

2 Working with Microsoft Excel 2016

LESSON SKILL MATRIX

Skills	Exam Objective	Objective Number
Creating Workbooks	Create a workbook.	1.1.1
Saving Workbooks	Save workbooks in alternative file formats.	1.5.2
	Inspect a workbook for compatibility issues.	1.5.8
Entering and Editing Basic Data in a Worksheet	Replace data.	2.1.1
	Adjust row height and column width.	1.3.7
	Fill cells by using Auto Fill.	2.1.4
	Insert and delete cells.	2.1.5
Using Data Types to Populate a Worksheet	Apply number formats.	2.2.5
Cutting, Copying, and Pasting Data	Cut, copy, or paste data.	2.1.2
Editing a Workbook's Properties	Modify document properties.	1.4.6

SOFTWARE ORIENTATION

Excel's Home Tab

The ribbon in Microsoft Office Excel 2016 is made up of a series of tabs, each related to specific kinds of tasks that you perform in Excel. The Home tab, shown in Figure 2-1, contains the commands that people use the most when creating Excel documents. Having commands visible on the work surface enables you to see at a glance most tasks you want to perform. Each tab contains groups of commands related to specific tasks or functions.

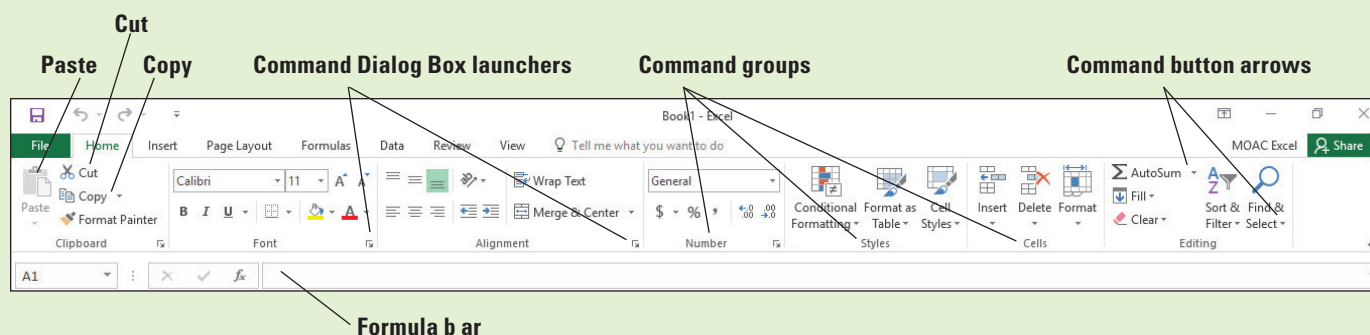


Figure 2-1

Ribbon, formula bar, and command options

Some commands have an arrow associated with them. In Figure 2-1, you see the button arrows associated with AutoSum and Find & Select. This indicates that in addition to the default task, other options are available for the task. Similarly, some of the groups have Dialog Box Launchers associated with them. Clicking these displays additional commands not shown on the ribbon. In Figure 2-1, the Clipboard, Font, Alignment, and Number groups have associated dialog boxes or task panes, whereas Styles, Cells, and Editing do not.

CREATING WORKBOOKS

There are three ways to create a new Microsoft Excel workbook. You can open a new, blank workbook when you launch Excel or by using the File tab to access Backstage view. You can open an existing Excel workbook, enter new or additional data, and save the file with a new name, thus creating a new workbook. You can also use a template to create a new workbook. A template is a model that has already been set up to display certain kinds of data, such as sales reports, invoices, and so on.

Creating a Workbook from Scratch

To create a new workbook, launch Excel and select a blank workbook or another type of template. If you are working in Excel and want to begin a new workbook, click the File tab, click New, and then click Blank workbook. Worksheets often include text that describes the content of the worksheet. In this exercise, you create two Excel workbooks: one with a company address and one with a quick phone message.

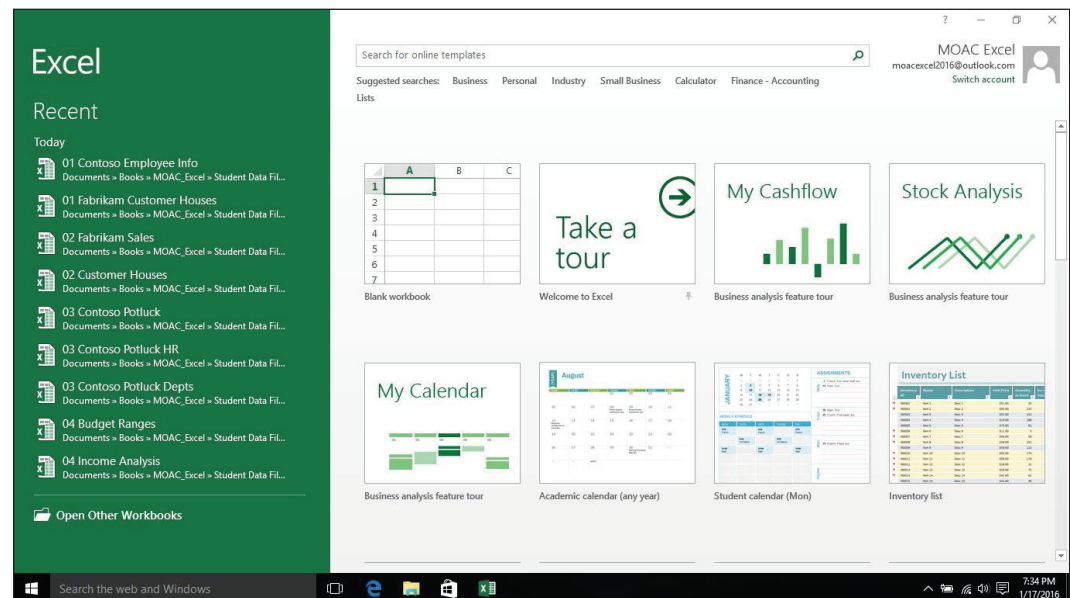
STEP BY STEP

Create a Workbook from Scratch

GET READY. LAUNCH Excel. Excel gives you options for starting a blank workbook, taking a tour, or using templates (see Figure 2-2).

Figure 2-2

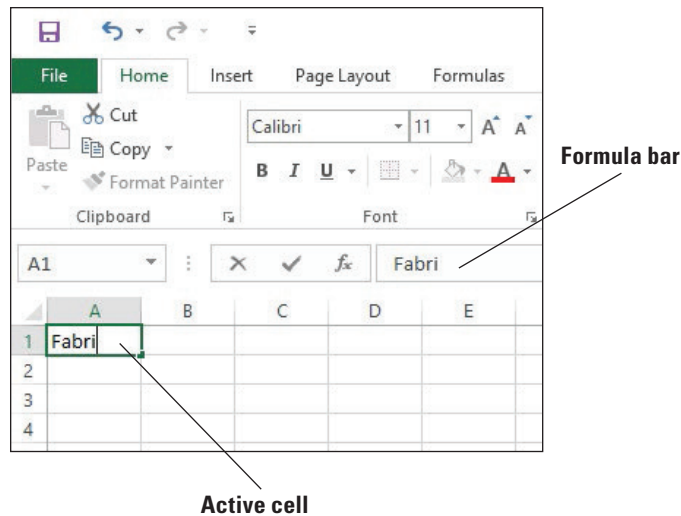
Available options after Excel is launched



1. Click **Blank workbook**. If you have just launched Excel, *Book1 – Excel* appears in the title bar at the top of the window. A blank workbook opens with A1 as the active cell.
2. In cell A1, type **Fabrikam Inc.** This entry is the primary title for the worksheet. Note that as you type, the text appears in the cell and in the formula bar (see Figure 2-3). See the definition of formula bar in the “Editing a Cell’s Contents” section, later in this lesson.

Figure 2-3

Typed text appears in both the active cell and the formula bar.



