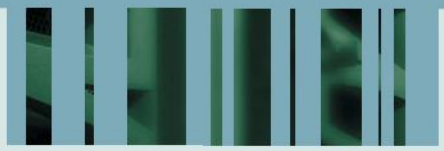


Estimated Time for Unit:
7 hours

UNIT III

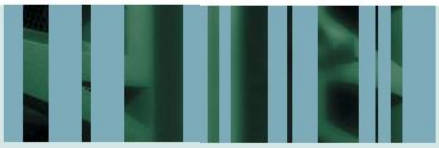
MICROSOFT EXCEL

LESSON 1 **1.5 HRS.**
Understanding Excel Fundamentals

LESSON 2 **2 HRS.**
Formatting and Editing Worksheets

LESSON 3 **2 HRS.**
Using Formulas and Functions

LESSON 4 **1.5 HRS.**
Working with Charts and Graphics



Estimated Time:
1.5 hours

LESSON 1

Understanding Excel Fundamentals

OBJECTIVES

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

- Start Excel, open an existing workbook, and navigate a worksheet.
- Save a workbook.
- Select cells, enter data, and edit cell contents.
- Manage worksheets in the workbook.
- Change workbook views.
- Add headers and footers.
- Preview and print worksheets.
- Close a workbook.

DATA FILES

To complete this lesson, you will need these data files:

Step EX 1-1.xlsx
Project EX 1-1.xlsx
Project EX 1-3.xlsx
Project EX 1-4.xlsx
Project EX 1-5.xlsx
Activity EX 1-1.xlsx

VOCABULARY

active cell
cell
cell reference
collated
columns
footer
formula bar
freeze panes
header
Name box
range
rows
select
sheet
sheet tab
spreadsheet software
workbook
workbook window
worksheet

Introduction

VOCABULARY
spreadsheet software
workbook
worksheet
sheet
workbook window
sheet tab

Microsoft Excel 2010 is the spreadsheet program included in the Microsoft Office 2010 suite of software. ***Spreadsheet software*** is used to calculate, analyze, and visually represent numerical data. You can perform a variety of tasks, from creating budgets to tracking inventory to totaling sales figures.

As in other Office programs, the various tools for entering and editing data in Excel are organized on the Ribbon tabs. Excel includes predefined formulas, functions, and charts that allow you to quickly and accurately perform calculations from the most basic to the most complex. With Excel you can create worksheets that are attractive and well organized, and that help you manage data effectively. Before you discover Excel's power to calculate and represent data quickly and easily, you need to learn basic skills such as opening, saving, and printing. In this lesson, you will learn techniques for performing fundamental skills using Excel.

Examining the Excel Program Window

An Excel file is called a ***workbook***. Each workbook contains a collection of related worksheets. A ***worksheet*** (also commonly called a spreadsheet or just a ***sheet***) is the grid with columns and rows where you enter and summarize data.

When you start Excel, a blank workbook opens, as shown in **Figure EX 1–1**. Use this figure to become familiar with the parts of the Excel program window.

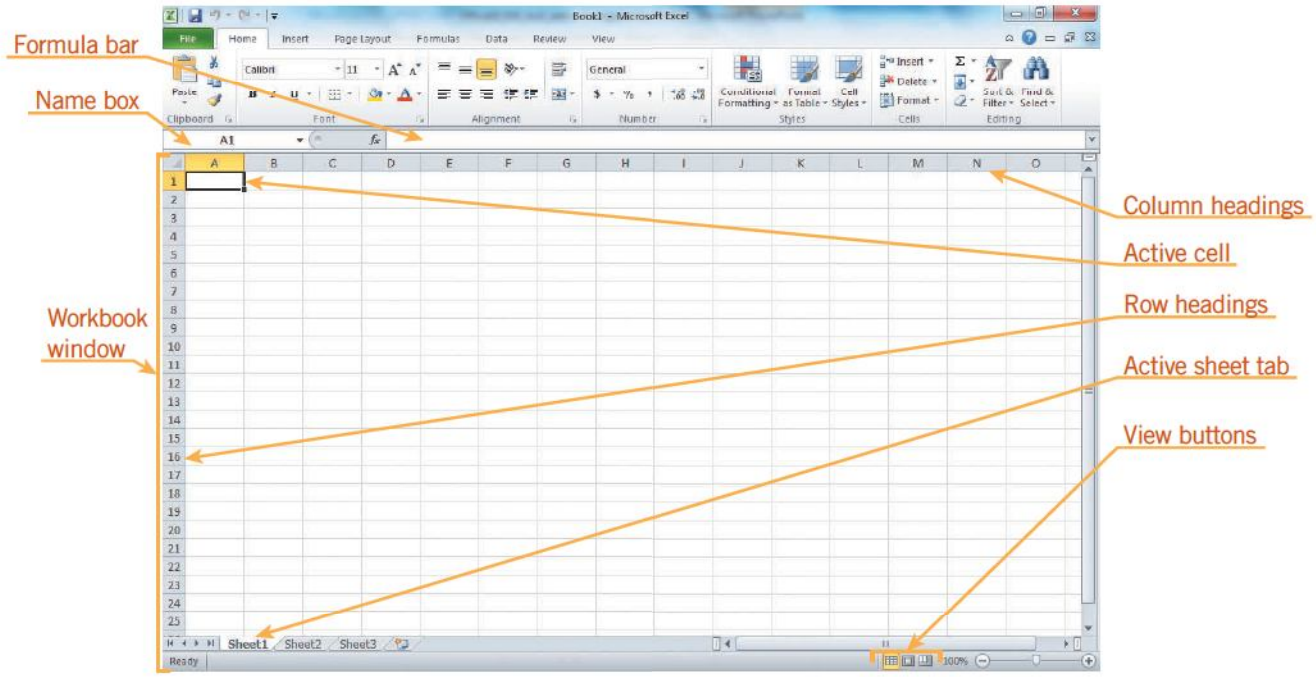


FIGURE EX 1–1 Excel program window

The portion of the program window displaying the worksheets is the ***workbook window***, and the name of each sheet is displayed on a sheet tab at the bottom of the workbook window. In Figure EX 1–1, Sheet1 is the active sheet, as shown by the ***sheet tab***. By default, a new workbook contains three worksheets. You can add as many sheets as you need to a workbook, up to 255 worksheets.

Columns in the worksheet are displayed vertically and are labeled with column headings from left to right beginning with A through Z, then AA through AZ, and so on. ***Rows*** are displayed horizontally and have numbered row headings running consecutively down the left side of the worksheet.

The rectangle where a column and row intersect is called a ***cell***. Each cell is identified by a ***cell reference***—the column letter heading followed by the row number heading, such as B5. The cell that is selected is called the ***active cell***, which means it is ready for data entry. Clicking a cell makes it active, as indicated by a thick black border around it. The column letter and row number headings of the active cell are also shaded for easy identification.

The ***Name box*** below the Ribbon displays the cell reference of the active cell. The ***formula bar*** next to the Name box displays the value or formula of the active cell.

VOCABULARY

columns

rows

cell

cell reference

active cell

Name box

formula bar

EXTRA FOR EXPERTS

You can access the General options in the Excel Options dialog box to change the number of sheets that are included by default in a new workbook. Click the File tab and then click Options to open the Excel Options dialog box.

EXTRA FOR EXPERTS

The names of the most recent workbooks you opened in Excel are displayed when you click Recent on the File tab. You can click a file in the list to open it. You can customize the number of files displayed in the list using the Advanced section of the Excel Options dialog box.

Starting Excel and Opening an Existing Workbook

To begin using Excel, you first need to start the program. You can do this by clicking the Start button on the Windows taskbar, and then clicking the program name on the All Programs menu, or by double-clicking an Excel program icon on the desktop. Once Excel starts, you can begin using it to create a new workbook or to open an existing workbook.

To open an existing workbook, you can search for and then open the workbook file using the Open dialog box shown in **Figure EX 1–2**. Excel provides three methods for displaying the Open dialog box. The most common method is through the Open command found on the File tab. You can also add an Open command to your Quick Access Toolbar or use the keyboard shortcut Ctrl+O.

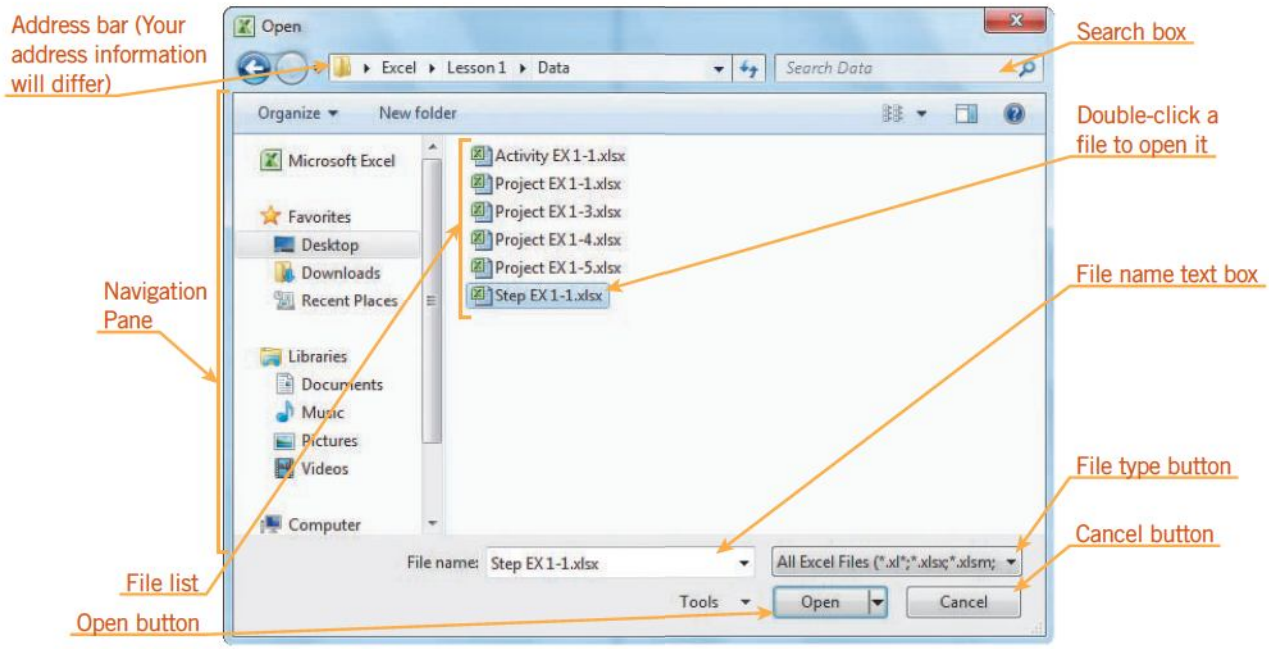


FIGURE EX 1–2 Open dialog box

You can use the Open dialog box to find and open existing files on your hard drive, CD, or other removable media; on a network drive to which you are connected; on your organization's intranet; or on the Internet. Double-clicking a file in the File list will open the file.

The following are parts of the Open dialog box:

- The Navigation Pane displays favorite links to folders that contain workbooks. You can open and view a folder's contents from the Navigation Pane.
- The Address bar at the top of the dialog box shows the folder path.
- The Search box allows you to find a file by name, file type, or location.
- The File type button lists other file types you can choose to open.
- The Open button arrow provides options for opening files, including opening the original file, opening a read-only version (when you want to open a file but keep the original file intact), or opening a copy of the original. If you open a copy or read-only version and edit or change the file, you cannot save changes to the original file. You can, however, use the Save As command to save your revisions with a new filename.
- The Cancel button closes the dialog box without opening a file.

Step-by-Step EX 1.1

1. Click the **Start** button on the Windows taskbar. The Start menu opens.
2. Click **All Programs**. A list of programs and program folders opens.
3. Click the **Microsoft Office** program folder. A list of Microsoft Office programs opens.
4. Click **Microsoft Excel 2010**. Excel 2010 starts and its program window opens a new, blank workbook.
5. Click the **File** tab on the Ribbon, and then click **Open** to open the Open dialog box.
6. If necessary, navigate to the folder containing the data files for this lesson. Double-click the file **Step EX 1-1.xlsx** in the File list. The workbook opens, as shown in **Figure EX 1–3**.

