Excel

Introduction to Excel

What Is a Spreadsheet?

AFTER YOU READ THIS CHAPTER, YOU WILL BE ABLE TO:

The Objectives List provides a simple list of Key Objectives covered within the chapter and includes page numbers for quick and easy reference.

1. Explore the Excel window p. 374
2. Enter and edit cell data p. 377
3. Create formulas p. 384
4. Use Auto Fill p. 386
5. Display cell formulas p. 387
6. Manage worksheets p. 394

7. Manage columns and rows p. 397
8. Select, move, copy, and paste data p. 406
9. Apply alignment and font options p. 414
10. Apply number formats p. 416
11. Select page setup options p. 423
12. Preview and print a worksheet p. 427

The Case Study presents a scenario for the chapter, weaving a story that ties the Hands-On Exercises together.

Case study | OK Office Systems

You are an assistant manager at OK Office Systems (OKOS) in Oklahoma City. OKOS sells a wide range of computer systems, peripherals, and furniture for small- and medium-sized organizations in the metropolitan area. To compete against large, global, big-box office supply stores, OKOS provides competitive pricing by ordering directly from local manufacturers rather than dealing with distributors.

Alesha Bennett, the general manager, asked you to calculate the retail price, sale price, and profit analysis for selected items on sale this month. Using markup rates provided by Alesha, you need to calculate the retail price, the amount OKOS charges its customers for the products. For the sale, Alesha wants to give customers between a 10% and 30% discount on select items. You need to use those discount rates to calculate the sale prices. Finally, you will calculate the profit margin to determine the percentage of the final sale price over the cost.

After you create the initial pricing spreadsheet, you will be able to change values and see that the formulas update the results automatically. In addition, you will be able to insert data for additional sale items or delete an item based on the manager's decision.

Although your experience with Microsoft Office Excel 2013 may be limited, you are excited to apply your knowledge and skills to your newly assigned responsibility. In the Hands-On Exercises for this chapter, you will create and format the analytical spreadsheet to practice the skills you learn.

Complete the Workbook

7. **Document the workbook as thoroughly as possible.** Include the current date, your name as the workbook author, assumptions, and purpose of the workbook. You can provide this documentation in a separate worksheet within the workbook. You can also add some documentation in the *Properties* section when you click the File tab.

8. **Save and share the completed workbook.** Preview and prepare printouts for distribution in meetings, send an electronic copy of the workbook to those who need it, or upload the workbook on a shared network drive or in the cloud.

Centered title

Formatted output range (calculated results)

Formatted column labels

Formatted input range (Cost, Markup Rate, and Percent Off)

Product data organized into rows

FIGURE 1.2 Completed OKOS Worksheet

	A	B	C	D	E	F	G	H
1				OK Office Systems Pricing Information				
2				9/1/2016				
3								
4	Product	Cost	Markup Rate	Retail Price	Percent Off	Sale Price	Profit Amount	Profit Margin
5	**Electronics**							
6	Computer System	$475.50	50.0%	$ 713.25	15.0%	$ 606.26	$ 130.76	21.6%
7	Color Laser Printer	$457.70	75.5%	$ 803.26	20.0%	$ 642.61	$ 184.91	28.8%
8	28" Monitor	$195.00	83.5%	$ 357.83	10.0%	$ 322.04	$ 127.04	39.4%
9	**Furniture**							
10	Desk Chair	$ 75.00	100.0%	$ 150.00	25.0%	$ 112.50	$ 37.50	33.3%
11	Solid Oak Computer Desk	$700.00	185.7%	$1,999.90	30.0%	$1,399.93	$ 699.93	50.0%
12	Executive Desk Chair	$200.00	100.0%	$ 400.00	25.0%	$ 300.00	$ 100.00	33.3%
13								

Enter Text

Text is any combination of letters, numbers, symbols, and spaces not used in calculations. Excel treats phone numbers, such as 555-1234, and Social Security numbers, such as 123-45-6789, as text entries. You enter text for a worksheet title to describe the contents of the worksheet, as row and column labels to describe data, and as cell data. In Figure 1.2, the cells in column A, row 1, and row 4 contain text, such as *Product*. Text aligns at the left cell margin by default. To enter text in a cell, do the following:

STEP 1 »

1. Make sure the cell is active where you want to enter text.
2. Type the text.
3. Do one of the following to make another cell the active cell after entering data:

   - Press Enter on the keyboard.
   - Press an arrow key on the keyboard.
   - Press Tab on the keyboard.

   Do one of the following to keep the current cell the active cell after entering data:

   - Press Ctrl+Enter.
   - Click Enter (the check mark between the Name Box and the Formula Bar).

As soon as you begin typing a label into a cell, the **AutoComplete** feature searches for and automatically displays any other label in that column that matches the letters you typed. For example, *Computer System* is typed in cell A6 in Figure 1.2. When you start to type *Co* in cell A7, AutoComplete displays *Computer System* because a text entry previously typed starts with *Co*. Press Enter to accept the repeated label, or continue typing to enter a different label, such as *Color Laser Printer*.