3. Press **Enter**. The text is entered into cell A1, but appears as if it flows into cell B1.
4. In cell A2, type **123 Fourth Street** and then press **Enter**.
5. In cell A3, type **Columbus, OH 43204** and then press **Enter**.
6. Sometimes you need a quick work area to complete another task while you are in the middle of a workbook. You can open another workbook as a scratch area. Click the **File** tab, and in the left pane, click **New**. The different templates available appear (refer to Figure 2-2).
7. In the Backstage view, click **Blank workbook**. A second Excel workbook opens and *Book2* appears in the title bar.
8. In cell A1, type **Phone Calls** and then press **Enter**.
9. In cell A2, type **David Ortiz UA flight 525 arriving 4:30 pm** and then press **Enter**.
10. Click the **File** tab to open Backstage view. In the left pane, click **Close** to close the Phone Calls workbook. In the message box, click **Don't Save**.

PAUSE. LEAVE the Fabrikam workbook open for the next exercise.

SAVING WORKBOOKS

When you save a file, you can save it to a folder on your computer's hard drive, a network drive, disc, CD, USB drive, OneDrive, or other storage location. You must first identify where the document is to be saved. The remainder of the Save process is the same, regardless of the location or storage device.

Naming and Saving a Workbook

When you save a file for the first time, you are asked two important questions: Where do you want to save the file? What name will you give to the file? In this lesson, you practice answering these questions for two different files. By default in all Office applications, documents are saved to the Documents folder or to your OneDrive, depending on settings specified during the program installation.

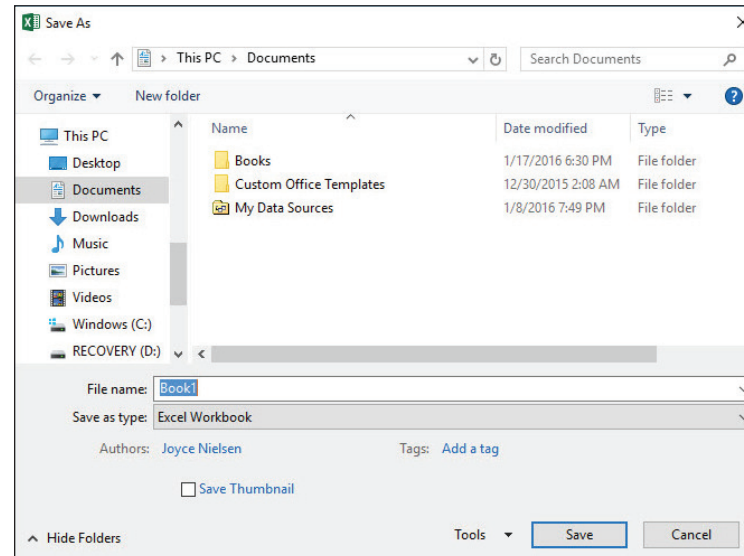
STEP BY STEP**Name and Save a Workbook**

GET READY. USE the workbook from the previous exercise.

1. Click the **File** tab to open Backstage view. In the left pane, click **Save As** to display the save options.
2. Double-click **This PC** to open the *Save As* dialog box (see Figure 2-4).

Figure 2-4

Save As dialog box



3. In the navigation pane on the left, in the *Save As* dialog box, click **Desktop**. The Desktop becomes the new destination of your saved file.
4. In the *Save As* dialog box, click **New folder**. A folder icon appears with the words *New folder* selected.
5. Type **Excel Lesson 2** and then press **Enter**.
6. Click the **Open** button.
7. In the File name box, type **02 Fabrikam Address Solution**.
8. Click the **Save** button.

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

Take Note Save your workbook often and especially before opening another workbook, printing, or after you enter information.

Saving to Your OneDrive

OneDrive is a cloud-based application that allows you to store and sync your files so you can retrieve them anywhere and share them with other people if desired. OneDrive is also a great place to store backup files of important documents. OneDrive comes with recent versions of Windows and Microsoft Office. A free desktop app is also available for mobile devices. This exercise assumes you already have access to OneDrive.

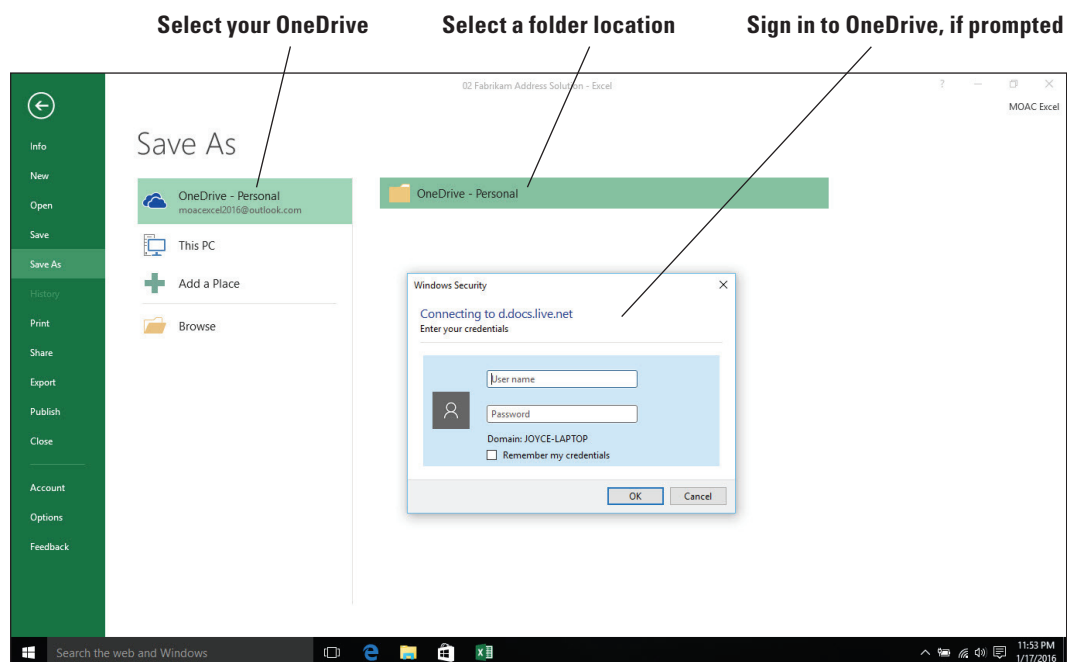
STEP BY STEP**Save to Your OneDrive**

GET READY. USE the workbook from the previous exercise.

1. Click the **File** tab and then click **Save As**.
2. In the Backstage view, under Save As, click your **OneDrive** account, and then click a folder location in the right pane. You may need to sign in to OneDrive if you haven't already (see Figure 2-5).

Figure 2-5

OneDrive information in Backstage view



3. Click the **New folder** button in the *Save As* dialog box.
4. In the New folder text box, type **Excel Lesson 2** to save a folder for this lesson on your OneDrive and then press **Enter**.
5. Double-click the **Excel Lesson 2** icon to move to that folder.
6. Keep the file with the same name (or type **02 Fabrikam Address Solution** in the File name box), and then click the **Save** button.

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

Saving a Workbook Under a Different Name

You can rename an existing workbook to create a new workbook. For example, when you have multiple offices, you can save a file with a new name and use it to enter data for another office. You can also use an existing workbook as a template to create new workbooks. In this exercise, you learn how to use the Save As dialog box to implement either of these options.

STEP BY STEP**Save a Workbook Under a Different Name**

GET READY. USE the workbook from the previous exercise.

1. In cell A2, type **87 East Broad Street** and then press **Enter**.
2. In cell A3, type **Columbus, OH 43215** and then press **Enter**.
3. Click the **File** tab, and in the left pane, click **Save As**. The Backstage view shows that the Current Folder in the right pane is Excel Lesson 2 on your OneDrive, because it was the folder that was last used to save a workbook.

4. Click **This PC** to return to the drive you used before.
5. In the right pane, click **Excel Lesson 2**.
6. Click in the **File name** box, click after **Fabrikam**, and then type **Broad** so the name reads **02 Fabrikam Broad Address Solution**.
7. Click **Save**. You created a new workbook by saving an existing workbook with a new name.
8. Click the **File** tab, click **Save As** in the left pane, and then click **Browse**.
9. In the File name box, type **02 Fabrikam Broad Address Template Solution**.
10. In the Save as type box, click the **drop-down arrow** and then choose **Excel Template**. Click the **Save** button.