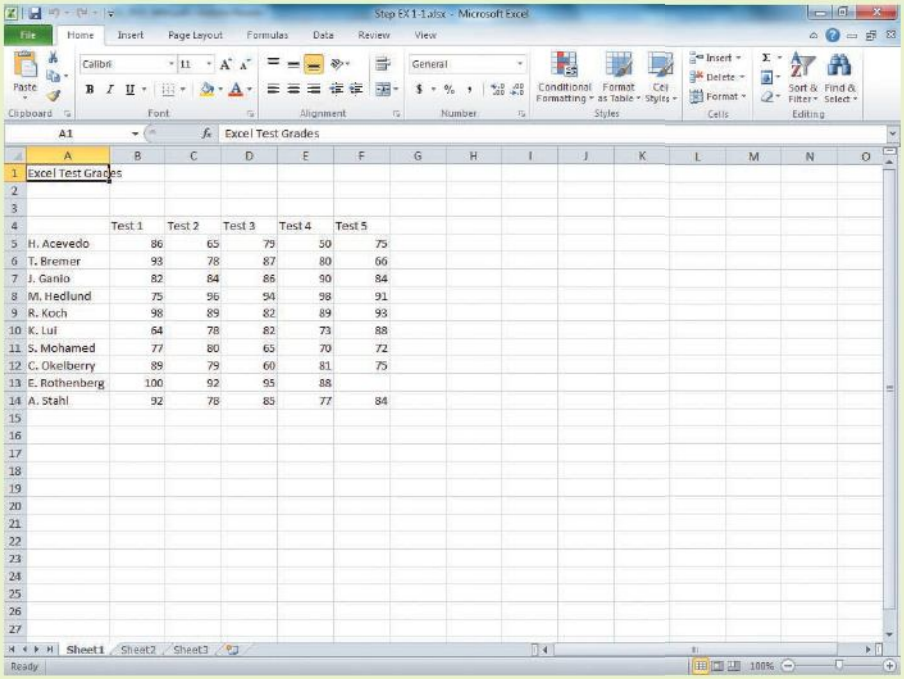


FIGURE EX 1–3
Step EX 1-1.xlsx workbook

7. Leave the workbook open for use in the next Step-by-Step.

Navigating in a Worksheet

A worksheet can, and often does, contain more data than can be displayed within the workbook window. You can use the scroll bars, scroll boxes, and scroll arrows to move through a worksheet. When you drag the vertical scroll box, a ScreenTip displays the number of the topmost row that is visible in the workbook window. When you drag the horizontal scroll box, the ScreenTip displays the letter of the leftmost column that is visible in the workbook window, as shown in **Figure EX 1–4**.

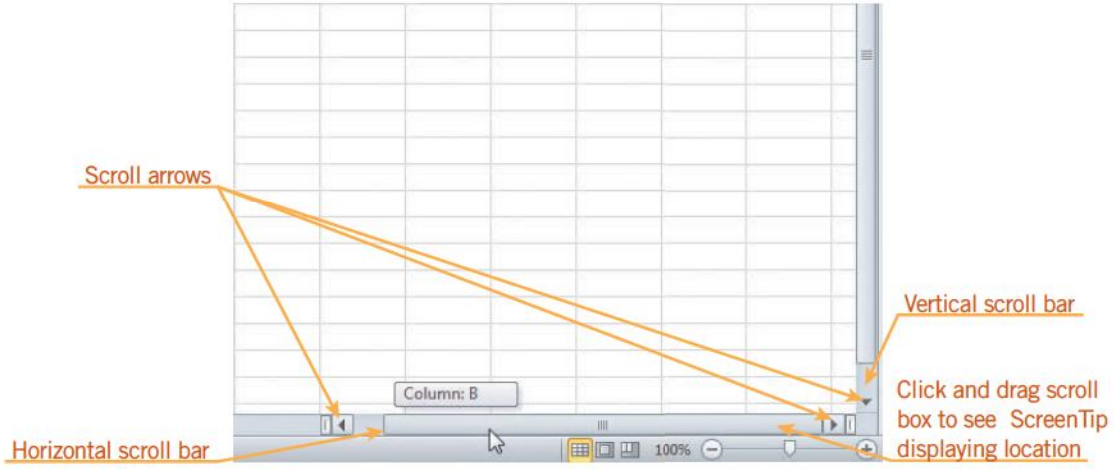


FIGURE EX 1–4 ScreenTip on horizontal scroll box

Clicking the scroll arrows on the vertical scroll bar moves the worksheet up or down one row. Clicking the scroll arrows on the horizontal scroll bar moves the worksheet left or right one column. You can also navigate using the keyboard and the Go To command.

Using the Keyboard

Table EX 1–1 contains some of the keys and key combinations you can use to move around a worksheet. When you use these keystrokes, you change the active cell.

TABLE EX 1–1 Using keystrokes to navigate the worksheet

PRESS KEY(S)	TO MOVE
Left arrow ←	One cell to the left
Right arrow →	One cell to the right
Up arrow ↑	One cell up
Down arrow ↓	One cell down
Page Up	Up one screen
Page Down	Down one screen
Home	To the first cell of a row
Ctrl+Home	To cell A1 at the beginning of the worksheet
Ctrl+End	To last cell of the worksheet containing data or formatting

EXTRA FOR EXPERTS

You can also navigate to cells that meet certain conditions or contain specific data. Click the Find & Select button, then click Go To Special to open the Go To Special dialog box and then select an option, such as Comments, Blanks, or Last cell.

Using the Go To Command

You can use the Go To dialog box to navigate to a particular location in the worksheet. The Go To dialog box is opened by clicking the Find & Select button in the Editing group on the Home tab and then clicking Go To. When you enter the cell name or range name in the Reference text box and click OK, the active cell moves to that specific location. This command is especially helpful when you want to move to a part of the worksheet that is not visible in the workbook window.

Step-by-Step EX 1.2

The Step EX 1-1 workbook from Step-by-Step EX 1.1 should be open in the Excel program window.

1. Press **Ctrl+Home** to move to cell A1 in the worksheet, if necessary.
2. Press the **right arrow** key to move one cell to the right, to cell B1.
3. Press the **down arrow** key to move down one cell, to cell B2.

4. Click and drag the **scroll box** on the horizontal scroll bar to the right and notice the ScreenTip displays the letter of the leftmost column that is visible on the screen, column B.
5. In the Editing group on the Home tab on the Ribbon, click the **Find & Select** button, and then click **Go To** on the menu to open the Go To dialog box.
6. In the Reference text box, type **A7**, as shown in **Figure EX 1–5**, and then click the **OK** button to close the dialog box and move to cell A7.

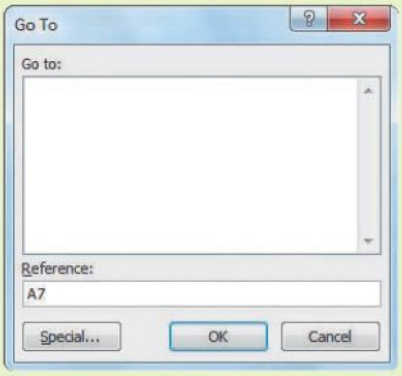


FIGURE EX 1–5
Go To dialog box

7. Press **Ctrl**+**End** to move to the last cell of the worksheet containing data or formatting, cell F14.
8. Press **Home** to move to the first cell of the row, cell A14.
9. Click cell **D7** to move to that cell.
10. Click the **down scroll arrow** on the vertical scroll bar to move the worksheet down one row, so row 2 becomes the top row displayed in the workbook window.
11. Press **Page Down** to move down one page. Because it is not a long worksheet, no data is visible in the worksheet grid.
12. Press **Ctrl**+**Home** to move to cell A1.
13. Leave the workbook open for use in the next Step-by-Step.

Saving Workbooks

The first time you save a workbook, the options for saving include the Save command on the File tab, the Save As command on the File tab, or the Save button on the Quick Access Toolbar. Each of these methods opens the Save As dialog box shown in **Figure EX 1–6**.

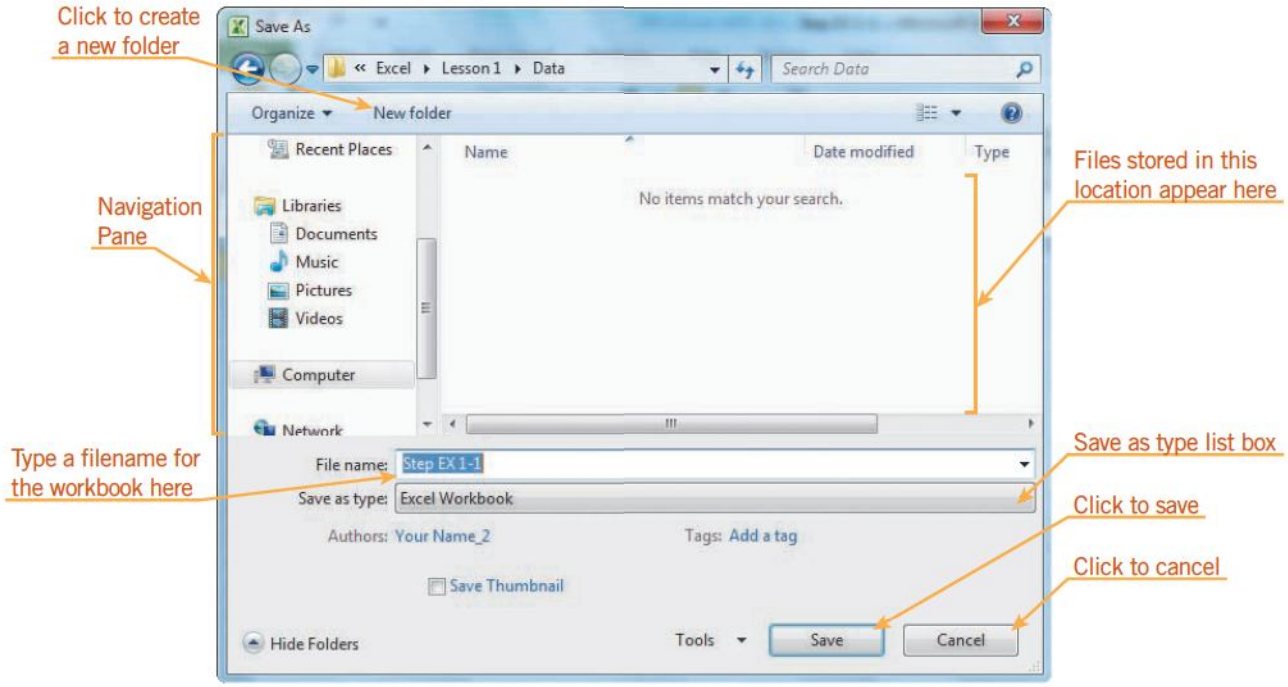


FIGURE EX 1–6 Save As dialog box

EXTRA FOR EXPERTS

Excel 2010 files and Excel 2007 files have an .xlsx extension that cannot be opened with previous versions of Excel. If you need to share a file with someone using an earlier version, you can use the Save As command located on the File tab to save files as an Excel 97-2003 Workbook with the .xls extension.

EXTRA FOR EXPERTS

For more information about Microsoft Office Web Apps, visit http://www.microsoft.com/office/2010.

After you save a file for the first time, the Save command saves your file with the previously specified name in the location you specified. The Save As command opens the Save As dialog box, in which you can make a copy of the file with a new name, location, or file type. The Save as type list box lets you save a document in another format or as a template. You might need to change the file format or program and version if you share files with others who use different software. To save a worksheet in a specific location, you use the Navigation Pane of the Save As dialog box to navigate to the folder in which you want to save the workbook.

Excel's AutoRecover feature automatically saves your workbook at regular intervals so that you can recover at least some of your work in case of a power outage or other unexpected shutdown. You can turn the AutoRecover feature off or change the frequency of saving by opening the Save page in the Excel Options dialog box from the File tab. However, you should still save your work often and not rely on this automatic saving feature.

You can use the Save & Send command on the File tab to save a document online in two ways. You can click the Save to Web button to make the file accessible from any computer using Windows Live SkyDrive, a free online storage service from Microsoft. You can also save to an organization's SharePoint site, which provides additional opportunities for collaboration, such as editing documents with multiple people at the same time. Saving online allows you to share and access documents through an Internet connection and to view and edit them in a Web browser using Microsoft Office Web Apps, which are free online companions to Word, Excel, and PowerPoint.