Step icons are incorporated into the white pages to allow students to quickly distinguish between the exercises (yellow pages) and theory (white pages). This allows students to easily find the relevant concepts as they work on each step. These sections are hyper-linked to one another in the eText.

hands-On Exercises

▶ Watch the Video for this Hands-On Exercise!

MyITLab®
HOE1 Training

...dsheets

...create a wor... ...e cost is incr... ...nt percentage (such as 25% off) for each product, the sale price...

Skills covered: Enter Text • Enter Values • Enter a Date and ...

STEP 1 ≫ ENTER TEXT

Now that you have planned the OKOS worksheet, you ... ...w labels. You will type a title in cell A1, product labels in ... Figure 1.3 as you complete Step 1.

Step b: Title
Step f: Labels for other columns
Step e: Label for second column
Step c: Label for first column
Step d: Name of products

	A	B	C	D	E	F	G	H
1	OK Office Systems Pricing Information							
2								
3								
4	Product	Cost		Markup Ra	Retail Pric	Percent O	Sale Price	Profit Margin
5	Computer System							
6	Color Laser Printer							
7	Filing Cabinet							
8	Desk Chair							
9	Solid Oak Computer Desk							
10	28" Monitor							
11								
12								
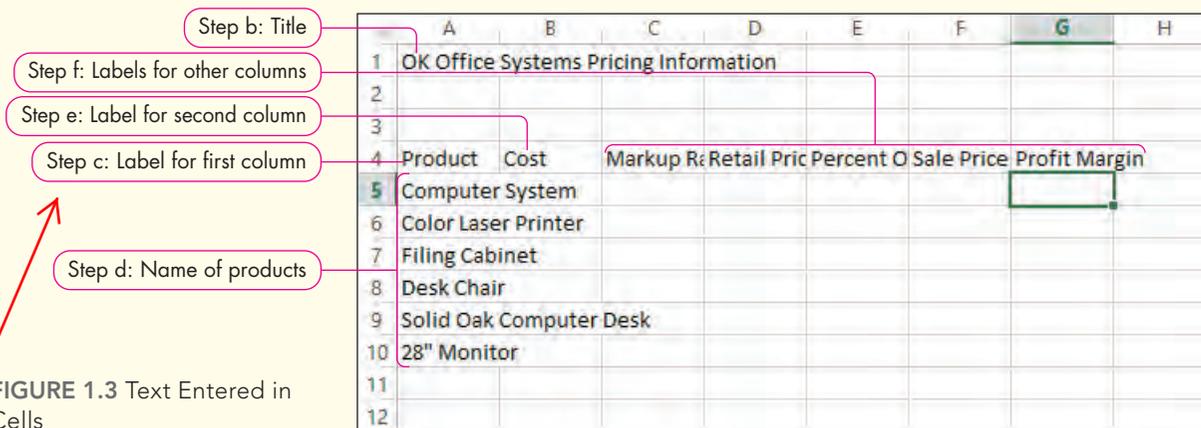
FIGURE 1.3 Text Entered in Cells

a. Start Excel and open a new blank workbook. Save the new workbook as **e01h1Markup_LastFirst**.

   When you save files, use your last and first names. For example, as the Excel author, I would save my workbook as *e01h1Markup_MulberyKeith*.

b. Type **OK Office Systems Pricing Information** in **cell A1** and press **Enter**.

   When you press Enter, the next cell down—cell A2 in this case—becomes the active cell. The text does not completely fit in cell A1, and some of the text appears in cells B1, C1, D1, and possibly E1. If you make cell B1, C1, D1, or E1 the active cell, the Formula Bar is empty, indicating that nothing is stored in those cells.

c. Click **cell A4**, type **Product**, and then press **Enter**.

d. Continue typing the rest of the text in **cells A5** through **A10** as shown in Figure 1.4. Text in column A appears to flow into column B.

   When you start typing *Co* in cell A6, AutoComplete displays a ScreenTip suggesting a previous text entry starting with *Co—Computer System*—but keep typing to enter *Color Laser Printer* instead. You just entered the product labels to describe the data in each row.

e. Click **cell B4** to make it the active cell. Type **Cost** and press **Tab**.

   Instead of pressing Enter to move down column B, you pressed Tab to make the cell to the right the active cell.

f. Type the following text in the respective cells, pressing **Tab** after typing each of the first four column labels and pressing **Enter** after the last column label:

- **Markup Rate** in **cell C4**
- **Retail Price** in **cell D4**
- **Percent Off** in **cell E4**
- **Sale Price** in **cell F4**
- **Profit Margin** in **cell G4**

The text looks cut off when you enter data in the cell to the right. Do not worry about this now. You will adjust column widths and formatting later in this chapter.

TROUBLESHOOTING: If you notice a typographical error, click in the cell containing the error and retype the label. Or press F2 to edit the cell contents, move the insertion point using the arrow keys, press Backspace or Delete to delete the incorrect characters, type the correct characters, and then press Enter. If you type a label in an incorrect cell, click the cell and press Delete.

g. Save the changes you made to the workbook.

You should develop a habit of saving periodically. That way if your system unexpectedly shuts down, you will not lose everything you worked on.