Take Note Templates are automatically saved in another location so they can be opened with the File, New option.

PAUSE. CLOSE Excel.

Creating a template to use for each new workbook based on the example file eliminates the possibility that you might lose data because you might overwrite a file after you enter new data. To use the template, you choose File > New > Personal and select the template you saved. When you exit, you are prompted to save the file with a new name.

Saving a Workbook in a Previous Excel Format

Files created in earlier Excel versions can be opened and revised in Excel 2016. However, if some of your users do not have the latest version or use other applications, they might not be able to open your file. You can save a copy of an Excel 2016 workbook (with the .xlsx file extension) to the older Excel 97-2003 Workbook format (with the .xls file extension). The program symbol displayed with the filenames is different, but it is a good idea to give the earlier edition file a different name. It is also a good idea to check which features might be lost with Excel's compatibility checker.

STEP BY STEP

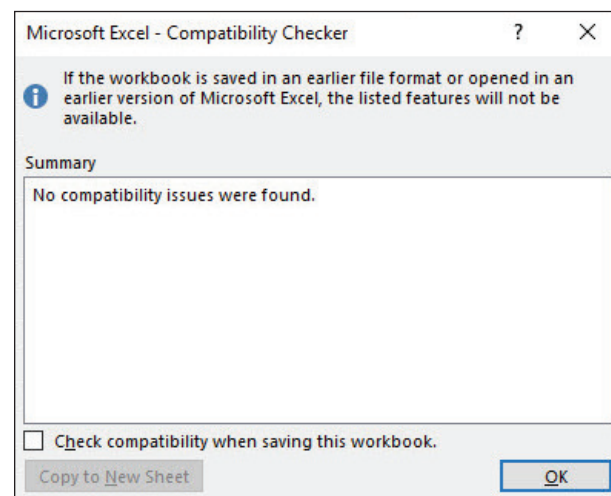
Save a Workbook in a Previous Excel Format

GET READY. LAUNCH Excel.

1. At the bottom of the left pane, click **Open Other Workbooks**.
2. In the list of recent files in the right pane, click **02 Fabrikam Broad Address Solution**.
3. First check for compatibility issues. Click the **File** tab, click **Info**, click **Check for Issues**, and then click **Check Compatibility**. The *Microsoft Excel - Compatibility Checker* dialog box in Figure 2-6 opens.

Figure 2-6

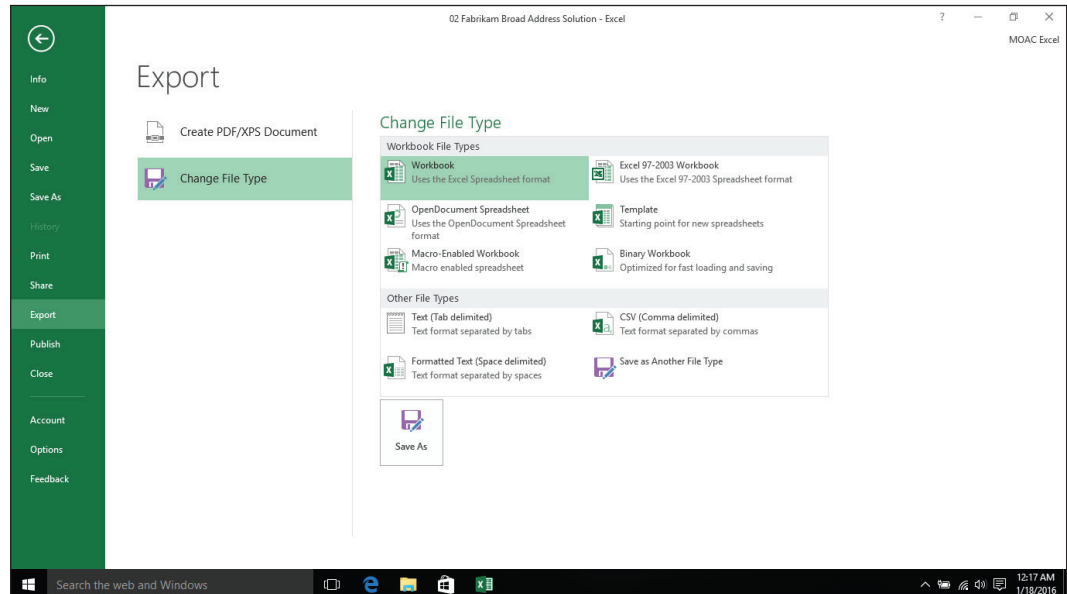
The Compatibility Checker showing no compatibility issues



4. Read the information in the *Compatibility Checker* dialog box and then click **OK**.
5. Click the **File** tab, click **Export**, and then click **Change File Type**. The Backstage view shows the different file types (see Figure 2-7).

Figure 2-7

Change File Type options in Backstage view



6. Click **Excel 97-2003 Workbook** and then click **Save As**.
7. In the File name box, click before **Solution**, type **97-03**, and then click **Save**.
8. Click the **File** tab, and then click **Close** to close the **02 Fabrikam Broad Address 97-03 Solution** workbook.
9. Click the **File** tab and then click **Open**. The right pane in Backstage view shows the last set of documents that have been saved.
10. Click **02 Fabrikam Broad Address Solution**.

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

Saving in Different File Formats

You can save an Excel 2016 file in a format other than .xlsx or .xls. The file formats that are listed as options in the Save As dialog box or on the Export tab depend on what type of file format the application supports. When you save a file in another file format, some of the formatting, data, and features might be lost.

STEP BY STEP

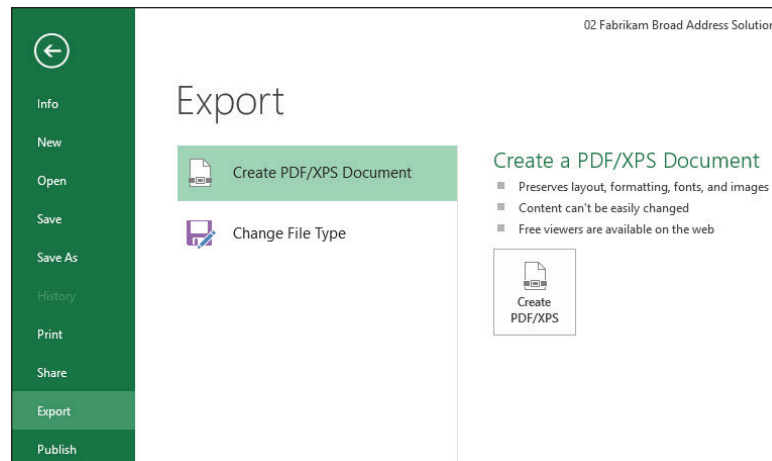
Save in Different File Formats

GET READY. USE the **02 Fabrikam Broad Address Solution** workbook from the previous exercise or type your name and address in a new workbook.

1. Click the **File** tab, and then click the **Export** button.
2. Click the **Change File Type** button. Excel explains the different file types (refer to Figure 2-7).
3. Click the **Create PDF/XPS Document** option. Figure 2-8 shows the reasons for using this format.

Figure 2-8

Backstage view with information about the PDF/XPS format



4. In the right pane, click the **Create PDF/XPS** button.
5. In the left navigation pane, click **Desktop**.
6. Double-click **Excel Lesson 2** to move to that folder.
7. In the *Publish as PDF or XPS* dialog box, ensure that the Save as type list shows PDF.
8. Click **Publish**.
9. The Reader application (or a Web browser) opens with the PDF file displayed.
10. Press **Alt+F4** to close the browser or Reader application.
11. If necessary, press **Alt+Tab** to return to the Excel file.

PAUSE. CLOSE the workbook and **LEAVE** Excel open to use in the next exercise.

Take Note

Adobe PDF (Portable Documents Format) ensures that your printed or viewed file retains the formatting that you intended, but the file cannot be easily changed. You can also save your workbooks in a Web page format for use on websites with the Single File Web Page or Web Page options in the Save As dialog box. To import data into another format, you can also try Text (Tab delimited) or CSV (Comma delimited) formats. All of these options are available from the Save as type drop-down list or the Export tab.