Step-by-Step EX 1.3

The Step EX 1-1 workbook from Step-by-Step EX 1.2 should be open in the Excel program window.

1. Click the **File** tab and then click **Save As** to open the Save As dialog box.
2. Navigate to the location where you save your files.
3. Click the **File name** text box, and type **Test Grades *XXX*** (replace *XXX* with your initials).
4. Click the **Save** button to save a copy of the workbook with the new name in the specified location.
5. Leave the workbook open for use in the next Step-by-Step.

Selecting Cells

Before you can enter data or use Excel commands, you must ***select***, or highlight, a cell or range. You can select a single cell by clicking it. A ***range*** is a group of cells. It can be a column, a row, or a group of cells forming a rectangle. A range is identified by the name of the cell in the upper-left corner of the range and the cell in the lower-right corner of the range, separated by a colon (:). For example, a range that includes all the cells between cells A1 and D5 is identified as A1:D5. To select a range, you can click the first cell and then drag to the last cell in the range.

Excel identifies a selected range by using a different background color for the cells included in the range (except for the first cell, which does not change color), as shown in **Figure EX 1–7**. The row number and column letter of any cells in the range are also shaded a different color. You can deselect a cell or range by pressing an arrow key or clicking any cell in the worksheet.

VOCABULARY

select

range

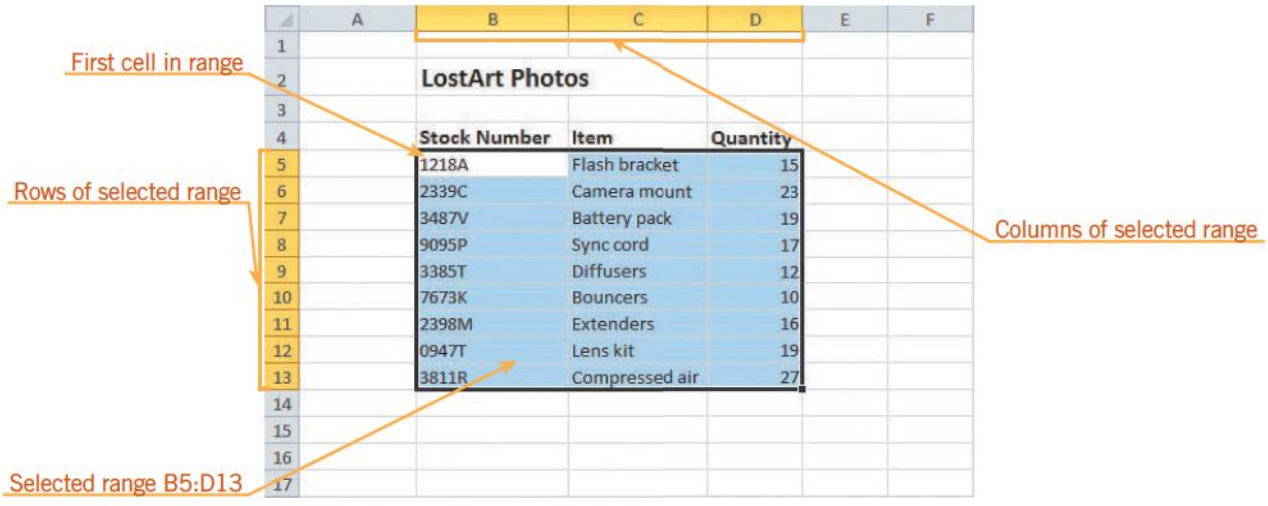


FIGURE EX 1–7 Selected range

You can select ranges or cells that are nonadjacent, meaning not side by side, by pressing and holding Ctrl while you click. You can select a column and a row at the same time using the same method. **Table EX 1–2** shows how to select cells using the mouse. You can also select cells using the keyboard by pressing and holding Shift and using the arrow keys to extend the selection. Another way to select a range is to type the range reference (for example, A1:C5) in the Name box and then press Enter.

TABLE EX 1–2 Selecting cells using the mouse

TO SELECT	DO THIS
A single cell	Click the cell
A range of cells	Click the first cell in the range (in the upper-left corner) and drag to the last cell in the range (in the lower-right corner) or Click the first cell in the range and then press and hold Shift and click the last cell in the range
Nonadjacent cells or ranges	Press and hold Ctrl as you click to select additional cells or click and drag to select additional ranges
An entire row	Click the row heading
An entire column	Click the column heading
All cells on the worksheet	Click the Select All button in the upper-left corner of the workbook window

Step-by-Step EX 1.4

The Test Grades *XXX* workbook from Step-by-Step EX 1.3 should be open in the Excel program window.

1. Click cell **C8** to select it, as shown in **Figure EX 1–8**.

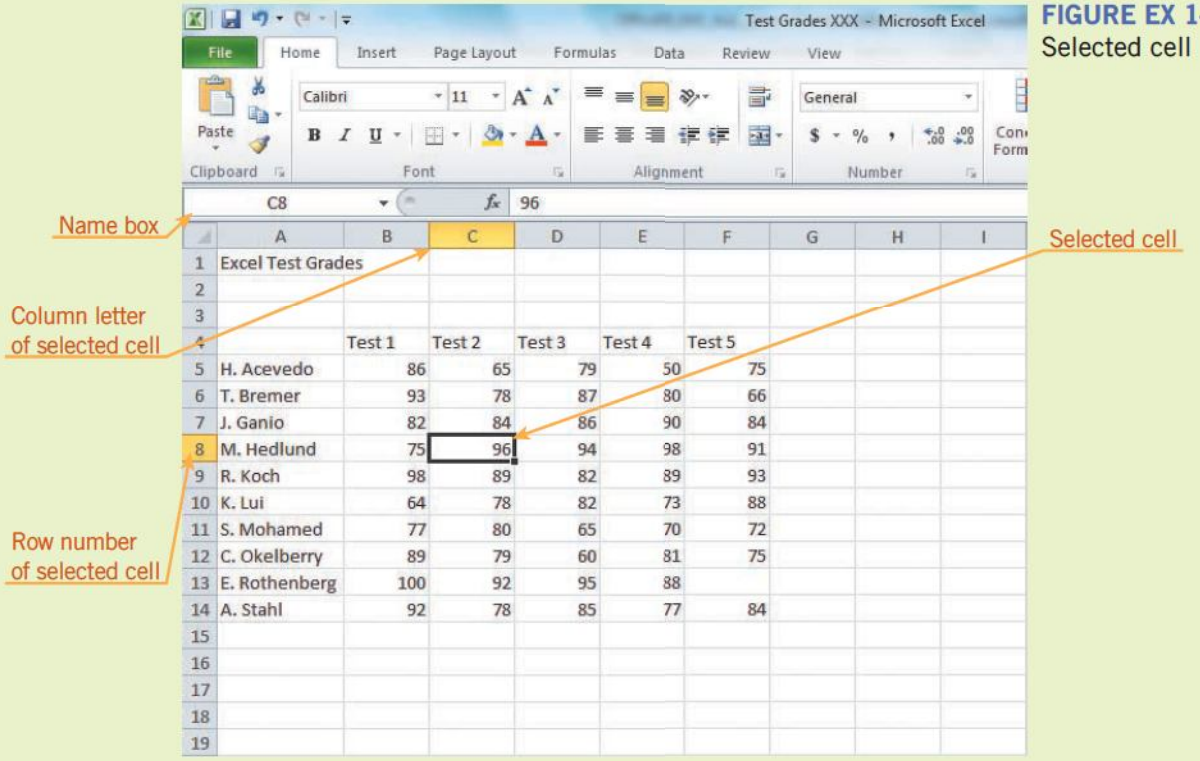
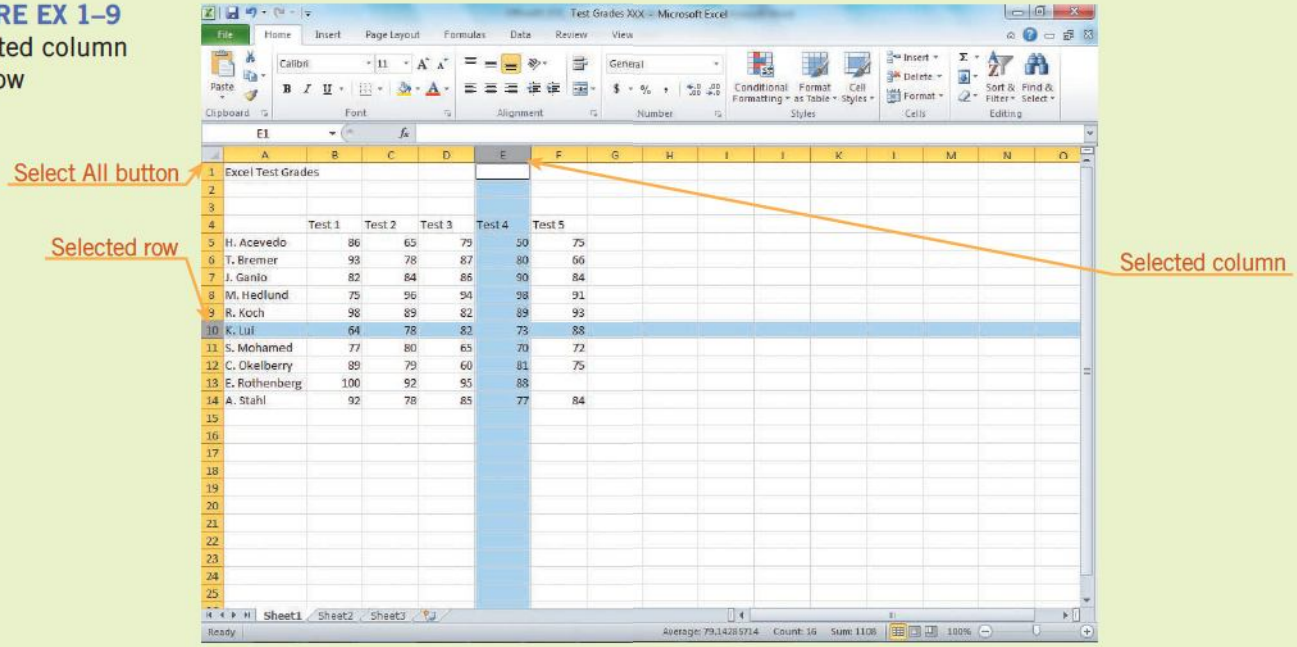


FIGURE EX 1–8
Selected cell

2. Click cell **B5** and, holding the mouse button down, drag to cell **F14** to select the range B5:F14. Notice the selected range is shaded, except for the first cell, which does not change color.
3. Click the **row heading 10** to select the entire row. Notice the whole row is shaded (except for the first cell), including the row number.

4. Press and hold **Ctrl** and then click the **column heading E** to select the entire column while row 10 is still selected. Your screen should look similar to **Figure EX 1–9**.

FIGURE EX 1–9
Selected column and row



5. Click the **Name** box, type **A5:A14**, and then press **Enter** to select that range.
6. Click the **Select All** button to select the entire worksheet.
7. Click cell **A1** to select it. Notice all the other cells on the worksheet are deselected.
8. Leave the workbook open for use in the next Step-by-Step.

Entering Data

You can enter data in Excel by typing numbers or text in the active cell and then pressing Enter or clicking the Enter button on the formula bar. The cell below then becomes the active cell. Entering data and then pressing Tab selects the cell to the right, making it the active cell. You can also press an arrow key after typing data to enter it, and then move to the cell above or below or to the right or left.

As you enter data in a cell, the data is displayed in the active cell and in the formula bar, as shown in **Figure EX 1–10**. As you begin entering data, the message in the status bar changes from *Ready* to *Enter*. You can click the Cancel button on the formula bar or press Esc to cancel the entry you started to type.

