Figure A-50b.



24. To reduce the width, drag *left* until the column width is about half as in Figure A-50c—this need not be exact).

You can also move a column as follows:

25. Click the INVDAT title to select it and then Shift + Click its bottom entry, as in Figure A-50d.

26. Point to the *middle* of the column in any row as in Figure A-50e.

27. Click and drag/drop left until the column is positioned correctly as in Figure A-50f.

If the column is not correct, simply repeat steps 26 and 27 moving left or right as needed.

28. In a similar fashion, reduce the width of the PAID columns and move it. Your screen should resemble Figure A-44. Adjust the columns if it does not.

To save and close the adjusted report:

29. Right-click the report's tab and click *Close*.

A dialog box appears.

30. Click *Yes* to save the report.

31. Close the database window and exit Access, or continue on to the next lesson.

LESSON 12: PRINTING A REPORT

You can use the report layout created in the previous section whenever you want to print a report. Each report actually contains a template—a picture, or a skeleton—of how you want your titles and columns to appear. You can create and save as many of these report templates as you desire, as long as you give them different names. Each uses an associated table to fill in the report contents when it prints. Records will appear in their specified order, or can be adjusted further using a sort or query.

1. Launch Access and open the Company database window if needed.
2. Double-click SALES REPORT #1 in the object list to highlight it.

You can now generate your report on the screen or on your printer. It is a good idea to generate a screen version of a report first. This way, you can check for errors or adjustments without wasting paper.

3. Click the *Print Preview* button on the status bar (2nd button, lower right) to generate a screen preview of the report.

The report on your screen should resemble Figure A-44. You can use the scroll bars to examine all of its parts. Notice that the date is automatically supplied at the bottom of the page. All your records (including the record containing your name) should appear in alphabetical order.

4. If you *do not* want to generate the report on the printer, skip to Step 7 now.
5. To print, click the *Print* command button (first button in the ribbon), or press **CTRL** + **P**.
6. Make sure your printer is connected, then click *OK*.
7. Close the window.

Creating Reports with Selected Records

You can also use a report layout to select records from a table just as you did with the Query command earlier. Although you can use (or create) any query, here you will create a new query to restrict the report to those records whose AMOUNT field exceeds \$400.00. Follow these steps to create a report using selected records:

1. Open the SALES table.
2. Click the *Create* tab and then the *Query Design* button (*Queries* group).
3. Click *Add* in the Show Table dialog box and then close the box.
As expected, a blank query form appears.
4. In the leftmost bottom column, click the drop-down arrow and then click *SALES.** from the drop-down list to include all fields in the query.

Only the fields that appear both in the query and the report template will appear in the report. Therefore, it is best to include all fields in a query that will be used with a report. The easiest way to do this is to click the *SALES.** option to immediately select all fields. (You could also double-click the *SALES.** option in the SALES table list.)

5. Click in the second field column and use the drop-down arrow to select the AMOUNT field.
6. Remove the check mark from the Show checkbox. (It has already been selected by clicking the *SALES.** option earlier.)
7. Click the Criteria row, type > 400 and press **↵**. Your screen should resemble Figure A-51. Change it if it does not.

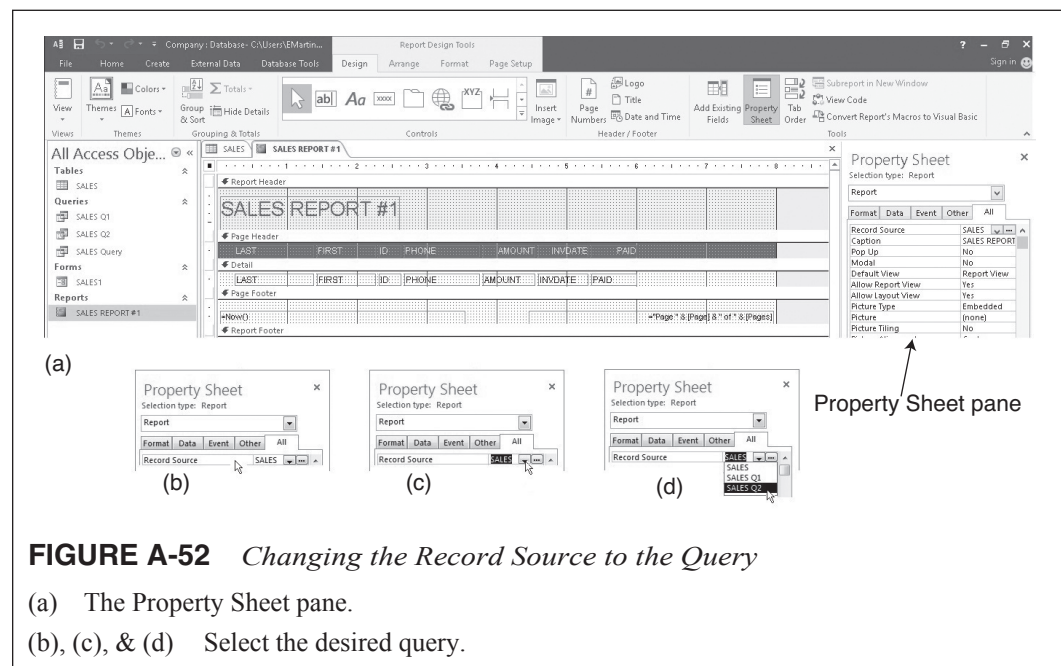
Field:	SALES.*	AMOUNT
Table:	SALES	SALES
Sort:		
Show:	☒	☐
Criteria:		>400

FIGURE A-51 *Setting the New Criterion*

8. Right-click the *Query1* tab (located just below the ribbon) and then click *Save*.
9. Type **SALES Q2** for the query name and click *OK*.
10. Close the query window (right-click its tab and click *Close*).