ENTERING AND EDITING BASIC DATA IN A WORKSHEET

You can type data directly into a worksheet cell. You can also copy and paste information from another worksheet or from other programs. **Copy** takes the information from one location and duplicates it. You use **Paste** to put this information into another location. To enter data in a cell in a worksheet, you must make the desired cell active and then type the data. To move to the next column after text is entered, press Tab. Continue to press Tab to go to the next column.

Entering Basic Data in a Worksheet

When you finish typing the entries in a row, press Enter to move to the beginning of the next row. You can also use the arrow keys to move to an adjacent cell or click on any cell to make that cell active. Press Enter to accept the entry and move down one row. In the following exercise, you create a list of people working in the office.

STEP BY STEP**Enter Basic Data in a Worksheet**

GET READY. If necessary **LAUNCH** Excel and **OPEN** a new workbook.

1. Click cell **A1**, type **Fabrikam Inc.**, and then press **Enter**. Notice that the active cell moves to the next row, to cell A2.
2. In cell A2, type **Employee List** and then press **Enter**.
3. Click cell **A4**, type **Name**, and then press **Tab**. Notice that the active cell moves to the next column, to cell B4.

**Troubleshooting**

If you type the wrong data, you can click the cell and retype the entry. In the following sections, you see how to edit text.

4. Type **Extension** and then press **Enter**. Notice that the active cell moves to the first cell in the next row.
5. Type **Richard Carey** and then press **Tab**.
6. Type **101** and then press **Enter**. Richard Carey's name looks cut off.
7. Click cell **A5** and notice that the complete entry for Richard Carey appears in the formula bar.
8. Click cell **A6**, type **David Ortiz**, and then press **Enter**.
9. Type **Kim Akers** and then press **Enter**.
10. Type **Nicole Caron** and then press **Enter**.
11. **SAVE** the workbook in the Excel Lesson 2 folder on your computer as **02 Fabrikam Employees Solution**. Your file should look like Figure 2-9.

Figure 2-9

The completed 02 Fabrikam Employees workbook

	A	B	C
1	Fabrikam Inc.		
2	Employee List		
3			
4	Name	Extension	
5	Richard Carey	101	
6	David Ortiz		
7	Kim Akers		
8	Nicole Caron		
9			

PAUSE. LEAVE the workbook open for the next lesson.

Take Note Text is stored in only one cell, even when it appears to extend into adjacent cells. If an entry is longer than the cell width and the next cell contains data, the entry appears in truncated form. To edit the data, you need to go to the cell where the text starts and not to the adjacent cells.

Changing the Column Width

In Excel, column width is established based on the existing data. When you add an entry in a column that extends beyond the column's width, it is necessary to adjust the column width to accommodate the entry.

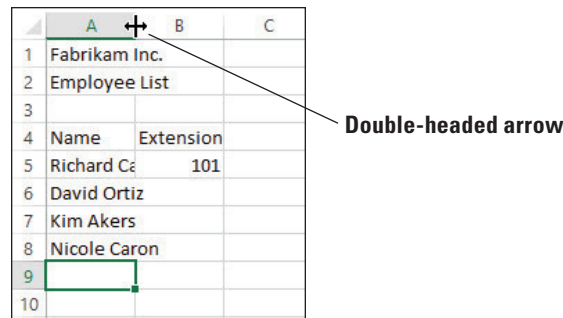
STEP BY STEP**Change the Column Width**

GET READY. Use the **02 Fabrikam Employees Solution** file from the previous exercise.

1. Move the mouse pointer between columns A and B, to the column markers at the top of the worksheet (see Figure 2-10). The mouse pointer changes to a double-headed arrow.

Figure 2-10

Resizing a column



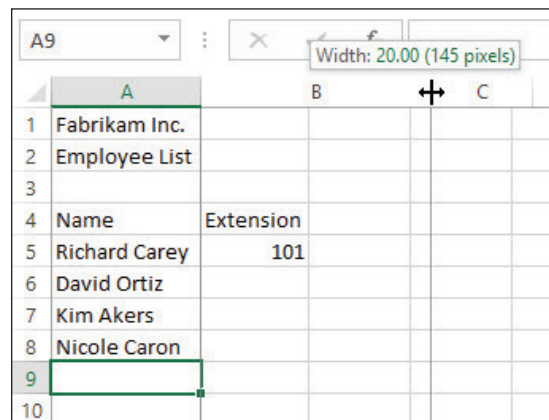
2. Double-click the column marker between A and B. The width of the column changes to the widest entry in column A. In this case, the widest entries are Employee List and Richard Carey's name.

Take Note To change the column width manually, point to the column marker between columns A and B and drag the pointer left or right instead of double-clicking.

3. Drag the double-headed arrow mouse pointer between columns B and C until the ScreenTip shows *Width: 20 (145 pixels)* or something close to this amount (see Figure 2-11), and then release the mouse button.

Figure 2-11

When you drag the double-headed arrow pointer, the ScreenTip shows the column width.



4. **SAVE** the *02 Fabrikam Employees Solution* file. This overwrites your previous version without the column width change.

PAUSE. CLOSE the workbook and **LEAVE** Excel open for the next exercise.

Take Note When you type text that is longer than the cell's width, the text appears as if it extends into the next cell. However, when you type in the next cell, the overflow text does not display. The text is still there. It is often easier to proof your work if you have the column widths match the longest text entries. You can double-click on the column markers to automatically adjust to the widest entry or drag the column marker to adjust the column width to your desired width.

Editing a Cell's Contents

One advantage of electronic records versus manual records is that changes can be made quickly and easily. To edit information in a worksheet, you can make changes directly in the cell or edit the contents of a cell in the **formula bar**, located between the ribbon and the worksheet. When you enter data in a cell, the text or numbers appear in the cell and in the formula bar. You can also enter data directly in the formula bar. Before changes can be made, however, you must select

the information that is to be changed. **Selecting text** means that you highlight the text that is to be changed. You can select a single cell or a portion of the cell's text in the formula bar before you make changes. You can also double-click in a cell to position the insertion point for editing.

STEP BY STEP

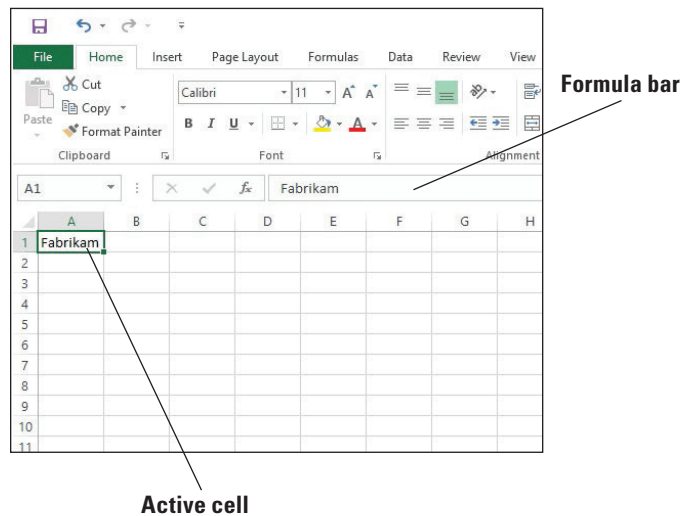
Edit a Cell's Contents

GET READY. OPEN a blank workbook.

1. Click cell **A1**, type **Fabrikam**, and then press **Enter**. The insertion point moves to cell A2 and nothing appears in the formula bar.
2. Click cell **A1**. Notice that the formula bar displays *Fabrikam* (see Figure 2-12).