STEP 2 » ENTER VALUES

Now that you have entered the descriptive labels, you need to enter the cost, markup rate, and percent off for each product. Refer to Figure 1.4 as you complete Step 2.

Steps e–f: Percent Off values

Steps c–d: Markup Rate values

Steps a–b: Cost values

	A	B	C	D	E	F	G	H
1	OK Office Systems Pricing Information							
2								
3								
4	Product	Cost	Markup Ra	Retail Pric	Percent O	Sale Price	Profit Margin	
5	Computer	400	0.5		0.15			
6	Color Lase	457.7	0.75		0.2			
7	Filing Cab	68.75	0.905		0.1			
8	Desk Chai	75	1		0.25			
9	Solid Oak	700	1.857		0.3			
10	28" Monit	195	0.835		0.1			
11								
12								

FIGURE 1.4 Values Entered in Cells

a. Click **cell B5**, type **400**, and then press **Enter**.

b. Type the remaining costs in **cells B6** through **B10** shown in Figure 1.4.

TIP Numeric Keypad

To improve your productivity, use the number keypad (if available) on the right side of your keyboard. It is much faster to type values and press Enter on the number keypad rather than using the numbers on the keyboard. Make sure Num Lock is active before using the number keypad to enter values.

Hide and Unhide Columns and Rows

If your worksheet contains confidential information, you might need to hide some columns and/or rows before you print a copy for public distribution. However, the column or row is not deleted. If you hide column B, you will see columns A and C side by side. If you hide row 3, you will see rows 2 and 4 together. Figure 1.22 shows that column B and row 3 are hidden. Excel displays a double line between column headings (such as between A and C), indicating one or more columns are hidden, and a double line between row headings (such as between 2 and 4), indicating one or more rows are hidden.

Double vertical line
indicates hidden column

Double horizontal line
indicates hidden row

FIGURE 1.22 Hidden Column and Row

To hide a column or row, do one of the following:

- Click in the column or row you want to hide, click Format in the Cells group on the HOME tab (refer to Figure 1.16), point to Hide & Unhide (refer to Figure 1.17), and then select Hide Columns or Hide Rows, depending on what you want to hide.
- Right-click the column or row heading(s) you want to hide and select Hide.

You can hide multiple columns and rows at the same time. To select adjacent columns (such as columns B through E) or adjacent rows (such as rows 2 through 4), drag across the adjacent column or row headings. To hide nonadjacent columns or rows, press and hold Ctrl while you click the desired column or row headings. After selecting multiple columns or rows, use any acceptable method to hide the selected columns or rows.

To unhide a column or row, select the columns or rows on both sides of the hidden column or row. For example, if column B is hidden, drag across column letters A and C. Then do one of the following:

- Click Format in the Cells group on the HOME tab (refer to Figure 1.16), point to Hide & Unhide (refer to Figure 1.17), and then select Unhide Columns or Unhide Rows, depending on what you want to display again.
- Right-click the column(s) or row(s) you want to hide and select Unhide.

The Quick Concepts Check provides a series of questions at the end of each white page section. These cover the most essential concepts for students to understand before moving on to the Hands-On Exercises. Page numbers are included for easy review.

hiding Column A, Row 1, and All Hidden Rows/ olumns

mn A or row 1 is different because you cannot select the row or column on unhide column A or row 1, type A1 in the Name Box and press Enter. Click Format in the Cells group on the Home tab, point to Hide & Unhide, and then select Unhide Columns or Unhide Rows to display column A or row 1, respectively. If you want to unhide all columns and rows, click Select All and use the Hide & Unhide submenu.

***Quick*
Concepts** ✓

1. What is the benefit of renaming a worksheet? ***p. 395***
2. What are two ways to insert a new row in a worksheet? ***p. 397***
3. How can you delete cell B5 without deleting the entire row or column? ***p. 398***
4. When should you adjust column widths instead of using the default width? ***p. 398***

chapter Objectives review

After reading this chapter, you have accomplished the following objectives:

1. **Explore the Excel window.**
   - A worksheet is a single spreadsheet containing data. A workbook is a collection of one or more related worksheets contained in a single file.
   - Identify Excel window elements: The Name Box displays the name of the current cell. The Formula Bar displays the contents of the current cell. The active cell is the current cell. A sheet tab shows the name of the worksheet.
   - Identify columns, rows, and cells: Columns have alphabetical headings, such as A, B, C. Rows have numbers, such as 1, 2, 3. A cell is the intersection of a column and row and is indicated like A5.
   - Navigate in and among worksheets: Use the arrow keys to navigate within a sheet, or use the Go To command to go to a specific cell. Click a sheet tab to display the contents on another worksheet.

2. **Enter and edit cell data.**
   - You should plan the worksheet design by stating the purpose, deciding what input values are needed, and then deciding what outputs are needed. Next, you enter and format data in a worksheet. Finally, you document, save, and then share a workbook.
   - Enter text: Text may contain letters, numbers, symbols, and spaces. Text aligns at the left side of a cell.
   - Enter values: Values are numbers that represent a quantity. Values align at the right side of a cell by default.
   - Enter dates: Excel stores dates as serial numbers so that you can calculate the number of days between dates.
   - Enter formulas: A formula is used to perform calculations. The formula results display in the cells.
   - Edit and clear contents: You can clear the cell contents and/or formats.