Your query can now be used with the report template to generate a report that includes only those records whose AMOUNT exceeds \$400. To do this, you must first tell the report to use the SALES Q2 query instead of the entire SALES table. This can be done as follows:

11. Double-click the SALES REPORT #1 object in the left pane to open it.
 12. Click the *Design View* button (last in the status bar).
 13. Click the *Property Sheet* button (Tools group) in the ribbon to open the task pane.
- A Property Sheet pane appears as shown in Figure A-52a.

**FIGURE A-52** *Changing the Record Source to the Query*

- (a) The Property Sheet pane.
- (b), (c), & (d) Select the desired query.

14. Click the Record Source box, as shown in Figure A-52b.
15. Click the drop-down arrow next to Record Source as shown in Figure A-52c.
16. Click the *SALES Q2* query file, as shown in Figure A-52d.

17. Close the Property Sheet pane to see the entire report.

You can now view the effects of the query and sort order as follows:

18. Click the *Print Preview* button (2nd on status bar) to see the report. (Of course, you could also print it out if desired, but here we're saving paper.)

Your screen should resemble Figure A-53. Note that these records are the ones that satisfy the query's criterion of `AMOUNT>400` and appear in alphabetical order by `LAST` and `FIRST` name. Not every record in the `SALES` table appears in the report. Report templates can be used with any table to display *all* the data that the table contains. When used with a query, a report will contain *only* those records that satisfied the query's conditions.

19. Close all windows, but *do not* save the report.

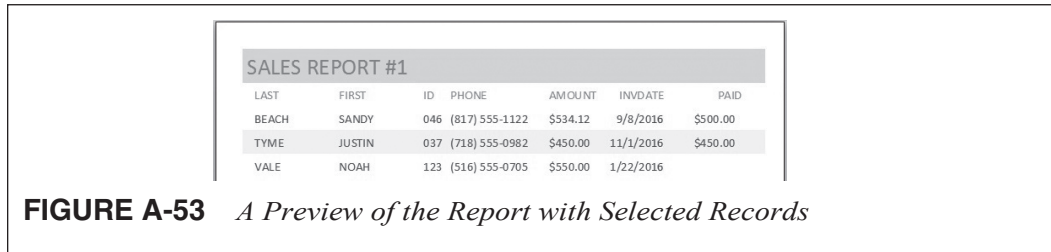


FIGURE A-53 *A Preview of the Report with Selected Records*

LESSON 13: MODIFYING A REPORT TEMPLATE

So far, so good. But what if you make a mistake on the report layout? Or what if you want to move or delete a column, or decide to show totals? The nice thing about report templates is that they can be modified at any time. You will examine some basic Access report modifications. (Of course, you could always create a new report with the Report Wizard if the changes are extensive.)

Copying a Report Template

Although you could modify the `SALES REPORT #1` report directly, it is wiser to copy the report and then modify the new one without changing the original. This would leave you with two separate reports. Try this for practice, as follows:

1. Open the Company database, if needed.
2. Right-click the `SALES REPORT #1` report in the left object pane.
3. Click *Copy*.
4. Right-click anywhere in the left pane and then click *Paste*.

A Paste As dialog box appears as in Figure A-54. You can now assign a new name to the report that will be copied.

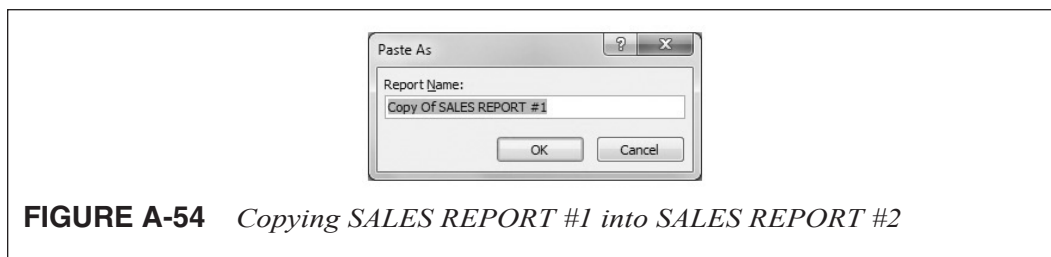


FIGURE A-54 *Copying SALES REPORT #1 into SALES REPORT #2*

5. Delete the current entry and type the new report name, `SALES REPORT #2`.
6. Click the *OK* button.

The `SALES REPORT #1` report is copied into `SALES REPORT #2`, and you return to the database window for further work.