Figure 2-12

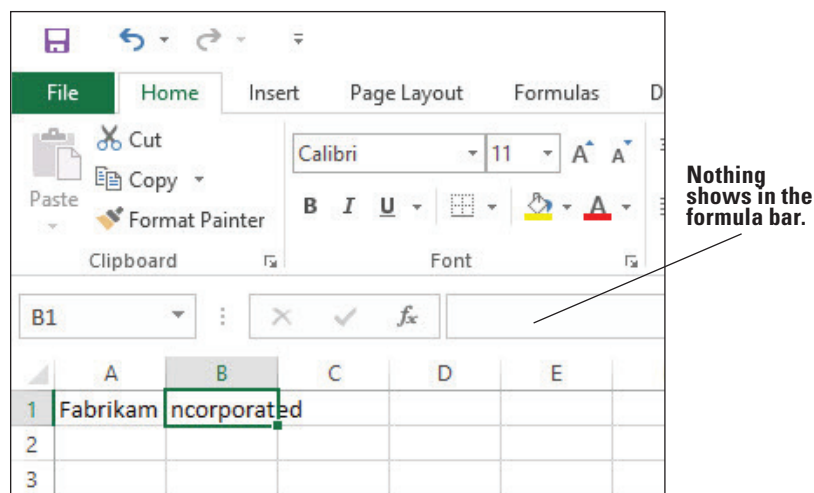
Active cell and formula bar displaying the same information



3. Click after **Fabrikam** in the formula bar, type a space, type **Incorporated**, and then press **Tab**. The insertion point moves to cell B1 and nothing appears in the formula bar (see Figure 2-13).

Figure 2-13

Although it looks like text is in B1, it is actually extended text from A1.



4. Click cell **A1** and in the formula bar, double-click on **Incorporated** to select it. Type **Inc.** and then press **Enter**.
5. Type **Sales** and then press **Enter**.
6. Click cell **A2** and then click after **Sales** in the formula bar.
7. Press **Home**. The insertion point moves to the beginning of the formula bar.

Take Note While you are editing in the formula bar, you can press **Home** to move to the beginning, **End** to move to the end, or the left or right arrow keys to move one character at a time. Press **Delete** to delete characters after the insertion point. Press **Backspace** to delete characters before the insertion point.

8. Type **Monthly** and then press the **spacebar**. Press **Enter**.

9. In cell **A3**, type **January** and then press **Enter**.

10. Click cell **A3**, type **February**, and then press **Enter**. Cell **A3**'s original text is gone and February replaces January.

11. Click cell **A3** and then press **Delete**. The entry in **A3** is removed.

12. Above row 1 and to the left of column **A**, click the **Select All** button. All cells on the worksheet are selected.

13. Press **Delete**. All entries are removed.

PAUSE. CLOSE the workbook without saving and **LEAVE** Excel open for the next exercise.

Take Note If you edit a cell's contents and change your mind before you press **Enter**, press **Esc** and the original text will be restored. If you change the contents of a cell, press **Enter**, and then do not want the change, click the **Undo** button on the **Quick Access Toolbar** or press **Ctrl+Z**. The previous entry will be restored.

You can edit a cell by double-clicking the cell and then typing the replacement text in the cell. Or, you can click the cell and then click in the formula bar.

When you are in Edit mode:

- The insertion point appears as a vertical bar and most commands are inactive.
- You can move the insertion point by using the left and right arrow keys.
- The Edit indicator appears at the left end of the Status bar.

Use the **Home** key on your keyboard to move the insertion point to the beginning of the cell, and use the **End** key to move the insertion point to the end of the cell. You can add new characters at the location of the insertion point.

To select multiple characters while in Edit mode, press **Shift** while you press the arrow keys. You also can use the mouse to select characters while you are editing a cell. Just click and drag the mouse pointer over the characters that you want to select.

As in the preceding exercises, there are several ways to modify the values or text you enter into a cell:

- **Erase** the cell's contents.
- **Replace** the cell's contents with something else.
- **Edit** the cell's contents.

Deleting and Clearing a Cell's Contents

To erase the entire contents of a cell, click the cell and then press **Delete**. This deletes what is in the cell rather than the cell itself. To erase the contents of more than one cell, select all the cells that you want to erase and on your keyboard, press **Delete**. Pressing **Delete** removes the cell's contents, but does not remove any formatting (such as bold, italic, or a different number format) that you might have applied to the cell.

STEP BY STEP**Delete and Clear a Cell's Contents**

GET READY. OPEN a blank workbook.

1. In cell A1, type **1** and then press **Enter**.
2. Type **2** and then press **Enter**.
3. Type **3** and then press **Enter**.
4. Type **4** and then press **Enter**.
5. Highlight cells **A1** through **A4** (containing the numbers 1 through 4).
6. Press **Delete**. All the cells are erased.
7. On the Quick Access Toolbar, click the **Undo** button to restore the cell entries.
8. Click cell **B5**, type **\$275,000**, and then press **Enter**. The value and format are placed into the cell.
9. Click cell **B5** and then press **Delete**.
10. Type **225000** without the dollar sign and comma and then press **Enter**. Notice that \$225,000 is formatted. Although the original entry is gone, the cell retains the previous format when you press Delete.
11. Click cell **B5** and on the Home tab, in the Editing group, click **Clear**.
12. Click **Clear Formats**. Cell B5 displays *225000* without the dollar sign and comma.

Take Note *Clear displays a number of options. To remove both the entry and the format, choose Clear All.*

PAUSE. CLOSE the workbook without saving and **LEAVE** Excel open for the next exercise.

USING DATA TYPES TO POPULATE A WORKSHEET

You can enter three types of data into Excel: text, numbers, and formulas. You have already entered basic text and numeric data in this lesson. In the following exercises, you enter dates, use Auto Fill to complete data in a series, and use the Flash Fill feature to speed data entry down a column. You enter formulas in Lesson 4, "Using Basic Formulas." Text entries contain alphabetic characters and any other characters that do not have a purely numeric value. The strength of Excel is its capability to calculate and analyze numbers based on the numeric values you enter. Of course, if you enter the wrong numbers, you get the wrong calculations. For that reason, accurate data entry is crucial.

Entering Dates

Dates are often used in worksheets to track data over a specified period of time. Like text, dates can be used as row and column headings. However, dates are considered serial numbers, which means that they are sequential and can be added, subtracted, and used in calculations. Dates can also be used in formulas and in developing graphs and charts. The way a date is initially displayed in a worksheet cell depends on the format in which you type the characters. In Excel 2016, the default date format uses four digits for the year. Also by default, dates are right-justified in the cells.

STEP BY STEP**Enter Dates**

GET READY. OPEN *02 Fabrikam Sales* from the data files for this lesson.

1. Click cell **B5**, type **1/4/2017**, and then press **Enter**.
2. Click cell **B6**, type **1/25/17**, and then press **Enter**. The date is entered in B6 as *1/25/2017* and B7 becomes the active cell.
3. Type **1/23** and then press **Enter**. *23-Jan* is entered in the cell. Click cell **B7**, and notice that *1/23/20XX* (with XX representing the current year) appears in the formula bar.

4. If the year displayed in the formula bar is not 2017, click cell **B7** and then press **F2**. Change the year to **2017** and then press **Enter**.
5. In cell **B8**, type **1/28/17** and then press **Enter**.
6. In cell **B9**, type **January 21, 2017** and then press **Enter**. *21-Jan-17* appears in the cell. If you enter a date in a different format than specified or had already entered something in the cell and deleted it, your worksheet might not reflect the results described. The date formats in column B are not consistent (see Figure 2-14). You apply a consistent date format in the next section.

Figure 2-14

If you don't type dates the same way, the formats are inconsistent in a workbook.

	A	B	C
1	Fabrikam Inc.		
2	Monthly Sales		
3			
4	Agent	Last Closing Date	January
5	Richard Carey	1/4/2017	\$275,000
6	David Ortiz	1/25/2017	125,000
7	Kim Akers	23-Jan	209000
8	Nicole Caron	1/28/2017	258,000
9	Ryan Calafato	21-Jan-17	145700
10			

7. In cell **B9**, type **1/1/17** and then press **Enter**. Notice that the value changes but the formatting remains the same.
8. Click the **Undo** button to return to the workbook shown in Figure 2-14.

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

Excel interprets two-digit years from 00 to 29 as the years 2000 to 2029; two-digit years from 30 to 99 are interpreted as 1930 to 1999. If you enter 1/28/28, the date will be displayed as 1/28/2028 in the cell. If you enter 1/28/37, the cell will display 1/28/1937.

