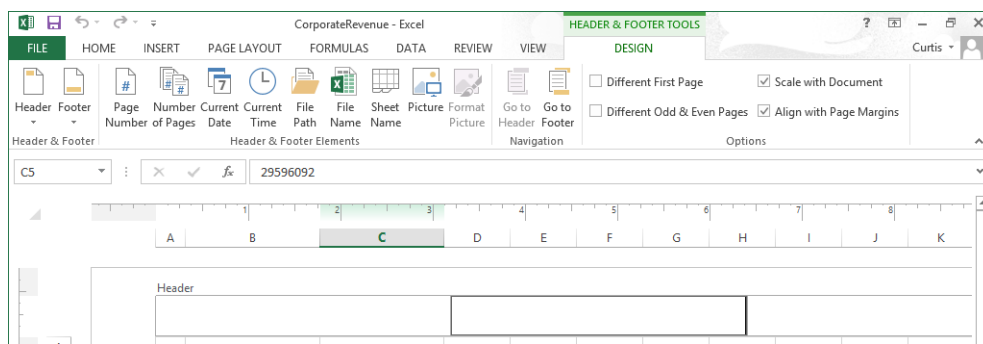


Adding headers and footers to printed pages

If you want to ensure that the same information appears at the top or bottom of every printed page, you can do so by adding headers or footers. A *header* is a section that appears at the top of every printed page; a *footer* is a section that appears at the bottom of every printed page. To create a header or footer in Excel, you display the Insert tab and then, in the Text group, click Header & Footer to display the Design tool tab.



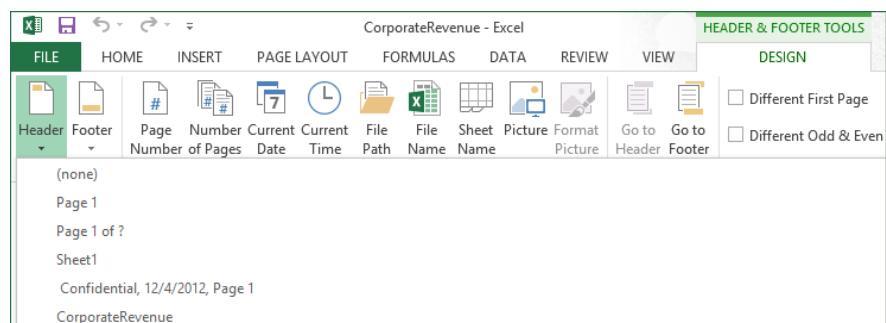
When you display your workbook's headers and footers, Excel displays the workbook in Page Layout view. Page Layout view shows you exactly how your workbook will look when printed, while still enabling you to edit your file, a capability not provided by Print Preview. You can also switch to Page Layout view by displaying the View tab and then, in the Workbook Views group, clicking Page Layout.

SEE ALSO For information about editing your workbook in Print Preview mode, see ["Previewing worksheets before printing"](#) later in this chapter.

Excel divides its headers and footers into left, middle, and right sections. When you point to an editable header or footer section, Excel highlights the section to indicate that clicking the mouse button will open that header or footer section for editing.

TIP If you have a chart selected when you click the Header & Footer button on the Insert tab, Excel displays the Header/Footer page of the Page Setup dialog box instead of opening a header or footer section for editing.

When you click a header or footer section, Excel displays the Design tool tab on the ribbon. The Design tool tab contains several standard headers and footers, such as page numbers by themselves or followed by the name of the workbook. To add an Auto Header to your workbook, display the Design tool tab and then, in the Header & Footer group, click Header. Then click the header you want to apply. The list of headers that appears will vary depending on the properties and contents of your worksheet and workbook.

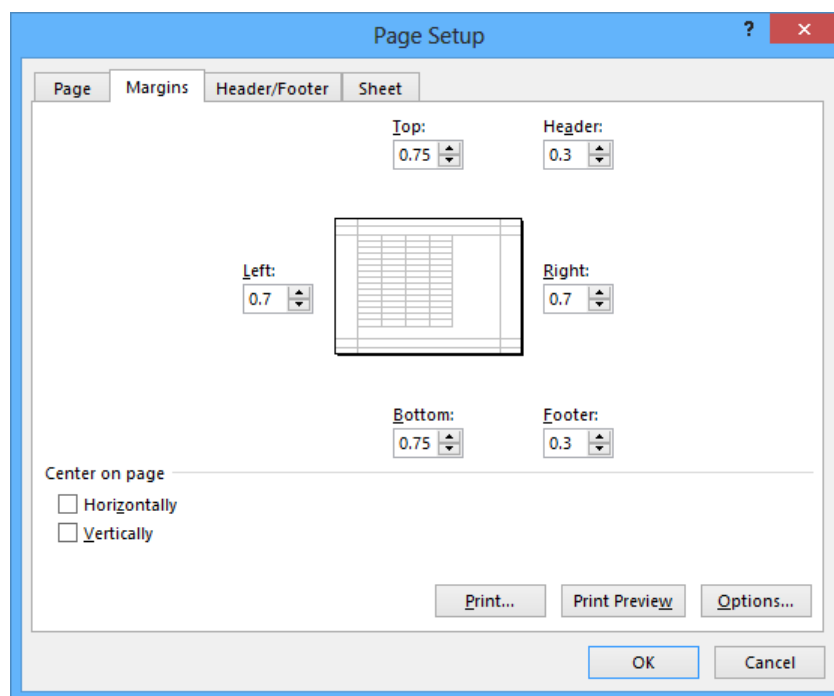


You can also create custom headers by entering your own text or by using the commands in the Header & Footer Elements group to insert a date, time, worksheet name, or page number. You can also add a graphic, such as a company logo, to a header or footer. For example, if you include a worksheet in a printed report that is distributed outside your company, adding your company's logo to the worksheet can identify the worksheet with your company. After you insert a graphic into a header or footer, the Format Picture button in the Header & Footer Elements group will become available. When you click that button, a dialog box opens with tools for editing your graphic.

When you print or display a worksheet, you might want to have different headers for odd and even pages. For example, Consolidated Messenger's document standards might require the current date on odd-numbered pages and the page number on even-numbered pages. To establish different headers and footers for odd-numbered and even-numbered pages,

click the View tab and then click the Page Layout button to display your workbook in Page Layout view. Click within a header or footer and then, on the Design tool tab, select the Different Odd & Even Pages check box. Now when you change a header or footer, Excel indicates whether it applies to an odd or even page.

Your worksheet's header and footer will always be the same width as the printed worksheet. If you want to adjust the vertical size of a header or footer, click the Page Layout tab, click the Margins button, and then click the Custom Margins command at the bottom of the menu to display the Margins page of the Page Setup dialog box.



The Margins page of the Page Setup dialog box has boxes for you to enter your desired header and footer sizes. Enter the values you want and then click OK to apply your changes.

In this exercise, you'll create a custom header for a workbook. You'll then add a graphic to the footer and edit the graphic by using the Format Picture dialog box.

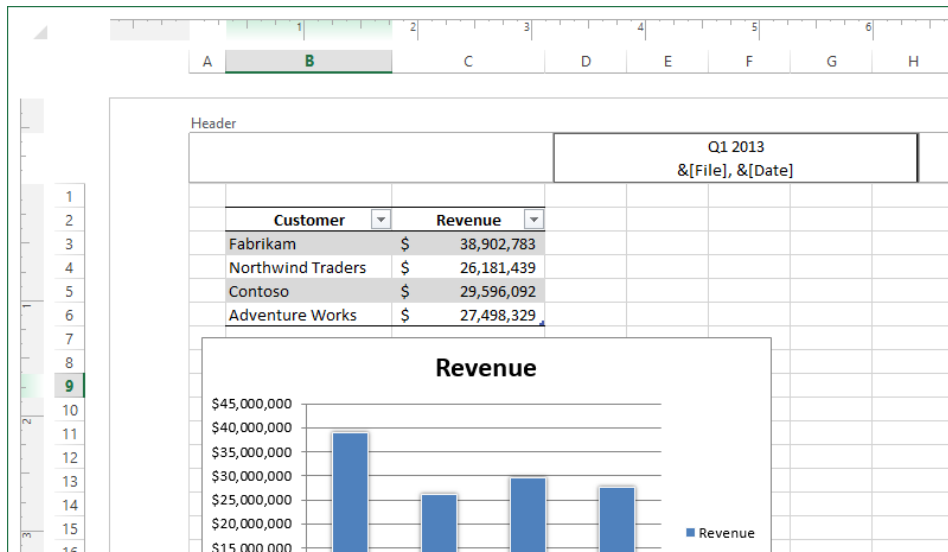


SET UP You need the **RevenueByCustomer** workbook and the **ConsolidatedMessenger** image located in your **Chapter11** practice file folder to complete this exercise. Open the workbook, and then follow the steps.

- 1 On the **Insert** tab, click the **Text** button, and then click **Header & Footer** to display your workbook in **Page Layout** view.

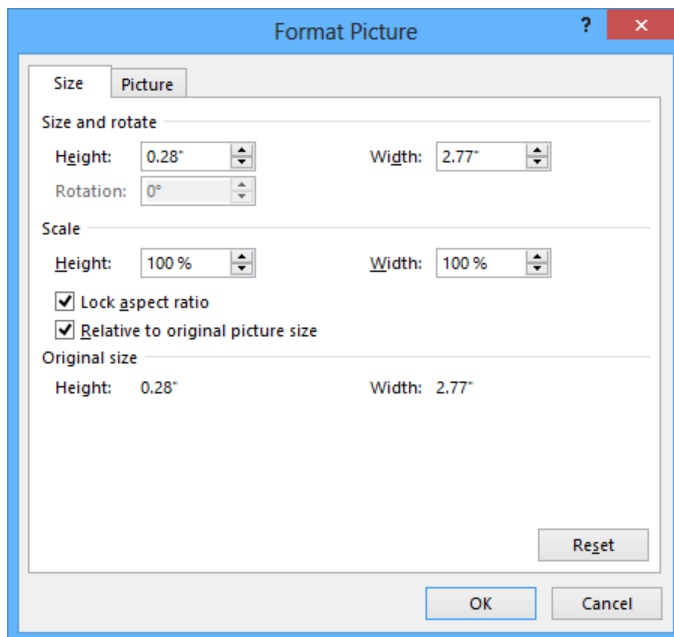
Customer	Revenue
Fabrikam	\$ 38,902,783
Northwind Traders	\$ 26,181,439
Contoso	\$ 29,596,092
Adventure Works	\$ 27,498,329

- 2 In the middle header section, enter **Q1 2013**, and then press **Enter**.
- 3 On the **Design** tool tab, in the **Header & Footer Elements** group, click **File Name** to add the **&[File]** code to the header.
- 4 To the right of the **&[File]** code, enter a comma, and then press the **Spacebar**.
- 5 On the **Design** tool tab, in the **Header & Footer Elements** group, click **Current Date**. Excel changes the contents of the middle header section to **&[File], &[Date]**.



- 6 Press **Tab**. Excel highlights the right header section. The workbook name and current date appear in the middle header section.
- 7 On the **Design** tool tab, in the **Options** group, select the **Different Odd & Even Pages** check box to print the header you defined on odd-numbered pages only and to leave the header on even-numbered pages blank. Excel changes the header label from **Header** to **Odd Page Header**.
- 8 On the **Design** tool tab, in the **Navigation** group, click **Go to Footer** to highlight the right footer section.
- 9 Click the middle footer section.
- 10 On the **Design** tool tab, in the **Header & Footer Elements** group, click **Picture** to open the **Insert Pictures** dialog box.
- 11 Click **From a File** to display the **Insert Picture** dialog box.
- 12 Navigate to the **Chapter11** folder, and then double-click the **ConsolidatedMessenger** image file. The code **&[Picture]** appears in the middle footer section.
- 13 Click any worksheet cell above the footer to display the worksheet as it will be printed.

- 14 Click the image in the footer and then, on the **Design** tool tab, click **Format Picture** to open the **Format Picture** dialog box.