Modifying a Report

Using SALES REPORT #2, you will now learn how to make a few report modifications. These changes include changing a report title, editing a column heading, deleting and moving data columns, and adding some summary statistics. Ultimately, your report will look like Figure A-55.

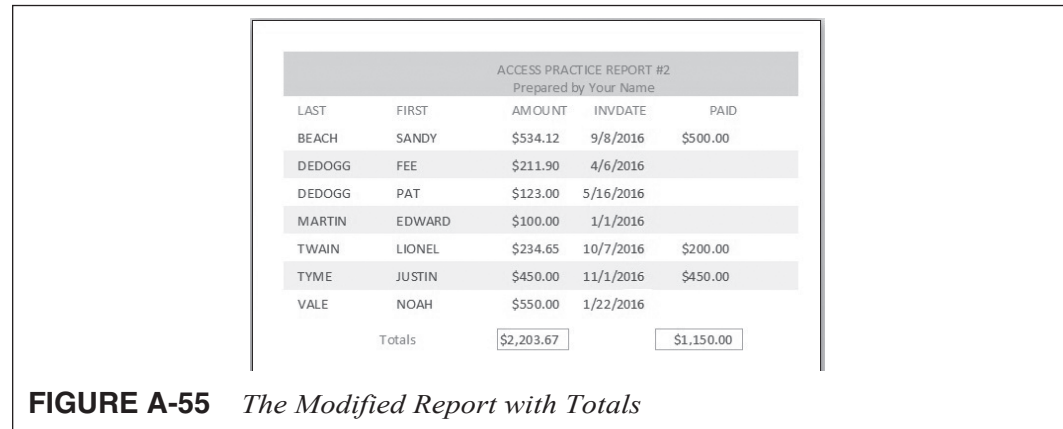


FIGURE A-55 *The Modified Report with Totals*

NOTE: You do not have to complete this entire section before stopping. If you want to exit after completing a procedure, save the Report (right-click its tab and use Save). You can then invoke the report design sequence and continue.

1. Double-click the SALES REPORT #2 object.
2. Click the *Design View* selector button (last button on status bar).

The Report Design window will appear again, this time with SALES REPORT #2 in the tab. First, a few words about the report design view.

The design view shows the report page template “skeleton” or format. This format is divided into *bands*, or sections, that define the various report components. Each band has a border and an entry area beneath it. If there is no entry area showing, then the band is considered closed. Here are descriptions of the main bands:

- The **Report Header** band shows text that will appear at the beginning of the report, such as the report title. A report footer band appears at the bottom of the design, containing text that will appear at the end of the report, such as summary totals or averages.
- The **Page Header** band shows text that will appear at the top of each page, such as the field column headings. Access provides a heading for each column using the appropriate field name from the table. Note that numeric data (which includes currency) are right-aligned in those columns. A page footer band appears near the bottom of the design. Access has automatically placed a date and page number counter here.
- The **Detail** band shows the position and contents of each row of data. Access has set aside a column for each table field, in the order you specified in the Report Wizard. Lines are drawn to show where data will appear in each column. When the report is generated, each record’s data will appear on a separate line in neat columns.

Other bands may be added for groups, subtotals, and other features. You may want to compare the design to the finished report.

You can now adjust any report parameters you want. A few examples of basic parameters you can adjust follow:

Modifying the Report Heading

Access uses the heading you specified in the Report Wizard create procedure. However, you can modify the heading in the design itself to include a more descriptive title, as follows:

1. Click the *Sales Report #1* title located at the top left of the report header band, as shown in Figure A-56. A rectangular box should now surround the object, indicating that it has been selected.
2. Press **DELETE** to remove this object from the report header.

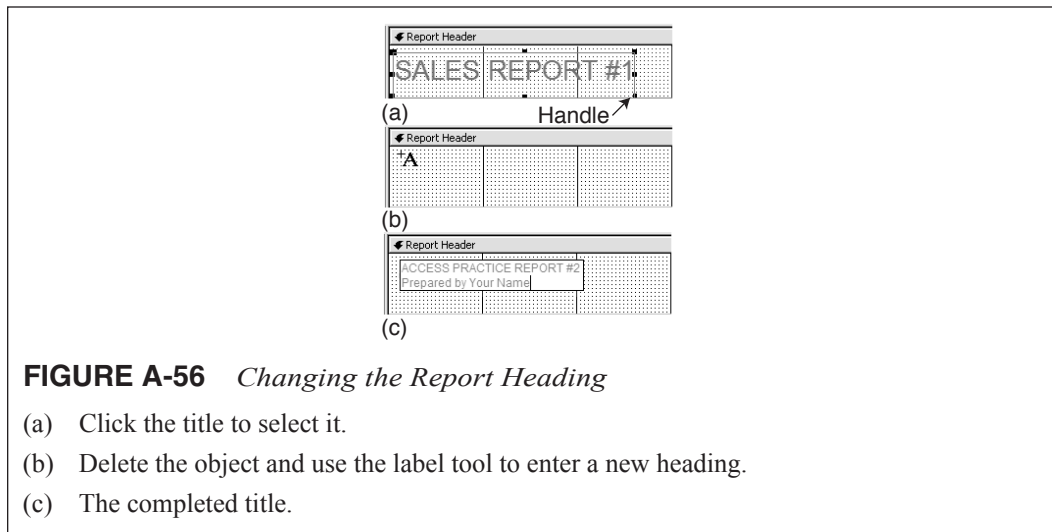


FIGURE A-56 *Changing the Report Heading*

- (a) Click the title to select it.
- (b) Delete the object and use the label tool to enter a new heading.
- (c) The completed title.

