Personal Budget

One of the most useful ways in which you can use Excel in your daily life is to create a budget to keep track of your income and expenses. You can then use your budget to identify and track trends. For example, you can determine if you spend a consistent amount each month on entertainment or if you spend less in some months than in others. You can also use the budget to ask "what-if" questions to identify how best to allocate your resources. To create the personal budget, you **Enter and Enhance Labels**, **Calculate Totals**, **Ask What-If Questions**, and **Format and Print the Budget**. The completed budget appears in FIGURE 3-10 on page 63.

Enter and Enhance Labels

You create a worksheet, enter and enhance the worksheet title, then add the labels for the months of the year and the income and expense categories.

STEPS

1. Start Excel and open a new blank workbook, type Six-Month Budget, press [Enter], type the labels in cells A2 to A7 as shown in FIGURE 3-1, then save the workbook as PR 3-Six-Month Budget to the location where you save the files for this book
2. Click cell A1, click the Page Layout tab, click the Themes button in the Themes group, click Slice, click the Home tab, click the Font Size list arrow in the Font group, change the font size to 22 pt, then click the Bold button in the Font group
3. Click cell A2, then change the font size to 14 pt
4. Select cells A1:H2, right-click the selection, click Format Cells, click the Alignment tab, click the Horizontal list arrow, click Center Across Selection, then click OK
5. Select cells A1:H1, click the Fill Color list arrow in the Font group, click Dark Green, Accent 4, Darker 25%, click the Font Color list arrow in the Font group, then click White, Background 1
6. Click cell B3, type JAN, move the pointer over the lower-right corner to show the Fill Handle pointer +, drag + to cell G3, click the Center button in the Alignment group, click cell H3, then type Totals and press [Enter]
   The labels for the months from January to June are added and centered.
7. Click B on the worksheet frame, click and drag to select columns B to H as shown in FIGURE 3-2, click the Format button in the Cells group, click Column Width, type 14, then click OK
8. Click cell A9, then enter the labels required for cells A9:A25 as shown in FIGURE 3-3
9. Click the Review tab, click the Spelling button in the Proofing group, click Yes if prompted, correct any spelling errors, then save the workbook

FIGURE 3-1: Labels for Cells A1 to A7

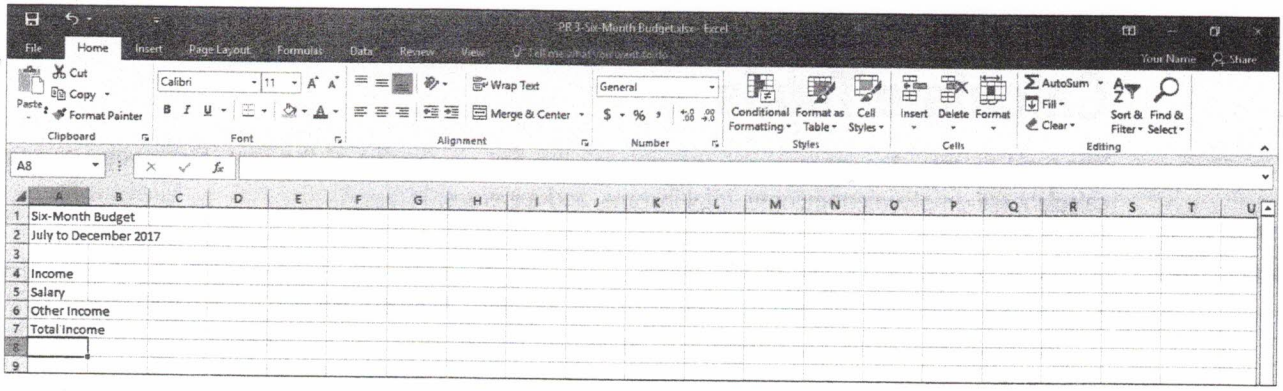


FIGURE 3-2: Selecting columns

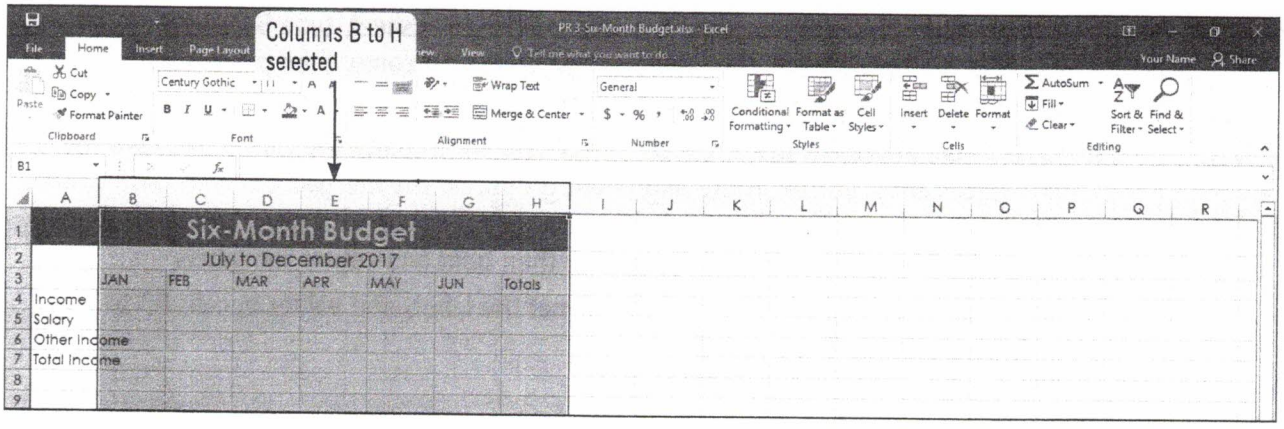
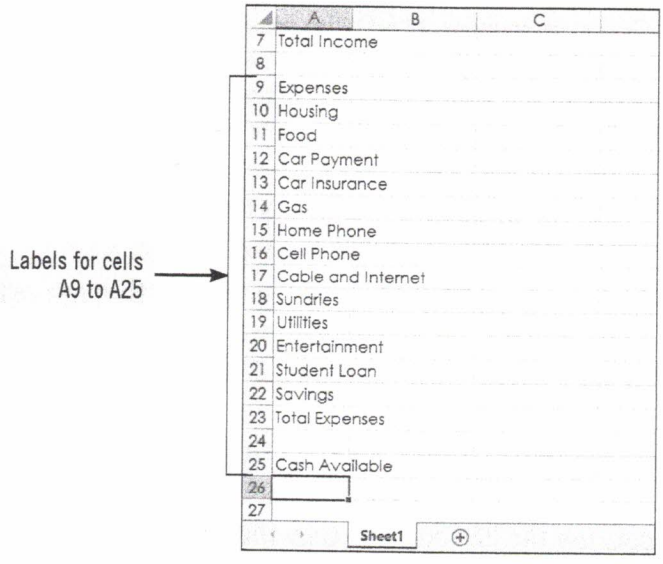


FIGURE 3-3: Labels for Cells A9 to A25



Merging cells

A merged cell is created by combining two or more cells into a single cell. The cell reference for the merged cell is the upper-left cell of the originally selected range. When you merge a range of cells containing data, only the data in the upper-left cell of the range is included in the merged cell. To merge cells in a single row, use the Merge and Center button in the Alignment group on the Home tab and then adjust the alignment as needed. If you want to center data across several consecutive rows, use the Alignment tab in the Format Cells dialog box and select Center Across Selection. The data is centered across several cells but the cells themselves remain separate and are not merged.

Personal Budget (continued)

Calculate Totals

You need to enter the income and expenses for the first six months of the year. Then, you need to calculate self-employment income, total income, and expenses.

STEPS

1. Double-click the column divider between columns A and B on the worksheet frame to increase the width of column A to fit all the labels, click cell B10, enter the values for January as shown in FIGURE 3-4, select cells B10:B22, position the pointer over the lower-right corner of cell B22, then drag + to cell G22

HINT
You use a new worksheet to avoid cluttering the first worksheet with data that will not be printed.

2. Double-click the Sheet1 tab at the bottom of the worksheet, type Budget, press [Enter], click ⊕, double-click the new sheet tab, type Other Income, then press [Enter]
   In addition to your salary, you have earned income from website design work and garden work.
3. Type Hours in cell A1, press [Enter], select cells A1:G1, click the Home tab, click the Merge & Center button in the Alignment group, fill the merged cell with Dark Green, Accent 4, Lighter 80%, click the Bold button B, click cell B2, type January, fill the range C2:G2 with the remaining months, then bold and center the labels
4. Using FIGURE 3-5 as a guide, enter and format the labels and values in cells A3 to G11, widening column A as needed
   Your worksheet should look like **FIGURE 3-5**.
5. Click cell B6, enter the formula =B3*B10, press [Enter], then copy the formula through cells C6:G6
   Oops! Cells C6 through G6 contain no values. Why? When you copied the formula, Excel changed the cell references in the copied formula because the formulas contained relative references. You need to enter a formula in cell B6 that uses an absolute reference for cell B10 (the rate of pay for web work). When you use an absolute cell reference, the value associated with the absolute cell reference remains constant no matter where the formula is copied to in the worksheet.

HINT
If your computer supports the use of function keys, press [F4] or [Fn][F4] to insert the dollar signs in the selected cell reference.