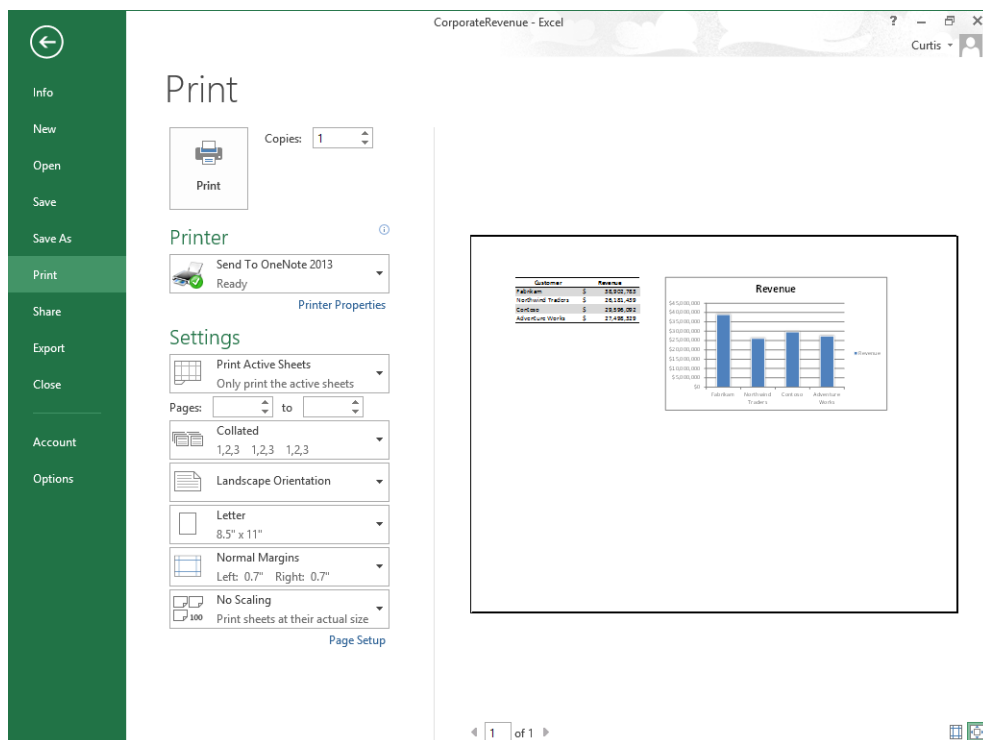
- 15 Click the **Size** tab if the **Size** page is not already displayed.
- 16 In the **Scale** area of the dialog box, in the **Height** field, enter **80%**, and then press **Enter** to close the **Format Picture** dialog box.
- 17 Click any worksheet cell above the footer to display the reformatted picture.
- 18 On the **Page Layout** tab, click **Margins**, and then click the **Custom Margins** command at the bottom of the menu to display the **Margins** page of the **Page Setup** dialog box.
- 19 In the **Header** box, enter **.5**.
- 20 In the **Footer** box, enter **.5** and click **OK** to reformat your worksheet.



CLEAN UP Close the **RevenueByCustomer** workbook, saving your changes if you want to.

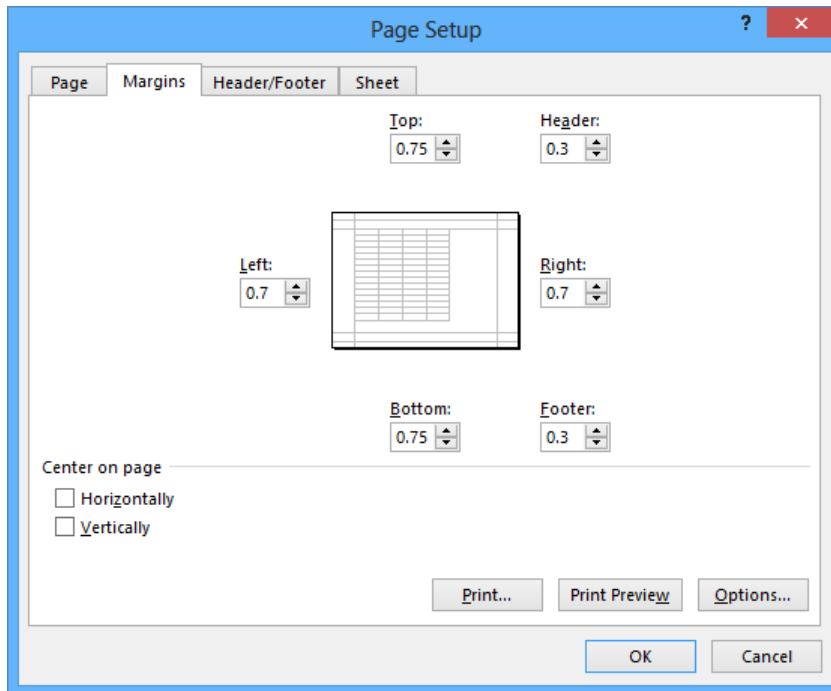
Preparing worksheets for printing

When you are ready to print your workbook, you can change the workbook's properties to ensure that your worksheets display all your information and that printing is centered on the page. In Excel, all of these printing functions are gathered together in one place: the Backstage view. To preview your workbook in the Backstage view, click the File tab and then click Print.



KEYBOARD SHORTCUT Press Ctrl+P to preview your worksheet in the Backstage view. For a complete list of keyboard shortcuts, see "Keyboard shortcuts" at the end of this book.

Excel comes with three margin settings: Normal, Wide, and Narrow. Excel applies the Normal setting by default, but you can select any of the three options by displaying the workbook in the Backstage view and then, in the Settings area, clicking the Margins button and clicking the setting you want. If you want finer control over your margins, click the Margins button and then click Custom Margins to display the Margins page of the Page Setup dialog box.



If you want to display a worksheet's margins while you have its workbook open in the Backstage view, click the Show Margins button near the lower-right corner of the Backstage view.

HourlyPickups - Excel

Curtis

January	
Day	Hour
	5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM
1	2117 1989 1544 2408 1921 1505 1687
2	1128 1109 1354 1115 2277 1432 1559
3	1228 1350 1662 1758 1892 1710 1709
4	2295 2496 1964 1793 1138 1592 1811
5	1866 1631 1631 1136 1959 2275 2348
6	1234 1536 2348 1208 2109 2382 2487
7	1608 1825 1851 1037 2259 2091 2211
8	1903 2014 1451 1283 2243 1266 1746
9	2275 2360 1392 1511 1942 1639 2018
10	1039 2191 1729 1028 2278 1044 1936
11	1569 1069 1487 1155 2434 2181 1721
12	1773 1782 1224 2401 2426 1514 1526
13	2108 1511 1916 2488 1459 1703 1706
14	1512 2319 2239 1063 1164 2115 1469
15	1003 1283 1874 1512 1238 1993 2390
16	2007 1864 2088 1228 2023 1186 1585
17	1016 2400 1039 1024 1107 2178 1445
18	1794 2291 2166 1966 1650 1899 1931
19	1904 2424 1799 2332 1089 1132 1045
20	2035 2174 1123 2277 1400 2468 1287
21	1188 2321 1171 1884 2292 2437 2465
22	1577 1235 1742 1089 2203 2143 1073
23	1987 1348 2170 1728 2426 1015 1227
24	1868 2459 1380 1990 2270 1336 1886
25	1058 1541 1793 1740 2360 2309 2167
26	2016 2412 1128 1477 1184 2104 1513
27	1640 2180 1904 1048 1931 1541 1858
28	2363 1940 2113 1330 1814 2358 1613
29	2398 1924 1572 2264 1335 2002 1495
30	2225 1178 1633 1148 1640 1872 1581
31	1726 1794 2020 1777 1016 1405 1845

CONSOLIDATED*Messenger*

1 of 4

Show margins

Zoom to page

You can drag each margin line to change the corresponding margin's position, increasing or decreasing the amount of space allocated to each worksheet section. Do bear in mind that increasing the size of the header or footer reduces the size of the worksheet body, meaning that fewer rows can be printed on a page.

Another issue with printing worksheets is that the data in worksheets tends to be wider horizontally than a standard sheet of paper. You can use the commands in the Backstage

view to change the alignment of the rows and columns on the page. When the columns parallel the long edge of a piece of paper, the page is laid out in portrait mode; when the columns parallel the short edge of a piece of paper, it is in landscape mode.

Changing between portrait and landscape mode can result in a better fit, but you might find that not all of your data will fit on a single printed page. This is where the options available on the Scaling button in the Backstage view come to the rescue. By using the options on the Scaling button, you can perform three tasks: reduce the size of the worksheet's contents until the worksheet can be printed on a single page, reduce the size of the worksheet's contents until all of the worksheet's columns fit on a single page, or reduce the size of the worksheet's contents until all of the worksheet's rows fit on a single page. You can make the same changes (and more) by using the controls in the Page Setup dialog box. To display the Page Setup dialog box, click the Page Layout tab, and then click the Page Setup dialog box launcher.

Previewing worksheets before printing

You can view your worksheet as it will be printed by displaying the Backstage view and then clicking Print in the left pane. When Excel displays your worksheet in the Backstage view, it shows the active worksheet as it will be printed with its current settings. At the bottom of the Backstage view, Excel indicates how many pages the worksheet will require when printed and the number of the page you are viewing.

TIP When you display a workbook in the Backstage view, you can view the next printed page by clicking the preview image and pressing the Page Down key; to move to the previous page, press the Page Up key. You can also use the Previous and Next arrows at the bottom of the Backstage view, enter a page number in the Current Page box, or scroll through the pages by using the vertical scroll bar at the right edge of the Backstage view.

Changing page breaks in a worksheet

Another way to affect how your worksheet will appear on the printed page is to change where Excel assigns its page breaks. A page break is the point at which Excel prints all subsequent data on a new sheet of paper. You can make these changes indirectly by modifying a worksheet's margins, but you can do so directly by displaying your document in Page Break Preview mode. To display your worksheet in this mode, on the View tab, in the Workbook Views group, click Page Break Preview.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2		January												
3		Hour												
4	Day	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	
5	1	2117	1989	1544	2408	1921	1505	1687	2391	1486	2075	1626	1326	
6	2	1128	1109	1354	1115	2277	1432	1559	2103	2493	1317	1519	1836	
7	3	1228	1350	1662	1758	1892	1710	1709	1889	1495	1405	1513	1493	
8	4	2295	2496	1964	1793	1138	1592	1811	1479	2339	1839	2416	1838	
9	5	1866	1631	1631	1136	1959	2275	2348	1355	1346	1947	2098	1163	
10	6	1234	1536	2348	1208	2109	2382	2487	2464	1755	2086	1261	1989	
11	7	1608	1825	1851	1037	2259	2091	2211	1195	1395	1727	1171	1753	
12	8	1903	2014	1451	1283	2243	1266	1746	2243	1385	1414	1675	2274	
13	9	2275	2360	1392	1511	1942	1639	2018	2468	2247	2493	1827	2261	
14	10	1039	2191	1729	1028	2278	1044	1936	1233	1677	1988	1690	1649	
15	11	1569	1069	1487	1155	2434	2181	1721	2235	1534	1407	1187	1581	
16	12	1773	1782	1224	2401	2426	1514	1526	1086	1478	1943	1028	1988	
17	13	2108	1511	1916	2488	1459	1703	1706	2083	2305	2348	1662	2218	
18	14	1512	2319	2239	1068	1164	2115	1469	1629	2398	1970	1665	1343	
19	15	1003	1283	1874	1512	1238	1993	2390	2040	1366	2422	2344	1144	
20	16	2007	1864	2088	1228	2023	1186	1585	1422	1486	2232	1907	2001	
21	17	1016	2400	1039	1024	1107	2178	1445	1452	1506	1605	1925	2223	
22	18	1794	2291	2166	1966	1650	1899	1931	2124	1166	1630	2178	1185	
23	19	1904	2424	1799	2332	1089	1132	1045	1203	1364	2346	1654	1483	

The blue lines in the window represent the page breaks. If you want to set a page break manually, you can do so by displaying your worksheet in Page Break Preview mode, right-clicking the row header of the row below where you want the new page to start, and clicking Insert Page Break. In other words, if you right-click the row header of row 15 and then click Insert Page Break, row 14 will be the last row on the first printed page, and row 15 will be the first row on the second printed page. The same technique applies to columns: if you right-click the column H column header and click Insert Page Break, column G will be the last column on the first printed page, and column H will be the first column on the second printed page.