You can now add text to create a new title.

3. Click the *Label* command button in the *Controls* group.
4. As shown in Figure A-56b, move the mouse pointer (which now resembles “+A”) to the left edge of the report header.
5. While pointing at this position, click the mouse to create a label object. An “I” pointer will appear at that spot.
Now you can enter your new heading, as follows:
6. Type **ACCESS PRACTICE REPORT #2**.
7. Press **CTRL** + **↵** to create a new line. The pointer moves to the next line. Note, too, that the header band automatically expands to accept a second title line.
8. Type **Prepared by** then press **SPACE** and type your name.

The title in the report header should resemble Figure A-56c. If not, delete the title and repeat steps 3–8. Let’s say you want to center the title as well. Try the following:

9. Click any blank area in the report header to end the label procedure.
10. Point to any line in the title that you just typed and click the mouse to open the object. A box appears around the title, as in Figure A-57a.
11. Point to the square handle in the center of the right edge of the object box as shown in Figure A-57b. The mouse pointer will change to a horizontal double-pointed arrow. (Make sure that the pointer does not appear as a diagonal arrow or a hand. Point again if needed.)
12. Now, drag the edge of the object box to the right, until it aligns with the right edge of the report (just over the end of the PAID field in the Page Header band) as shown in Figure A-57c.





13. Click the Format tab in the ribbon and then *Center* command button (*Font* group). The lines in the box are now centered. That's enough title changes for this simple report.
14. This is a good place to save your work. Right-click the SALES REPORT #2 tab and then click *Save*.

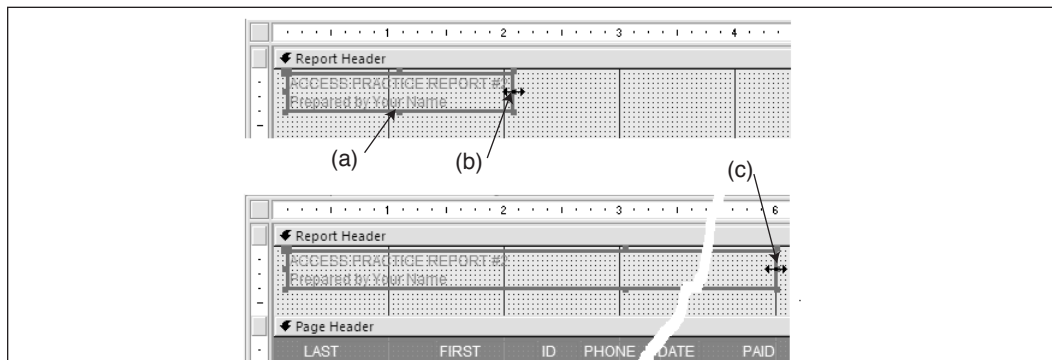


FIGURE A-57 *Centering the Heading*

- (a) Select the object.
- (b) Click the center handle at its right edge.
- (c) Drag the edge to the right edge of the report.

Changing a Column Heading in the Page Header

To change a column heading, you need only select the appropriate heading and then make the adjustment. Let's say you wanted to change the LAST column heading to read LAST NAME. Here's how to do it:

1. Click the LAST name column heading in the Page Header band to select it and then click it once more to open its text box, as shown in Figure A-58a. (Do not double-click.)
2. Move the pointer after the "T" in "LAST."
3. Press **[SPACE]** and then type NAME as shown in Figure A-58b.
4. Click outside the text box to deselect it.

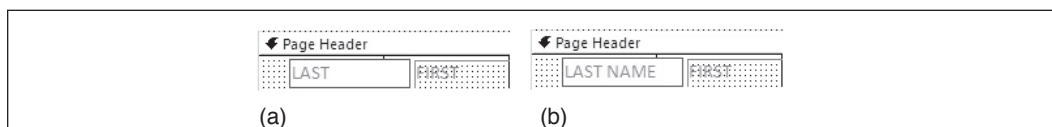


FIGURE A-58 *Modifying a Column Heading*

- (a) Select the column heading.
- (b) Retype it as desired.

Deleting a Column

To delete a column, you simply identify it in the "Arrange" tab and then press the **[DELETE]** key. The trick here is making certain that you have removed all references to the column in other parts of the report—not just the column titles.