6. Click cell B6, select B10 in the formula bar, type $B$10, press [Enter], click cell B6 again, then drag + to fill cells C6:G6 with the revised formula
7. Click cell B7, enter the formula =B4*$B$11, copy the formula through cells C7:G7, select the range B6:G8, then click the AutoSum button in the Editing group
   In January and February, $ - is displayed in cells B7 and C7 because no hours were worked during those months.
8. Click the Budget tab, click cell B6, type =, click the Other Income tab, click cell B8, press [Enter], then drag + in cell B6 to fill the range C6:G6
9. Click cell B5, type 2650, use the fill handle to copy the value to the range C5:G5, select the range B5:H7, click the AutoSum button in the Editing group, select the range B10:H23, click the AutoSum button, then save the workbook
   The total income displayed in cell H7 is 19025 and the total expenses shown in cell H23 are 16950, as shown in **FIGURE 3-6** (shown in 80% zoom).

FIGURE 3-4: Values for cells B10 to B22

	A	B	C
8			
9	Expenses		
10	Housing	1100	
11	Food	400	
12	Car Payment	200	
13	Car Insurance	100	
14	Gas	100	
15	Home Phone	50	
16	Cell Phone	75	
17	Cable and Internet	100	
18	Sundries	50	
19	Utilities	50	
20	Entertainment	100	
21	Student Loan	200	
22	Savings	300	
23	Total Expenses		
24			
25	Cash Available		
26			
27			
28			

Sheet1

Values for January expenses

FIGURE 3-5: Labels and values for the Other Income sheet

	A	B	C	D	E	F	G	H
1				Hours				
2		January	February	March	April	May	June	
3	Web	10	10	20	10	10	5	
4	Garden	0	0	10	20	20	25	
5				Total Pay				
6	Web							
7	Garden							
8	Total Pay							
9								
10	Web Rate	$ 25.00						
11	Garden Rate	$ 20.00						
12								
13								
14								

FIGURE 3-6: Worksheet completed with totals

	A	B	C	D	E	F	G	H	I
1	Six-Month Budget								
2	July to December 2017								
3		JAN	FEB	MAR	APR	MAY	JUN	Totals	
4	Income								
5	Salary	2650	2650	2650	2650	2650	2650	15900	
6	Other Income	$ 250.00	$ 250.00	$ 700.00	$ 650.00	$ 650.00	$ 625.00	$ 3,125.00	
7	Total Income	2900	2900	3350	3300	3300	3275	19025	
8									
9	Expenses								
10	Housing	1100	1100	1100	1100	1100	1100	6600	
11	Food	400	400	400	400	400	400	2400	
12	Car Payment	200	200	200	200	200	200	1200	
13	Car Insurance	100	100	100	100	100	100	600	
14	Gas	100	100	100	100	100	100	600	
15	Home Phone	50	50	50	50	50	50	300	
16	Cell Phone	75	75	75	75	75	75	450	
17	Cable and Internet	100	100	100	100	100	100	600	
18	Sundries	50	50	50	50	50	50	300	
19	Utilities	50	50	50	50	50	50	300	
20	Entertainment	100	100	100	100	100	100	600	
21	Student Loan	200	200	200	200	200	200	1200	
22	Savings	300	300	300	300	300	300	1800	
23	Total Expenses	2825	2825	2825	2825	2825	2825	16950	
24									
25	Cash Available								

Budget | Other Incom

Total income is 19025

Total expenses is 16950

Understanding relative and absolute references

By default, Microsoft Excel considers all values entered in formulas as relative values. That is, Excel automatically changes all cell addresses in a formula when you copy the formula to a new location. If you do not want Excel to change the cell address of a value when you copy it, you must make the value absolute. To do this, you enter a dollar sign ($) before both the column and the row designation in the address. For example, $C$26 tells Excel that the reference to cell C26 must not change, even if you copy the formula to a new location in the worksheet. If your computer supports the use of Function keys, you can click the cell reference and then press [F4] or [Fn][F4] to insert the $.

Ask What-If Questions

You need to calculate how much cash is available each month, and then perform the calculations required to answer several what-if questions. You also create sparklines to provide a quick visual review of monthly variations in income, expenses, and cash flow.

STEPS

1. **Click cell B25 on the Budget tab, enter the formula =B7-B23, press [Enter], then copy the formula across to cell H25**

   The total cash available at the end of six months, given the current level of income and expenses, is 2075. The first what-if question is "What if you raise the hourly rate charged for web design work to $50?"

2. **Click the Other Income tab, click cell B10, type 50, press [Enter], widen columns if ## marks appear, then click the Budget tab**

   By changing the amount charged for web design work, you answer the what-if question and see that your total profit in cell G23 increases to 3700. Next, you want to know, "What if an increase in the hourly rate for web design work results in a 40-percent drop in the number of hours worked from January to June?"

3. **Click the Other Income tab, click 4 on the worksheet frame to select row 4, click the Insert button in the Cells group (a new row appears above "Garden"), click cell A4, type 60%, click cell B4, enter the formula =B3-(B3*$A$4) as shown in FIGURE 3-7, press [Enter], then copy the formula to the range C4:G4**

4. **Click cell B7, select B3 in the formula bar, type B4, press [Enter], copy the revised formula through cells C7:G7, then click the Budget tab**

   The new total in cell H25 is 1750—quite a reduction from 3700! Perhaps you shouldn't raise the hourly rate if the result is a 60-percent drop in the number of hours worked.

5. **Click the Undo button until the extra row is removed from the Other Income sheet and the value in cell B10 is again $25.00 (you will click the Undo button about ten times), then return to the Budget sheet**

   The value in cell H25 is again 2075. Next, you want to know, "What if Housing costs increase to $1,200/month starting in March?"

6. **Click cell E10 in the Budget sheet, type 1200, then drag the fill handle to cell G10**

   If you increase your housing cost, you reduce your total available cash (cell H25) to 1775. You can experiment endlessly with entering various combinations of values for income and expenses to see the effect on the "bottom line."

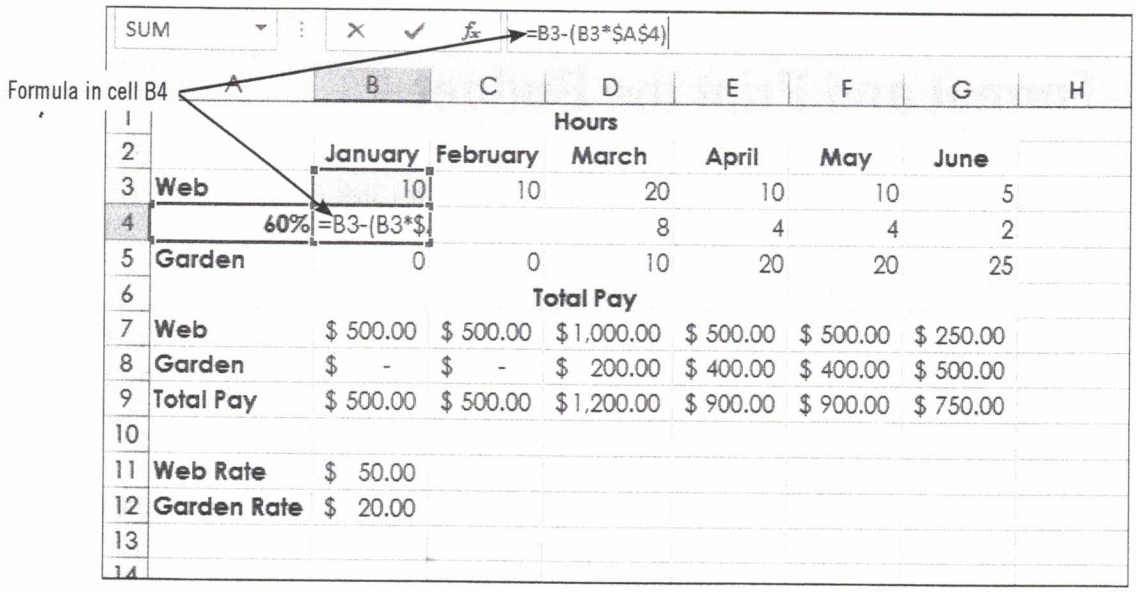
7. **Click cell I3, type Trend, press [Enter], click cell I7, click the Insert tab, click Column in the Sparklines group, move the Create Sparklines dialog box down as needed so you can see row 7, select the range B7:G7, then click OK**

   You insert a Column sparkline to provide a visual representation of the variations in income over the six months covered by the budget.

8. **Click the High Point check box in the Show group, click the Home tab, click the Copy button in the Clipboard group, click cell I23, click the Paste button, click cell I25, then click the Paste button**

9. **Modify values as shown in the highlighted cells in FIGURE 3-8, verify that 1575 appears in cell H25, then save the workbook**

FIGURE 3-7: Calculating a reduction in hours worked



	A	B	C	D	E	F	G	H
1				Hours				
2		January	February	March	April	May	June	
3	Web	10	10	20	10	10	5	
4	60%	=B3-(B3*$		8	4	4	2	
5	Garden	0	0	10	20	20	25	
6				Total Pay				
7	Web	$ 500.00	$ 500.00	$ 1,000.00	$ 500.00	$ 500.00	$ 250.00	
8	Garden	$ -	$ -	$ 200.00	$ 400.00	$ 400.00	$ 500.00	
9	Total Pay	$ 500.00	$ 500.00	$ 1,200.00	$ 900.00	$ 900.00	$ 750.00	
10								
11	Web Rate	$ 50.00						
12	Garden Rate	$ 20.00						
13								
14								

FIGURE 3-8: Values to modify in the Budget sheet

	A	B	C	D	E	F	G	H	I	J
1	Six-Month Budget									
2	July to December 2017									
3		JAN	FEB	MAR	APR	MAY	JUN	Totals	Trend	
4	Income									
5	Salary	2650	2650	2650	2650	2650	2650	15900		
6	Other Income	$ 250.00	$ 250.00	$ 700.00	$ 650.00	$ 650.00	$ 625.00	$ 3,125.00		
7	Total Income	2900	2900	3350	3300	3300	3275	19025		
8										
9	Expenses									
10	Housing	1100	1100	1100	1200	1200	1200	6900		
11	Food	400	400	500	400	500	400	2600		
12	Car Payment	200	200	200	200	200	200	1200		
13	Car Insurance	100	100	100	100	100	100	600		
14	Gas	100	100	100	100	100	100	600		
15	Home Phone	50	50					100		
16	Cell Phone	75	75	75	75	75	75	450		
17	Cable and Internet	100	100	100	100	100	100	600		
18	Sundries	50	50	50	50	50	50	300		
19	Utilities	100	100	50	50	50	50	400		
20	Entertainment	100	100	100	100	100	100	600		
21	Student Loan	200	200	200	200	200	200	1200		
22	Savings	300	400	300	300	300	300	1900		
23	Total Expenses	2875	2975	2875	2875	2975	2875	17450		
24										
25	Cash Available	25	-75	475	425	325	400	1575		

Budget | Other Income

Utilities expense rises in January and February

Savings are increased in February

Food expense rises in March and May

Home phone is canceled from March to June

Personal Budget (continued)

Format and Print the Budget

To make the worksheet easier to read, you need to add border lines and fills to selected cells, format values using either the Accounting Number Format or the Comma Style (depending on their location in the worksheet), and then use a variety of Page Setup features.