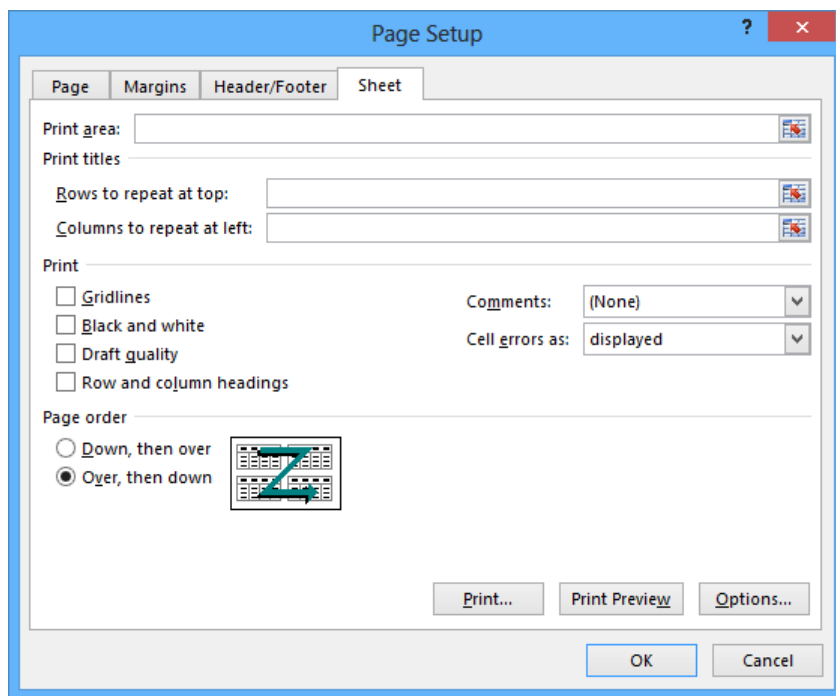
You can also add page breaks without displaying your workbook in Page Break Preview mode. To add a page break while your workbook is open in Normal view, click a row or column header and then, on the Page Layout tab, in the Page Setup area, click Breaks, and click Insert Page Break. You can use the commands in the Breaks list to delete a page break or to reset all of the page breaks in your worksheets.

IMPORTANT Be sure to click a row header or column header when you want to insert a single page break. If you view a workbook in Page Break Preview mode, right-click a cell within the body of a worksheet, and then click Insert Page Break, Excel creates both a vertical page break to the left of the selected cell and a horizontal page break above the selected cell.

To move a page break, drag the line that represents the break to its new position. Excel will change the worksheet's properties so that the area you defined will be printed on a single page.

Changing the page printing order for worksheets

When you view a document in Page Break Preview mode, Excel indicates the order in which the pages will be printed with light gray words on the worksheet pages. (These indicators appear only in Page Break Preview mode; they don't show up when the document is printed.) You can change the order in which the pages are printed by displaying the Page Layout tab, clicking the Page Setup dialog box launcher, and displaying the Sheet page of the Page Setup dialog box.



In the Page Order area of the dialog box, you can select the Over, Then Down option to change the order in which the worksheets will be printed from the default Down, Then Over. You might want to change the printing order to keep certain information together on consecutive printed pages. For example, suppose you have a worksheet that is designed to hold hourly package pickup information; the columns represent hours of the day, and the rows represent days of the month. If you want to print out consecutive days for each hour, you use Down, Then Over. In a typical configuration, pages 1 and 2 display the 5:00 A.M. to 11:00 A.M. pickups for the months of January and February, pages 3 and 4 display the 12:00 P.M. to 5:00 P.M. pickups for those months, and so on.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2			January											
3			Hour											
4	Day		5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
5		1												
6		2												
7		3												
8		4												
9		5												
10		6												
11		7												
12		8												
13		9												
14		10												
15		11												
16		12												
17		13												
18		14												
19		15												
20		16												
21		17												
22		18												
23		19												
24		20												
25		21												
26		22												

Changing the print order to Over, Then Down for the previous example would print consecutive hours for each day. Pages 1 and 2 would display the 5:00 A.M. to 5:00 P.M. pickups for January, and pages 3 and 4 would display the same pickups for February.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2			January											
3			Hour											
4	Day		5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
5		1												
6		2												
7		3												
8		4												
9		5												
10		6												
11		7												
12		8												
13		9												
14		10												
15		11												
16		12												
17		13												
18		14												
19		15												
20		16												
21		17												
22		18												
23		19												
24		20												
25		21												
26		22												

In this exercise, you'll preview a worksheet before printing it, change the worksheet's margins, change its orientation, reduce its size, add a page break, and change the page printing order.



SET UP You need the **PickupsByHour** workbook located in the **Chapter11** practice file folder to complete this exercise. Open the workbook, and then follow the steps.

- 1 While displaying the **JanFeb** worksheet, click the **File** tab to display the **Backstage** view, and then click **Print**.
- 2 On the **Print** page of the **Backstage** view, click the **Orientation** button, and then click **Landscape Orientation** to reorient the worksheet.
- 3 In left pane of the **Backstage** view, click the **Go Back** button to return to the workbook.

- 4 On the **Page Layout** tab, in the **Scale to Fit** group, enter **80%** in the **Scale** box, and then press **Enter** to resize your worksheet.
- 5 Click the row header for row **38** to highlight that row.
- 6 On the **Page Layout** tab, in the **Page Setup** group, click **Breaks**, and then click **Insert Page Break** to set a horizontal page break above row **38**.

	A	B	C	D	E
37					
38		February			
39					
40		Hour			
41		Day	5:00 AM	6:00 AM	
42		1	2117	1989	
43		2	1128	1109	
44		3	1228	1350	
45		4	2295	2496	

- 7 On the tab bar, click the **MarJun** sheet tab to display the **MarJun** worksheet.
- 8 On the **Page Layout** tab, in the **Page Setup** group, click **Margins**, and then click **Wide** to apply wide margins to the worksheet.
- 9 On the **Page Layout** tab, click the **Page Setup** dialog box launcher to open the **Page Setup** dialog box.
- 10 If necessary, click the **Sheet** tab to display the **Sheet** page of the dialog box.
- 11 In the **Page order** area, click **Over**, then down.
- 12 Click **OK**.
- 13 If you want, display the **Backstage** view, click **Print** to display the **Print** page, and then click the **Print** button to print your worksheet.

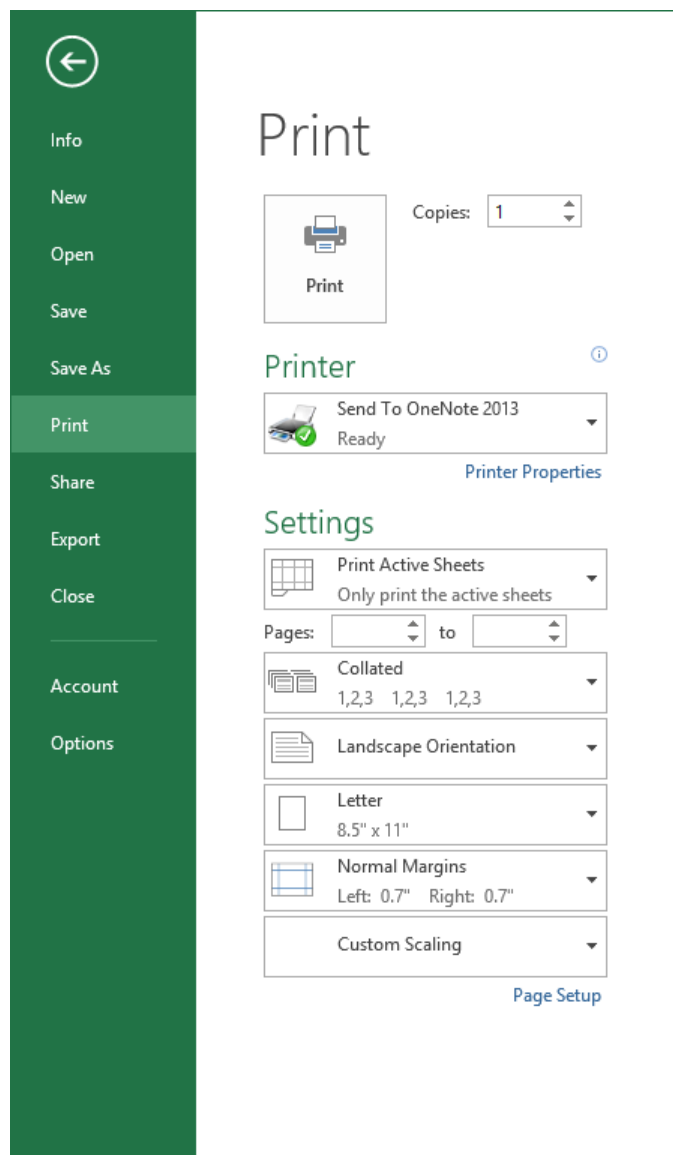


CLEAN UP Close the **PickupsByHour** workbook, saving your changes if you want to.

Printing worksheets

When you're ready to print a worksheet, all you have to do is display the **Backstage** view, click **Print**, and then click the **Print** button. If you want a little more say in how Excel prints your worksheet, you can use the commands on the **Print** page of the **Backstage** view to

determine how Excel prints your worksheet. For example, you can choose the printer to which you want to send this print job, print multiple copies of the worksheet, and select whether the copies are collated (all pages of a document are printed together) or not (multiple copies of the same page are printed together).



If you want to print more than one worksheet from the active workbook, but not every worksheet in the workbook, you can select the worksheets to print from the tab bar. To select specific worksheets to print, hold down the Ctrl key while you click the sheet tabs of the worksheets you want. Then display the Backstage view, click Print, and click the Print button.

TIP The worksheets you select for printing do not need to be next to one another in the workbook.

One helpful option on the Sheet page of the Page Setup dialog box is the Cell Errors As box, which you can use to select how Excel will print any errors in your worksheet. You can print an error as it normally appears in the worksheet, print a blank cell in place of the error, or choose one of two other indicators that are not standard error messages.

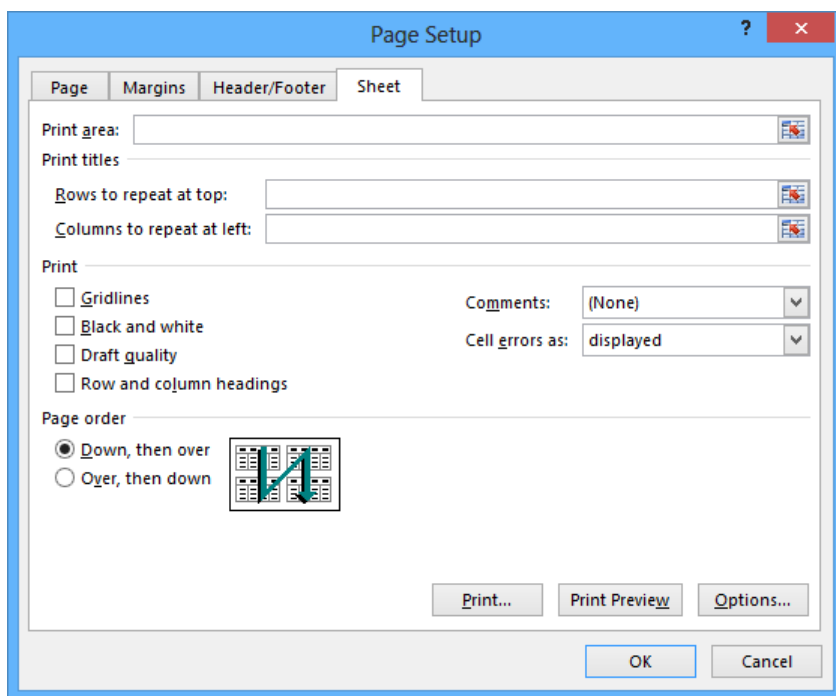
After you prepare your workbook for printing, you can specify which elements to print by displaying the Print page of the Backstage view and then clicking the Print What button, which displays Print Active Sheets by default. To print the entire worksheet, verify that the Print What button displays Print Active Sheets, and then click the Print button. To print every worksheet in the active workbook, click the Print What button, click Print Entire Workbook, and then click the Print button.

In this exercise, you'll print nonadjacent worksheets in your workbook and suppress errors in the printed worksheet.



SET UP You need the **SummaryByCustomer** workbook located in the **Chapter11 practice file folder** to complete this exercise. Open the workbook, and then follow the steps.

- 1 If necessary, display the **Summary** worksheet.
- 2 On the **Page Layout** tab, click the **Page Setup** dialog box launcher to open the **Page Setup** dialog box.
- 3 Click the **Sheet** tab to display the **Sheet** page of the dialog box.



- 4 In the **Cell errors as** list, click **<blank>**.
- 5 Click **OK**.
- 6 Hold down the **Ctrl** key and then, on the tab bar, click the **Northwind** sheet tab to select the **Summary** and **Northwind** worksheets.
- 7 Display the **Backstage** view, and then click **Print**.
- 8 In the **Settings** area of the **Print** page, verify that **Print Active Sheets** is selected.
- 9 Click the **Go Back** button at the top of the left pane to cancel printing, or click the **Print** button if you want to print the worksheets.



CLEAN UP Close the **SummaryByCustomer** workbook, saving your changes if you want to.