If you type January 28, 2020, the date will display as 28-Jan-20. If you type 1/28 without a year, Excel interprets the date to be the current year. 28-Jan will display in the cell, and the formula bar will display 1/28/ followed by the current four-digit year. In the next section, you learn to apply a consistent format to a series of dates.

Take Note When you enter a date into a cell in a particular format, the cell is automatically formatted even if you delete the entry. Subsequent numbers entered in that cell will be converted to the date format of the original entry.

Regardless of the date format displayed in the cell, the formula bar displays the date in month/day/four-digit-year format because that is the format required for calculations and analyses.

Filling a Series with Auto Fill

Excel provides **Auto Fill** options that automatically fill cells with data and/or formatting. To populate a new cell with data that exists in an adjacent cell, use the Auto Fill feature either through the command or the fill handle. The **fill handle** is a small green square in the lower-right corner of a selected cell or range of cells. A **range** is a group of adjacent cells that you select to perform operations on all of the selected cells. When you refer to a range of cells, the first cell and last cell are separated by a colon (for example, C4:H4).

To use the fill handle, point to the lower-right corner of the cell or range until the mouse pointer turns into a +. Click and drag the fill handle from cells that contain data to the cells you want to fill with that data, or have Excel automatically continue a series of numbers, numbers and text combinations, dates, or time periods, based on an established pattern. To choose an interval for

your series, type the first two entries, select them, and then use the fill handle to expand the series using the pattern of the two selected cells. In this exercise, you use the Auto Fill command and fill handle to populate cells with data.

STEP BY STEP

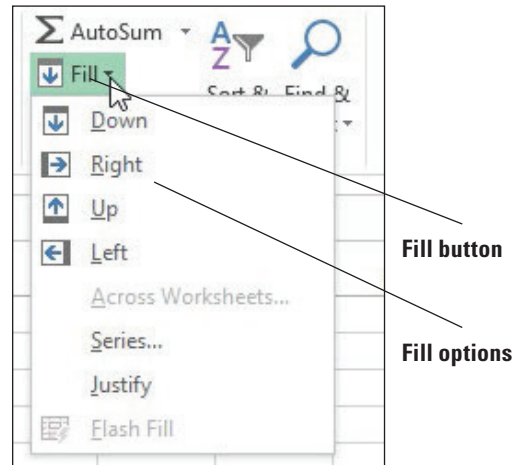
Fill a Series with Auto Fill

GET READY. USE the workbook from the previous exercise or type the text in Figure 2-14.

1. Select the range **C4:H4**. January is in the first cell.
2. On the Home tab, in the Editing group, click the **Fill** button. The Fill menu appears (see Figure 2-15).

Figure 2-15

Fill drop-down menu



3. From the menu, click **Right**. The contents of C4 (January) are filled into all the cells.
4. Click the **Undo** button.
5. Select the range **C9:C13** and then click the **Fill** button. Choose **Down**. The content of C9 is copied into the four additional cells.
6. Click the **Undo** button.
7. Click cell **C4**, point to the fill handle in the lower-right corner of the cell (see Figure 2-16), and drag it to E4 and release. The Auto Fill Options button appears next to the range, and January through March are displayed.

Figure 2-16

Mouse pointer changes to a black+in the lower-right corner of a selected cell or range

	A	B	C
1	Fabrikam Inc.		
2	Monthly Sales		
3			
4	Agent	Last Closing Date	January
5	Richard Carey	1/4/2017	\$275,000
6	David Ortiz	1/25/2017	125,000
7	Kim Akers	23-Jan	209000
8	Nicole Caron	1/28/2017	258,000
9	Ryan Calafato	21-Jan-17	145700

8. Click cell **C5**, point to the fill handle, and then drag it to **C9** and release. All the numbers turn to *\$275,000* in column C. The Auto Fill Options button appears near the lower-right corner of the selected range (see Figure 2-17).
9. Click the **Auto Fill Options** button, and choose **Fill Formatting Only** from the list that appears. All the numbers return to their previous values and are formatted with dollar signs and commas.
10. Repeat Steps 8 and 9 for the range **B5:B9**.

Figure 2-17

You can fill numbers, formats, or other options.

	A	B	C	D
1	Fabrikam Inc.			
2	Monthly Sales			
3				
4	Agent	Last Closing Date	January	February
5	Richard Carey	1/4/2017	\$275,000	
6	David Ortiz	1/25/2017	\$275,000	
7	Kim Akers	23-Jan	\$275,000	
8	Nicole Caron	1/28/2017	\$275,000	
9	Ryan Calafato	21-Jan-17	\$275,000	
10				
11				

Auto Fill Options button

- 11. Click cell **A9**, and then drag the fill handle down to **A15**. Ryan Calafato’s name is repeated.
- 12. Click the **Undo** button to return the spreadsheet.
- 13. **SAVE** the workbook as **02 Fabrikam Sales Solution**.

PAUSE. CLOSE the workbook and **LEAVE** Excel open for the next exercise.

After you fill cells using the fill handle, the Auto Fill Options button appears so that you can choose how the selection is filled. In Excel, the default option is to copy the original content and formatting. With Auto Fill, you can select how the content of the original cell appears in each cell in the filled range.

Take Note When you type sufficient data for Excel to recognize a series, the fill handle will do the rest. For example, to record daily sales, you might want to have consecutive columns labeled with the days of the week. If you type Monday in the first cell, you can fill in the rest of the days by dragging the fill handle from the Monday cell to complete the series.

Excel recognizes January as the beginning of a natural series and completes the series as far as you take the fill handle. By definition, a **natural series** is a formatted series of text or numbers that are in a normal sequence such as months, weekdays, numbers, or times. For example, a natural series of numbers could be 1, 2, 3, or 100, 200, 300, or a natural series of text could be Monday, Tuesday, Wednesday, or January, February, March. For different natural series, see Table 2-1.

Table 2-1

Examples of Auto Fill series

Initial Selection	Extended Series
1	1, 1, 1, 1, ...
1, 2	3, 4, 5, ...
2017, 2018	2019, 2020, 2021, ...
8:00	9:00, 10:00, 11:00, ...
6:00 PM	7:00 PM, 8:00 PM, ...
Mon	Tue, Wed, Thu, ...
Monday	Tuesday, Wednesday, Thursday, ...
Jan	Feb, Mar, Apr, ...
January	February, March, April, ...
Qtr1	Qtr2, Qtr3, Qtr4, Qtr1, ...
2/8/2017, 2/15/2017	2/22/2017, 3/1/2017, 3/8/2017, ...
1st anytext	2nd anytext, 3rd anytext, 4th anytext, ...
Anytext 1	Anytext 2, Anytext 3, Anytext 4, ...

Take Note Note that you might have to select two cells rather than one to continue some of the previous patterns. To create your own custom list, go to File > Options > Advanced > General section > Edit Custom Lists.

Filling a Series with Flash Fill

Another time-saving option for filling in data is the **Flash Fill** feature, introduced in Excel 2013. With Flash Fill, you can quickly fill a column of data using an example that is based on existing data in adjacent columns. As the following steps show, for example, you can almost instantly create columns for first and last names if the full name appears in another column. After you enter the initial item (such as the first name) in a column and start to type the second item in that column, Excel displays a preview of entries formatted the same way in the rest of the column. If the presented preview of the data is what you want, just press Enter to fill the column with the entries.

STEP BY STEP

Fill a Series with Flash Fill

GET READY. OPEN *02 Customers* from the data files for this lesson.

1. Notice the customer list in column A, which includes the last name followed by a comma and then the first name. You want to create separate columns for the first and last names.
2. Select cell **B2** in the First Name column.
3. Type **Alice** and then press Enter.
4. In cell B3, type **Ai** to begin the next first name, *Aidan*. Excel guesses that you want to enter the rest of the first names in column B and displays a preview of the results (see Figure 2-18).