1. Click the “Arrange” tab in the ribbon.
2. Select the PHONE column heading in the Page Header band by clicking it.
3. Click the Select column button (*Rows and Columns* group).
4. Press **DELETE** to remove the column.
The PHONE field name beneath it in the Detail band also disappears and the remaining columns automatically shift left to fill the empty space.
5. Now, delete the ID column using the same technique.
Your screen should resemble Figure A-59. If not, delete the objects as needed.
6. Save the SALES REPORT #2 again.

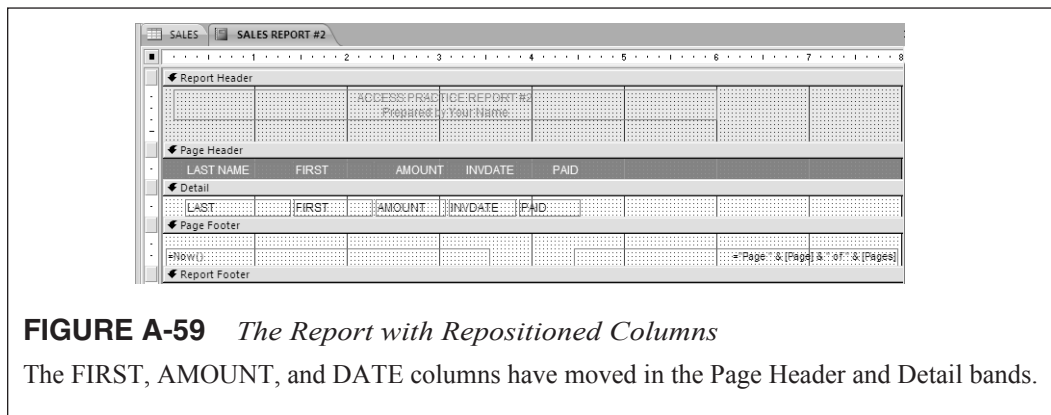


FIGURE A-59 *The Report with Repositioned Columns*

The FIRST, AMOUNT, and DATE columns have moved in the Page Header and Detail bands.

Adding Summary Statistics

At times, you may want to calculate and display summary statistics (such as totals, averages, or counts) in your report. Access does not automatically include numeric totals when you create a report using the Report Wizard, but you can add summary statistics to any report. In this example, perform these steps:

1. Open the SALES REPORT #2 in Design view if needed.
2. Click the Design tab in the ribbon and then the Text Box command button (*Controls* group).
Your goal is to place a holder for the AMOUNT total directly beneath its corresponding data holder in the detail band.
3. Position the pointer cross hair so that it is aligned with the first tick of the left ruler and directly beneath the 2 1/4-inch marker on the top ruler, in the Report Footer band as shown in Figure A-60a.
4. Click and drag the pointer just past the tick mark to the 3-inch marker and down approximately two tick marks, as shown in Figure A-60b. Then release the mouse.



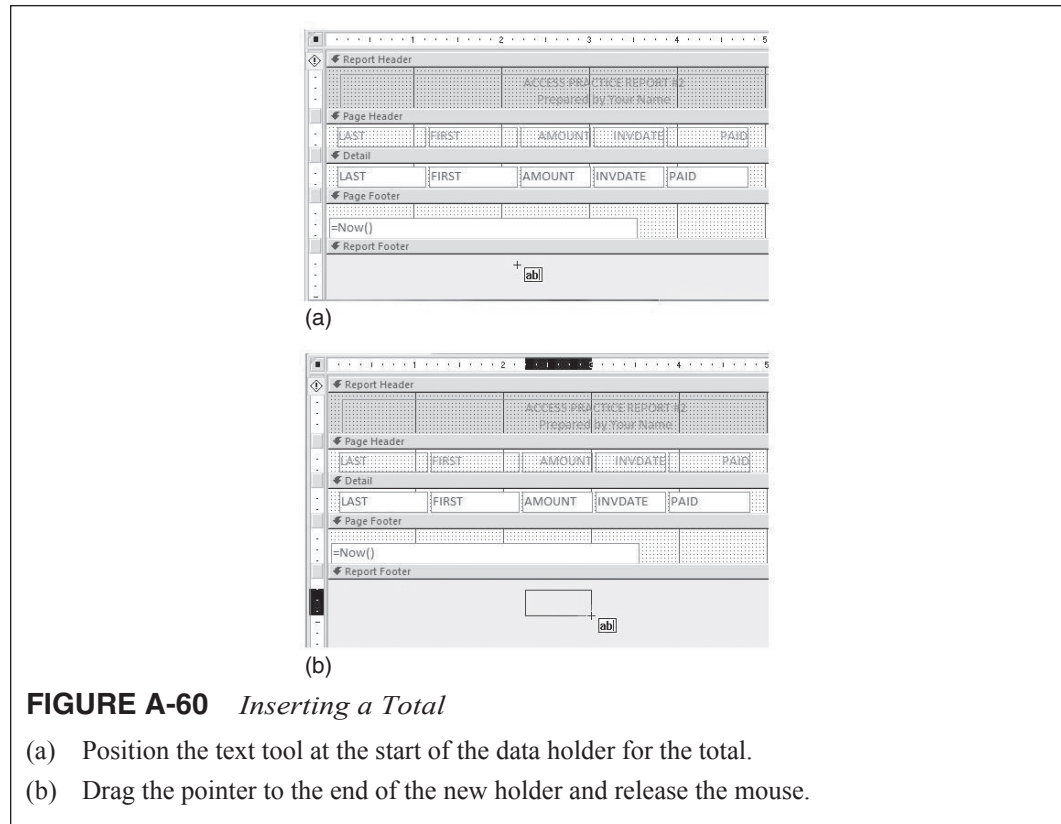


FIGURE A-60 *Inserting a Total*

- (a) Position the text tool at the start of the data holder for the total.
- (b) Drag the pointer to the end of the new holder and release the mouse.