3. **Create formulas.**
   - Use cell references in formulas: Use references, such as =B5+B6, instead of values within formulas.
   - Apply the order of precedence: The most commonly used operators are performed in this sequence: Exponentiation, Multiplication, Division, Addition, and Subtraction. Use parentheses to perform a lower operation first.
   - Use semi-selection to create a formula: When building a formula, you can click a cell containing a value to enter that cell reference in the formula.

4. **Use Auto Fill.**
   - Copy formulas with Auto Fill: To copy a formula down a column or across a row, double-click or drag the fill handle.
   - Complete sequences with Auto Fill: Use Auto Fill to copy formulas, number patterns, month names, etc.

5. **Display cell formulas.**
   - By default, the results of formulas appear in cells.
   - You can display formulas by pressing Ctrl+`.

6. **Manage worksheets.**
   - Rename a worksheet: The default worksheet tab name is Sheet1, but you can change the name to describe the contents of a worksheet.
   - Change worksheet tab color: You can apply different colors to the sheet tabs so they stand out.
   - Insert and delete a worksheet: You can insert new worksheets to include related data within one workbook, or you can delete extra worksheets you do not need.
   - Move or copy a worksheet: Drag a sheet tab to rearrange the worksheets. You can copy a worksheet within a workbook or to another workbook.

7. **Manage columns and rows.**
   - Insert cells, columns, and rows: Insert a cell to move the remaining cells down or to the right. Insert a new column or row for data.
   - Delete cells, columns, and rows: You can delete cells, columns, and rows you no longer need.
   - Adjust column width: Double-click between the column headings to widen a column based on the longest item in that column, or drag the border between column headings to increase or decrease a column width.
   - Adjust row height: Drag the border between row headings to increase or decrease the height of a row.
   - Hide and unhide columns and rows: Hiding rows and columns protects confidential data from being displayed.

8. **Select, move, copy, and paste data.**
   - Select a range: A range may be a single cell or a rectangular block of cells.
   - Move a range to another location: After selecting a range, cut it from its location. Then make the top-left corner of the destination range the active cell and paste the range there.
   - Copy and paste a range: After selecting a range, click Copy, click the top-left corner of the destination range, and then click Paste to make a copy of the original range.
   - Use Paste Options and Paste Special: The Paste Special option enables you to specify how the data are pasted into the worksheet.
   - Copy Excel data to other programs: You can copy Excel data and paste it in other programs, such as in Word or PowerPoint.

9. **Apply alignment and font options.**
   - Merge and center labels: Type a label in the left cell, select a range including the data you typed, and then click Merge & Center to merge cells and center the label within the newly merged cell.
   - Change horizontal and vertical cell alignment: The default horizontal alignment depends on the data entered, and the default vertical alignment is Bottom Align.

Key terms Matching

Match the key terms with their definitions. Write the key term letter by the appropriate numbered definition.

a.	Alignment	**k.**	Order of precedence
b.	Auto Fill	**l.**	Output area
c.	Cell	**m.**	Range
d.	Column width	**n.**	Row height
e.	Fill color	**o.**	Sheet tab
f.	Fill handle	**p.**	Text
g.	Formula	**q.**	Value
h.	Formula Bar	**r.**	Workbook
i.	Input area	**s.**	Worksheet
j.	Name Box	**t.**	Wrap text

1. _____ A spreadsheet that contains formulas, functions, values, text, and visual aids. **p. 374**

2. _____ A file containing related worksheets. **p. 374**

3. _____ A range of cells containing values for variables used in formulas. **p. 377**

4. _____ A range of cells containing results based on manipulating the variables. **p. 377**

5. _____ Identifies the address of the current cell. **p. 375**

6. _____ Displays the content (text, value, date, or formula) in the active cell. **p. 375**

7. _____ Displays the name of a worksheet within a workbook. **p. 375**

8. _____ The intersection of a column and row. **p. 376**

9. _____ Includes letters, numbers, symbols, and spaces. **p. 378**

10. _____ A number that represents a quantity or an amount. **p. 379**

11. _____ Rules that control the sequence in which Excel performs arithmetic operations. **p. 385**

12. _____ Enables you to copy the contents of a cell or cell range or to continue a sequence by dragging the fill handle over an adjacent cell or range of cells. **p. 386**

13. _____ A small green square at the bottom-right corner of a cell. **p. 386**

14. _____ The horizontal measurement of a column. **p. 398**

15. _____ The vertical measurement of a row. **p. 399**

16. _____ A rectangular group of cells. **p. 406**

17. _____ The position of data between the cell margins. **p. 414**

18. _____ Formatting that enables a label to appear on multiple lines within the current cell. **p. 415**

19. _____ The background color appearing behind data in a cell. **p. 416**

20. _____ A combination of cell references, operators, values, and/or functions used to perform a calculation. **p. 379**

Multiple choice

1. What is the first step in planning an effective worksheet?

   (a) Enter labels, values, and formulas.