STEPS

1. Select cells A3:I3 on the Budget tab, click the Border list arrow in the Font group, click More Borders, then refer to FIGURE 3-9: click the single thick border in the Style list, click the Color list arrow, click Dark Green, Accent 4, Darker 25%, click the Top Border button, click the Bottom border button, click OK, then apply bold

HINT
To complete these steps, use the completed budget in **FIGURE 3-10** as a guide.

2. Select cells A5:A6, fill them with Dark Green, Accent 4, Lighter 60%, fill the range B5:H6 with Dark Green, Accent 4, Lighter 80%, then format the Expenses cells with Red, Accent 6, Lighter 60% and Lighter 80% and the Cash Available row with Dark Blue, Text 2, Lighter 60% and Lighter 80%
3. Click cell A4, press and hold the [Ctrl] key, click cells A7, A9, A23, and A25, then apply Bold
   You use the [Ctrl] key to select a series of nonadjacent cells.
4. Select the range B5:H25, then click the Comma Style button in the Number group
5. Select the range B5:H5, press and hold the [Ctrl] key, select the ranges B7:H7, B10:H10, B23:H23, and B25:H25, then click the Accounting Number Format button in the Number group
6. Select cells A1:I1, click the Merge & Center button in the Alignment group, then merge and center cells A2:I2
   When you add columns to a worksheet, you sometimes need to adjust how cells are merged so the worksheet appears balanced.
7. Click 7 on the worksheet frame, press and hold [Ctrl], select row 23 and row 25, click the Format button in the Cells group, click Row Height, type 30, click OK, select and fill cells A8:I8 with Dark Green, Accent 4, Darker 25%, repeat for cells A24:I24, select row 8 and row 24, then set the row height to 8
   With an increased row height, the sparklines are more visible. The narrow rows look like border lines which gives the worksheet a finished look.
8. Click the File tab, click Print, click Portrait Orientation, click Landscape Orientation, click the Page Setup link at the bottom of the Print pane, click the Margins tab, click to select the Horizontally and Vertically check boxes, click the Header/Footer tab, click Custom Header, type Six-Month Budget in the left section, press [Tab] twice, type your name in the right section, click OK, then click OK again

MORE PRACTICE
For more practice with the skills presented in this project, complete Independent Challenge 2.

9. Click the No Scaling list arrow, click Fit Sheet on One Page, then compare the completed worksheet to FIGURE 3-10
10. Click to exit Backstage view, save the file and submit it to your instructor, then close the workbook

FIGURE 3-9: Format Cells dialog box

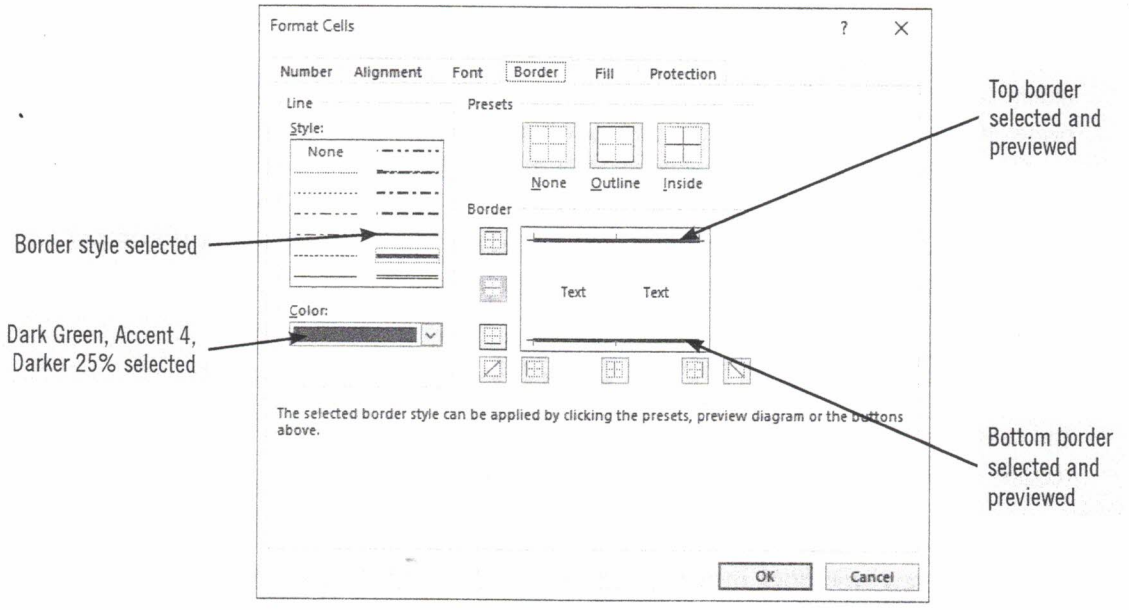


FIGURE 3-10: Completed budget

Six-Month Budget

Your Name

Six-Month Budget

July to December 2017

	JAN	FEB	MAR	APR	MAY	JUN	Totals	Trend
Income								
Salary	$ 2,650.00	$ 2,650.00	$ 2,650.00	$ 2,650.00	$ 2,650.00	$ 2,650.00	$ 15,900.00	
Other Income	250.00	250.00	700.00	650.00	650.00	625.00	3,125.00	
Total Income	$ 2,900.00	$ 2,900.00	$ 3,350.00	$ 3,300.00	$ 3,300.00	$ 3,275.00	$ 19,025.00	
Expenses								
Housing	$ 1,100.00	$ 1,100.00	$ 1,100.00	$ 1,200.00	$ 1,200.00	$ 1,200.00	$ 6,900.00	
Food	400.00	400.00	500.00	400.00	500.00	400.00	2,600.00	
Car Payment	200.00	200.00	200.00	200.00	200.00	200.00	1,200.00	
Car Insurance	100.00	100.00	100.00	100.00	100.00	100.00	600.00	
Gas	100.00	100.00	100.00	100.00	100.00	100.00	600.00	
Home Phone	50.00	50.00					100.00	
Cell Phone	75.00	75.00	75.00	75.00	75.00	75.00	450.00	
Cable and Internet	100.00	100.00	100.00	100.00	100.00	100.00	600.00	
Sundries	50.00	50.00	50.00	50.00	50.00	50.00	300.00	
Utilities	100.00	100.00	50.00	50.00	50.00	50.00	400.00	
Entertainment	100.00	100.00	100.00	100.00	100.00	100.00	600.00	
Student Loan	200.00	200.00	200.00	200.00	200.00	200.00	1,200.00	
Savings	300.00	400.00	300.00	300.00	300.00	300.00	1,900.00	
Total Expenses	$ 2,875.00	$ 2,975.00	$ 2,875.00	$ 2,875.00	$ 2,975.00	$ 2,875.00	$ 17,450.00	
Cash Available	$ 25.00	-$ 75.00	$ 475.00	$ 425.00	$ 325.00	$ 400.00	$ 1,575.00	

Invoice Form and Tracker

Bloom Landscaping provides gardening and landscaping services to homes in Seattle, Washington. The owner of the company has asked you to create a simple invoice form that she can use to bill her customers. She also wants you to create a worksheet that she can use to keep track of the invoices she sends out. To create the invoice and invoice tracker, you **Create the Invoice Form**, **Enter Invoice Information**, and **Develop the Invoice Tracker**. The completed invoice form is shown in FIGURE 3-13 and the completed invoice tracker appears in FIGURE 3-17 on page 69.

Create the Invoice Form

You need to create an invoice form that includes labels for all the information the owner and customers require, is easy to read and understand, and prints on one page.