Printing parts of worksheets

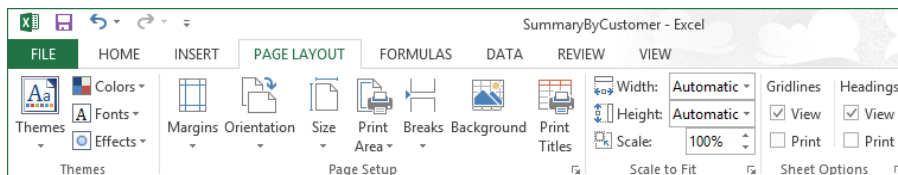
Excel gives you a great deal of control over what your worksheets look like when you print them, but you also have a lot of control over which parts of your worksheets will be printed. For example, you can use the commands available on the Print page of the Backstage view to choose which pages of a multipage worksheet you want to print.

In the Settings area of the Print page, you can fill in the page numbers you want to print in the Pages From and To boxes.

TIP You can also use the Page Break Preview window to determine which pages to print, and if the pages aren't in an order you like, you can use the commands on the Sheet page of the Page Setup dialog box to change the order in which they will be printed.

Another way you can modify how a worksheet will be printed is to have Excel fit the entire worksheet on a specified number of pages. For example, you can have Excel resize a worksheet so that it will fit on a single printed page. Fitting a worksheet onto a single page is a handy tool when you need to add a sales or other summary to a report and don't want to spread important information across more than one page.

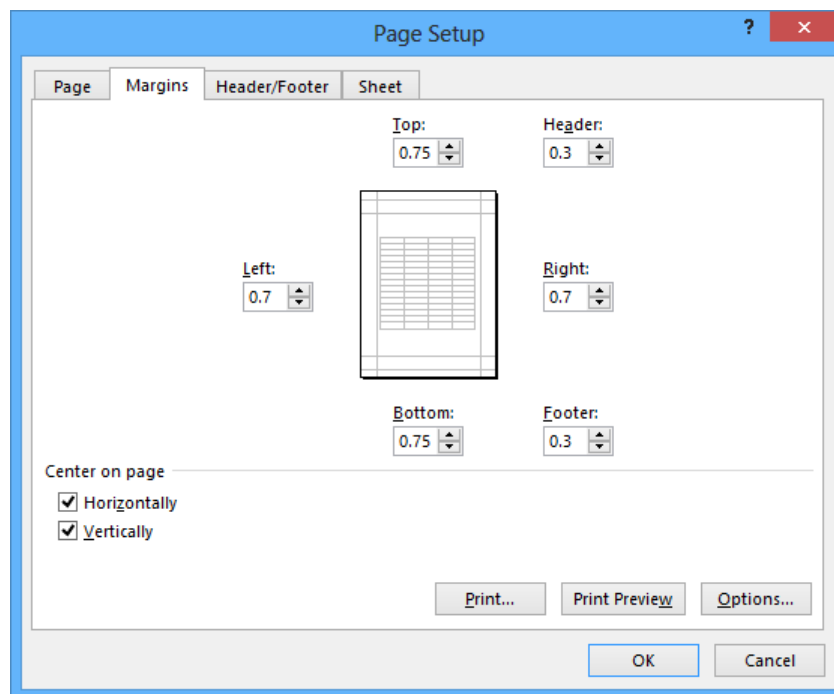
To have Excel fit a worksheet on a set number of pages, display the Page Layout tab and use the controls in the Scale To Fit group. In the Width and Height lists, you can select how many pages wide or tall you want your printout to be.



If you want to print a portion of a worksheet instead of the entire worksheet, you can define the area or areas that you want to have printed. To identify the area of the worksheet you want to print, select the cells with the data you want to print and, on the Page Layout tab, in the Page Setup group, click Print Area and then click Set Print Area. Excel marks the area with a dotted line around the border of the selected cells and prints only the cells you selected. To remove the selection, click Print Area, and then click Clear Print Area.

TIP You can include noncontiguous groups of cells in the area to be printed by holding down the Ctrl key as you select the cells. Noncontiguous print areas will be printed on separate pages.

After you define a print area, you can use the options in the Page Setup dialog box to position the print area on the page. Specifically, you can have Excel center the print area on the page by selecting the Horizontally and Vertically check boxes in the Center On Page area of the Margins page.



If the contents of a worksheet will take up more than one printed page, you can have Excel repeat one or more rows at the top of the page or columns at the left of the page. For example, if you want to print a lengthy worksheet that contains the mailing addresses of customers signed up to receive your company's monthly newsletter, you could repeat the column headings Name, Address, City, and so forth at the top of the page. To repeat rows at the top of each printed page, on the Page Layout tab, in the Page Setup group, click Print Titles. Excel will display the Sheet page of the Page Setup dialog box.

On the Sheet page of the Page Setup dialog box, you can use the commands in the Print Titles area to select the rows or columns to repeat. To choose rows to repeat at the top of the page, click the Collapse Dialog button next to the Rows To Repeat At Top box, select the rows, and then click the Expand Dialog button. The rows you selected appear in the Rows To Repeat At Top box.

Similarly, to have a set of columns appear at the left of every printed page, click the Collapse Dialog button next to the Columns To Repeat At Left box, select the columns, and then click the Expand Dialog button. When you're done, click OK to accept the settings.

In this exercise, you'll select certain pages of a worksheet to print, have Excel fit your printed worksheet on a set number of pages, define a multi-region print area, center the printed material on the page, and repeat columns at the left edge of each printed page.



SET UP You need the **HourlyPickups** workbook located in the **Chapter11** practice file folder to complete this exercise. Open the workbook, and then follow the steps.

- 1 On the **Page Layout** tab, in the **Page Setup** group, click **Print Titles** to open the **Page Setup** dialog box with the **Sheet** page displayed.
- 2 At the right edge of the **Columns to repeat at left** field, click the **Collapse Dialog** button to collapse the dialog box.
- 3 Select the column **A** header, and drag to select the column **B** header. The reference **\$A:\$B** appears in the **Columns To Repeat At Left** field.
- 4 At the right edge of the **Columns to repeat at left** field, click the **Expand Dialog** button to expand the dialog box.
- 5 Click **Print Preview** to display your worksheet in the **Backstage** view.

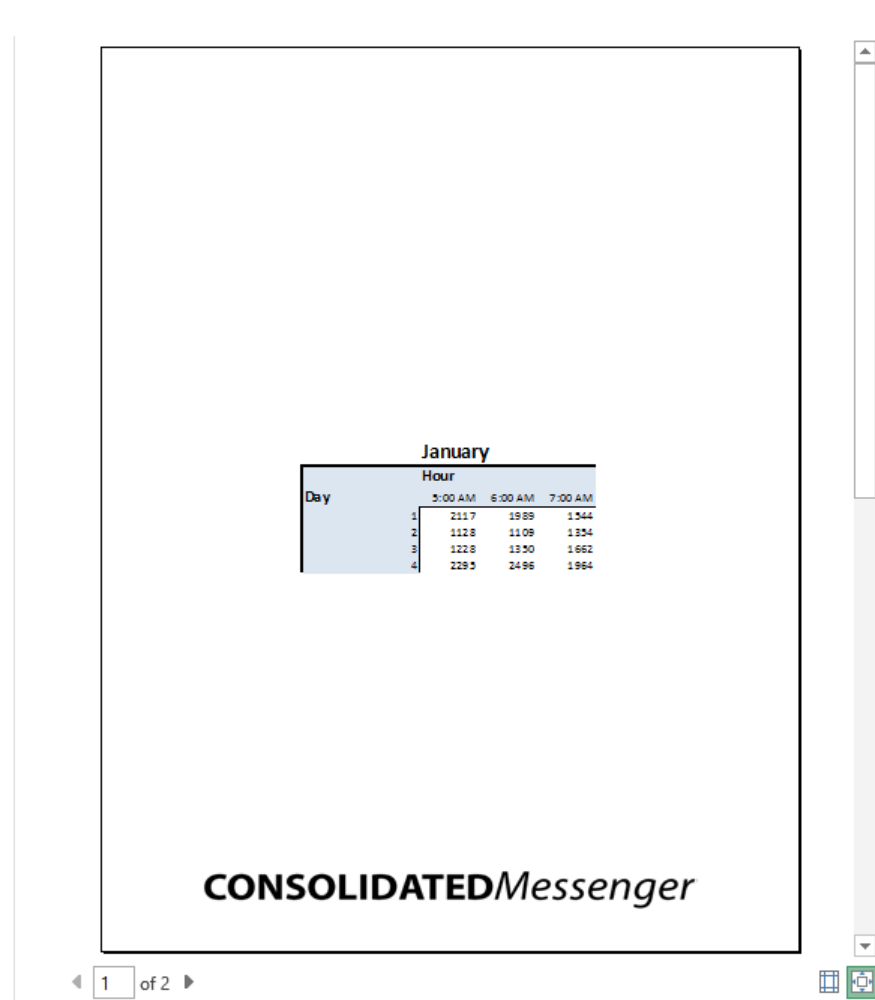
TIP Even though nothing in the preview indicates that columns A and B will appear on every printed page, scrolling through the preview shows those columns on each page.

January							
Day	Hour						
	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM
1	2117	1989	1544	2408	1921	1505	1687
2	1128	1109	1354	1115	2277	1432	1559
3	1228	1350	1662	1758	1892	1710	1709
4	2295	2496	1964	1793	1138	1592	1811
5	1866	1631	1631	1136	1959	2275	2348
6	1234	1536	2348	1208	2109	2382	2487
7	1608	1825	1851	1037	2259	2091	2211
8	1903	2014	1451	1283	2243	1266	1746
9	2275	2360	1392	1511	1842	1639	2018
10	1039	2191	1729	1028	2278	1044	1936
11	1569	1069	1487	1155	2434	2181	1721
12	1773	1782	1224	2401	2426	1514	1526
13	2108	1511	1916	2488	1459	1703	1706
14	1512	2319	2239	1063	1164	2115	1469
15	1003	1283	1874	1512	1238	1993	2390
16	2007	1864	2088	1228	2023	1186	1585
17	1016	2400	1039	1024	1107	2178	1445
18	1794	2291	2166	1866	1650	1899	1931
19	1904	2424	1799	2332	1089	1132	1045
20	2035	2174	1123	2277	1400	2468	1287
21	1288	2321	1171	1884	2292	2437	2465
22	1577	1235	1742	1089	2203	2143	1073
23	1987	1348	2170	1728	2426	1015	1227
24	1868	2459	1380	1390	2270	1336	1886
25	1058	1541	1753	1740	2360	2308	2167
26	2016	2412	1128	1477	1184	2104	1513
27	1640	2180	1904	1048	1531	1541	1858
28	2363	1340	2113	1350	1814	2358	1613
29	2398	1324	1572	2264	1355	2002	1495
30	2225	1178	1633	1148	1640	1872	1581
31	1726	1794	2020	1777	1016	1405	1845

CONSOLIDATED*Messenger*

- 6 Below **Pages** in the **Settings** area, in the **From** field, enter **1**; in the **To** field, enter **2**.
- 7 Click the **Go Back** button at the top of the left pane and then, on the ribbon, click the **Page Layout** tab; in the **Scale to Fit** group, click the **Width** arrow and then, in the list that appears, click **1 page**.
- 8 Click the **Height** arrow and then, in the list that appears, click **2 pages**. Excel resizes your worksheet so that it will fit on two printed pages. The new scaling and size values appear in the **Scale to Fit** group on the **Page Layout** tab.

- 9 Select the cell range **A1:E8**, hold down the **Ctrl** key, and then select the cell range **A38:E45**.
- 10 On the **Page Layout** tab, in the **Page Setup** group, click the **Print Area** button, and then click **Set Print Area**.
- 11 Click the **Page Setup** dialog box launcher to open the **Page Setup** dialog box.
- 12 On the **Margins** page of the dialog box, in the **Center on page** area, select the **Horizontally** and **Vertically** check boxes.
- 13 Click **Print Preview** to display your worksheet in the **Backstage** view.



- 14 Click the **Go Back** button to exit the **Backstage** view and then, on the ribbon, click the **Page Layout** tab to display your worksheet in **Normal** view.
- 15 In the **Page Setup** group, click **Print Area**, and then click **Clear Print Area** to remove the print areas defined for the **JanFeb** worksheet.



CLEAN UP [Close the HourlyPickups workbook, saving your changes if you want to.](#)

Printing charts

With charts, which are graphic representations of your Excel data, you can communicate lots of information by using a single picture. Depending on your data and the type of chart you make, you can show trends across time, indicate the revenue share for various departments in a company for a month, or project future sales by using trendline analysis. After you create a chart, you can print it to include in a report or use in a presentation.

If you embed a chart in a worksheet, however, the chart might obscure some of your data unless you move the chart elsewhere on the worksheet. That's one way to handle printing a chart or the underlying worksheet, but there are other ways that don't involve changing the layout of your worksheets.