   (b) State the purpose of the worksheet.

   (c) Identify the input and output areas.

   (d) Decide how to format the worksheet data.

2. What Excel interface item displays the address of the current cell?

   (a) Quick Access Toolbar

   (b) Formula Bar

   (c) Status bar

   (d) Name Box

3. Given the formula =B1*B2+B3/B4^2 where B1 contains 3, B2 contains 4, B3 contains 32, and B4 contains 4, what is the result?

   (a) 14

   (b) 121

   (c) 76

   (d) 9216

4. Why would you press Ctrl+` in Excel?

   (a) To display the print options

   (b) To undo a mistake you made

   (c) To display cell formulas

   (d) To enable the AutoComplete feature

5. Which of the following is a nonadjacent range?

   (a) C15:D30

   (b) L15:L65

   (c) A1:Z99

   (d) A1:A10, D1:D10

6. If you want to balance a title over several columns, what do you do?

   (a) Enter the data in the cell that is about midway across the spreadsheet.

   (b) Merge and center the data over all columns.

   (c) Use the Increase Indent command until the title looks balanced.

   (d) Click Center to center the title horizontally over several columns.

7. Which of the following characteristics is not applicable to the Accounting Number Format?

   (a) Dollar sign immediately on the left side of the value

   (b) Commas to separate thousands

   (c) Two decimal places

   (d) Zero values displayed as hyphens

8. You selected and copied worksheet data containing formulas. However, you want the pasted copy to contain the current formula results rather than formulas. What do you do?

   (a) Click Paste in the Clipboard group on the Home tab.

   (b) Click the Paste arrow in the Clipboard group and select Formulas.

   (c) Click the Paste arrow in the Clipboard group and select Values & Source Formatting.

   (d) Display the Paste Special dialog box and select *Formulas and number formats*.

9. Assume that the data on a worksheet consume a whole printed page and a couple of columns on a second page. You can do all of the following except what to force the data to print all on one page?

   (a) Decrease the Scale value.

   (b) Increase the left and right margins.

   (c) Decrease column widths if possible.

   (d) Select a smaller range as the print area.

10. What should you do if you see a column of pound signs (###) instead of values or results of formulas?

    (a) Increase the zoom percentage.

    (b) Delete the column.

    (c) Adjust the row height.

    (d) Increase the column width.

practice Exercises

Practice Exercises work through the chapter objectives and require a basic understanding of the skills covered.

1 | Mathematics Review

You want to brush up on your math skills to test your logic by creating formulas in Excel. You realize that you should avoid values in formulas most of the time. Therefore, you created an input area that contains values you will use in your formulas. To test your knowledge of formulas, you will create an output area that will contain a variety of formulas using cell references from the input area. You also need to include a formatted title, the date prepared, and your name. After creating and verifying formula results, you will change input values and observe changes in the formula results. You want to display cell formulas, so you will create a picture copy of the formulas view. This exercise follows the same set of skills as used in Hands-On Exercises 1–4 and 6 in the chapter. Refer to Figure 1.52 as you complete this exercise.

FIGURE 1.52 Formula Practice

a. Open *e01p1Math* and save it as **e01p1Math_LastFirst**.

b. Type the current date in **cell B2** in this format: 9/1/2016. Type your first and last names in **cell D2**.

c. Adjust the column widths by doing the following:
- Click in any cell in column A and click **Format** in the Cells group.
- Select **Column Width**, type **12.57** in the **Column width box**, and then click **OK**.
- Click in any cell in column B and set the width to **11**.
- Click in any cell in column D and set the width to **35.57**.

d. Select the **range A1:E1**, click **Merge & Center** in the Alignment group, click **Bold**, and then apply **14 pt font size**.

e. Select the **range B5:B8** and click **Center** in the Alignment group.

f. Select the **range D10:D12** and click **Wrap Text** in the Alignment group.

g. Enter the following formulas in column E:
- Click **cell E5**. Type **=B5+B6** and press **Enter**. Excel adds the value stored in cell B5 (1) to the value stored in cell B6 (2). The result (3) appears in cell E5, as described in cell D5.
- Enter appropriate formulas in **cells E6:E8**, pressing **Enter** after entering each formula. Subtract to calculate a difference, multiply to calculate a product, and divide to calculate a quotient.
- Type **=B6^B7** in **cell E9** and press **Enter**. Calculate the answer: 2*2*2 = 8.
- Enter **=B5+B6*B8-B7** in **cell E10** and press **Enter**. Calculate the answer: 2*4 = 8; 1+8 = 9; 9–3 = 6. Multiplication occurs first, followed by addition, and finally subtraction.
- Enter **=(B5+B6)*(B8-B7)** in **cell E11** and press **Enter**. Calculate the answer: 1+2 = 3; 4–3 = 1; 3*1 = 3. This formula is almost identical to the previous formula; however, calculations in parentheses occur before the multiplication.
- Enter **=B5*B6+B7*B8** in **cell E12** and press **Enter**. Calculate the answer: 1*2 = 2; 3*4 = 12; 2+12 = 14.

Mid-Level Exercises

Mid-Level Exercises provide less instruction and require students to interpret and analyze using the skills they have learned.