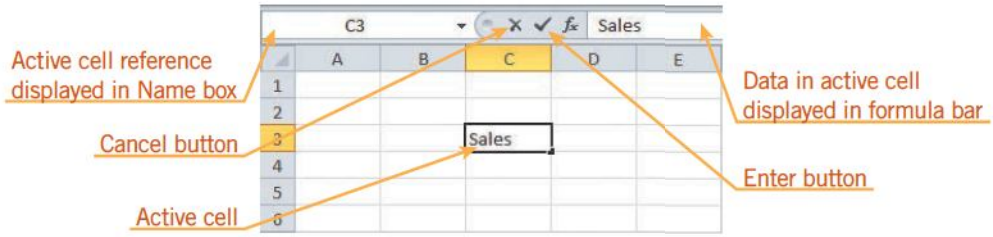


FIGURE EX 1–10 Formula bar

Understanding Data Types

Data in a cell can be text, such as letters, symbols, and other characters; or numbers, such as values, dates, and times. Generally speaking, numeric data can be used in calculations, whereas text cannot. Excel automatically determines whether data is text or numeric as you enter it.

By default, text is left-aligned in a cell and numbers are right-aligned, as shown in **Figure EX 1–11**. If you want to enter a number (such as a postal code) as text, you can type an apostrophe before the number to signal that it is not to be used in calculations. Otherwise, a postal code such as 07458 would be displayed without the leading zero and would be right-aligned. If a cell contains a combination of text and numbers, the contents are left-aligned.

WARNING

The alignment of data in a cell is not an accurate indicator of the data type. For example, do not assume data in a cell is numeric just because it is right-aligned. Cell alignment can be changed without affecting the data type.

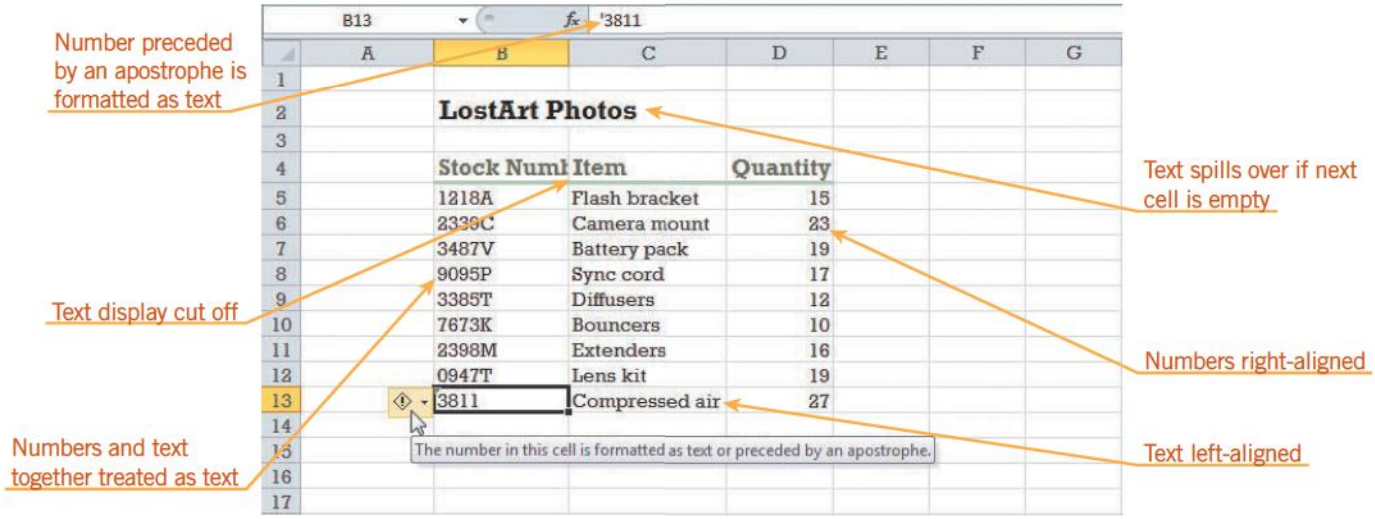


FIGURE EX 1–11 Data types

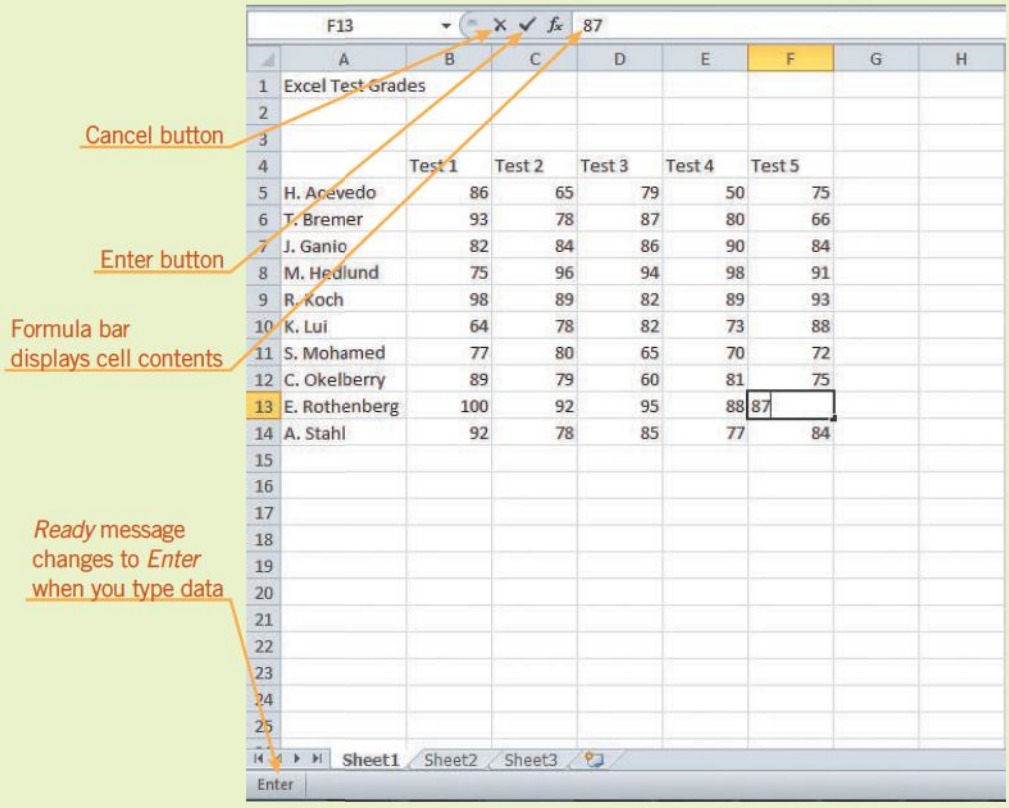
Text entries are often used as labels or headings that identify the numeric data you enter in a worksheet. If you enter text in a cell that is longer than the cell can display, it may spill over into empty cells to the right. The entire entry is still stored in the one cell, even though some of it is visible in adjacent cells. If the cell to the right already contains data, the text displayed in the cell in which it was entered is truncated, or cut off. The entire entry is still stored in the cell even though you cannot see all of it.

Step-by-Step EX 1.5

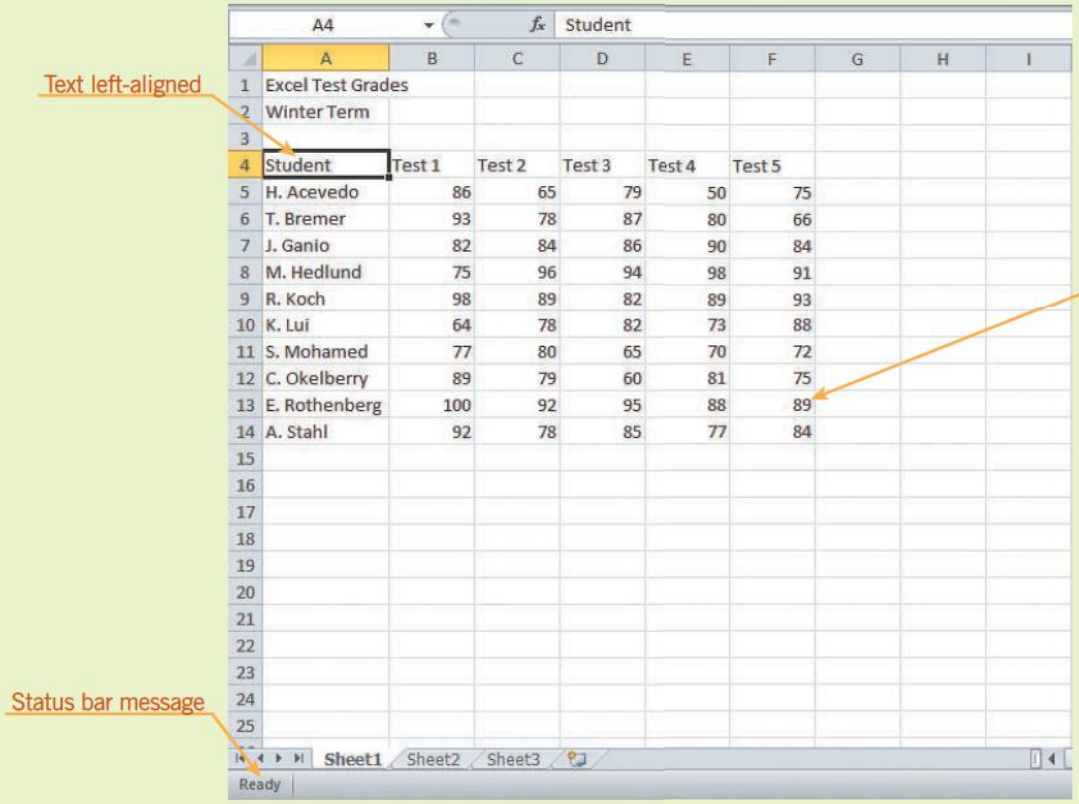
The Test Grades *XXX* workbook from Step-by-Step EX 1.4 should be open in the Excel program window.

1. Click cell **F13** to make it the active cell, and then type **87**. Notice that the number is displayed in the cell and in the formula bar, and the *Ready* message on the left of the status bar changes to *Enter*, as shown in **Figure EX 1–12**.

FIGURE EX 1–12
Entering data



2. Press **Esc** to cancel the entry.
3. In cell F13, type **89** and then press **Enter** to enter the number. Notice the number is right-aligned in the cell.
4. Press **Ctrl+Home** and then press the **down arrow** to navigate to cell A2. Type **Winter Term,** and press the **right arrow** key to enter the text and move the active cell to the right. Notice the text is left-aligned in the cell.
5. Click cell **A4**, and then type **Name**.
6. Click the **Cancel** button on the formula bar to cancel the entry.
7. In cell A4, type **Student** and then click the **Enter** button on the formula bar. Your screen should look similar to **Figure EX 1–13**.



	A	B	C	D	E	F
1	Excel Test Grades					
2	Winter Term					
3						
4	Student	Test 1	Test 2	Test 3	Test 4	Test 5
5	H. Acevedo	86	65	79	50	75
6	T. Bremer	93	78	87	80	66
7	J. Ganio	82	84	86	90	84
8	M. Hedlund	75	96	94	98	91
9	R. Koch	98	89	82	89	93
10	K. Lui	64	78	82	73	88
11	S. Mohamed	77	80	65	70	72
12	C. Okelberry	89	79	60	81	75
13	E. Rothenberg	100	92	95	88	89
14	A. Stahl	92	78	85	77	84

FIGURE EX 1–13
Data entered in a worksheet

8. Click the **Save** button on the Quick Access Toolbar to save the changes to the workbook.
9. Leave the workbook open for use in the next Step-by-Step.

Editing Cell Contents

When you need to make changes to the data in your worksheet, you can overwrite the existing contents using the same methods you use to enter data in a blank cell. When you select a cell, type new data, and press Enter, the new data replaces the original cell contents.

You can also edit data directly in the cell by double-clicking the cell or by selecting the cell and pressing F2. Or, you can select the cell and click in the formula bar. In the cell or the formula bar, you can click and drag to select the data or position the insertion point using arrow keys. Then you can use the Backspace or Delete keys to remove data or type new data.

If you want to remove all the data from a cell, you can clear it by right-clicking a cell and clicking Clear Contents or by using the Clear button located in the Editing group on the Home tab. When you click the Clear button, a menu is displayed with options to clear the cell's formats, the cell's contents, the cell's comments, or the cell's hyperlinks. You can also choose to clear the cell of all formatting, contents, comments, and links at once.