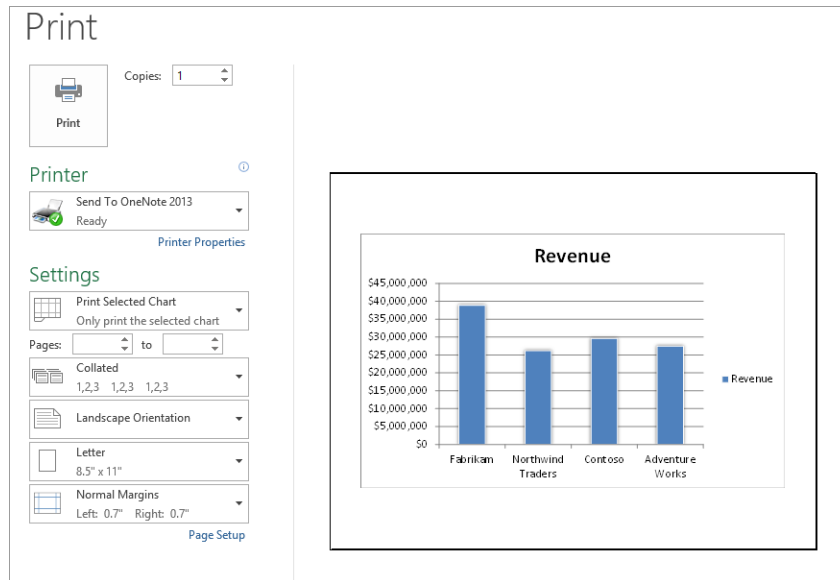
To print a chart without printing any other part of the underlying worksheet, click the chart, display the Backstage view, and then click Print. In the Settings area of the Print page, Print Selected Chart will be the only option available. If you click anywhere on the worksheet outside the chart, the Print What area opens with Print Active Sheets selected, meaning that the chart and underlying worksheet are printed as they appear on the screen. When you're ready to print the chart, click the Print button.

TIP Even if the selected chart is smaller than the worksheet on which it resides, it will be scaled to print at the full size of the printer's page.

In this exercise, you'll print a chart.

➔ **SET UP** You need the **CorporateRevenue** workbook located in the **Chapter11** practice file folder to complete this exercise. Open the workbook, and then follow the steps.

- 1 Select the chart.
- 2 Click the **File** tab to display the **Backstage** view, and then click **Print**.



- 3 Verify that **Print Selected Chart** is selected, and then click **Print** (or click the **Go Back** button to exit the **Backstage** view if you don't want to print the chart).

✕ **CLEAN UP** Close the **CorporateRevenue** workbook.

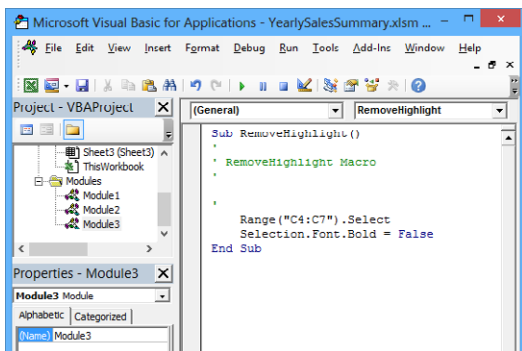
Key points

- In the Backstage view, you have complete control over how your worksheets appear on the printed page. Don't be afraid to experiment until you find a look you like.
- When you display a worksheet in the Backstage view, you can preview what your worksheet will look like on paper before you print.
- You can preview where the page breaks will fall when you print a worksheet, and you can change them if you want.
- Don't forget that you can have Excel avoid printing error codes!
- You can repeat rows or columns in a printed worksheet.
- If you want to print a chart without printing the rest of the accompanying worksheet, be sure to select the chart before you start the printing procedure.

Chapter at a glance

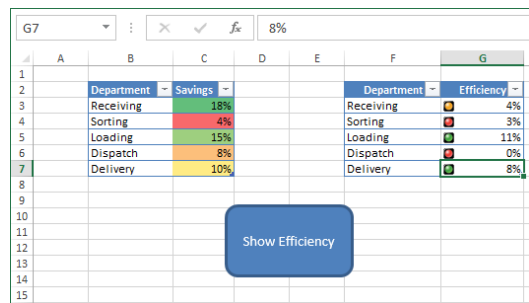
Modify

Create and modify macros,
page 369



On-click

Run macros when a button is clicked,
page 372



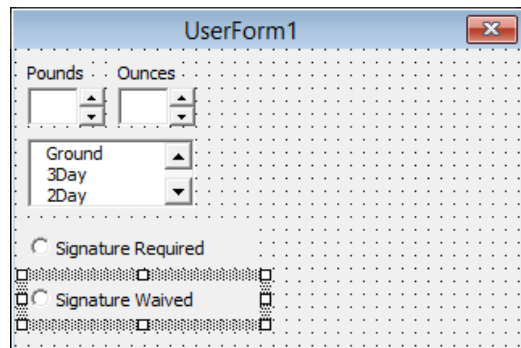
On-open

Run macros when a workbook is opened,
page 376

	A	B	C	D
1				
2		Center	Volume	
3		Northeast	1,450,392	
4		Atlantic	998,751	
5		Southeast	1,000,089	
6		North Central	843,552	
7		Midwest	795,022	
8		Southwest	810,123	
9		Mountain West	602,398	
10		Northwest	890,544	
11		Central	745,631	
12				

Controls

Insert form controls and set form properties,
page 379



IN THIS CHAPTER, YOU WILL LEARN HOW TO

- Enable and examine macros.
- Create and modify macros.
- Run macros when a button is clicked.
- Run macros when a workbook is opened.
- Insert form controls and set form properties.

Many tasks you perform in Microsoft Excel 2013 are done once (for example, entering sales data for a particular day or adding formulas to a worksheet) or can be repeated quickly by using tools in Excel (for example, changing the format of a cell range). However, you probably have one or two tasks you perform frequently that require a lot of steps to accomplish. For example, you might have several cells in a worksheet that contain important data you use quite often in presentations to your colleagues. Instead of going through a lengthy series of steps to highlight the cells that have the important information, you can create a macro, which is a recorded series of actions, to perform the steps for you. After you have created a macro, you can run, edit, or delete it as needed.

In Excel, you run and edit macros by using the items available in the Macros group on the View tab. You can make your macros easier to access by creating new buttons on the Quick Access Toolbar, to which you can assign your macros. If you run a macro to highlight specific cells in a worksheet every time you show that worksheet to a colleague, you can save time by adding a Quick Access Toolbar button that runs the macro to highlight the cells for you.

Another handy feature of Excel macros is that you can create macros that run when a workbook is opened. For example, you might want to ensure that no cells in a worksheet are highlighted when the worksheet opens. You can create a macro that removes any special formatting from your worksheet cells when its workbook opens, which enables you to emphasize the data you want as you present the information to your colleagues.

You can also use form controls and macros to create custom solutions for your business. By adding controls such as text boxes, spin controls, and list boxes, you can design a user-friendly interface for you and your colleagues to enter data quickly while minimizing errors.

In this chapter, you'll open, run, create, and modify macros; create Quick Access Toolbar buttons and shapes that you can use to run macros with a single mouse click; run a macro when a workbook is opened; and add controls and set form properties for a UserForm.

PRACTICE FILES To complete the exercises in this chapter, you need the practice files contained in the Chapter12 practice file folder. For more information, see "Download the practice files" in this book's Introduction.

Enabling and examining macros

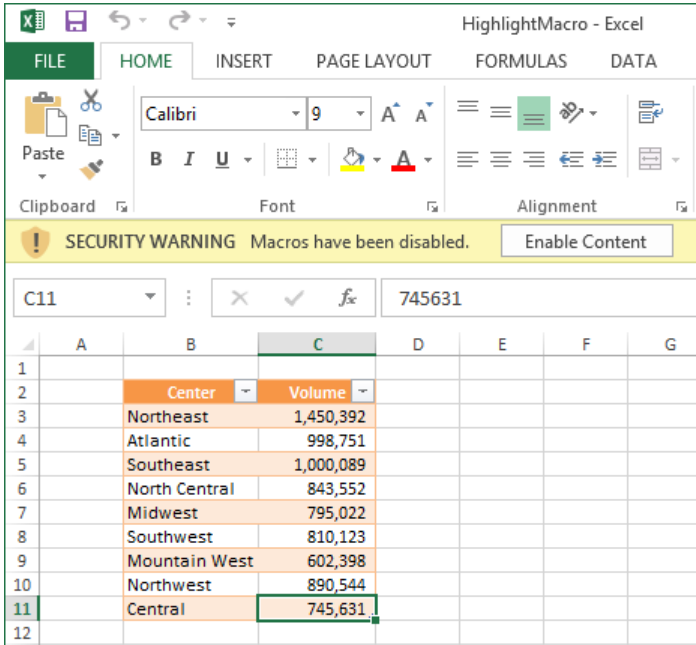
It's possible for unscrupulous programmers to write viruses and other harmful programs by using the Microsoft Visual Basic for Applications (VBA) programming language, so you need to be sure that you don't run macros from unknown sources. In addition to running protective software such as Windows Defender, you can also change your Excel macro security settings to control when macros can be run. After you're sure a macro is safe, you can open it in the Visual Basic Editor to examine its code.

Changing macro security settings

In versions of Excel prior to Excel 2007, you could define macro security levels to determine which macros, if any, your workbooks would be allowed to run, but there was no workbook type in which all macros were disallowed. Excel 2013 has several file types that you can use to control whether a workbook will allow macros to be run. The following table summarizes the macro-related file types.

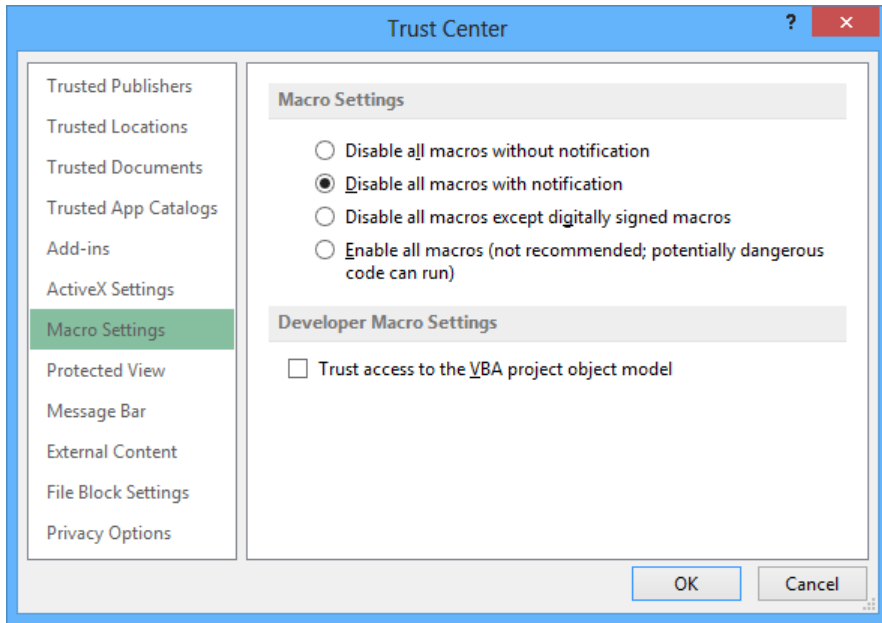
Extension	Description
.xlsx	Regular Excel workbook; macros are <i>disabled</i>
.xlsm	Regular Excel workbook; macros are <i>enabled</i>
.xltx	Excel template workbook; macros are <i>disabled</i>
.xltm	Excel template workbook; macros are <i>enabled</i>

When you open a macro-enabled workbook, the Excel program-level security settings might prevent the workbook from running the macro code. When that happens, Excel displays a security warning on the Message Bar.



To allow a workbook's macros to run, click the Enable Content button on the Message Bar. Always take the time to verify the workbook's source and consider whether you expected the workbook to contain macros before you enable the content. If you decide not to enable the macros in a workbook, click the Close button at the right edge of the Message Bar.

You can change your program-level security settings to make them more or less restrictive; to do so, click the File tab to display the Backstage view, click Options in the left pane, and then, in the Excel Options dialog box that opens, click the Trust Center category. On the page that appears, click the Trust Center Settings button to display the Trust Center dialog box.



The Excel default macro security level is Disable All Macros With Notification, which means that Excel displays a warning on the Message Bar but allows you to enable the macros manually. Selecting the Disable All Macros Without Notification option does exactly what the label says. If Consolidated Messenger's company policy is to disallow all macros in all Excel workbooks, its employees would select the Disable All Macros Without Notification option.