1 Restaurant Receipt

FROM SCRATCH

Matt, the owner of Matt's Sports Grill in Toledo, Ohio, asked you to help him create a receipt spreadsheet that he can use until his new system arrives. He wants an input area for the total food and beverage purchases, the sales tax rate, and the tip rate. The formatted receipt should include the subtotal, tax, tip, and total amount for a customer. Refer to Figure 1.55 as you complete this exercise.

FIGURE 1.55 Matt's Sports Grill Receipt

a. Open a new Excel workbook, save it as **e01m1Receipt_LastFirst**, and then rename *Sheet1* as **Receipt**.

b. Enter the four labels in the **range A1:A4** in the Input Area as shown in Figure 1.56. Type **9.39**, **0.065**, and **.18** in the **range B2:B4**. Apply these formats to the Input Area:
   - Merge and center the *Input Area* title over both columns. Apply bold and **Blue, Accent 1, Lighter 40% fill color** to the title. Adjust the width of the first column.
   - Apply the **Accounting Number Format** and **Percent Style** format with the respective decimal places as shown in the **range B2:B4**.

c. Enter the labels in the receipt area in column D. Use Format Painter to copy the formats of the title in **cells A1** and **D1**. Merge and center the city and state in the **range D2:E2**. Change the width of column D to **17**. Indent the *Subtotal* and *Tip Amount* labels twice each. Apply bold to *Total Bill* and apply italic to *Thank you for dining with us*.

d. Enter the following formulas for the receipt:
   - **Food & Beverages:** Enter a formula that reads the value in the Input Area; do not retype the value in cell E4.
   - **Sales Tax Amount:** Calculate the product of the food & beverages and the sales tax rate.
   - **Subtotal:** Determine the formula needed.
   - **Tip Amount:** Calculate the tip based on the pretax amount and the tip rate.
   - **Total Bill:** Determine the formula needed.

e. Apply **Accounting Number Format** to the *Food & Beverages*, *Subtotal*, and *Total Bill* values, if necessary. Apply **Comma Style** and underline to the *Sales Tax Amount* and *Tip Amount* values. Apply the **Double Underline style** to the *Total Bill* value.

f. Set **1.5"** top margin and center the data horizontally on the page.

g. Insert a footer with your name on the left side, the sheet name code in the center, and the file name code on the right side.

h. Create a copy of the Receipt worksheet, move the new sheet to the end, and then rename the copied sheet **Formulas**. Display cell formulas on the Formulas worksheet, select **Landscape orientation**, and then select the options to print gridlines and headings. Adjust column widths so that the data will fit on one page.

DISCOVER

i. Open the Excel Options dialog box while displaying the Formulas worksheet. In the Advanced category, under *Display options for this worksheet:*, select the **Show formulas in cells instead of their calculated results check box**. This option will make sure the active worksheet will display the formulas when you open the workbook again. The Receipt worksheet will continue showing the results.

j. Save and close the file, and submit based on your instructor's directions.

2 Guest House Rental Rates

ANALYSIS CASE

You manage a beach guest house in Ft. Lauderdale containing three types of rental units. Prices are based on peak and off-peak times of the year. You need to calculate the maximum daily revenue for each rental type, assuming all units are rented. In addition, you need to calculate the discount rate for off-peak rental times. Finally, you will improve the appearance of the worksheet by applying font, alignment, and number formats.

a. Open *e01m2Rentals* and save it as **e01m2Rentals_LastFirst**.

b. Merge and center *Peak Rentals* in the **range C4:D4**, over the two columns of peak rental data. Apply **Dark Red fill color** and **White, Background 1 font color**.

c. Merge and center *Off-Peak Rentals* in the **range E4:G4** over the three columns of off-peak rental data. Apply **Blue fill color** and **White, Background 1 font color**.

d. Center and wrap the headings on row 5. Adjust the width of columns D and F, if needed. Center the data in the **range B6:B8**.

e. Create and copy the following formulas:
- Calculate the Peak Rentals Maximum Revenue by multiplying the number of units by the peak rental price per day.
- Calculate the Off-Peak Rentals Maximum Revenue by multiplying the number of units by the off-peak rental price per day.
- Calculate the Discount rate for the Off-Peak rental price per day. For example, using the peak and off-peak per day values, the studio apartment rents for 75% of its peak rental rate. However, you need to calculate and display the off-peak discount rate, which is .24975.

f. Format the monetary values with **Accounting Number Format**. Format the Discount Rate formula results in **Percent Style** with one decimal place.

g. Apply **Blue, Accent 1, Lighter 80% fill color** to the **range E5:G8**.

h. Select the **range C5:D8** and apply a custom color with **Red 242**, **Green 220**, and **Blue 219**.

DISCOVER ★

i. Answer the four questions below the worksheet data. If you change any values to answer the questions, change the values back to the original values.

j. Set **1"** top, bottom, left, and right margins. Center the data horizontally on the page.

k. Insert a footer with your name on the left side, the sheet name code in the center, and the file name code on the right side.

l. Create a copy of the Rental Rates worksheet, place the new sheet to the right side of the original worksheet, and rename the new sheet **Formulas**. On the Formulas worksheet, select **Landscape orientation** and the options to print gridlines and headings. Delete the question and answer section on the Formulas sheet.