Step-by-Step EX 1.6

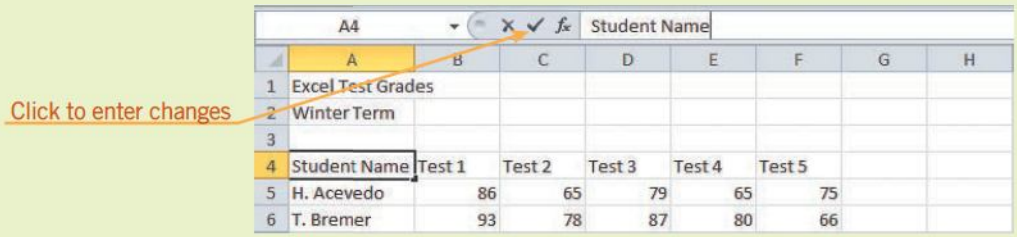
The Test Grades *XXX* workbook from Step-by-Step EX 1.5 should be open in the Excel program window.

1. Click cell **E5** to select it, type **65**, and then press **Enter** to replace the cell contents.
2. Double-click cell **A14** to activate it, and then double-click the name **Stahl** to select it, as shown in **Figure EX 1–14**.

FIGURE EX 1–14
Editing contents in a cell

3. Type **Teal** to edit the cell contents, and then press **Enter**.
4. Click cell **A4** to select it, and then click at the end of the word *Student* in the formula bar to position the insertion point.
5. Press the **spacebar** to insert a space, and then type **Name** in the formula bar after the word *Student*, as shown in **Figure EX 1–15**.

FIGURE EX 1–15
Editing contents in the formula bar



6. Click the **Enter** button on the formula bar to enter the changes in the cell.
7. Select the range **A5:F5**.
8. On the Home tab on the Ribbon, in the Editing group, click the **Clear** button, and then click **Clear All** on the menu to clear the contents and formatting from the cells in that range.
9. Save the workbook and leave it open for use in the next Step-by-Step.

Using Undo and Redo

You will often find it necessary to reverse, or undo, your most recent action. The Undo button on the Quick Access Toolbar, shown in **Figure EX 1–16**, undoes the last action; clicking the Undo button a second time undoes the prior action, and so on. If you click the Undo button arrow, you see a list of actions you can undo. Not all actions can be undone. The Undo ScreenTip changes to reflect the last action

that can be undone. For example, if you just entered the value of 65 in cell E5, the screen tip would read *Undo Typing '65' in E5*, because this was the last action you performed, and you can undo it with one click of the Undo button. Some actions cannot be undone; if you cannot undo an action, such as saving a file, then the button is dimmed and the ScreenTip reads *Can't Undo*.

FIGURE EX 1–16 Undo and Redo buttons on the Quick Access Toolbar

WARNING

Get into the habit of undoing (reversing) a mistake immediately after you make it, because the Undo menu can be confusing to use. For example, if you undo the third item on the menu, the first two items are undone as well. You might not remember what those actions were, or you might not notice the effect within your worksheet when they are undone.

If you perform and undo an action but then decide against the undo, you can use the Redo button on the Quick Access Toolbar to reverse an Undo action. The Redo button arrow displays a list of actions you can redo. When you cannot redo an action, the button is dimmed, and the ScreenTip reads *Can't Redo*.

Step-by-Step EX 1.7

The Test Grades *XXX* workbook from Step-by-Step EX 1.6 should be open in the Excel program window.

1. Click cell **G4**, type **Test 6**, and then press **Enter** twice.
2. In cell G6, type **76**, and then press **Enter**.
3. Click the **Undo** button arrow on the Quick Access Toolbar. Click the second item from the top of the menu, **Typing 'Test 6' in G4**, as shown in **Figure EX 1–17**. The last two actions are undone in the worksheet.

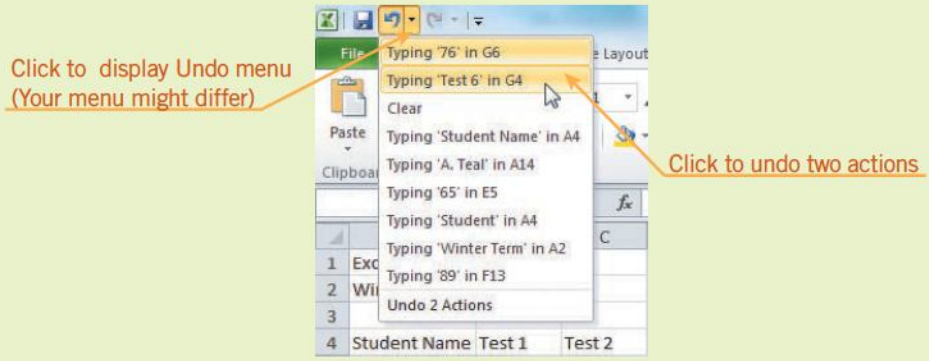


FIGURE EX 1–17
Undo button menu

4. In cell G4, type **Quiz 1**, and then press **Tab**.
5. Click the **Undo** button on the Quick Access Toolbar to undo the action.
6. Click the **Redo** button on the Quick Access Toolbar to redo the action.
7. Save the workbook and leave it open for use in the next Step-by-Step.

Managing Worksheets

You can customize a workbook by renaming, inserting, or deleting the worksheets as needed. You can move from worksheet to worksheet by clicking a sheet tab to make a different worksheet active.

EXTRA FOR EXPERTS

Another way to help identify a worksheet is to change the tab color by right-clicking a sheet tab, pointing to Tab Color on the shortcut menu, and then clicking a color in the palette.

Renaming a Worksheet

By default, the worksheets contained in a new workbook are labeled Sheet1, Sheet2, and Sheet3. You can rename them with descriptive names to better identify the data they contain. When you double-click the sheet tab, the sheet name is selected and you can type a new name, as shown in **Figure EX 1–18**. You can also right-click a sheet tab and then click Rename on the shortcut menu.

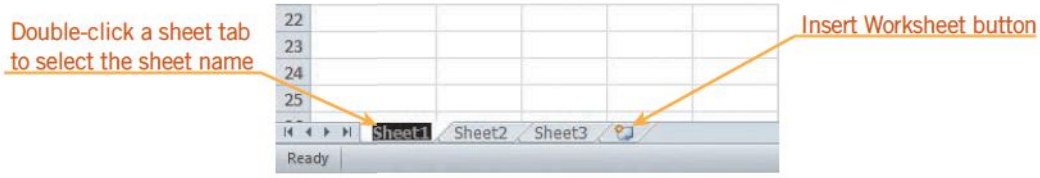


FIGURE EX 1–18 Rename a worksheet

Inserting a Worksheet

When you want to add another worksheet to your workbook, you can do so quickly by clicking the Insert Worksheet button to the right of the sheet tabs. You can also insert a worksheet by clicking the Insert Cells button arrow in the Cells group on the Home tab, and then clicking Insert Sheet or by right-clicking a sheet tab and then clicking Insert on the shortcut menu to open the Insert dialog box, shown in **Figure EX 1–19**.

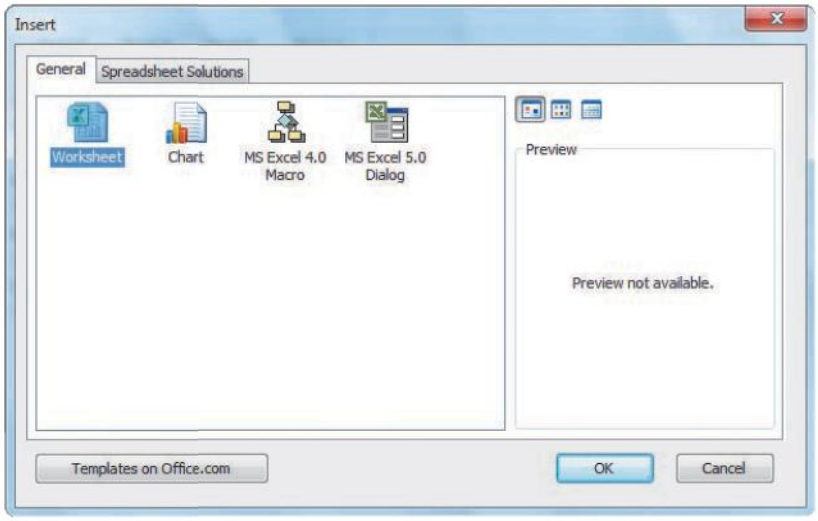


FIGURE EX 1–19 Insert dialog box

Deleting a Worksheet

If you don't need a worksheet, you can delete it from the workbook by right-clicking the sheet tab to open the shortcut menu and then clicking Delete; or, on the Home tab on the Ribbon, in the Cells group, click the Delete Cells button arrow and then click Delete Sheet.

WARNING

If there is any data in the worksheet you are deleting, a message box opens asking you to confirm that you want to delete the sheet. Deleting a sheet permanently deletes the data it contains. You cannot undo this command, so be sure you want to take this action.

Moving or Copying Worksheets within a Workbook

If you need to order worksheets in a more logical way within a workbook, it is easy to rearrange them by clicking a sheet tab and dragging it to a new position. A page icon is displayed beneath the mouse pointer, and a black arrow helps you choose the position as you drag. You can copy a worksheet by pressing and holding Ctrl while you drag. The page icon displays a plus sign when you are copying a worksheet.

You can also open the Move or Copy dialog box, shown in **Figure EX 1–20**, by right-clicking a sheet tab and clicking Move or Copy on the shortcut menu. You can select where to position the worksheet in the Before sheet list box and select the Create a copy check box if you want to copy the worksheet.

EXTRA FOR EXPERTS

You can move or copy worksheets to another workbook by right-clicking the sheet tab and clicking Move or Copy to open the Move or Copy dialog box, and then selecting a different workbook from the To book list box.

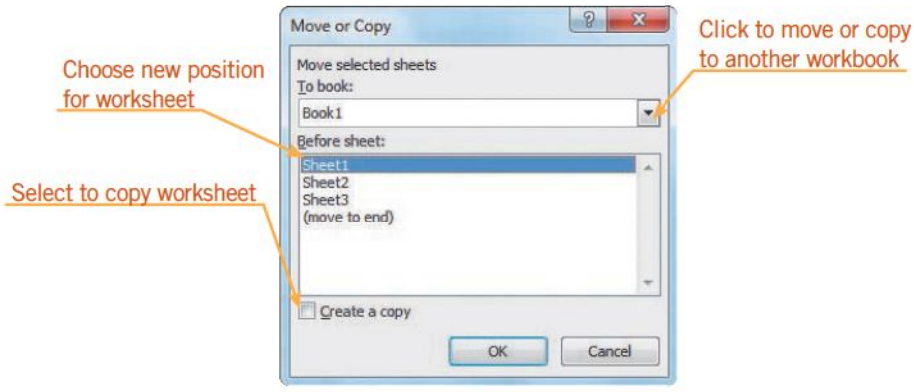


FIGURE EX 1–20 Move or Copy dialog box

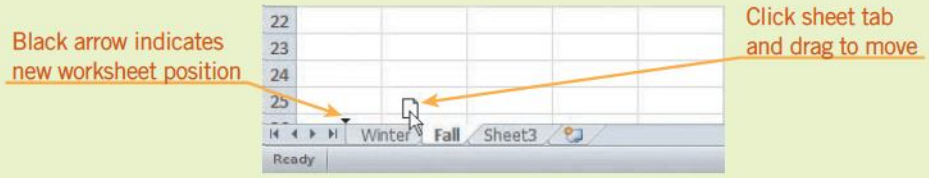
Step-by-Step EX 1.8

The Test Grades *XXX* workbook from Step-by-Step EX 1.7 should be open in the Excel program window.

1. Right-click the **Sheet1** sheet tab, and click **Rename** on the shortcut menu to select the name.
2. Type **Winter** and press **Enter** to rename the worksheet.
3. Double-click the **Sheet2** sheet tab to select the name.
4. Type **Fall** and press **Enter** to rename the worksheet.

5. Click the **Fall** sheet tab and drag it to the left. When the black arrow is positioned before the *Winter* sheet tab, as shown in **Figure EX 1–21**, release the mouse button to move the worksheet.