STEPS

1. Open a new workbook in Excel, apply the Parallax theme, type Bloom Landscaping in cell A1 and INVOICE in cell H1, select the range A1:H1, fill the cells with Blue, Accent 1, Darker 25%, change the font color to white, then with the cells still selected, increase the font size to 24 pt and apply bold
2. Click cell H1, click the Align Right button in the Alignment group, then save the workbook as PR 3-Invoice Form and Tracker to the location where you save the files for this book
3. Select column A, click the Format button in the Cells group, set the width of the column at 18, set the column width of column H to 14, then enter and format the labels as shown in FIGURE 3-11
4. Select cells B7:D9, click the Borders list arrow, click Outside Borders, select the range H6:H9, then click the Outside Borders button
5. Click cell A11, type Quantity, press [Tab], type Unit, press [Tab], type Description, click cell G11, type Unit Price, press [Tab], then type Amount
6. Select the range C11:F11, click the Merge & Center button in the Alignment group, select the range A11:H11, apply bold and center alignment, then fill the cells with Blue, Accent 1, Lighter 60%
7. Select the range C12:F12, click the Merge & Center button, click the lower-right corner of cell F12, then drag + to cell F25
   The cells under the Description heading are wider, allowing more room for the description.
8. Select the range A12:H25, click the Borders list arrow, click All Borders, then complete the bottom of the form so that it appears as shown in FIGURE 3-12
9. Click cell H2, click the Insert tab, click the Pictures button in the Illustrations group, navigate to the location where you store Data files for this book, click PR 3-01.jpg, then click Insert
10. Select the contents of the Height text box in the Size group, type .8, press [Enter], use arrow keys to position the picture so that it fills the space below INVOICE as shown in the completed invoice in FIGURE 3-13, then save the workbook

FIGURE 3-11: Labels entered and enhanced

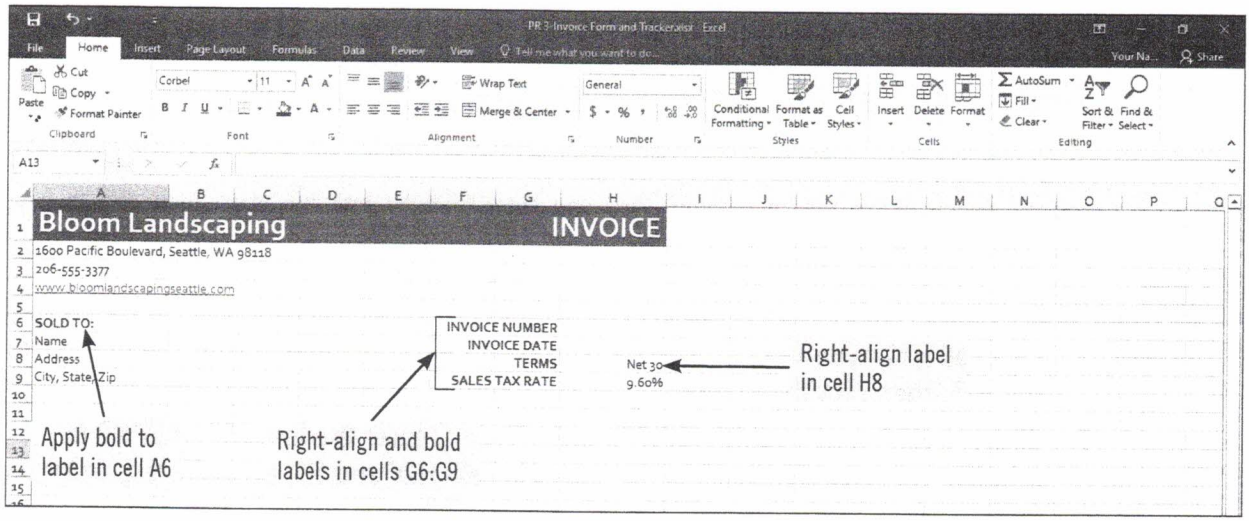


FIGURE 3-12: Labels for rows 26 to 31

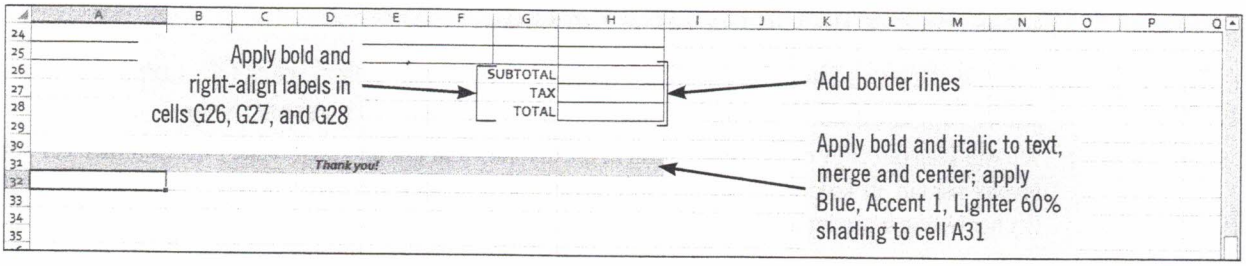


FIGURE 3-13: Picture positioned

Your Name

Invoice Form

Bloom Landscaping **INVOICE**

1600 Pacific Boulevard, Seattle, WA 98118
206-555-3377
www.bloomlandscapingseattle.com

SOLD TO:
City, State, Zip
Address
City, State, Zip

INVOICE NUMBER	
INVOICE DATE	
TERMS	Net 30
SALES TAX RATE	9.60%

Quantity	Unit	Description	Unit Price	Amount
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
			SUBTOTAL	$ -
			TAX	$ -
			TOTAL	$ -

Thank you!

Enter Invoice Information

A useful form is one into which you only need to enter variable information such as the name of the client and the various items they purchased. First, you enter formulas into the blank form and then you complete the form for three different clients.

STEPS

HINT
No values are displayed in cells H12:H25 because you have not yet entered values in the cells associated with the formulas.

1. Click cell H12, type =A12*G12, press [Enter], use the fill handle to copy the formula to cell H25, then click the Accounting Number Format button $ in the Number group
2. Click cell H26, type =SUM(H12:H25), press [Enter], enter the formula =H26*H9 to calculate the sales tax based on the values in cells H26 and H9, press [Enter], enter the formula =H26+H27, then press [Enter]
3. Select the range G12:G25, click the Accounting Number Format button $, select the range C12:C25, then click the Align Left button
4. Double-click the Sheet1 tab, type Invoice Form, press [Enter], click ⊕, name the new sheet 101, then add two more sheets named 102 and 103, respectively

   You will keep one copy of the invoice form in the Invoice Form tab, and then create three new invoices—one invoice per tab. By keeping all invoices together in one workbook, the owner of Bloom Landscaping simplifies her billing procedures.
5. Click the Invoice Form tab, click the Select All button at the top left corner of the worksheet frame to select the entire worksheet, click the Copy button, click the 101 tab, click the Paste button, click the 102 tab, click the Paste button, then paste the invoice form in the 103 sheet

HINT
Use the day-month-year format (20-May-27) for the dates and remember to enter the correct invoice number in cell H6 in each invoice. Check Invoice 101 or **FIGURE 3-14** for hourly rates for consultation and site preparation.

6. Go to the 101 sheet, complete invoice 101 as shown in FIGURE 3-14, verify that the total value in cell H28 is $2,192, then enter data in tab 102 and 103 according to the following information:

   On May 30, 2017, Bloom Landscaping did 20 hours of consultation and landscape design for Barry Lalonde of 34 Westview Road in Seattle (98120) and bought 15 plants (assorted shrubs) at a cost of $25 each.

   On May 31, 2017, Bloom Landscaping did 5 hours of consultation and landscape design for Anne Leung of 100 Sunset Place in Seattle (98119) and 40 hours of site preparation and planting.
7. Verify that the total in sheet 102 is $2,055.00 and the total in 103 is $2,603.00
8. Click ⊕, name the new tab Tracker, press [Enter], drag the tab to the right of Invoice Form, then set up the Tracker sheet so that it appears as shown in FIGURE 3-15

HINT
Use the ScreenTips to find the Insert Sheet Name button.

9. Click the Invoice Form tab, press and hold [Shift], click the 103 tab to select all five tabs in the worksheet, click the File tab, click Print, click Page Setup, click the Header/Footer tab, click Custom Header, enter your name in the Left section, click in the Right section, click the Insert Sheet Name button, click OK, click OK, click the Back button, then save the workbook

   By selecting multiple tabs, you group them into one worksheet so that you create the header for all five worksheets at the same time.

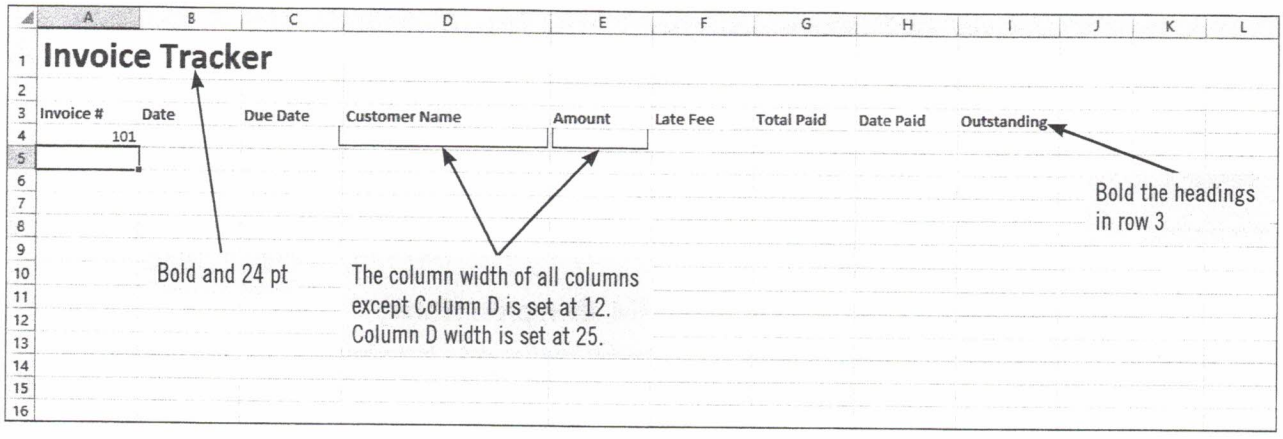
FIGURE 3-14: Completed Invoice 101

	A	B	C	D	E	F	G	H
6	SOLD TO:					INVOICE NUMBER		101
7	Name	Grant Martin				INVOICE DATE		28-May-17
8	Address	600 Tacoma Way				TERMS		Net 30
9	City, State, Zip	Seattle, WA 98112				SALES TAX RATE		9.60%
10								
11	Quantity	Unit	Description			Unit Price		Amount
12	12	Hours	Consultation and landscape design			$ 75.00		$ 900.00
13	20	Plants	Ground covers			$ 5.00		$ 100.00
14	20	Hours	Site preparation and planting			$ 50.00		$ 1,000.00
15								$ -
16								$ -
17								$ -
18								$ -
19								$ -
20								$ -
21								$ -
22								$ -
23								$ -
24								$ -
25								$ -
26						SUBTOTAL		$ 2,000.00
27						TAX		$ 192.00
28						TOTAL		$ 2,192.00

Invoice Form | 101 | 102 | 103

Use dd-mm-yy format for date

FIGURE 3-15: Labels for the Invoice Tracker



Invoice Form and Tracker (continued)

Develop the Invoice Tracker

You can use Excel to automate many common business tasks, including keeping track of invoices in one easy-to-read list. You format the Invoice Tracker as a table that will list information about each of the three invoices you have created and then enter invoice data from the three Invoice tabs. The completed Invoice Tracker is shown in FIGURE 3-17.