DISCOVER

m. Open the Excel Options dialog box while displaying the Formulas worksheet. In the Advanced category, under *Display options for this worksheet:*, select the **Show formulas in cells instead of their calculated results check box**. This option will make sure the active worksheet will display the formulas when you open the workbook again. The Rental Rates worksheet will continue showing the results. Adjust column widths so that the data will fit on one page.

n. Save and close the file, and submit based on your instructor's directions.

3 Real Estate Sales Report

You own a small real estate company in Indianapolis. You want to analyze sales for selected properties. Your assistant has prepared a spreadsheet with sales data. You need to calculate the number of days that the houses were on the market and their sales percentage of the list price. In one situation, the house was involved in a bidding war between two families that really wanted the house. Therefore, the sale price exceeded the list price.

a. Open *e01m3Sales* and save it as **e01m3Sales_LastFirst**.

b. Delete the row that has incomplete sales data. The owners took their house off the market.

c. Calculate the number of days each house was on the market. Copy the formula down that column.

d. Format prices with **Accounting Number Format** with zero decimal places.

e. Calculate the sales price percentage of the list price. The second house was listed for $500,250, but it sold for only $400,125. Therefore, the sale percentage of the list price is 79.99%. Format the percentages with two decimal places.

f. Wrap the headings on row 4.

g. Insert a new column between the *Date Sold* and *List Price* columns. Move the *Days on Market* column to the new location. Apply **Align Right** and increase the indent on the days on market formula results. Then delete the empty column B.

h. Edit the list date of the 41 Chestnut Circle house to be **4/22/2016**. Edit the list price of the house on Amsterdam Drive to be **$355,000**.

i. Select the property rows and set a **20 row height**. Adjust column widths as necessary.

j. Select **Landscape orientation** and set the scaling to **130%**. Center the data horizontally and vertically on the page.

k. Insert a header with your name, the current date code, and the current time code.

l. Save and close the file, and submit based on your instructor's directions.

4 Problem-Solving with Classmates

COLLABORATION CASE

Collaboration Cases encourage team work and cooperation to solve work through the exercise.

Your instructor wants all students in the class to practice their problem-solving skills. Pair up with a classmate so that you can create errors in a workbook and then see how many errors your classmate can find in your worksheet and how many errors you can find in your classmate's worksheet.

a. Create a folder named **Exploring** on your SkyDrive and give access to that drive to a classmate and your instructor.

b. Open *e01h6Markup_LastFirst*, which you created in the Hands-On Exercises, and save it as **e01m4Markup_LastFirst**.

c. Edit each main formula to have a deliberate error (such as a value or incorrect cell reference) in it and then copy the formulas down the columns.

d. Save the workbook to your shared folder on your SkyDrive.

e. Open the workbook your classmate saved on his or her SkyDrive and save the workbook with your name after theirs, such as *e01m4Markup_MulberyKeith_KrebsCynthia*.

f. Find the errors in your classmate's workbook, insert comments to describe the errors, and then correct the errors.

g. Save the workbook back to your classmate's SkyDrive and submit based on your instructor's directions.

Beyond the classroom

Credit Card Rebate

RESEARCH CASE

FROM SCRATCH

You recently found out the Costco TrueEarnings® American Express credit card earns annual rebates on all purchases. You want to see how much rebate you would have received had you used this credit card for purchases in the past year. Use the Internet to research the percentage rebates for different categories. Plan the design of the spreadsheet. Enter the categories, rebate percentages, amount of money you spent in each category, and a formula to calculate the amount of rebate. Use the Excel Help feature to learn how to add several cells using a function instead of adding cells individually and how to apply a Double Accounting underline. Insert the appropriate function to total your categorical purchases and rebate amounts. Apply appropriate formatting and page setup options for readability. Underline the last monetary values for the last data row and apply the **Double Accounting underline style** to the totals. Insert a header. Save the workbook as **e01b2Rebate_LastFirst**. Close the workbook and submit based on your instructor's directions.

Net Proceeds from House Sale

DISASTER RECOVERY

Garrett Frazier is a real estate agent. He wants his clients to have a realistic expectation of how much money they will receive when they sell their houses. Sellers know they have to pay a commission to the agent and pay off their existing mortgages; however, many sellers forget to consider they might have to pay some of the buyer's closing costs, title insurance, and prorated property taxes. The realtor commission and estimated closing costs are based on the selling price and the respective rates. The estimated property taxes are prorated based on the annual property taxes and percentage of the year. For example, if a house sells three months into the year, the seller pays 25% of the property taxes. Garrett created a worksheet to enter values in an input area to calculate the estimated deductions at closing and calculate the estimated net proceeds the seller will receive. However, the worksheet contains errors. Open *e01b3Proceeds* and save it as **e01b3Proceeds_LastFirst**.