FIGURE EX 1–21
Move a worksheet



6. Click the **Insert Worksheet** button to the right of the Sheet3 sheet tab to insert a new worksheet named *Sheet1*.
7. Right-click the **Sheet1** sheet tab, and click **Insert** on the shortcut menu to open the Insert dialog box.
8. Click the **OK** button to insert a new worksheet named *Sheet2*.
9. On the Home tab on the Ribbon, in the Cells group, click the **Insert Cells** button arrow, and then click **Insert Sheet** to insert a new worksheet named *Sheet4*.
10. Click the **Sheet3** sheet tab, press and hold **Shift**, and then click the **Sheet1** tab to select four sheet tabs—*Sheet3*, *Sheet4*, *Sheet2*, and *Sheet1*.
11. On the Home tab, in the Cells group, click the **Delete Cells** button arrow, and then click **Delete Sheet** to delete all four selected sheet tabs so only the *Fall* and *Winter* worksheets remain in the workbook.
12. Save the workbook and leave it open for use in the next Step-by-Step.

Changing Workbook Views

You might find it useful to preview how your worksheet would look as a printout, see where the pages would break when the worksheet is printed, create a custom view, or view more data on the screen. Excel provides five different views using the buttons in the Workbook Views group on the View tab on the Ribbon, as shown in **Figure EX 1–22**. You can also switch easily between the first three of these views by using the View buttons located on the right side of the status bar.

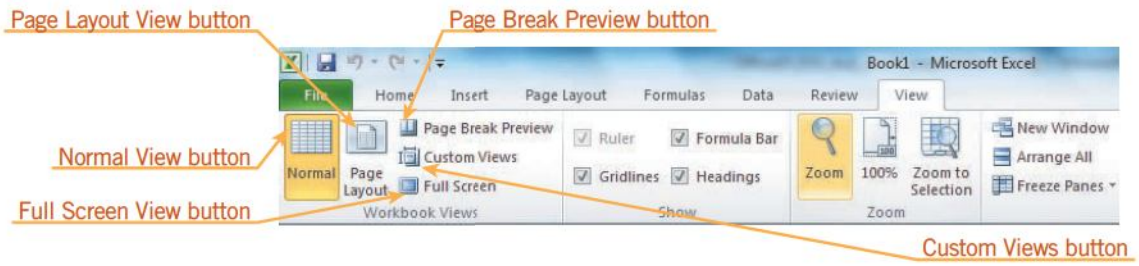


FIGURE EX 1–22 Workbook views

The five workbook view buttons are:

- Normal View, which displays the view most commonly used.
- Page Layout View, which displays the worksheet as it will print so you can make any necessary changes.
- Page Break Preview, which you can use to view and adjust page breaks before printing a worksheet.
- Custom Views, which you can use to create, apply, or delete a view you have created with specific display or print settings.
- Full Screen View, which maximizes the space available for viewing data on the screen by hiding the Ribbon, the formula bar, and the status bar.

Freezing and Unfreezing Panes

The Freeze Panes button, located on the View tab in the Window group, as shown in **Figure EX 1–23**, is useful when you want to keep some parts of a large worksheet visible while you scroll to another. When you ***freeze panes***, you lock specified rows or columns into place.

VOCABULARY
freeze panes

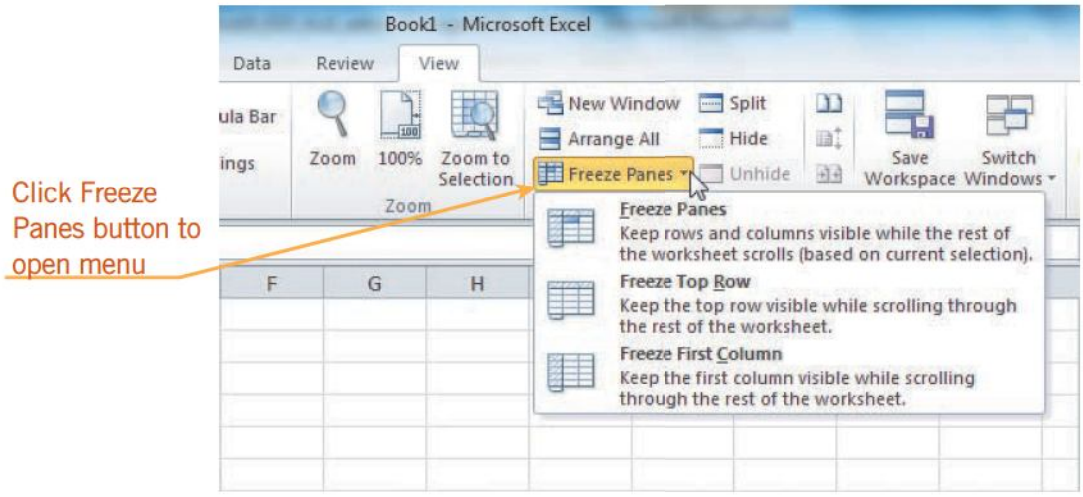


FIGURE EX 1–23 Freeze Panes menu on the View tab

You can use the Freeze Panes menu to freeze the top row, the first column, or an area that you select. You select an area to freeze in one of the following ways:

- To freeze a row or rows, select the row below the row(s) you want to freeze.
- To freeze a column or columns, select the column to the right of the column(s) you want to freeze.
- To freeze both, select the cell below and to the right of the row(s) and column(s) you want to freeze.

A solid line on the worksheet indicates that the area above and/or to the left is frozen. When you want to unfreeze panes, click the Freeze Panes button on the View tab in the Window group, and then click Unfreeze Panes.

EXTRA FOR EXPERTS

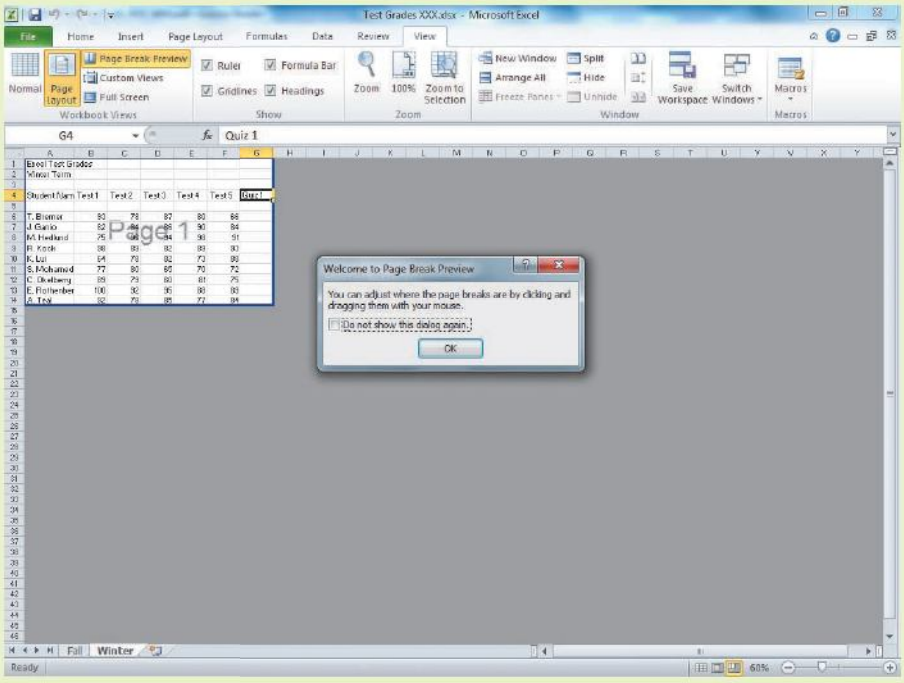
The buttons on the View tab in the Window group offer more ways to change how worksheets and workbooks are displayed on the screen. For example, you can split a worksheet into multiple panes, open a new window, tile all open program windows, or hide the current window.

Step-by-Step EX 1.9

The Test Grades *XXX* workbook from Step-by-Step EX 1.8 should be open in the Excel program window.

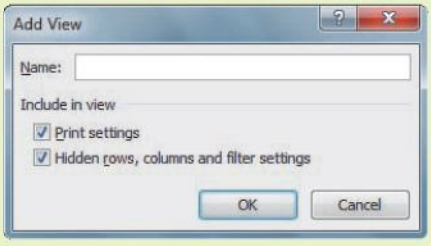
1. Click the **View** tab on the Ribbon. In the Workbook Views group, notice that the Normal View button is selected, as this is the default view.
2. On the View tab, in the Workbook Views group, click the **Page Layout View** button to display the worksheet as it would appear when printed.
3. On the View tab, in the Workbook Views group, click the **Page Break Preview** button to preview where pages will break when the worksheet is printed, as shown in **Figure EX 1–24**. If a Welcome to Page Break Preview dialog box opens, click the **OK** button to close it.

FIGURE EX 1–24
Page Break Preview

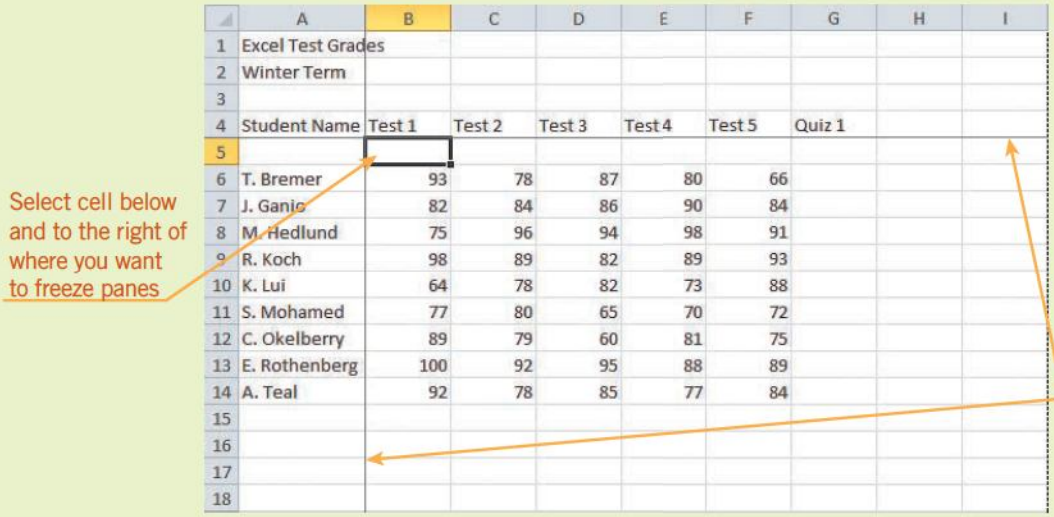


4. On the View tab, in the Workbook Views group, click the **Custom Views** button to open the Custom Views dialog box.
5. In the Custom Views dialog box, click the **Add** button to open the Add View dialog box, as shown in **Figure EX 1–25**.

FIGURE EX 1–25
Add View dialog box



6. Click the **Cancel** button to close the Add View dialog box without creating a custom view.
7. On the View tab, in the Workbook Views group, click the **Full Screen View** button to display the worksheet in full screen mode.
8. Press **Esc** to return to the previous view.
9. On the View tab, in the Workbook Views group, click the **Normal View** button to display the worksheet in Normal view.
10. Click cell **B5** to select the cell below and to the right of where you want to freeze panes.
11. On the View tab, in the Window group, click the **Freeze Panes** button, and then click **Freeze Panes** to freeze the panes, as indicated by the solid line (see **Figure EX 1–26**).



	A	B	C	D	E	F	G	H	I
1	Excel Test Grades								
2	Winter Term								
3									
4	Student Name	Test 1	Test 2	Test 3	Test 4	Test 5	Quiz 1		
5									
6	T. Bremer	93	78	87	80	66			
7	J. Ganio	82	84	86	90	84			
8	M. Hedlund	75	96	94	98	91			
9	R. Koch	98	89	82	89	93			
10	K. Lui	64	78	82	73	88			
11	S. Mohamed	77	80	65	70	72			
12	C. Okelberry	89	79	60	81	75			
13	E. Rothenberg	100	92	95	88	89			
14	A. Teal	92	78	85	77	84			
15									
16									
17									
18									

FIGURE EX 1–26
Freeze panes

12. Scroll down and to the right to see that the panes are frozen.
13. Save the workbook and leave it open for use in the next Step-by-Step.