Figure 2-18

Flash Fill showing possible list for all First Names

	A	B	C
1	Customers	First Name	Last Name
2	Ciccu, Alice	Alice	
3	Delaney, Aidan	Aidan	
4	Forde, Viggo	Viggo	
5	Glimp, Diane R.	Diane R.	
6	Hance, Jim	Jim	
7	Kemmotsu, Yukari	Yukari	
8	Kerr, Melissa	Melissa	
9	Langvad-Nielsen, Anders	Anders	
10	Low, Jeff	Jeff	
11	Mihelcic, Goran	Goran	
12	Patel, Rajesh M.	Rajesh M.	
13	Pereira, Michel	Michel	
14	Pfeiffer, Michael	Michael	
15	Piaseczny, Michal	Michal	
16	Ruggiero, Michael	Michael	
17	Suominen, Ari	Ari	
18	Thorell, Iben	Iben	
19	Valdes, Rene	Rene	
20	Vasa, Petr	Petr	
21	Wickham, Jim	Jim	
22	Yamagishi, Makoto	Makoto	

Type first name of first person in B2

Type first two letters of second person in B3 and Excel automatically guesses that you want all first names in column B.

5. Press **Enter** to accept the suggestion. The remaining first names fill down the column. Notice that Excel also includes the middle initials for those names that include them.
6. Select cell **C2** in the Last Name column.
7. Type **Ciccu** and then press Enter.
8. In cell C3, type **De** to begin the next last name, Delaney. Excel guesses that you want to enter the rest of the last names in column C and displays a preview of the results.

9. Press **Enter** to accept the suggestion. The remaining last names fill down the column.
10. **SAVE** the workbook as *02 Customers Solution*.

PAUSE. CLOSE Excel.

CUTTING, COPYING, AND PASTING DATA

After you enter data into a worksheet, you frequently need to rearrange or reorganize some of it to make the worksheet easier to understand and analyze. You can use Excel's Cut, Copy, and Paste commands to copy or move entire cells with their contents, formats, and formulas. These processes are discussed as the exercises in this section continue. You can also copy specific contents or attributes from the cells. For example, you can copy the format only without copying the cell value, or copy the resulting value of a formula without copying the formula itself. You can also copy the value from the original cell but retain the formatting of the destination cell.

Cut, copy, and paste functions can be performed in a variety of ways by using:

- The mouse
- Ribbon commands
- Shortcut commands, such as Ctrl+C (copy), Ctrl+X (cut), and Ctrl+V (paste)
- The Office Clipboard pane

Copying a Data Series with the Mouse

By default, drag-and-drop editing is turned on so that you can use the mouse to copy (duplicate) or move cells. Just select the cell or range of cells you want to copy and hold down Ctrl while you point to the border of the selection. When the pointer becomes a **copy pointer** (arrow with a plus), you can drag the cell or range of cells to the new location. As you drag, a scrolling ScreenTip identifies where the selection will be copied if you release the mouse button. In this exercise, you practice copying data with the mouse.

STEP BY STEP

Copy a Data Series with the Mouse

GET READY. Before you begin these steps, **LAUNCH** Microsoft Excel.

1. Open the *02 Customer Houses* file.
2. Select the range **A12:A22**.
3. Press **Ctrl** and point to the right border of the selected range. The copy pointer is displayed.



Troubleshooting

Be sure to hold down the Ctrl key the entire time you are dragging a data series for copying with the mouse, or you will move the series instead of copying it.

4. With the copy pointer displayed, press and hold down the left mouse button and drag the selection to the right, until H12:H22 appears in the scrolling ScreenTip next to the selection.
5. Release the mouse button and then release **Ctrl**. The data in A12:A22 also appears in H12:H22.

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

Moving a Data Series with the Mouse

Data can be moved from one location to another within a workbook in much the same way as copying. To move a data series, select the cell or range of cells and point to the border of the selection. When the pointer becomes a **move pointer**, you can drag the cell or range of cells to

a new location. When data is moved, it replaces any existing data in the destination cells. In this exercise, you practice moving a data series from one range of cells to another.

STEP BY STEP

Move a Data Series with the Mouse

GET READY. USE the *02 Customer Houses* workbook from the previous exercise.

1. Select **E12:E22**.
2. Point to the right border of the selected range. The move pointer (a white arrow with four smaller black arrows attached) is displayed.
3. With the move pointer displayed, hold down the left mouse button and then drag the selection to the right, until I12:I22 appears in the scrolling ScreenTip beside the selected range.
4. Release the mouse button. In your worksheet, the destination cells are empty; therefore, you are not concerned with replacing existing data. The data previously in E12:E22 is now in I12:I22.
5. Drag **A1** to **H12**. Note that a dialog box warns you about replacing the contents of the destination cells.
6. Click **Cancel**.
7. Drag **A1** to **H11**.
8. Drag **E1** to **I11**. Your worksheet should look like the one shown in Figure 2-19.

Figure 2-19

The 02 Customer Houses workbook

	A	B	C	D	E	F	G	H	I
1		Bedrooms	Baths	SqFt					
2	Delaney, Aidan	4	3	3,044	\$380,500				
3	Thorell, Iben	3	2	3,838	\$479,750				
4	Valdes, Rene	4	3	2,834	\$354,250				
5	Mihelcic, Goran	3	2	2,068	\$258,500				
6	Patel, Rajesh M.	4	3	2,753	\$344,125				
7	Kerr, Melissa	4	2	4,387	\$548,375				
8	Kemmotsu, Yukari	3	1	2,228	\$278,500				
9	Piaseczny, Michal	3	2	3,216	\$402,000				
10	Glimp, Diane R.	3	1	1,245	\$155,625				
11	Suominen, Ari	5	3	1,813	\$226,625			Customer Price	
12	Langvad-Nielsen, Anders	5	3	2,940				Langvad	#####
13	Low, Jeff	5	3	1,913				Low, Jeff	#####
14	Ciccu, Alice	2	1	4,090				Ciccu, A	#####
15	Ruggiero, Michael	5	3	3,138				Ruggiero	#####
16	Wickham, Jim	2	1	2,036				Wickham	#####
17	Forde, Viggo	2	1	1,366				Forde, V	#####
18	Vasa, Petr	5	3	2,543				Vasa, Pe	#####
19	Pereira, Michel	5	4	2,014				Pereira,	#####
20	Pfeiffer, Michael	2	1	1,717				Pfeiffer, I	#####
21	Hance, Jim	2	1	2,675				Hance, J	#####
22	Yamagishi, Makoto	3	2	2,394				Yamagis	#####

indicates entries won't fit with this format

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

Take Note When you attempt to move a selection to a location that contains data, a caution dialog box opens. *“There’s already data here. Do you want to replace it?”* is a reminder that moving data to a new location replaces the existing data. You can click OK or cancel the operation.

Copying and Pasting Data

The **Office Clipboard** collects and stores up to 24 copied or cut items that are then available to be used in the active workbook, in other workbooks, and in other Microsoft Office programs.

You can **paste** (insert) selected items from the Clipboard to a new location in the worksheet. **Cut** (moved) data is removed from the worksheet but is still available for you to use in multiple locations. If you copy multiple items and then click Paste, only the last item copied will be pasted. To access multiple items, you must open the Clipboard pane. In this exercise, you use commands in the Clipboard group and the Clipboard pane to copy and paste cell data.

STEP BY STEP

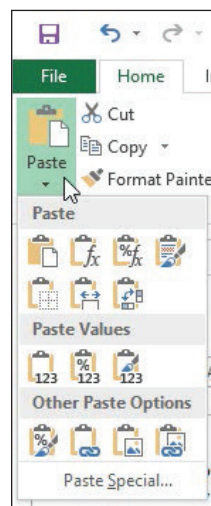
Copy and Paste Data

GET READY. USE the *02 Customer Houses* workbook from the previous exercise.

1. On the Home tab of the ribbon, click the **Clipboard** Dialog Box Launcher. The Clipboard pane opens on the left side of the worksheet. The most recently copied item is always added at the top of the list in this pane, and it is the item that will be copied when you click Paste or a shortcut command.
2. Select **A1:E22** and then press **Delete**.
3. Select **H11:I22** and in the Clipboard group, click the **Copy** button. The border around the selected range becomes a moving border.
4. Select **A1** and then click the **Paste** button. The moving border remains active around H11:I22. A copied range does not deactivate until you type new text, issue another command, double-click on another cell, or press Esc.
5. Select **A20** and then click the down arrow on the **Paste** button. The Paste options menu appears (see Figure 2-20).