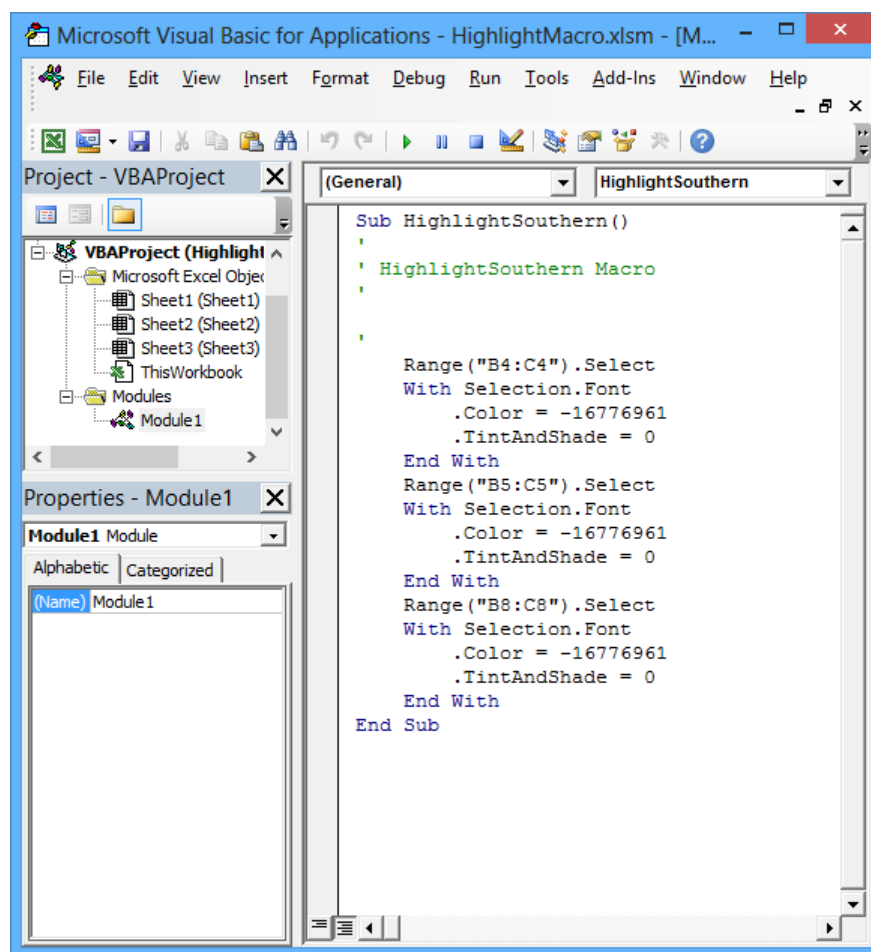
IMPORTANT Because it is possible to write macros that act as viruses, potentially causing harm to your computer and spreading copies of themselves to other computers, you should never choose the Enable All Macros security setting, even if you have virus-checking software installed on your computer.

Examining macros

The best way to get an idea of how macros work is to examine an existing macro. To do that, display the View tab. In the Macros group, click the Macros button, and then click View Macros.

TIP In the Macro dialog box, you can display the macros available in other workbooks by clicking the Macros In box and selecting a workbook by name or selecting All Open Workbooks to display every macro in any open workbook. If you select either of those choices, the macro names that are displayed include the name of the workbook in which the macro is stored. Clicking This Workbook displays the macros in the active workbook.

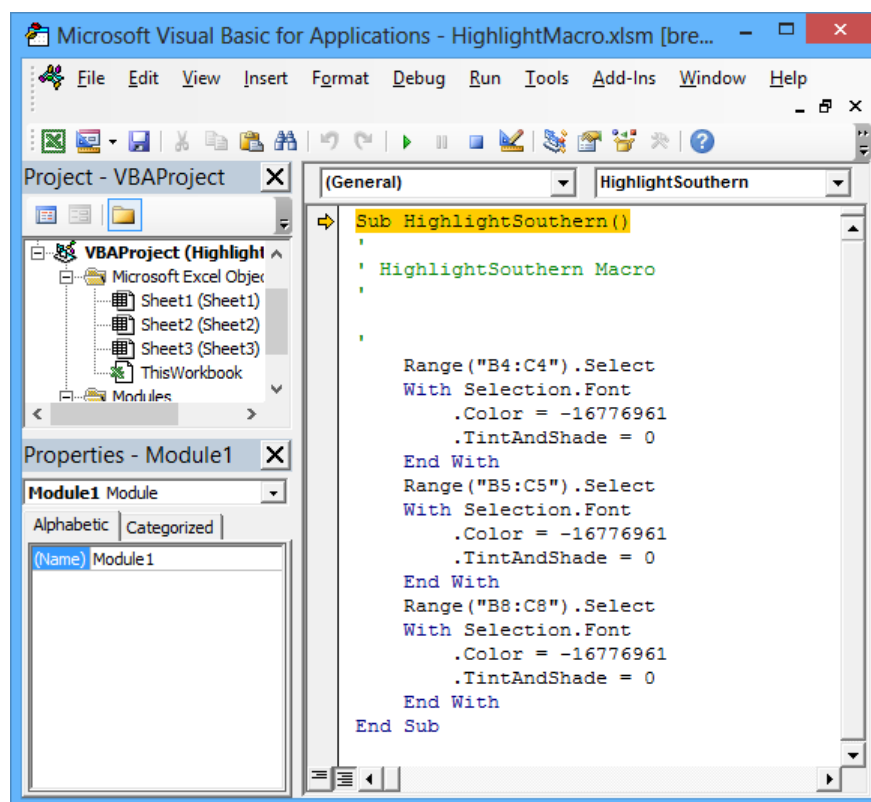
The Macro dialog box displays a list of macros in your workbook. To view the code behind a macro, you click the macro's name and then click Edit to open the Visual Basic Editor.



KEYBOARD SHORTCUT Press Alt+F11 to open and close the Visual Basic Editor. For a complete list of keyboard shortcuts, see “Keyboard shortcuts” at the end of this book.

Excel macros are recorded by using VBA. Consider, for example, the code for a macro that selects the cell range B4:C4 and changes the cells' formatting to bold. The first line of the macro identifies the cell range to be selected (in this case, cells C4:C9). After the macro selects the cells, the next line of the macro changes the formatting of the selected cells to bold, which has the same result as when you click a cell and then click the Bold button in the Font group on the Home tab.

To test how the macro works, you can open the Macro dialog box, click the name of the macro you want to examine, and then click Step Into. The Visual Basic Editor opens, with a highlight around the instruction that will be executed next.



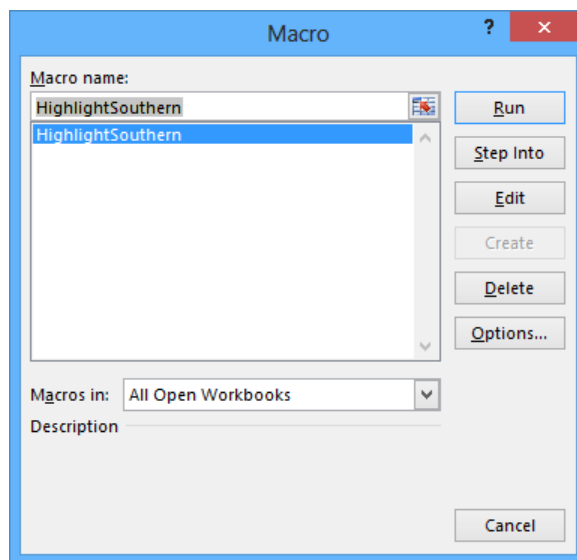
To execute an instruction, press F8. The highlight moves to the next instruction, and your worksheet then changes to reflect the action that resulted from the execution of the preceding instruction.

You can run a macro without stopping after each instruction by opening the Macro dialog box, clicking the macro to run, and then clicking Run. You'll usually run the macro this way; after all, the point of using macros is to save time.

In this exercise, you'll examine a macro in the Visual Basic Editor, move through the first part of the macro one step at a time, and then run the entire macro without stopping.

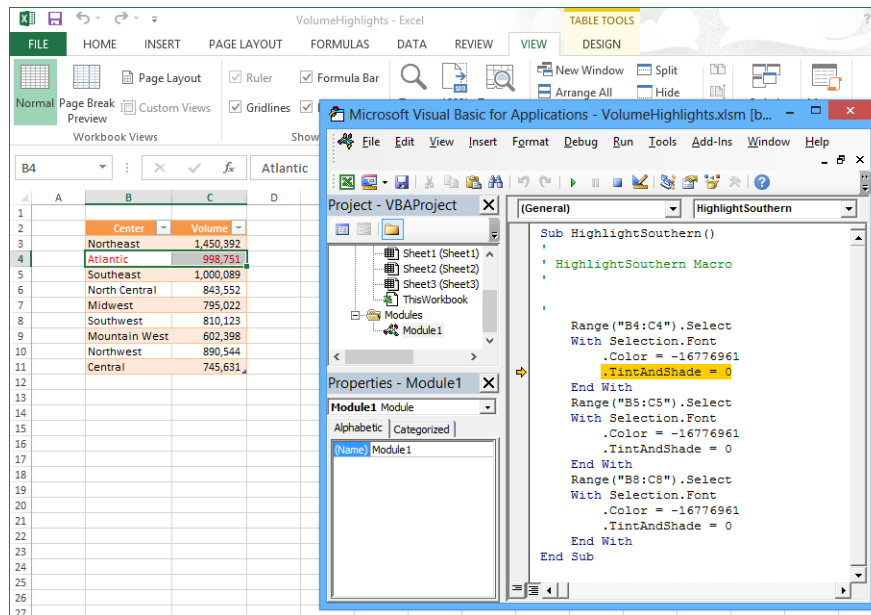
→ SET UP You need the **VolumeHighlights** workbook located in the **Chapter12 practice file folder** to complete this exercise. Open the workbook, click the **Enable Content** button on the **Message Bar** (if necessary), and then follow the steps.

- 1 On the **View** tab, in the **Macros** group, click the **Macros** arrow and then, in the list that appears, click **View Macros** to open the **Macro** dialog box.



- 2 If necessary, click the **HighlightSouthern** macro, and then, to display the macro code, click **Edit**. The Visual Basic Editor opens, with the code for the **HighlightSouthern** macro displayed in the **Module1 (Code)** window.
- 3 In the Visual Basic Editor window, click the **Close** button to close the window and redisplay the workbook.
- 4 In the **Macros** list, click **View Macros** to open the **Macro** dialog box.
- 5 Click the **HighlightSouthern** macro, and then click **Step Into**. The macro appears in the Visual Basic Editor, with the first macro instruction highlighted.

- 6 Press the **F8** key to highlight the next instruction.
- 7 Press **F8** again to execute the step that selects the **Atlantic** row in the table.
- 8 Press **F8** twice to execute the steps that change the **Atlantic** row's text color to red.



- 9 Click the **Close** button in the Visual Basic Editor.
- 10 When a warning dialog box opens, indicating that closing the Visual Basic Editor will stop the debugger, click **OK**.
- 11 In the **Macros** list, click **View Macros** to open the **Macro** dialog box.
- 12 Click the **HighlightSouthern** macro.
- 13 Click **Run** to close the **Macro** dialog box and run the entire macro.

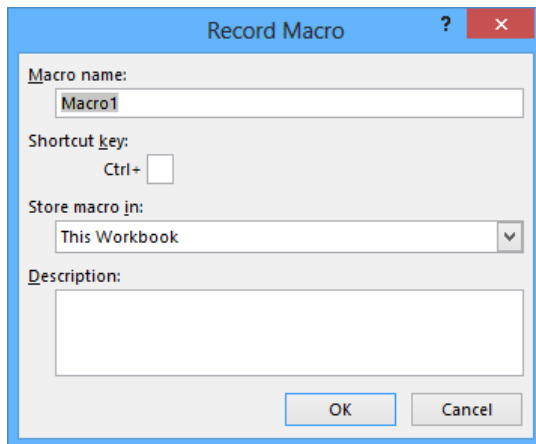
	A	B	C	D
1				
2		Center	Volume	
3		Northeast	1,450,392	
4		Atlantic	998,751	
5		Southeast	1,000,089	
6		North Central	843,552	
7		Midwest	795,022	
8		Southwest	810,123	
9		Mountain West	602,398	
10		Northwest	890,544	
11		Central	745,631	
12				



CLEAN UP Close the VolumeHighlights workbook, saving your changes if you want to.