STEPS

1. In the Tracker worksheet, select the range A3:I20, click Format as Table in the Styles group, select Table Style Medium 2 (blue), click the My table has headers check box to select it, if necessary, click OK, click the Banded Rows check box in the Table Style Options group to deselect it, click Convert to Range in the Tools group, then click Yes

   You've formatted the Invoice Tracker as a table so that you can quickly apply border lines and shading. You then converted the table to a range so that you can turn off the calculated columns feature. When you are entering cell references from other sheets into a table with the calculated columns feature active, you can get unexpected results when you copy formulas.

2. Click cell A5, type 102, select cells A4 and A5, then drag the fill handle from cell A5 to cell A20 to fill all the cells with invoice numbers in sequential order

   You set up the sequence by entering 101 and then 102. If you copied only 101, you would fill the column with 101, rather than with the sequential numbers: 101, 102, 103, and so on.

TROUBLE
Apply the correct date format as necessary.

3. Enter the values from invoice 101 in the tracker as follows: click cell B4, type =, click the 101 tab, click cell H7, press [Enter], click cell C4, type = B4+30, press [Enter], click cell D4, type =, click the 101 tab, click cell B7, press [Enter], click cell E4, type =, click the 101 tab, click cell H28 to select the invoice total, press [Enter], then enter 2000 in cell G4 and 30-Jun-17 in cell H4

4. Select the range F4:G20, press and hold the [CTRL] key, select the range I4:I20, then apply the Accounting Number style

   Now you are ready to enter formulas to calculate the late fee and outstanding balance.

TROUBLE
Be sure to type 0 (zero) for the False value.

5. Click cell F4, click the Insert Function button f_x on the formula bar, click IF, click OK, type H4>C4, press [Tab], type 5, press [Tab], type 0, then compare the Function Arguments dialog box to FIGURE 3-16

   The IF function enters $5.00 in cell F4 (Late Fee) IF the date in cell H4 (Date Paid) is later than the date in cell C4 (Payment Date).

6. Click OK, click cell I4, type =E4-G4+F4, then press [Enter]

TROUBLE
You will use AutoFill to enter the remaining data in a later step.

7. Click cell B5, enter the cell address for the invoice date from invoice 102, use the Format Painter to apply the correct date format if necessary, enter the cell address for the customer name in cell D5, enter the total invoice amount from invoice 102 in cell E5, click cell G5, type =E5 to enter the amount paid, then type 25-June-17 for the Date Paid

8. Repeat Step 7 for invoice 103, but this time enter the Total Paid as 1500 and the Date Paid as 13-Jul-17, then fill cells with the formulas from row 4 so that each invoice includes a Due Date, a Late Fee (if applicable), and an Outstanding Balance

MORE PRACTICE
For more practice with the skills presented in this project, complete Independent Challenge 2.

9. On Invoice 102, change the name to Bart Lalonde and the consultation hours to 25, return to the Tracker, compare it to FIGURE 3-17, set it up to print in Landscape orientation and to fit on one page, submit copies of all five worksheets to your instructor, then save and close the workbook

FIGURE 3-16: Function Arguments dialog box

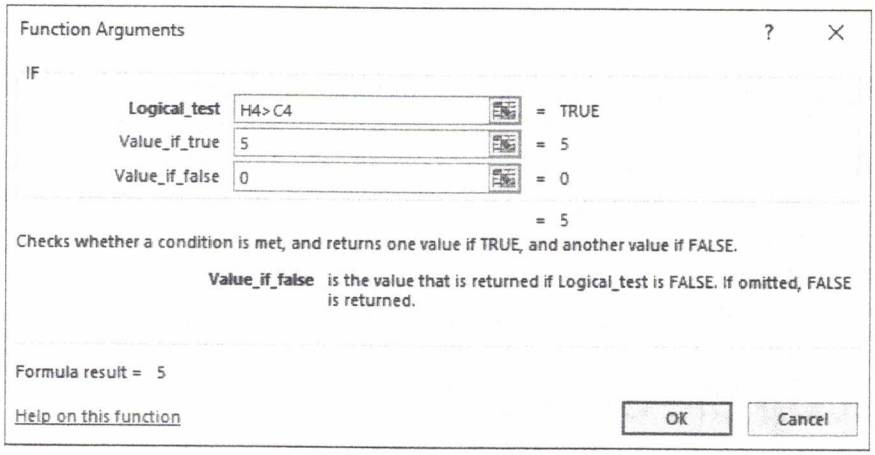


FIGURE 3-17: Completed and updated Invoice Tracker

Your Name

Tracker

Invoice Tracker

Invoice #	Date	Due Date	Customer Name	Amount	Late Fee	Total Paid	Date Paid	Oustanding
101	28-May-17	27-Jun-17	Grant Martin	$ 2,192.00	$ 5.00	$ 2,000.00	30-Jun-17	$ 197.00
102	30-May-17	29-Jun-17	Bart Lalonde	$ 2,466.00	$ -	$ 2,466.00	25-Jun-17	$ -
103	31-May-17	30-Jun-17	Anne Leung	$ 2,603.00	$ 5.00	$ 1,500.00	13-Jul-17	$ 1,108.00
104								
105								

Loan Amortization Schedule

Borrowing money usually costs money because you generally need to pay interest on the money that you borrow. One of the most useful ways in which you can use Excel is to help you determine the cost of a loan, including payments, interest, and the total cost of borrowing. For example, you can set up a loan amortization schedule to calculate the cost of a car loan or a student loan or a mortgage on a house. You use functions such as PMT to set up an amortization schedule that includes a table detailing all the payments involved in the loan. For this project you need to **Set up the Schedule** and then **Enter Formulas to Calculate Payments**. The completed loan amortization schedule is shown in **FIGURE 3-22** on page 73.

Set Up the Schedule

STEPS

1. **Create a blank workbook in Excel, select the Retrospect theme, then save the workbook as PR 3-Loan Amortization Schedule**
2. **Select columns A to I, then set the column width to 12**
3. **Enter and format labels for the worksheet as shown in FIGURE 3-18, selecting the color indicated in the figure for the shaded areas**
4. **Select the range B4:B8, click the Increase Indent button in the Alignment group two times, then increase the indent two times for the range F4:F5**
5. **Click cell A10, enter just the labels shown in FIGURE 3-19 (your labels will not yet wrap, be bold, or be formatted as a table)**
6. **Select the range A10:I22, click Format as Table in the Styles group, select Table Style Light 3, click the My table has headers check box to select it, then click OK**
7. **Select columns A to I, reset the column width to 12, select the range A10:I10, then click Wrap Text in the Alignment group on the Home tab**

   When you format cells as a table, the column widths are sometimes adjusted and you need to readjust them. By default, filter arrows appear in the header row of a table so that you can filter table entries. You can remove these arrows.
8. **With row 1 of the table still selected, click the Table Tools Design tab, click the Filter Button check box in the Table Style Options group to deselect it, then click away from the table**

   The formatted table appears as shown in **FIGURE 3-19**.
9. **Click cell D4, enter and format values related to a loan for $10,000 and rename the sheet tab Loan Schedule as shown in FIGURE 3-20, then save the workbook**

   To calculate loan payments you need the loan amount ($10,000), the interest rate being charged (4%), and the number of years over which you plan to pay off the loan (1). You also enter an optional extra monthly payment of $100. In the next lesson, you can enter these values into the PMT function to determine your monthly payment.