Printing Workbooks

Often you will want to print the worksheets from a workbook that you create to distribute or keep. You can add headers and footers so you can include useful information on a printed worksheet, such as the filename or date. If you only want to print part of a worksheet, you can set the print area. You can preview a worksheet and change formatting and printing options in Backstage view before you click the Print button.

Adding Headers and Footers

VOCABULARY
header
footer

A ***header*** is text that appears in the top margin of a worksheet when printed, and a ***footer*** refers to text that appears in the bottom margin of a worksheet when printed. You can use headers and footers to include useful information that you would not include in the worksheet grid, such as page numbers, titles, the date, or a logo. To create a header or footer, you click the Header & Footer button, located in the Text group on the Insert tab on the Ribbon. The Header & Footer Tools contextual tab opens on the Ribbon, and header text boxes appear at the top of the worksheet, and footer text boxes appear at the bottom of the worksheet.

There are three header and footer text boxes—left, center, and right. You can either type the text you want to appear in each text box, or you can click an element on the Header & Footer Elements group of the Header and Footer Tools Design contextual tab on the Ribbon, shown in **Figure EX 1–27**. For example, if you wanted to include the current date in the right text box of a worksheet's header, you would click the right header text box, and then click the Current Date button in the Header & Footer Elements group. The code *&[Date]* appears in the right text box, and when you click outside the right header text box, the actual date is displayed in the header.

WARNING

The Freeze Panes command is not compatible with Page Layout view. To work with headers and footers in Page Layout view, the panes must be unfrozen.

When you work with headers and footers, you are in Page Layout view. To close the Header & Footer Tools contextual tab, simply click somewhere on the worksheet. If you want to return to Normal view, you can then click the Normal View button in the Workbook Views group on the View tab.

FIGURE EX 1–27 Header & Footer Tools Design tab

Setting the Print Area

Unless you specify otherwise, Excel prints all the data on the active worksheet. If you only want to print part of the worksheet, you can set the print area by selecting the range(s) you want to include and then clicking the Print Area button in the Page Setup group of the Page Layout tab. The menu that opens contains options for setting the print area and clearing the print area. The defined print area will be saved with the worksheet, so you need to clear it if you want to print the entire worksheet or workbook again.

Step-by-Step EX 1.10

The Test Grades *XXX* workbook from Step-by-Step EX 1.9 should be open in the Excel program window.

1. Click the **Insert** tab on the Ribbon, and then, in the Text group, click the **Header & Footer** button. When a message is displayed, click the **OK** button to unfreeze panes.

2. On the Header & Footer Tools Design tab, in the Header & Footer Elements group, click the **Current Date** button to add a code for the current date to the center header text box, as shown in **Figure EX 1–28**.

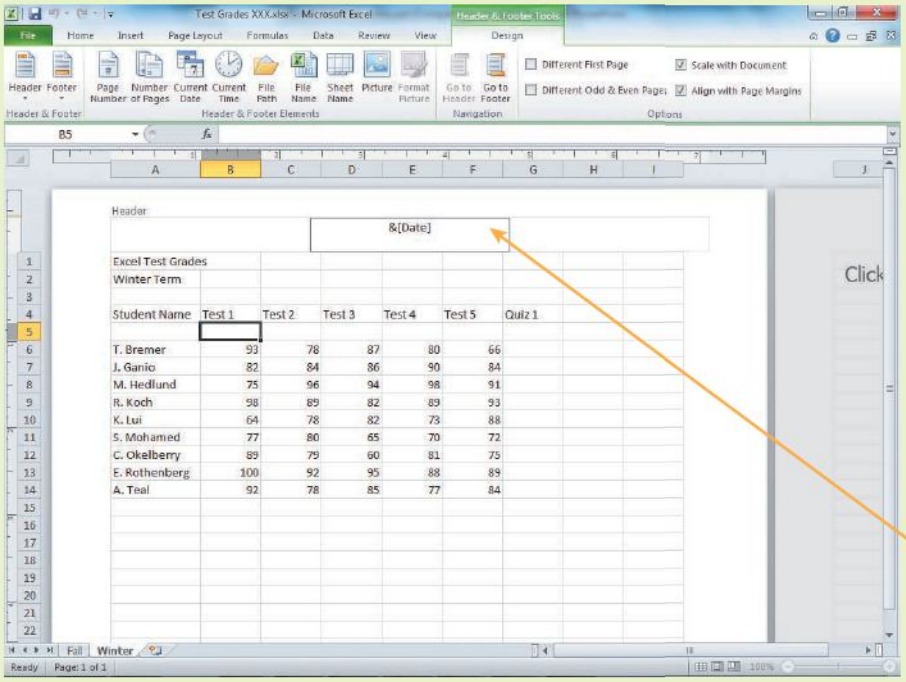
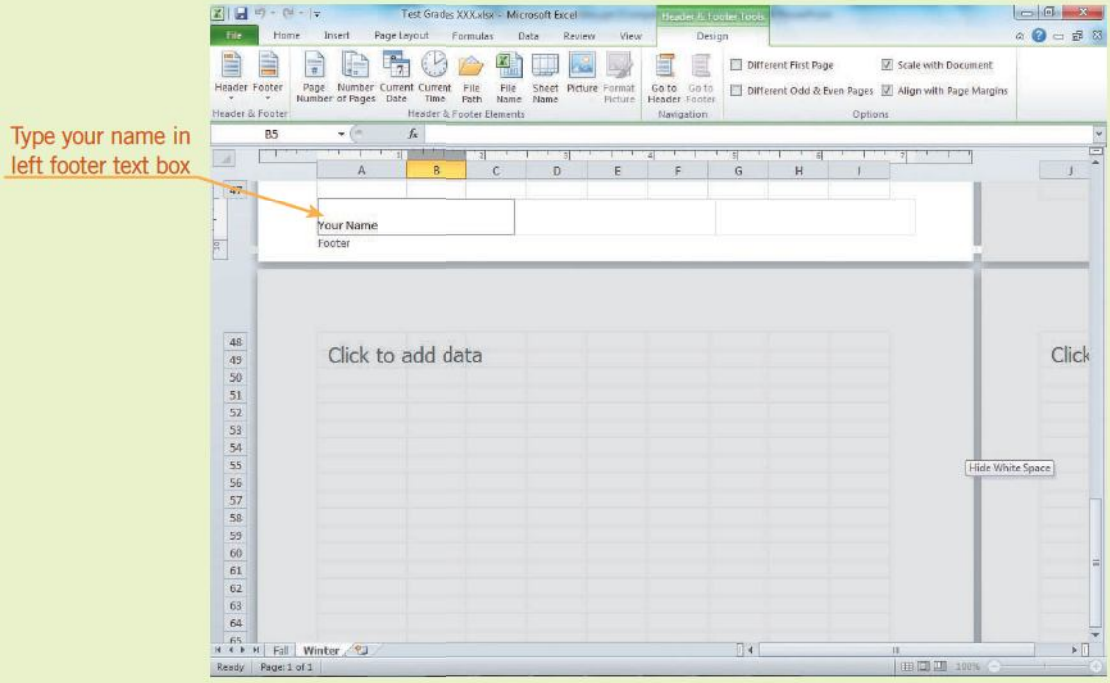


FIGURE EX 1–28
Worksheet header

3. Click the right text box of the header. Notice that the code you inserted in the center text box now displays the current date.
4. On the Header & Footer Tools Design tab, in the Navigation group, click the **Go to Footer** button to switch to the footer.

5. Click the **left text box** of the footer and type your first and last name, as shown in **Figure EX 1–29**.

FIGURE EX 1–29
Worksheet footer



6. Click any blank cell in the worksheet to close the Header & Footer Tools Design tab.
7. Click the **View** tab on the Ribbon, and in the Workbook Views group, click the **Normal View** button.
8. Scroll up, if necessary, and select the range **A4:F14** in preparation for setting the print area.
9. Click the **Page Layout** tab, and in the Page Setup group, click the **Print Area** button. Click **Set Print Area** to define the range you want to print. The print area is outlined with a dotted border, as shown in **Figure EX 1–30**.

FIGURE EX 1–30
Print area

	A	B	C	D	E	F	G	H	I
1	Excel Test Grades								
2	Winter Term								
3									
4	Student Name	Test 1	Test 2	Test 3	Test 4	Test 5	Quiz 1		
5									
6	T. Bremer	93	78	87	80	66			
7	J. Ganio	82	84	86	90	84			
8	M. Hedlund	75	96	94	98	91			
9	R. Koch	98	89	82	89	93			
10	K. Lui	64	78	82	73	88			
11	S. Mohamed	77	80	65	70	72			
12	C. Okelberry	89	79	60	81	75			
13	E. Rothenberg	100	92	95	88	89			
14	A. Teal	92	78	85	77	84			
15									
16									
17									
18									

Print area indicated by dotted border around range

10. On the Page Layout tab on the Ribbon, in the Page Setup group, click the **Print Area** button and then click **Clear Print Area** to clear the print area.
11. Save the workbook and leave it open for use in the next Step-by-Step.

Previewing and Printing a Worksheet

When you choose Print on the File tab, Backstage view displays the Print button and default print settings in the center pane of the window and a preview of the worksheet in the right pane, as shown in **Figure EX 1–31**. To change a print setting in the center pane, click the setting that you want to change, and then select a new option from the gallery that opens.

You can click the Show Margins button in the lower-right corner of the right pane to show or hide the margins on the worksheet preview pane. You can click the Zoom to Page button in the lower-right corner of the right pane to zoom in on the worksheet and then click it again to return the preview to the original magnification.

EXTRA FOR EXPERTS

If you do not want the worksheet gridlines to print, or be displayed in the workbook window, you can click the Gridlines check box on the View tab in the Show group to remove the check mark.

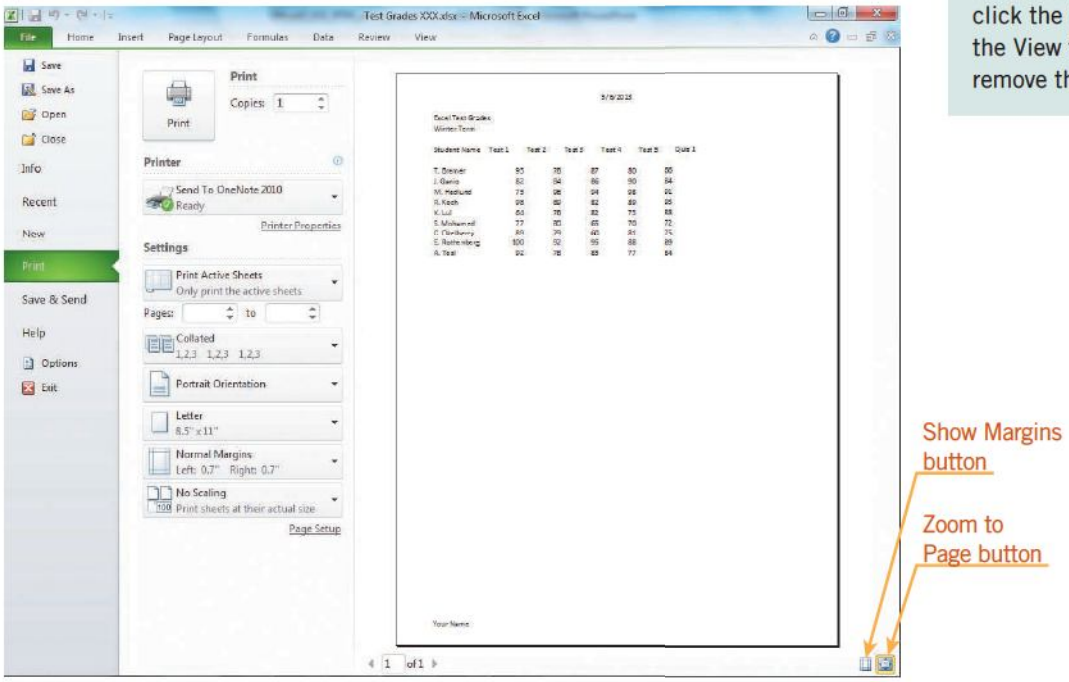


FIGURE EX 1–31 Previewing and printing options in Backstage view

The following printing and previewing options are available in Backstage view:

- The Print button prints the worksheet with current settings.
- Use the up and down arrows in the Copies box to indicate the quantity of copies to print.
- The Printer area displays the default printer. Click the default printer to select a different printer from the gallery of available printers. The Printer Properties link lets you choose paper type, print quality, color, or to specify other options for your printer.