Creating and modifying macros

The first step of creating a macro is to plan the process you want to automate. Computers today are quite fast, so adding an extra step that doesn't affect the outcome of a process doesn't slow you down noticeably, but leaving out a step means you will need to re-record your macro. After you plan your process, you can create a macro by clicking the View tab and then, in the Macros group, clicking the Macros arrow. In the list that appears, click Record Macro. When you do, the Record Macro dialog box opens.



The Record Macro dialog box is shown with the following fields:

- Macro name:** Macro1
- Shortcut key:** Ctrl+
- Store macro in:** This Workbook
- Description:**

Buttons: OK, Cancel

After you enter the name of your macro in the Macro Name box, click OK. You can now perform the actions that you want Excel to repeat later; when you're done recording your macro, in the Macros list, click Stop Recording to add your macro to the list of macros available in your workbook.

TIP The Record and Stop Recording icons also appear on the status bar.

To modify an existing macro, you can simply delete the macro and re-record it. Or if you just need to make a quick change, you can open it in the Visual Basic Editor and add to or change the macro's instructions. To delete a macro, open the Macro dialog box, click the macro you want to delete, and then click Delete.

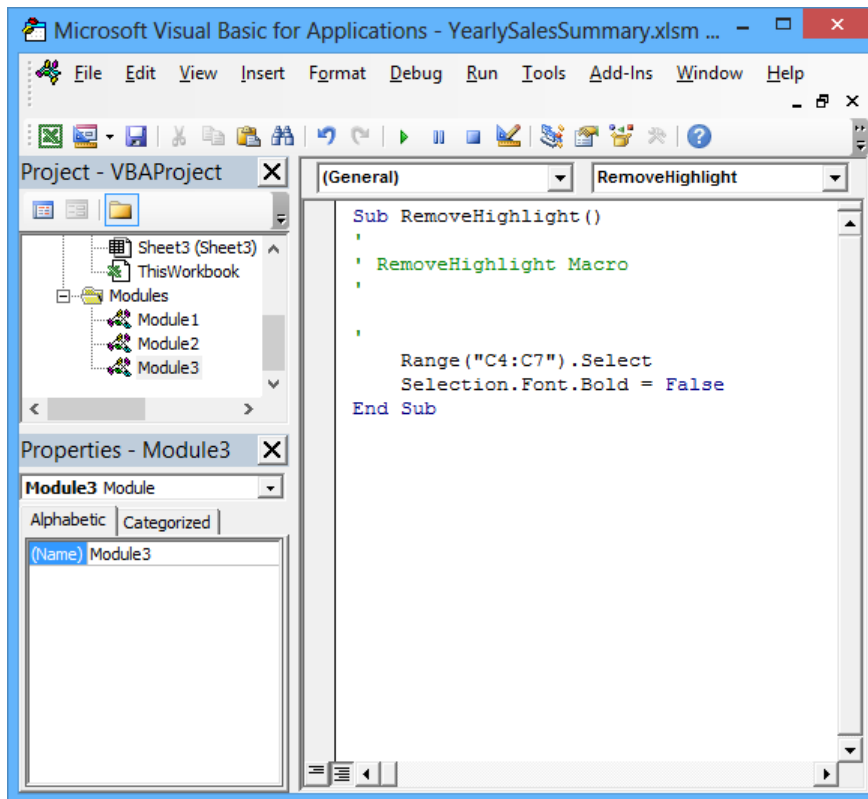
SEE ALSO For more information about using the Visual Basic Editor, press Alt+F11 to display the Visual Basic Editor, and then press F1 to display the Visual Basic Help dialog box.

In this exercise, you'll record, edit, save, and run a macro that removes the bold formatting from selected cells.



SET UP You need the `YearlySalesSummary` workbook located in the Chapter12 practice file folder to complete this exercise. Open the workbook, click the Enable Content button on the Message Bar (if necessary), and then follow the steps.

- 1 On the **View** tab, in the **Macros** group, click the **Macros** arrow and then, in the list that appears, click **Record Macro** to open the **Record Macro** dialog box.
- 2 In the **Macro name** box, replace the existing name with **RemoveHighlight**.
- 3 Click **OK** to close the **Record Macro** dialog box.
- 4 Select the cell range **C4:C7**. (The text in these cells is currently bold.)
- 5 On the **Home** tab, in the **Font** group, click the **Bold** button to remove the bold formatting.
- 6 On the **View** tab, in the **Macros** list, click **Stop Recording** to stop recording the macro.
- 7 In the **Macros** list, click **View Macros** to open the **Macro** dialog box.
- 8 In the **Macro name** area, click **RemoveHighlight**, and then click **Edit** to display the macro in the Visual Basic Editor.



- 9 Edit the line of code that currently reads **Range("C4:C7").Select** so that it reads **Range("C3:C9").Select**. This macro statement selects the cell range C3:C9, not the incorrect range C4:C7.
- 10 On the **Standard** toolbar of the Visual Basic Editor, click the **Save** button to save your change.
- 11 On the title bar of the Visual Basic Editor window, click the **Close** button.
- 12 Select cells C3:C9 and format them as bold.
- 13 In the **Macros** list, click **View Macros** to open the **Macro** dialog box.
- 14 Click **RemoveHighlight**, and then click **Run**. The macro removes the bold formatting from cells C3:C9.

12

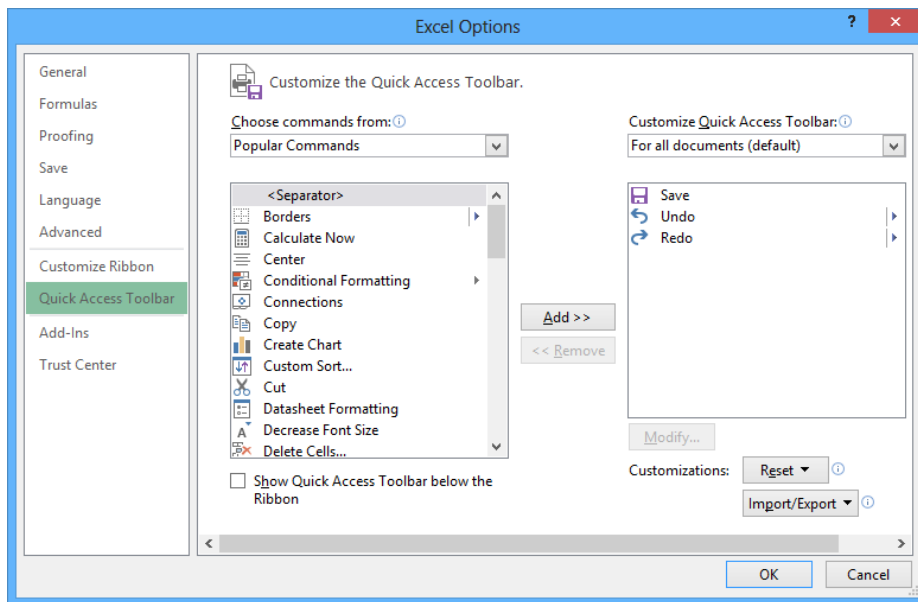


CLEAN UP Close the **YearlySalesSummary** workbook, saving your changes if you want to.

Running macros when a button is clicked

You can quickly discover the commands built into Excel by looking through the commands on the ribbon. However, it can take a few seconds to display the View tab, open the Macro dialog box, select the macro you want to run, and click the Run button. When you're in the middle of a presentation, taking even those few seconds can reduce your momentum and force you to regain your audience's attention. Excel offers several ways for you to make your macros more accessible.

If you want to display the Macro dialog box quickly, you can add the View Macros button to the Quick Access Toolbar. To do so, click the Customize Quick Access Toolbar button at the right edge of the Quick Access Toolbar, and then click More Commands to display the Quick Access Toolbar page of the Excel Options dialog box.



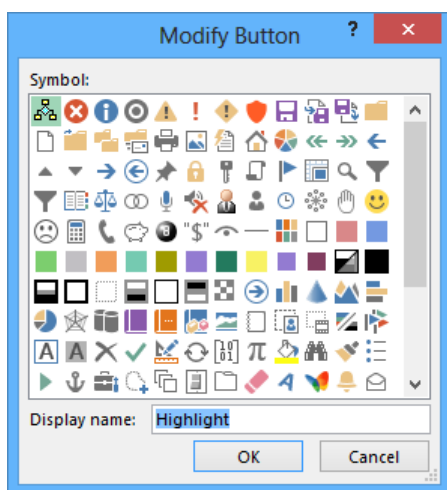
SEE ALSO For more information about customizing the Quick Access Toolbar, see “Customizing the Excel 2013 program window” in Chapter 1, “Setting up a workbook.”

In the Popular Commands command group, the last item in the command pane is View Macros. When you click the View Macros command, click the Add button, and then click OK, Excel adds the command to the Quick Access Toolbar and closes the Excel Options dialog box. Clicking the View Macros button on the Quick Access Toolbar opens the Macro

dialog box, which saves a significant amount of time compared to when you display the View tab and move the pointer to the far right edge of the ribbon.

If you prefer to run a macro without having to display the Macro dialog box, you can do so by adding a button representing the macro to the Quick Access Toolbar. Clicking that button runs the macro immediately, which is very handy when you create a macro for a task you perform frequently. To add a button that represents a macro to the Quick Access Toolbar, click the Customize Quick Access Toolbar button at the right edge of the Quick Access Toolbar, and then click More Commands to display the Quick Access Toolbar page of the Excel Options dialog box. From there, in the Choose Commands From list, click Macros. Click the macro that you want represented on the Quick Access Toolbar, click Add, and then click OK.

If you add more than one macro button to the Quick Access Toolbar or if you want to change the button that represents your macro on the Quick Access Toolbar, you can select a new button from more than 160 options. To assign a new button to your macro, click the macro command in the Customize Quick Access Toolbar pane and click the Modify button to display your choices. Click the symbol you want, enter a new text value to appear when a user points to the button, and then click OK twice (the first time to close the Modify Button dialog box and the second to close the Excel Options dialog box).



Finally, you can have Excel run a macro when you click a shape in your workbook. By assigning macros to shapes, you can create “buttons” that are graphically richer than those available on the Quick Access Toolbar. If you’re so inclined, you can even create custom button layouts that represent other objects, such as a remote control. To run a macro when you

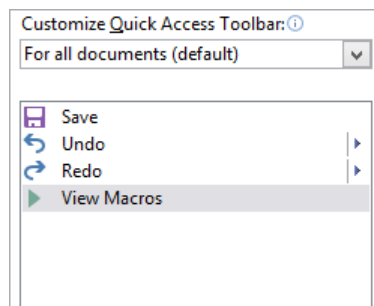
click a shape, right-click the shape, and then click **Assign Macro** on the shortcut menu that opens. In the **Assign Macro** dialog box, click the macro that you want to run when you click the shape, and then click **OK**.

IMPORTANT When you assign a macro to run when you click a shape, don't change the name of the macro that appears in the **Assign Macro** dialog box. The name that appears refers to the object and what the object should do when it is clicked; changing the macro name breaks that connection and prevents Excel from running the macro.

In this exercise, you'll add the **View Macros** button to the **Quick Access Toolbar**, add a macro button to the **Quick Access Toolbar**, assign a macro to a workbook shape, and then run the macros.

→ SET UP You need the **PerformanceDashboard** workbook located in the **Chapter12 practice file folder** to complete this exercise. Open the workbook, click the **Enable Content** button on the **Message Bar** (if necessary), and then follow the steps.

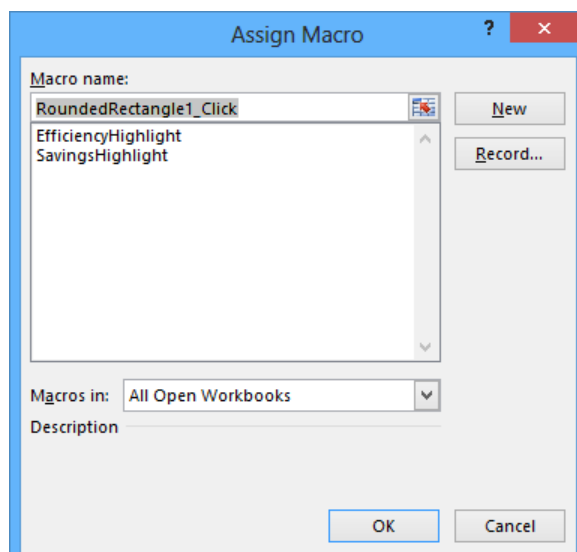
- 1 On the **Quick Access Toolbar**, click the **Customize Quick Access Toolbar** button, and then click **More Commands**. The **Quick Access Toolbar** page of the **Excel Options** dialog box opens, displaying the **Popular Commands** category in the **Choose Commands From** pane.
- 2 In the list of available commands, click **View Macros**.
- 3 Click **Add** to add the **View Macros** command to the **Customize Quick Access Toolbar** pane.