FIGURE 3-18: Labels for cells A1 to I8

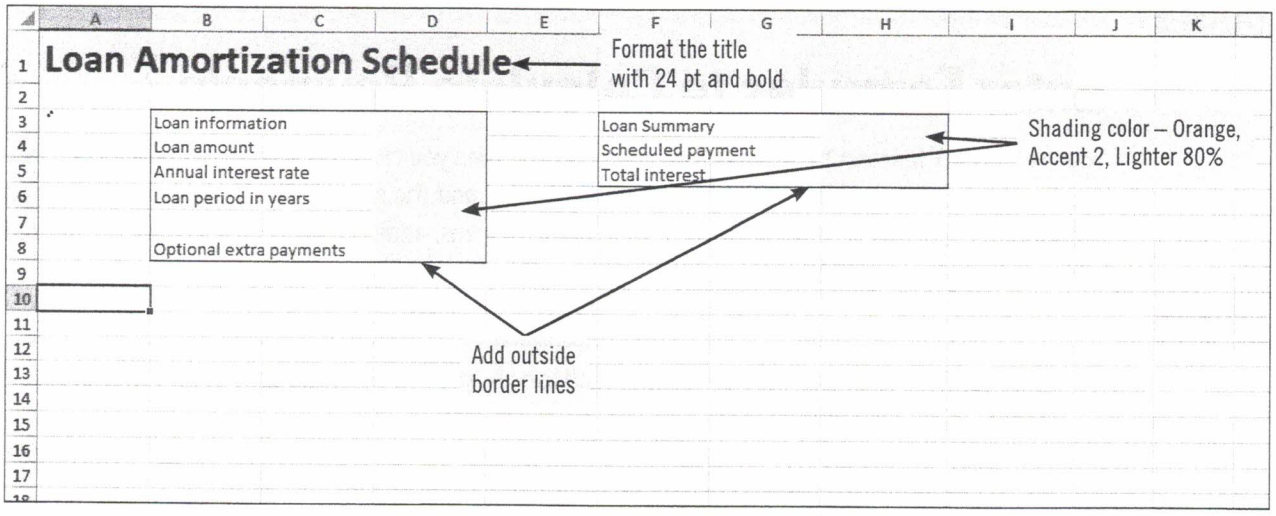
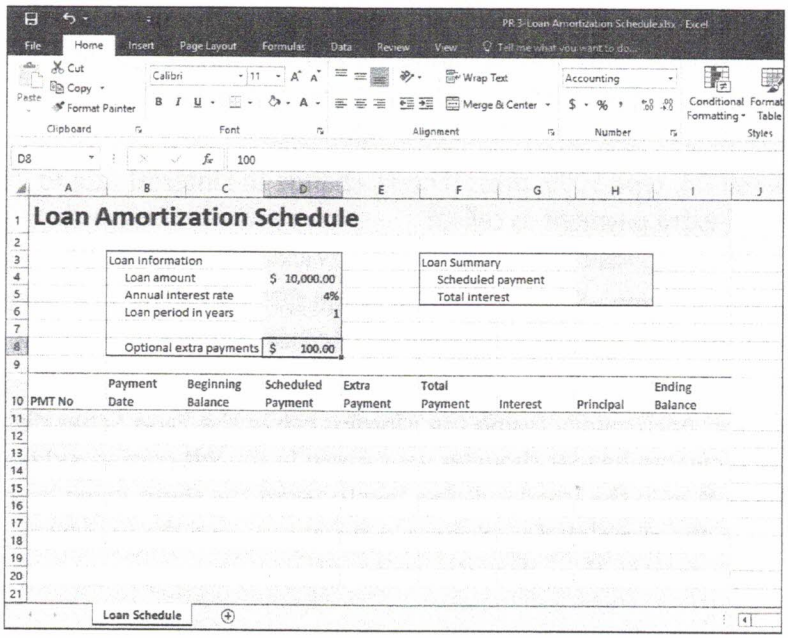


FIGURE 3-19: Labels for row 10

PMT No	Payment Date	Beginning Balance	Scheduled Payment	Extra Payment	Total Payment	Interest	Principal	Ending Balance

FIGURE 3-20: Formatted table and loan information



Enter Formulas to Calculate Payments

You use the PMT function to calculate loan payments and then you can enter payments in the table. Once you have entered the required values for the PMT function and the function itself, you can use the Loan Amortization Schedule as a template for a wide range of loans, adding rows as needed. The completed schedule is shown in FIGURE 3-22.

STEPS

1. Click cell H4, click the Insert Function button fx on the Formula bar, type PMT, press [Enter], click OK, type $D$5/12 in the Rate text box
   You will be copying the PMT function, so you need to make the values required for the function absolute. You divide the interest rate by 12 to determine the monthly interest rate.
2. Click in the Nper box, type $D$6*12, click in the PV box, enter -$D$4, then compare the Function Arguments dialog box to FIGURE 3-21
   You multiply the loan period by 12 to determine the number of months you will be paying off the loan. The PV is the loan amount. You made this value a negative value because it is money owed.

TROUBLE
After exiting the Function Arguments dialog box, you should see $851.50. If you do not, click the Insert Function button to return to the dialog box and compare it closely to FIGURE 3-21.

3. Click OK, click cell A11, type 1, type 2 in cell A12, select cells A11 and A12, fill the remaining rows in the table (to cell A22) with sequential numbers, click cell B11, type January 1, 2017, press [Enter], type February 1, 2017 in cell B12, then select cells B11 and B12 and fill the remaining rows in the table with the dates from March 1, 2017 to December 1, 2017
   When you enter a date, Excel formats is as Day-Month-Year; for example, 01-Jan-17.
4. Click cell C11, type =D4 to enter the beginning balance ($10,000), press [Enter], ignore the additional entries, click cell D11, type =$H$4, press [Enter], click cell E11, type =$D$8, then press [Enter]
5. In cell F11, enter the formula =D11+E11 to add the Scheduled Payment to the Extra payment, in cell G11, enter the formula =C11*($D$5/12), then in cell H11, enter the formula =F11-G11 to subtract the Interest from the Total Payment
6. In cell I11, enter the formula =C11-F11 (the Total Payment subtracted from the Beginning Balance), click cell C12, type =I11, click the Undo button to remove the error messages, drag the Fill handle for cell C12 to cell C22, format the values in columns E and G with the Accounting Number format, then click below the table
   The Amortization table appears as shown in FIGURE 3-22.
7. Click cell D4, type 5000, press [Enter], change the interest rate to 2%, then delete the optional extra payment in cell D8
   Notice how the scheduled payment is now $421.19 and the values in the table have updated.
8. Click cell H5, type =SUM(, select the range G11:G22, type a closed parenthesis), press [Enter], then format the value with the Accounting Number format

MORE PRACTICE
For more practice with the skills presented in this project, complete Independent Challenge 2.

9. Click the File tab, click Print, click Page Setup, select Landscape orientation, center the worksheet horizontally (using the Margins tab in the Page Setup dialog box), then create a custom header showing your name in the left corner and using the Insert Sheet Name button in the Header dialog box to insert the sheet name in the right corner as shown in the completed worksheet in FIGURE 3-23, save the workbook and submit a copy to your instructor, then close the workbook

FIGURE 3-21: Data for the PMT function

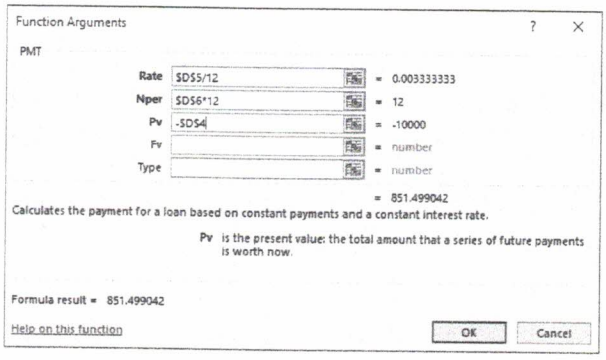
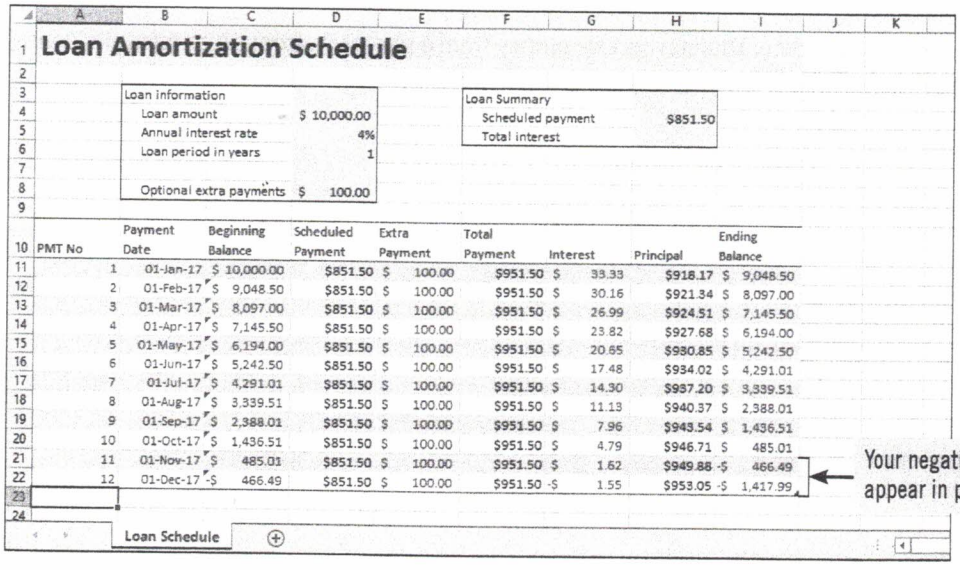


FIGURE 3-22: Completed Loan Amortization Schedule



Loan Amortization Schedule

Loan information	
Loan amount	$ 10,000.00
Annual interest rate	4%
Loan period in years	1
Optional extra payments	$ 100.00