Use Help to learn how to insert comments into cells. As you identify the errors, insert comments in the respective cells to explain the errors. Correct the errors, including formatting errors. Apply **Landscape orientation**, **115% scaling**, **1.5" top margin**, and center horizontally. Insert your name on the left side of the header, the sheet name code in the center, and the file name code on the right side. Save and close the workbook, and submit based on your instructor's directions.

Goal Setting

SOFT SKILLS CASE

FROM SCRATCH

After watching the Goal Setting video, start a new Excel workbook and save it as **e01b4Goals_LastFirst**. List three descriptive goals in column A relating to your schoolwork and degree completion. For example, maybe you usually study three hours a week for your algebra class, and you want to increase your study time by 20%. Enter *Algebra homework & study time (hours)* in column A, *3* in column B, the percentage change in column C, and create a formula that calculates the total goal in column D. Adjust column widths as needed.

Insert column labels above each column. Format the labels and values using information you learned earlier in the chapter. Merge and center a title at the top of the worksheet. Use the Page Setup dialog box to center the worksheet horizontally. Rename Sheet1 using the term, such as *Fall 2016*. Create a footer with your name on the left side, sheet name code in the center, and file name code on the right side. Save and close the workbook, and submit based on your instructor's directions.

capstone Exercise

... nd sells books to bookstores in Austin. Your assistant prepared a standard six-month royalty statement for one author. You need to insert formulas, format the worksheets, and then prepare royalty statements for other authors.

Enter data into the worksheet

You need to format a title, enter the date indicating the end of the statement period, and delete a blank column. You also need to insert a row for the standard discount rate, a percentage that you discount the books from the retail price to sell to the bookstores.

a. Open *e01c1Royalty* and save it as **e01c1Royalty_LastFirst**.

b. Merge and center the title over the **range A1:D1**.

c. Type **6/30/2016** in **cell B3** and left align the date.

d. Delete the blank column between the Hardback and Paperback columns.

e. Insert a new row between Retail Price and Price to Bookstore. Enter **Standard Discount Rate**, **0.55**, and **0.5**. Format the two values as **Percent Style**.

calculate Values

You need to insert formulas to perform necessary calculations.

a. Enter the Percent Returned formula in **cell B10**. The percent returned indicates the percentage of books sold but returned to the publisher.

b. Enter the Price to Bookstore formula in **cell B15**. This is the price at which you sell the books to the bookstore. It is based on the retail price and the standard discount. For example, if a book has a $10 retail price and a 55% discount, you sell the book for $4.50.

c. Enter the Net Retail Sales formula **in cell B16**. The net retail sales is the revenue from the net units sold at the retail price. Gross units sold minus the returned units equals net units sold.

d. Enter the Royalty to Author formula in **cell B20**. Royalties are based on net retail sales and the applicable royalty rate.

e. Enter the Royalty per Book formula in **cell B21**. This amount is the author's earnings on every book sold but not returned.

f. Copy the formulas to the Paperback column.

Format the Values

You are ready to format the values to improve readability.

a. Apply **Comma Style** with zero decimal places to the **range B8:C9**.

b. Apply **Percent Style** with one decimal place to the **range B10:C10** and **Percent Style** with two decimal places to the **range B19:C19**.

c. Apply **Accounting Number Format** to all monetary values.

Format the worksheet

You want to improve the appearance of the rest of the worksheet.

a. Select the **range B6:C6**. Apply bold, right alignment, and **Purple font color**.

b. Click **cell A7**, apply **Purple font color**, and then apply **Gray-25%, Background 2, Darker 10% fill color**. Select the **range A7:C7** and select **Merge Across**.

c. Use Format Painter to apply the formats from **cell A7** to **cells A12** and **A18**.

d. Select the **ranges A8:A10**, **A13:A16**, and **A19:A21**. Indent the labels twice. Widen column A as needed.

e. Select the **range A7:C10** (the *Units Sold* section) and apply the **Outside Borders** border style. Apply the same border style to the *Pricing* and *Royalty Information* sections.

Manage the workbook

You will apply page setup options insert a footer, and, then duplicate the royalty statement worksheet to use as a model to prepare a royalty statement for another author.

a. Select the margin setting to center the data horizontally on the page. Insert a footer with your name on the left side, the sheet name code in the center, and the file name code on the right side.

b. Copy the Jacobs worksheet, move the new worksheet to the end, and then rename it **Lopez**.

c. Change the Jacobs sheet tab to **Red**. Change the Lopez sheet tab to **Dark Blue**.

d. Make these changes on the Lopez worksheet: **Lopez** (author), **5000** (hardback gross units), **14000** (paperback gross units), **400** (hardback returns), **1925** (paperback returns), **19.95** (hardback retail price), and **6.95** (paperback retail price).

display Formulas and print the workbook

You want to print the formatted Jacobs worksheet to display the calculated results. To provide evidence of the formulas, you want to display and print cell formulas in the Lopez worksheet.

a. Display the cell formulas for the Lopez worksheet.

b. Select options to print the gridlines and headings.

c. Change the Options setting to make sure the formulas display instead of cell results on this worksheet when you open it again.

d. Adjust the column widths so that the formula printout will print on one page.

e. Save and close the workbook, and submit based on your instructor's directions.