- The Settings area lists the current print settings. Clicking the settings opens galleries of options that let you indicate whether to print:
  - The active sheets, the entire workbook, or the current selection.
  - One sided, on both sides, or manually on both sides.
  - Multiple copies of a workbook or worksheet with pages in order, called ***collated***, or uncollated.
  - Portrait or landscape orientation.
  - Letter 8.5"×11" size or another paper size.
  - Current margin settings or other margin settings.
  - Sheets at their actual size, or shrunk to fit on one page, one page wide, or one page high.
- The Page Setup link opens the Page Setup dialog box where you can make changes to the orientation, page or paper size, margins, header and footer, and gridlines.
- The preview pane shows a preview of the worksheet and allows you to check margins and zoom in and out to check for errors. As you make changes to the print settings, the preview is updated to reflect the changes so that you can be sure you are satisfied with the settings before printing.

VOCABULARY

collated

EXTRA FOR EXPERTS

You can add the Quick Print command to the Quick Access Toolbar to print to the default printer with the default settings without opening Backstage view.

Step-by-Step EX 1.11

The Test Grades *XXX* workbook from Step-by-Step EX 1.10 should be open in the Excel program window.

1. Click the **File** tab to display Backstage view, and then click **Print**.
2. Click the **Show Margins** button in the lower-right corner of the right pane to preview the worksheet margins.
3. Click the **Show Margins** button again to hide the margins on the worksheet preview.
4. Click the **Zoom to Page** button in the lower-right corner of the right pane to zoom in on the worksheet.
5. Click the **Zoom to Page** button again to return to the original magnification.
6. At the bottom of the center pane, click the **Page Setup** link to open the Page Setup dialog box.
7. Click the **Cancel** button to close the Page Setup dialog box without making changes.
8. Click each of the buttons in the center pane under Settings to see the printing options available.
9. Click the **Print** button to print the worksheet. If you have been instructed not to print, click the File tab to close Backstage view.
10. Leave the workbook open for use in the next Step-by-Step.

Closing a Workbook

When you are finished with a workbook, you can remove it from your screen using the Close command. To close a workbook without closing Excel, choose the Close command on the File tab. When you have only one workbook open, you can click the Close button on the title bar to close the document and exit the program at the same time. If you have more than one workbook open, you can close all workbooks and exit the program using the Exit command on the File tab. The software prompts you to save your work if you made any changes since you last saved.

Step-by-Step EX 1.12

The Test Grades *XXX* workbook from Step-by-Step EX 1.11 should be open in the Excel program window.

1. Click the **File** tab and then click **Close**. The workbook closes, and the Excel program window remains open.
2. Click the **Close** button  on the title bar to close Excel.

SUMMARY

In this lesson, you learned:

- How to open an existing workbook.
- Methods of navigating in a worksheet using the mouse, keyboard, and Go To command.
- How to save a workbook.
- The processes for selecting cells, entering data, and editing data.
- To use the Undo and Redo commands to undo or reverse previous actions.
- Ways to manage worksheets by renaming, inserting, deleting, moving, or copying worksheets.
- How to change worksheet views.
- How to add headers and footers.
- To preview and print a workbook using Backstage view.
- To close a workbook.

VOCABULARY REVIEW

Define the following terms:

active cell
cell
cell reference
collated
columns
footer
formula bar
freeze panes
header
Name box
range
rows
select
sheet
sheet tab
spreadsheet software
workbook
workbook window
worksheet

REVIEW QUESTIONS

MULTIPLE CHOICE

Select the best response for the following statements.

1. The _____ below the Ribbon displays the cell reference of the active cell.
   A. formula bar C. Name box
   B. Navigation Pane D. Address bar
2. To move to the first cell of a row, press the _____ key(s).
   A. Page Up C. Ctrl+Home
   B. Home D. Ctrl+End
3. The Go To dialog box is opened by clicking the Go To command on the Find & Select menu in the Editing group on the _____ tab on the Ribbon.
   A. Home C. Page Layout
   B. Insert D. View
4. To select nonadjacent cells or ranges, press and hold the _____ key as you click or drag to select additional cells or ranges.
   A. Shift C. Alt
   B. Ctrl D. Enter
5. By default, numbers are _____ in a cell.
   A. left-aligned C. centered
   B. right-aligned D. justified
6. If you want to remove all the data from a cell, you can clear it using the _____ button in the Editing group on the Home tab.
   A. Delete C. Replace
   B. Remove D. Clear
7. To add another worksheet to your workbook, you can click the Insert Worksheet button to the right of the _____.
   A. File tab C. Quick Access Toolbar
   B. sheet tabs D. View buttons
8. If you don't need a worksheet, you can delete it by _____ on the sheet tab to open the shortcut menu and then clicking Delete.
   A. clicking C. right-clicking
   B. double-clicking D. none of the above
9. Which workbook view is the most commonly used?
   A. Normal C. Page Break Preview
   B. Page Layout D. Full Screen
10. When you are finished with a file, you can remove it from your screen using the _____ command on the File tab.
    A. Remove C. Exit
    B. Clear D. Close

FILL IN THE BLANK

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

1. A(n) _____ contains a collection of related worksheets.
2. The rectangle where a column and row intersect is called a(n) _____.
3. The _____ command lets you make a copy of the file with a new name, location, or file type.
4. Excel's _____ feature automatically saves your workbook at regular intervals so that you can recover at least some of your work in case of a power outage or other unexpected shutdown.
5. The _____ tab on the Ribbon has many options to help you create a header or footer.
6. Use the _____ button on the Quick Access Toolbar when you want to reverse an Undo action.
7. You can copy a worksheet by holding down the _____ key while you drag the sheet tab.
8. The _____ workbook view displays the worksheet as it will be printed so you can make any necessary changes.
9. The _____ button in the Windows group on the View tab is useful for large worksheets when you want to keep some parts of the worksheet visible while you scroll to another part of the worksheet.
10. When you click _____ on the File tab, Backstage view displays the default print settings in the center pane of the window and a preview of the worksheet in the right pane.

PROJECTS

PROJECT EX 1–1

1. Open the file **Project EX 1-1** from the folder containing the data files for this lesson.
2. Use the Save As command on the File tab to save the workbook with the filename **LostArt *XXX*** (replace *XXX* with your initials).
3. Rename the Sheet1 tab **Items to Reorder**.
4. Create a header with the filename in the center section.
5. Switch to Normal view and freeze column A.
6. Scroll to the right to see that the first column is frozen.
7. In cell A15, enter **9085D**.
8. In cell B15, enter **Camera bag**.
9. In cell C15, enter **4**.
10. Edit cell A3 to **Stock #**.
11. Edit cell B12 so the letter **A** in *Air* is lowercase.
12. Undo the change you made in Step 11, then redo the action.
13. Save the workbook, and leave it open for use in Project EX 1–2.

PROJECT EX 1–2

The LostArt *XXX* workbook from Project EX 1–1 should be open in the Excel program window.

1. Save the workbook as **LostArt2 *XXX*** (replace *XXX* with your initials).
2. Navigate to the last cell in the worksheet containing data or formatting and change the contents of that cell to 5.
3. Create a copy of the *Items to Reorder* worksheet.
4. Rename the new worksheet **Items on Backorder**.
5. Select the range C4:C15 on the Items on Backorder worksheet.
6. Clear all contents and formatting from the selected range.
7. Edit cell C3 to display **Backordered**.
8. Edit cells C7 and C13 to display an **X**.
9. Unfreeze column A, and freeze the rows above row 4.
10. Scroll down to see that the pane is frozen.
11. Move the *Items to Reorder* worksheet so it is the first worksheet in the workbook.
12. Select the Sheet2 and Sheet3 sheet tabs and delete the worksheets.
13. Save and close the workbook.

PROJECT EX 1–3

1. Open the file **Project EX 1-3** from the folder containing the data files for this lesson.
2. Save the workbook with the filename **Term Schedule *XXX*** (replace *XXX* with your initials).
3. In cell A1, replace *School Name* with the name of your school.
4. In cell A2, replace *Term* with **Spring**.
5. View the worksheet in Full Screen view.
6. Return to Normal view.
7. Create a header with your name in the center section.
8. Create a footer with the current date in the center section.
9. Return to Normal view.
10. Freeze the rows above row 5 and to the left of column B. Scroll down and to the right to see that the panes are frozen.
11. Select the range B4:F10 and set the print area.
12. Preview the worksheet in Backstage view.
13. Zoom in on the worksheet preview.
14. Save, print, and close the workbook.

ON YOUR OWN

Open the **Term Schedule *XXX*** workbook, and customize the header and footer by adding other elements from the Header & Footer Elements group on the Header & Footer Tools Design tab on the Ribbon. Experiment with placing elements in the left and right sections of the header or footer. Save and close the workbook.

PROJECT EX 1–4

1. Open the file **Project EX 1-4** from the folder containing the data files for this lesson.
2. Save the workbook with the filename **Chess Club *XXX*** (replace *XXX* with your initials).
3. In cell A4, type your first and last name.
4. In cell B4, type today's date.
5. In cells C4:H4, enter your contact information in the appropriate columns. (*Note*: Remember that for postal codes, you can type an apostrophe before the number to signal that it is not to be used in calculations.)
6. Use the skills you have learned in this lesson to enter data for at least six more members in the appropriate cells. Use your classmates' names and contact information, or create some fictitious data.
7. Use the Go To command to move to cell I4 and enter **Elected president for next year**.
8. Rename the worksheet **Member Info**.
9. Insert a new worksheet and name it **Tournament Dates**.
10. Switch to the Member Info sheet, and use Page Break Preview to see where the pages will break when the worksheet is printed.
11. Switch to Page Layout view.
12. Return to Normal view.
13. Select the range A3:C10, and set the print area.
14. Save, print, and close the workbook.

ON YOUR OWN

Open the **Chess Club *XXX*** workbook, and then create a custom view for the worksheet that includes the print settings, and name the custom view **Custom *XXX*** (replace *XXX* with your initials). Save and close the workbook.

WEB PROJECT

1. Open the file **Project EX 1-5** from the folder containing the data files for this lesson.
2. Save the workbook with the filename **Hotels *XXX*** (replace *XXX* with your initials).
3. Rename the first worksheet **Dallas**.
4. Assume you are going on a trip to Dallas this coming weekend. Search the Web for information on hotels in that city. In the range B4:C8, list the names of five hotels where you would like to stay and the price per night.
5. Delete Sheet2 and Sheet3.
6. Save and close the workbook.

ON YOUR OWN

Open the **Hotels *XXX*** workbook, then copy the *Dallas* worksheet, and rename it **Chicago** (or another city where you would like to stay). Search for five hotels and the price per night in that city, and record them in the new worksheet, replacing and editing data as needed. Save and close the workbook.

TEAMWORK PROJECT

Open a workbook that you used in this lesson. Have a partner call out cell references to move to or ranges to select (for example, "move to cell Z155" or "select range D10:H25"). See how quickly you can navigate to the cells or select ranges. Use different methods and see which one you prefer. For an extra challenge, try navigating to cells that meet certain conditions or contain specific data using the Go To Special dialog box (for example, blank cells).

CRITICAL THINKING

ACTIVITY EX 1–1

Open the file **Activity EX 1–1** from the folder containing the data files for this lesson, and then perform the following tasks, using Excel Help if necessary:

- Save the workbook as an Excel 97-2003 Workbook with the filename **All About Me *XXX***.
- Add data about yourself in cells C3:C8.
- Continue the list, adding at least five more facts about yourself.
- Create a header and insert a picture of yourself (or another picture that you like) and resize as needed.
- Hide the gridlines on the worksheet.
- Rename Sheet1 with your name, and change the color of the sheet tab.
- Save, print, and close the workbook.

ACTIVITY EX 1–2

Search for the video in Excel Help titled *Backstage view in Excel 2010* and watch it. What options are available on the Info tab? Open a workbook you used in this lesson and check to see what properties are listed for that file. Click each of the other tabs in Backstage view to see the options available. Close the workbook without saving any changes.