Figure 2-20

The Paste options menu



6. Under Paste Values, select the first option. Notice that the values in the range B21:B31 are no longer formatted.
7. Click the **Undo** button.
8. Select **H11:I22** and then press **Delete**.
9. Press **Ctrl+Home** to return to the top of the workbook. Click the Close button in the upper-right corner of the Clipboard pane to close it.
10. **SAVE** the workbook as *02 Customer Houses Solution*.

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

Take Note If you point to the Paste options in either the shortcut menu or the Paste options in the Clipboard group, you will be able to preview your changes before actually implementing them.

EDITING A WORKBOOK'S PROPERTIES

The workbook has a number of properties that are associated with it to make managing it easier. The properties include items that you indirectly change such as file size and last edit date. The **workbook properties** also include items you directly change such as keywords. Assigning **keywords** (also called *tags*) to the document properties makes it easier to organize and find documents. You can also add more notes to your file for classification and document management.

Assigning Keywords

If you work for Fabrikam, Inc., you might assign the keyword *sales* to worksheets that contain data about revenue. You can then search for and locate all files containing information about sales. You can assign more than one keyword to a document.

STEP BY STEP

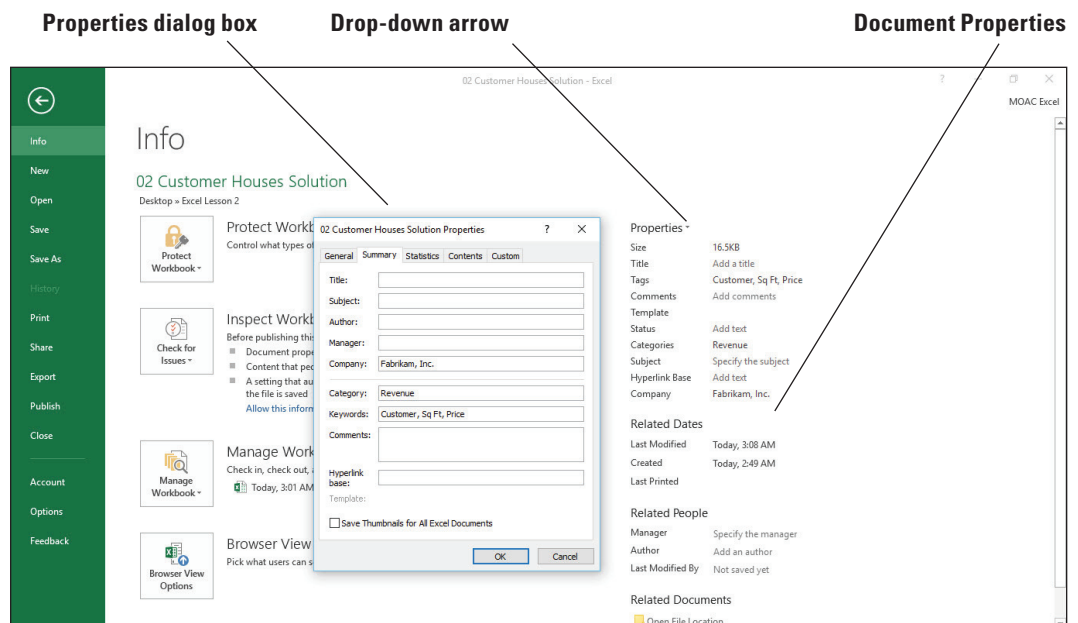
Assign Keywords

GET READY. USE the *02 Customer Houses Solution* workbook from the previous exercise.

1. Click **File**. The Backstage view displays current properties on the right side of the window.
2. At the bottom of the right pane, click the **Show All Properties** link to display additional properties.
3. Click the **Tags** field and type **Customer, Sq Ft, Price**.
4. Click the **Categories** field and type **Revenue**.
5. Click the **Company** field and type **Fabrikam, Inc.**
6. Above the Size field, click the **Properties** drop-down arrow, and then click **Advanced Properties**. The *Properties* dialog box opens (see Figure 2-21).

Figure 2-21

Current document's properties



7. Click the **Summary** tab in the dialog box to see the properties you entered.
8. Click the **Statistics** tab to see the date you modified the file.
9. Click **OK** to close the *Properties* dialog box.
10. Press **Esc** to return to the worksheet.
11. **SAVE** the workbook in the Excel Lesson 2 folder as *02 Customer Houses Prop Solution*.

PAUSE. CLOSE Excel.

After a file is saved, the Statistics tab records when the file was accessed and when it was modified. It also identifies the person who last saved the file. After a workbook is saved, the Properties dialog box title bar displays the workbook name.

Knowledge Assessment

Multiple Choice

Select the best response for the following statements.

1. Which of the following consists of details that describe or identify a file, including the author?
 - a. Paste
 - b. Document properties
 - c. Copy
 - d. Range
2. Which command is used to insert a cut or copied selection to a cell or range of cells?
 - a. Paste
 - b. Document properties
 - c. Copy
 - d. Range
3. If you want to use a workbook in another kind of document, you have the option to save using which of the following?
 - a. File format
 - b. Worksheet
 - c. File sheet
 - d. File range
4. Which is a small green square in the lower-right corner of a selected cell or range that you can use to copy one cell to adjacent cells or to create a series?
 - a. Cell pointer
 - b. Column marker
 - c. Fill handle
 - d. Formula bar
5. Which of the following can you drag or double-click to change the width of a column?
 - a. Cell pointer
 - b. Column marker
 - c. Fill handle
 - d. Formula bar

True / False

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

- T F** 1. Using the Delete key removes both text and formats from a cell.
- T F** 2. You can assign keywords so that others can search for your documents online.
- T F** 3. The formula bar is found at the bottom of the Excel window.
- T F** 4. Use the fill handle to create a natural series, such as the months of the year.
- T F** 5. Workbooks can be saved as web pages, PDF files, and for use in previous versions of Excel.

Projects

Project 2-1: Creating a Workbook

In this project, you will create a new workbook for Fabrikam, Inc., that is a result of a focus group showing the most desired options for houses for first-time homebuyers.

GET READY. LAUNCH Excel and start a new blank workbook.

1. Click cell **A1**, type **Fabrikam, Inc.**, and then press **Enter**.
2. Click cell **A2** and type **Focus Group Requests (Age 20-30)**.
3. Beginning in **A4**, type the following labels and values. Press **Tab** between each new cell and **Enter** to move to a new row:

Option	Priority	Cost
Gameroom	Low	\$25,000
Exercise equipment	Low	2500
Fenced yard for dog	Medium	10,000
Flat screen HDTV	Medium	1000
Furnished	Medium	15000
Washer & dryer	High	1500
Dishwasher	Medium	1000
Near bike path	High	0
Basketball hoop	Low	100
4. If necessary, adjust the column widths to display all of the text in the columns.
5. Drag the fill handle from **C5** through **C13** and choose **Fill Formatting Only**.
6. **SAVE** the workbook as **02 Focus Group Solution** in the Excel Lesson 2 folder you created in a previous exercise.

PAUSE. LEAVE the workbook open for the next project.

Project 2-2: Setting Document Properties and Assigning Keywords

In this project, you will use Document Properties to assign properties to an existing workbook.

GET READY. If necessary, **OPEN** the **02 Focus Group Solution** workbook you created in the previous project.

1. Click the **File** tab.
2. Click **Properties** and then click **Advanced Properties**. Click the **Summary** tab.
3. Click the **Title** field, type **Focus Group Requests**, and then press **Tab**.
4. In the Subject field, type **Sales** and then press **Tab**.
5. In the Author field, type **[your name]** and then press **Tab** four times.
6. In the Keywords field, type **20-30, options, priorities**.
7. Click **OK**.
8. **SAVE** the file as **02 Focus Properties Solution** in the Excel Lesson 2 folder.
9. **CLOSE** the file.

CLOSE Excel.