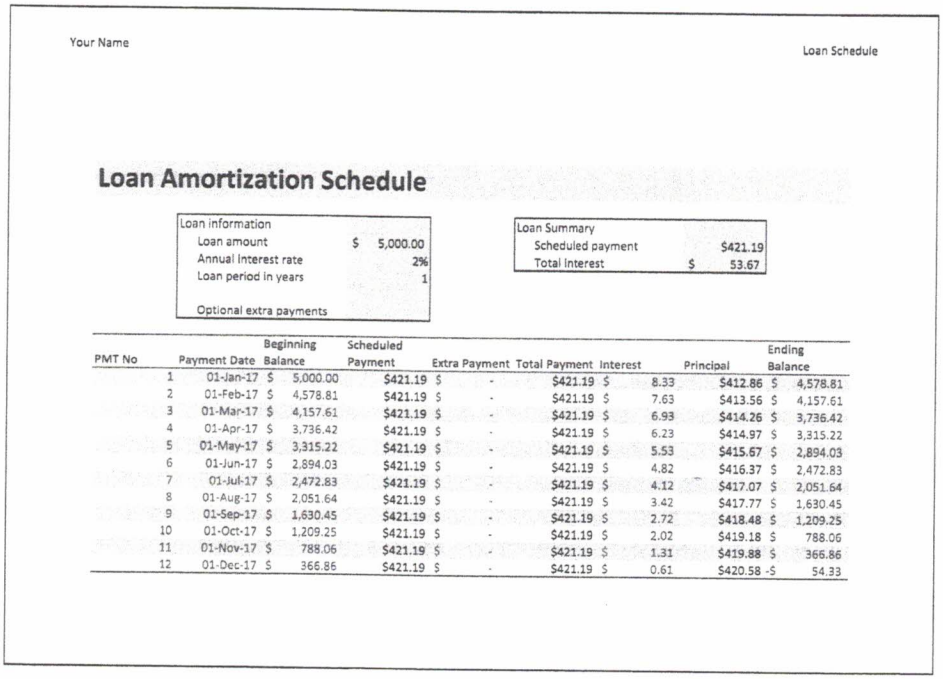
Loan Summary	
Scheduled payment	$851.50
Total interest	

PMT No	Payment Date	Beginning Balance	Scheduled Payment	Extra Payment	Total Payment	Interest	Principal	Ending Balance
1	01-Jan-17	$ 10,000.00	$851.50	$ 100.00	$951.50	$ 33.33	$918.17	$ 9,048.50
2	01-Feb-17	$ 9,048.50	$851.50	$ 100.00	$951.50	$ 30.16	$921.34	$ 8,097.00
3	01-Mar-17	$ 8,097.00	$851.50	$ 100.00	$951.50	$ 26.99	$924.51	$ 7,145.50
4	01-Apr-17	$ 7,145.50	$851.50	$ 100.00	$951.50	$ 23.82	$927.68	$ 6,194.00
5	01-May-17	$ 6,194.00	$851.50	$ 100.00	$951.50	$ 20.65	$930.85	$ 5,242.50
6	01-Jun-17	$ 5,242.50	$851.50	$ 100.00	$951.50	$ 17.48	$934.02	$ 4,291.01
7	01-Jul-17	$ 4,291.01	$851.50	$ 100.00	$951.50	$ 14.30	$937.20	$ 3,339.51
8	01-Aug-17	$ 3,339.51	$851.50	$ 100.00	$951.50	$ 11.13	$940.37	$ 2,388.01
9	01-Sep-17	$ 2,388.01	$851.50	$ 100.00	$951.50	$ 7.96	$943.54	$ 1,436.51
10	01-Oct-17	$ 1,436.51	$851.50	$ 100.00	$951.50	$ 4.79	$946.71	$ 485.01
11	01-Nov-17	$ 485.01	$851.50	$ 100.00	$951.50	$ 1.62	$949.88	-$ 466.49
12	01-Dec-17	-$ 466.49	$851.50	$ 100.00	$951.50	-$ 1.55	$953.05	-$ 1,417.99

Loan Schedule

Your negative numbers may appear in parentheses.

FIGURE 3-23: Revised Loan Amortization Schedule



Your Name

Loan Schedule

Loan Amortization Schedule

Loan information	
Loan amount	$ 5,000.00
Annual interest rate	2%
Loan period in years	1
Optional extra payments	

Loan Summary	
Scheduled payment	$421.19
Total interest	$ 53.67

PMT No	Payment Date	Beginning Balance	Scheduled Payment	Extra Payment	Total Payment	Interest	Principal	Ending Balance
1	01-Jan-17	$ 5,000.00	$421.19	$ -	$421.19	$ 8.33	$412.86	$ 4,578.81
2	01-Feb-17	$ 4,578.81	$421.19	$ -	$421.19	$ 7.63	$413.56	$ 4,157.61
3	01-Mar-17	$ 4,157.61	$421.19	$ -	$421.19	$ 6.93	$414.26	$ 3,736.42
4	01-Apr-17	$ 3,736.42	$421.19	$ -	$421.19	$ 6.23	$414.97	$ 3,315.22
5	01-May-17	$ 3,315.22	$421.19	$ -	$421.19	$ 5.53	$415.67	$ 2,894.03
6	01-Jun-17	$ 2,894.03	$421.19	$ -	$421.19	$ 4.82	$416.37	$ 2,472.83
7	01-Jul-17	$ 2,472.83	$421.19	$ -	$421.19	$ 4.12	$417.07	$ 2,051.64
8	01-Aug-17	$ 2,051.64	$421.19	$ -	$421.19	$ 3.42	$417.77	$ 1,630.45
9	01-Sep-17	$ 1,630.45	$421.19	$ -	$421.19	$ 2.72	$418.48	$ 1,209.25
10	01-Oct-17	$ 1,209.25	$421.19	$ -	$421.19	$ 2.02	$419.18	$ 788.06
11	01-Nov-17	$ 788.06	$421.19	$ -	$421.19	$ 1.31	$419.88	$ 366.86
12	01-Dec-17	$ 366.86	$421.19	$ -	$421.19	$ 0.61	$420.58	-$ 54.33

Sales Report for Gourmet Style

As an analyst for Gourmet Style, a small catering company, you use an existing product list to produce a report that analyzes sales over three years. The report includes two worksheets—one with conditional formatting that provides a visual comparison of product sales, and the other with a PivotTable and column chart that arrange and summarize product data to allow for comparisons and trend analysis. To create the Sales Report, you need to **Apply Conditional Formatting** and **Filter and Chart Results**.

Apply Conditional Formatting

You open the product list, use conditional formatting to highlight trends, then create a PivotTable that shows yearly sales by product category.

STEPS

1. Start Excel, open PR 4-03.xlsx from the location where you store your Data Files, save it as PR 4-Gourmet Style Sales Analysis to the location where you save the files for this book, then apply the Basis theme
2. Click cell F1, type Total, use the SUM function in cell F2 to calculate the total number of products sold in all three years, then use the Fill handle to copy the formula for all products
   The worksheet contains the total menu items that Gourmet Style sold in its catering business in each year from 2015 to 2017. Each product is assigned to a category such as "Appetizer" or "Dessert."
3. Select cells A1:F1, click the Home tab, click the Cell Styles button in the Styles group, click Accent2 in the Themed Cell Styles section, then bold and center the headings

HINT
You use Conditional Formatting to highlight cells containing text based on criteria you set.

4. Select the range F2:F30, click the Conditional Formatting button in the Styles group, point to Data Bars, click Blue Data Bar in the Solid Fill area, increase the width of the Total column to 15, then click cell G1
   The Conditional Formatting shows that Papaya Salad is the most popular product as shown in **FIGURE 4-18**.
5. Select the range B2:B30, click the Conditional Formatting button, point to Highlight Cells Rules, click Text that Contains, notice that Salad is selected, then click OK
   All instances of "Salad" in the range are formatted with a red font color and light red fill.
6. Click the Conditional Formatting button again, point to Highlight Cells Rules, click Text that Contains, type Dessert, click the with list arrow, click Custom Format, click the Fill tab, click the second lightest Blue color box, click OK, then click OK
7. Repeat Step 6 to format Main Course with a light green fill and Appetizer with a light orange fill, then click cell A1
8. Name Sheet1 Sales Data, add a new sheet called Product Sales, select A1:F30 in the Sales Data sheet, click the Insert tab, click PivotTable in the Tables group, click the Existing Worksheet option button, click the Product Sales sheet tab, click cell A1, then click OK
   The PivotTable Tools Analyze and Design tabs are now available and the PivotTable Fields pane opens on the right side of the window.

HINT
All the products are added to the PivotTable in alphabetical order starting in cell A2 with "Apricot Cobbler."

9. In the Product Sales sheet, click the Product check box in the PivotTable Fields pane, click each of the remaining check boxes in the PivotTable Fields pane as shown in **FIGURE 4-19**, then save the workbook
   All the data from the list is added to the PivotTable, with each product assigned to a different row.