A text label and an “unbound” text box appear. At the moment, this box is not linked to any particular value. You can now specify the properties of this new box by completing the following steps:

5. Click the *Properties Sheet* command button (*Tools* group) to open the task pane.

A Text Box properties box appears, in this example, *Text40* appears as shown in Figure A-61a. (Your text number may differ from the figure—it doesn’t matter.) Using Figure A-61b as a guide, complete the following steps:

6. Click the *All* tab if needed.
7. Click the *Name* row, delete its contents, type **TOTAL_AMT** and press $\downarrow$.
8. In the *Control Source* row, type **=SUM([AMOUNT])** and press $\downarrow$. Be sure to type the equal sign, parentheses, and brackets as shown.

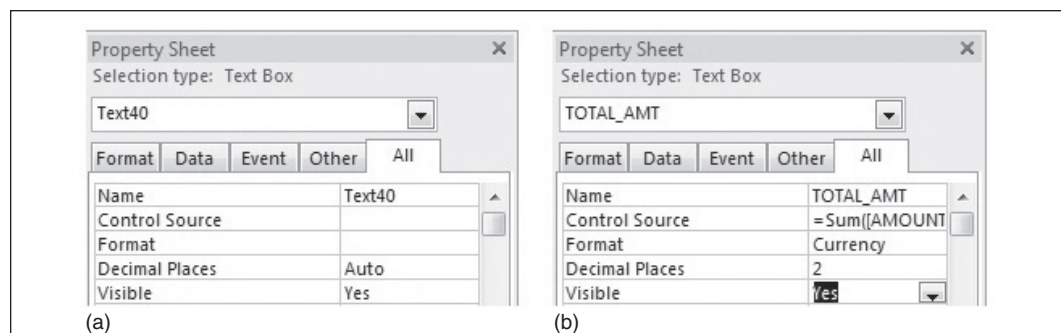


FIGURE A-61 *Adding Total Properties*

- (a) The default Text Box settings.
- (b) The new settings.

This formula tells Access to sum the AMOUNT field.

9. In the Format row, type **C** for currency format and press .
 10. In the Decimal Places row, type **2** and press .
 11. Close the properties pane.
 12. Repeat steps 3–11 to place another text box directly under the PAID column in the same row as the TOTAL_AMT box you just added. Assign a name of **TOTAL_PAID** and the formula **=SUM([PAID])**.
- The Report Footer band should now display four boxes (with some overlap) as shown in Figure A-62. Using this figure as a guide, finish the report footer as follows:
13. Click the *Text42* box (near its right side to stay away from the overlap), as shown in Figure A-62a, and then press  to remove this box. (Your text number may differ—simply delete whatever text box appears in the *right* box as shown.)
 14. Click the *Text40* box, as shown in Figure A-62b. (Again, your number may differ, but use the *left* box.)
 15. Click the box again. Then press  to remove the text label and type **Totals:**
 16. Your report footer layout should resemble Figure A-62c.
 17. Save the report design (right-click the report's tab and click Save).

NOTE: If one of the totals displays a set of pound signs (#####) when viewed, then the object box is too narrow to adequately display the data. Simply return to the design view, click the right side of the object box and drag it slightly wider.

18. Preview the report to see the effects of your changes—compare this to Figure A-55.
19. Close all open boxes and windows. You can now exit Access.

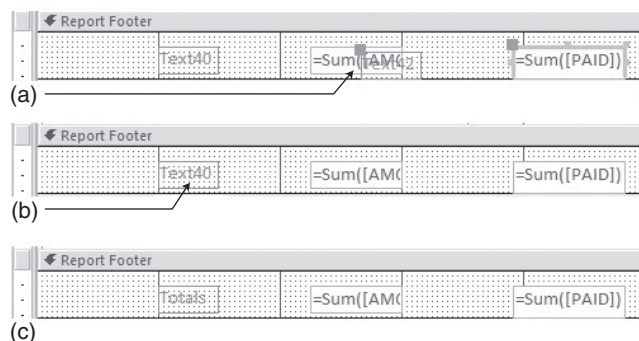


FIGURE A-62 *Finishing the Report Footer*

- (a) Delete the Text42 box.
- (b) Retype “Text40” as “Totals.”
- (c) The finished footer.

You are now finished with this module, but you have only scratched the surface of Access commands in this brief introduction. Although you should now understand the basics of database management, there are many other techniques with graphics, calculated fields, customized forms, and multiple tables that you might explore on your own to learn the true power of relational databases. For now, try the projects to see how well you’ve learned the basics of Access.

DATABASE MANAGEMENT PROJECTS

Complete these projects to see how well you've mastered basic database techniques in Access. You may want to write the project number, your name, and date on each printout to identify it. Before you begin, you must create a new database named PROJECTS into which you will place the tables and other objects you create.

Project 1 *Creating a Table with Records*

- a.** Open the PROJECTS database you just created and create a table called SOFTWARE with the following structure:

FIELD NAME	TYPE	WIDTH
VOLUME	Number, no decimals	
DISK	Text	40
TYPE	Text	2
FILE	Text	4

- b.** Using the table in step a, enter the following records and then print the table. Make sure to type your name for the DISK field in the first record.

VOL DISK	TYPE	FILE
1 <YOUR NAME>	ID	XXXX
2 WORDPERFECT 10	WP	PROG
3 WORDPERFECT 11	WP	PROG
4 WORD 2010	WP	PROG
5 WORD 2016	WP	DATA
6 EXCEL	SS	PROG
7 ACCESS 2016	DB	PROG
8 LETTERS 1	WP	DATA
9 LETTERS 2	WP	DATA
10 BUDGET 2016	SS	DATA

Project 2 *Editing and appending:* Using the SOFTWARE table you created in Project 1, do the following:

- a.** Edit record 6 so that the DISK field will show EXCEL 2002 instead of EXCEL.
b. Modify the FILE data in record 5 to read PROG instead of DATA.
c. Add these new records:

VOL DISK	TYPE	FILE
11 APPROACH	DB	PROG
12 LOTUS 1-2-3	SS	PROG
13 LETTERS 3	WP	DATA
14 BUDGET 2012	SS	DATA
15 BUDGET 2011	SS	DATA
16 WINDOWS 7	SH	PROG
17 RECORD SET 1	DB	DATA
18 RECORD SET 2	DB	DATA

- d.** After all records have been added and edited, print the table.

Project 3 *Deleting Records:* Using the SOFTWARE table from Project 2, do the following:

- a. Delete these two records individually from the table: WORDPERFECT 10 and RECORD SET 2. Do not use a query.
- b. Print the table to show that these have been deleted.

Project 4 *Selecting records:* Using the SOFTWARE table from Project 3, and the appropriate query, create and then print the dynasets that do the following:

- a. List those records that show the word DATA in the FILE field.
- b. List only the VOL and DISK fields for all records.
- c. List only the DISK and FILE fields for those records that show WP in the TYPE field.

Project 5 *Sorting the records:* Using the SOFTWARE table from Project 4, do the following:

- a. Sort the table into alphabetical order by the DISK field. Print the table.
- b. Sort the table by TYPE and DISK fields. (Use the advanced filter/sort.) Print the table.

Project 6 *Creating a Report:* Using the SOFTWARE table from Project 5, do the following:

- a. Create a report that will display the following title and four columns of data, as follows:

```
LISTING OF DISKS PREPARED BY (type your name here)
VOLUME   DISK                               TYPE   FILE
xxx      xxxxxxxxxxxxxxxxxxxxxxxxxxxx      xx      xxxx
```

- b. Save this report as SOFTRPT1 and then print it.

Project 7 *Modifying the Report:* Using the SOFTRPT1 report template you created in Project 6, do the following:

- a. COPY the SOFTRPT1 report template into SOFTRPT2 to create a second report template.
- b. Modify the new report template SOFTRPT2 to change the title, remove the VOLUME column, change the heading of the DISK column to CONTENTS, and move the FILE column as shown below:

```
NEW LISTING OF DISKS PREPARED BY (type your name here)
FILE           CONTENTS                               TYPE
xxxx          xxxxxxxxxxxxxxxxxxxxxxxxxxxx          xx
```

- c. Save this report template and print the report.

Project 8 *Putting It All Together:* Using the SOFTWARE table and the appropriate query, print the following reports using the SOFTRPT1 report template:

- a. Only those records that contain the label DATA. (Hint: The FILE field must have the word DATA in it.)
- b. Only those records that relate to word processing. (Hint: The TYPE field must show WP.)
- c. Only those records whose DISK contents start with the word BUDGET.

Project 9 *Creating a Payroll Table:*

- a. In the PROJECTS database you created earlier, create a table called PAYROLL with the following structure:

FIELD NAME	TYPE	WIDTH
LAST	Text	15
FIRST	Text	10
DEPT	Text	5
HOURS	Number, no decimals	
RATE	Currency	

- b. Using the structure in Project 9a, add the following records to the table. Make sure that you type your own name for the LAST and FIRST name fields in the first record.

LAST	FIRST	DEPT	HOURS	RATE
<Your Name>	<Your Name>	ACCTG	45	10.00
EMPLENTY	BILL	ACCTG	32	9.50
SINDEMAIL	CHUCK	PAYRL	50	11.25
THEMALL	SUE	LEGAL	30	8.50
LITTLE	KAREN	SALES	55	15.00

- c. After completing the entry of the five records, print all the records.