FIGURE 4-18: Data bars applied to the Total column

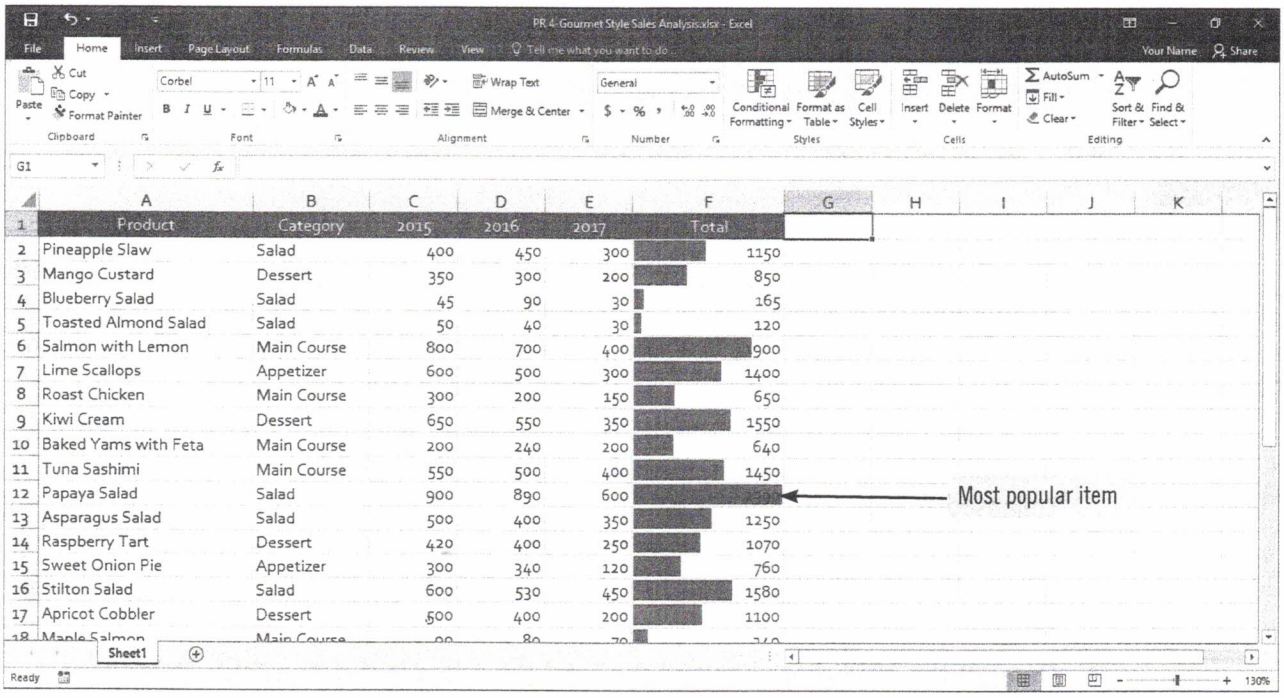
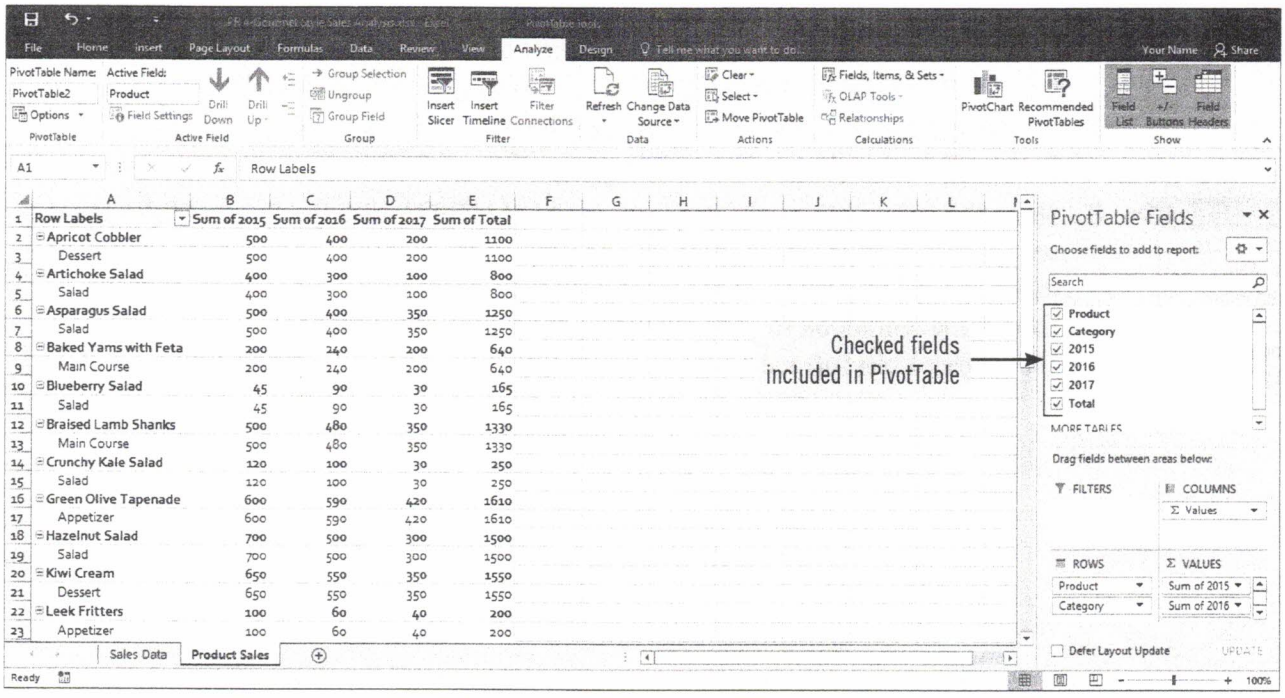


FIGURE 4-19: PivotTable in the Product Sales sheet



Sales Report (continued)

Filter and Chart Results

You modify the PivotTable, then create a PivotChart. The completed sales report is shown in **FIGURE 4-21**.

STEPS

1. Click Product in the ROWS area of the PivotTable Fields pane, click Move Down to sort and summarize the products by category, insert a new row above row 1 in the PivotTable and type Gourmet Style Sales Report, press [Enter], apply the Title style to cell A1, then click in the PivotTable to show the PivotTable Fields pane
2. Click the Collapse button [−] to the left of Appetizer to collapse the list of appetizers, then click [−] next to Dessert, Main Course, and Salad so all four categories are collapsed as shown in **FIGURE 4-20**
3. Click the Insert tab, click the Insert Column or Bar Chart button in the Charts group, click Clustered Column, then drag the chart to position its upper-left corner in cell A10
4. Deselect the 2016 check box and the Total check box in the PivotTable Fields pane
   Only data for 2015 and 2017 is shown. As you can see, Gourmet Style experienced a significant reduction in sales of all four product categories between 2015 and 2017.
5. Click the Sales Data sheet tab, click cell E4, type 400, press [Enter], then notice how the width of the blue bar in cell F4 increases
6. Click the Product Sales sheet tab, click the PivotChart Tools Analyze tab, then click the Refresh button in the Data group
   The total items for 2017 are now 6690 and the height of the red bar for Salad sales in 2017 has increased. Each time you change the data used to build the PivotTable, you need to refresh the PivotTable.
7. Click the chart, click the PivotChart Tools Analyze tab, if necessary, click the Field Buttons list arrow in the Show/Hide group, then click Hide All
8. Show the Sales Data worksheet, press and hold [Shift], click the Product Sales sheet, set up both worksheets to print on one page each, centered horizontally, with your name in the Left section of the Header and the sheet name in the Right section, submit the workbook to your instructor, then close the workbook
   The completed Sales Data and Product Sales worksheets appear as shown in **FIGURE 4-21**.

MORE PRACTICE
For more practice with the skills presented in this project, complete Independent Challenge 3.

FIGURE 4-20: Groups collapsed

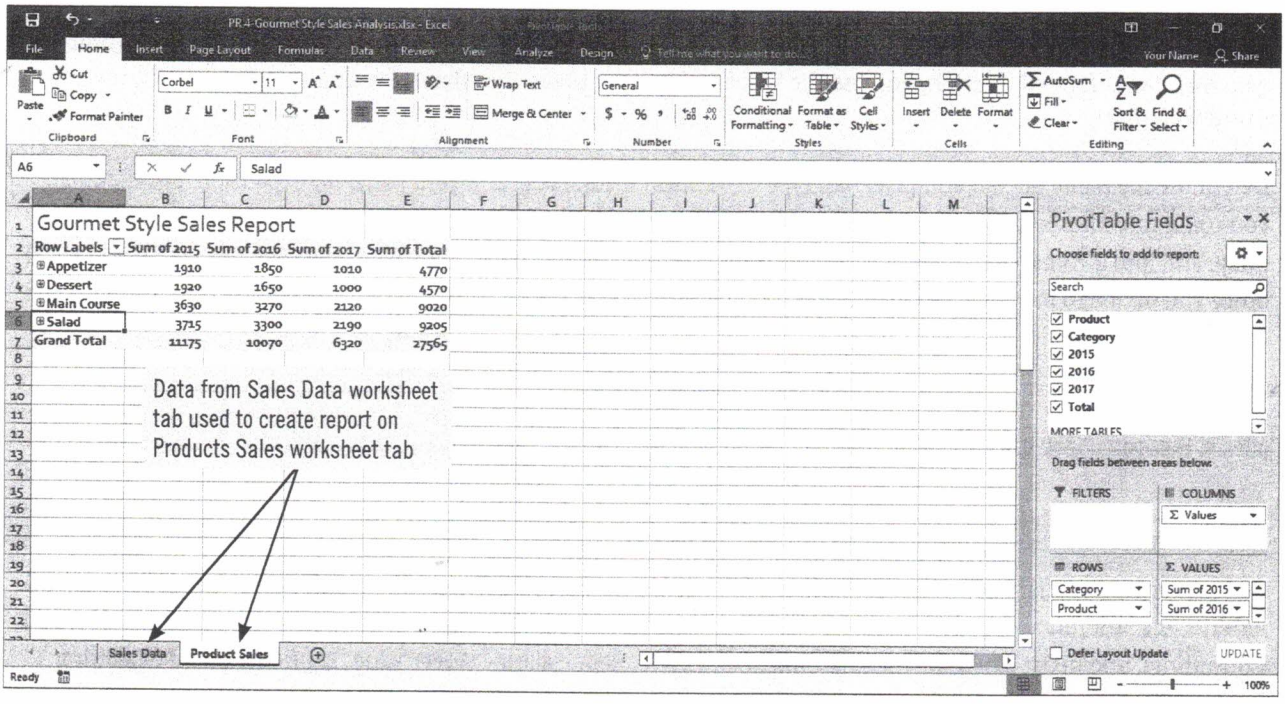


FIGURE 4-21: Product Sales and Sales Data