Project 10 *More Editing and Adding:* Using the PAYROLL table created in Project 9, do the following:

- Change BILL's RATE from 9.50 to 9.75.
- Change KAREN's HOURS from 55 to 52.
- Add three more records using data from your own imagination.
- After records are added and edited, print all the records.

Project 11 *Sorting the Records:* Using the PAYROLL table, do the following:

- Sort the table into alphabetical order by LAST and FIRST names; then print all records.
- Sort the records by the RATE field. Print all records.

Project 12 *Creating a Report:* Using the PAYROLL table, do the following:

- a. Create a report template named PAYRPT1 that will display the following title and columns of data.

PAYROLL REPORT PREPARED BY (type your name here)

LAST NAME	FIRST	DEPT	HOURS	RATE
XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXX	XXX	XX.XX

- b. YOU MAY SKIP THIS STEP. For extra credit, add a column called PAY to the right of the RATE column that will calculate the gross pay (HOURS * RATE). This skill was not covered in the manual.
- c. Save this report template, and then print the report for all the records.

Project 13 *Modifying the Report:* Using the PAYRPT1 report template you created in Project 12, do the following:

- a. COPY the PAYRPT1 report template to PAYRPT2 to create another report template.
- b. Modify the new report template, PAYRPT2, to remove the DEPT column.
- c. Save this report template, and print the report.

Project 14 *Putting It All Together:* Using the PAYROLL table and the appropriate query, use the PAYRPT1 report template to print the following reports:

- a. Only those personnel in the ACCTG department.
- b. Only those personnel whose HOURS exceed 40.

Project 15 *On Your Own:* Design your own table (called MUSIC) to manage a music collection. Include fields for TITLE, ARTIST, RECORD COMPANY, TYPE (LP, CD, TAPE, and so on), and any other fields you might desire.

- a. In the PROJECTS database, create the table structure and add ten or more sample records.
- b. List the records to the printer.
- c. Sort the table by title and list it to the printer.

CONTINUING ON YOUR OWN—THINGS TO CONSIDER

This module presented all the basic database management concepts that should be sufficient for most uses. However, there are other topics beyond the scope of this manual that will greatly expand your abilities and applications of database management programs. Feel free to refer to the *Help* screens that are offered in Access and to any documentation that is available to you.

Remember, you cannot harm the program or the computer by experimenting. You might want to look into these topics:

- 1. Relational and logical operators.
- 2. Creating customized entry and search screens.
- 3. Combining search conditions.
- 4. Creating calculated fields in a table, a query, and a report.
- 5. Importing from, and exporting to, spreadsheets and word processing programs.
- 6. Creating true relationships between tables.
- 7. Merging graphics into the program.
- 8. Merging records from another table.
- 9. Writing command programs to automate database functions.
- 10. Creating report templates with groups and subtotals.

COMMAND SUMMARY—ACCESS 2016

NOTE: Ribbon command button is shown in BOLD CAPS followed by its location in parentheses—Tab (in italics) and Group—as in “**BOLD** (*Home*, Font).”

ADD A NEW RECORD:	Open table, move to bottom, type data To end: right-click table tab, Close
CLOSE A WINDOW:	Click the window’s close button, or right-click its tab, <i>C</i> lose
CREATE A DATABASE:	<i>Blank database</i> button in center pane, Browse in right pane, check <i>Save in</i> drive, name, <i>OK</i>
CREATE A QUERY:	See QUERY
CREATE A REPORT:	Open database, <i>Create tab</i> , REPORT WIZARD (<i>Create</i> , Reports)
CREATE A TABLE:	Open database, <i>Create tab</i> , <i>Design View</i> button, type name, <i>OK</i>
DELETE A RECORD:	Open table, click leftmost column of row, DELETE , <i>Yes</i>
EDIT A RECORD:	Open table, move to record, edit the record
EXIT ACCESS:	File tab , <i>E</i> xit Access
FIND A RECORD:	Open table, click in top of row, Find (<i>Home</i> , Find)
HELP WINDOW:	HELP , follow screen
LAUNCH ACCESS:	Start Windows, find and click Access icon
MODIFY A REPORT:	Open database, double-click report object, DESIGN VIEW
OPEN A TABLE:	Open database, double-click table object
PRINT A TABLE:	Open table, File tab , <i>P</i> rint, <i>OK</i>
QUERY:	Create: in database, QUERY DESIGN (<i>Create</i> , Other), select table, <i>Add</i> , <i>Close</i> , then select desired fields and criteria Use: Open database, double-click query object
QUIT ACCESS:	See Exit
REPORT GENERATION:	Open database, double-click report object, then: to see on screen, click File tab , point to <i>Print</i> , click <i>Preview</i> ; to print, open report, click File tab , click <i>Print</i> , <i>OK</i>
SORT RECORDS:	Open table, click topmost cell in field, ASCENDING or DESCENDING (<i>Home</i> , Sort & Filter)
VALIDITY CHECK:	In table structure, highlight field, then enter desired validity check