- 4 In the **Choose commands from** list, click **Macros** to display the available macros in the pane below the list.
- 5 In the **Choose commands from** pane, click **SavingsHighlight**.

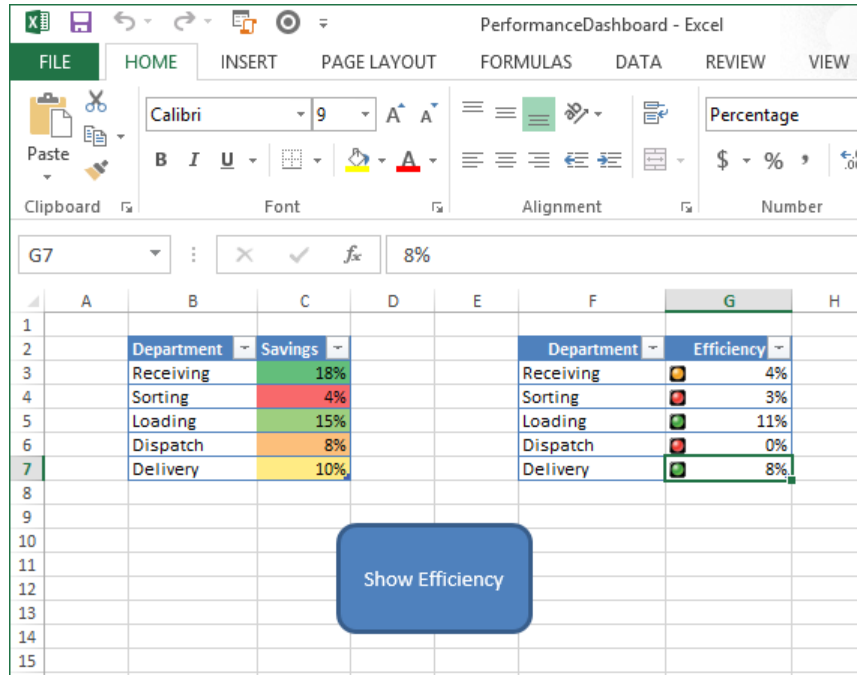
TROUBLESHOOTING If macros in the workbook are not enabled, the **SavingsHighlight** macro will not appear in the list.

- 6 Click **Add** to add the **SavingsHighlight** macro to the **Customize Quick Access Toolbar** pane.
- 7 In the **Customize Quick Access Toolbar** pane, click the **SavingsHighlight** command.
- 8 Click **Modify** to open the **Modify Button** dialog box.
- 9 Click the gray button with the white circle inside it (the fourth button from the left on the top row).
- 10 Click **OK** twice to close the **Modify Button** dialog box and the **Excel Options** dialog box. The **View Macros** and **SavingsHighlight** buttons appear on the **Quick Access Toolbar**.
- 11 On the worksheet, right-click the **Show Efficiency** shape, and then click **Assign Macro** to open the **Assign Macro** dialog box.



- 12 Click **EfficiencyHighlight**, and then click **OK** to assign the macro to the button and close the **Assign Macro** dialog box.
- 13 On the **Quick Access Toolbar**, click the **SavingsHighlight** button. Excel runs the macro, which applies a conditional format to the values in the **Savings** column of the table on the left.

- 14 Click the **Show Efficiency** shape. Excel runs the macro, which applies a conditional format to the values in the **Efficiency** column of the table on the right.



 **CLEAN UP** Close the PerformanceDashboard workbook, saving your changes if you want to.

Running macros when a workbook is opened

One advantage of writing Excel macros in VBA is that you can have Excel run a macro whenever a workbook is opened. For example, if you use a worksheet for presentations, you can create macros that render the contents of selected cells in bold type, italic, or different typefaces to set the data apart from data in neighboring cells. If you close a workbook without removing that formatting, however, the contents of your workbook will still have that formatting applied when you open it. Although this is not a catastrophe, returning the workbook to its original formatting might take a few seconds to accomplish.

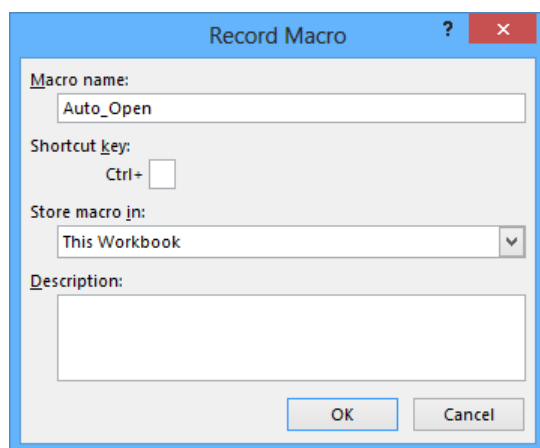
Instead of running a macro manually, or even from a toolbar button or a menu, you can have Excel run a macro whenever a workbook is opened. The trick of making that happen is in the name you give the macro. Whenever Excel finds a macro with the name `Auto_Open`, it runs the macro when the workbook to which it is attached is opened.

TIP If you have your macro security set to the `Disable With Notification` level, clicking the `Options` button that appears on the `Message Bar`, selecting the `Enable This Content` option, and then clicking `OK` allows the `Auto_Open` macro to run.

In this exercise, you'll create and test a macro that runs whenever someone opens the workbook to which it is attached.

➔ **SET UP** You need the `RunOnOpen` workbook located in the `Chapter12` practice file folder to complete this exercise. Open the workbook, click the `Enable Content` button on the `Message Bar` (if necessary), and then follow the steps.

- 1 On the **View** tab, in the **Macros** group, click the **Macros** arrow and then, in the list that appears, click **Record Macro** to open the **Record Macro** dialog box.
- 2 In the **Macro name** box, delete the existing name, and then enter `Auto_Open`.



- 3 Click **OK** to close the **Record Macro** dialog box.
- 4 Select the cell range **B3:C11**.
- 5 On the **Home** tab, in the **Font** group, click the **Bold** button twice. The first click of the **Bold** button formats all the selected cells in bold; the second click removes the bold formatting from all the selected cells.

- 6 Click cell **C11** and then, in the **Macros** list, click **Stop Recording** to stop recording your macro.
- 7 In the **Macros** list, click **View Macros** to open the **Macro** dialog box.
- 8 Click **Highlight**, and then click **Run**. The macro formats the contents of cells **C4**, **C6**, and **C10** in bold type.

	A	B	C	D
1				
2		Center	Volume	
3		Northeast	1,450,392	
4		Atlantic	998,751	
5		Southeast	1,000,089	
6		North Central	843,552	
7		Midwest	795,022	
8		Southwest	810,123	
9		Mountain West	602,398	
10		Northwest	890,544	
11		Central	745,631	
12				

- 9 On the **Quick Access Toolbar**, click the **Save** button.
- 10 Click the **Close** button to close the **RunOnOpen** workbook.
- 11 Display the **Backstage** view, click **Recent Workbooks**, and then click **RunOnOpen.xlsm**. If a warning appears, click **Enable Content**, and then click **OK** to enable macros. **RunOnOpen** opens, and the contents of cells **C4**, **C6**, and **C10** change immediately to regular type.

	A	B	C	D
1				
2		Center	Volume	
3		Northeast	1,450,392	
4		Atlantic	998,751	
5		Southeast	1,000,089	
6		North Central	843,552	
7		Midwest	795,022	
8		Southwest	810,123	
9		Mountain West	602,398	
10		Northwest	890,544	
11		Central	745,631	
12				



CLEAN UP Close the **RunOnOpen** workbook, saving your changes if you want to.

Inserting form controls and setting form properties

UserForms are Excel objects that you create to provide a user-friendly interface for data entry. You can allow open-ended text entry by adding a text box, define specific items in a list box, or combine the two approaches in a combo box.

To create a UserForm, press Alt+F11 to open the Visual Basic Editor, and then on the Insert menu, click UserForm. You can then change the form's name by clicking in the Properties pane and entering a new value in the Name field.

You can change the size of a UserForm by dragging any of the handles on its sides or corners. By dragging a handle in the middle of a side, you can change the UserForm's height or width; dragging a handle at a UserForm's corner changes both height and width.

TIP The Name property is the internal representation of the UserForm (that is, how you will refer to it in your code), so you should consider putting the letters *frm* at the start of the name to indicate that it represents a form.

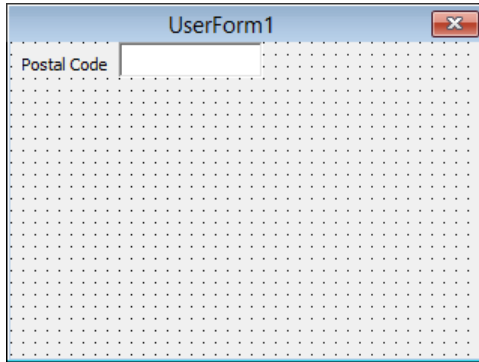
The Caption property contains the word or words that appear on a UserForm's title bar. To change the UserForm's caption, click the UserForm and then, in the Properties panel, click the box next to the Caption property and edit its value.

Adding text boxes to UserForms

You can create a text box in a UserForm so that users can enter textual information. If the Toolbox isn't displayed in the Visual Basic Editor, on the Insert menu, click Toolbox. Then click the TextBox button in the Toolbox and drag in the body of the UserForm to define the text box. When you do, the text box's properties appear in the Properties panel.

As with the UserForm object, you can change the name of a text box. To do that, click the text box control and then, in the Properties pane, enter a new value in the *Name* property's box.

You can also add a label to identify the control and indicate the data to be entered. To add a label, display the Toolbox, click the Label button, and drag to define the label in the body of the form. Position the label so that it's in line with the text box and then change the label's *Caption* property so that it contains the text required to identify its related control.



TROUBLESHOOTING A control's name may not be a reserved word, such as *Number* or *Date*.

Adding list boxes to UserForms

In a text box, users can enter any text they want into the control. If you prefer to have users select from a list of values, you can create a list box. List boxes increase data entry accuracy at the expense of user flexibility.

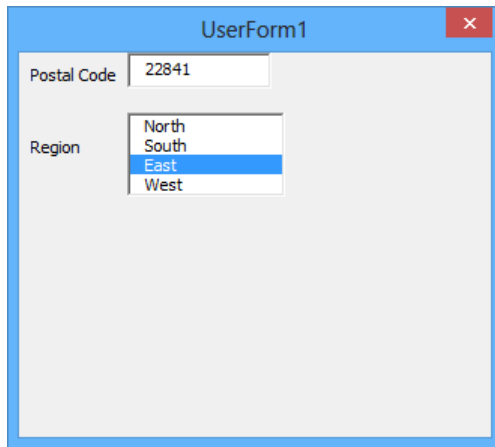
To create a list box, display a UserForm in the Visual Basic Editor and then, in the Toolbox, click the `ListBox` button, and drag on the UserForm to create the list box. When you do, the list box appears on the UserForm and its properties appear in the Properties panel on the left side of the Visual Basic Editor window.

A list box control draws its values from a range of worksheet cells. To assign a cell range to a list box, you enter the range's definition into the list box's *RowSource* property. In Excel 2013, the easiest way to define the row source for a list box is to create a one-column Excel table.

SEE ALSO For more information about creating an Excel table, see Chapter 2, "Working with data and Excel tables."

With your data source defined, enter an equal sign (=) followed by the name of the table in the *RowSource* property for your list box. When you run the UserForm, you can use the list

box's arrows to scroll through the list of available values. When you find the value you want, click it to highlight it.

A screenshot of a Microsoft Excel UserForm titled 'UserForm1'. It contains two controls: a text box labeled 'Postal Code' with the value '22841' entered, and a list box labeled 'Region' with a dropdown arrow. The list box is open, showing a list of four items: 'North', 'South', 'East', and 'West'. The 'East' item is currently selected and highlighted with a blue background.

IMPORTANT When you enter data in a UserForm's list box, you must click the item in the list box so that it is highlighted. The item displayed isn't necessarily the selected item.

Adding combo boxes to UserForms

In a list box, users can select a value from a predetermined list of values; in a text box, they can enter any text value they want. A combo box provides either mode of entry, which is more flexible than a list box but introduces the possibility that misspellings might lead to inconsistent data entry.

To add a combo box to a UserForm, display the UserForm in the Visual Basic Editor and then, in the Toolbox, click the Combobox button. Draw the outline of the combo box on the body of the UserForm to create it.

As with the list box, you can provide its values by assigning an Excel table to the *RowSource* property, using a statement such as `=ServiceLevels`.

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Adding option buttons to UserForms

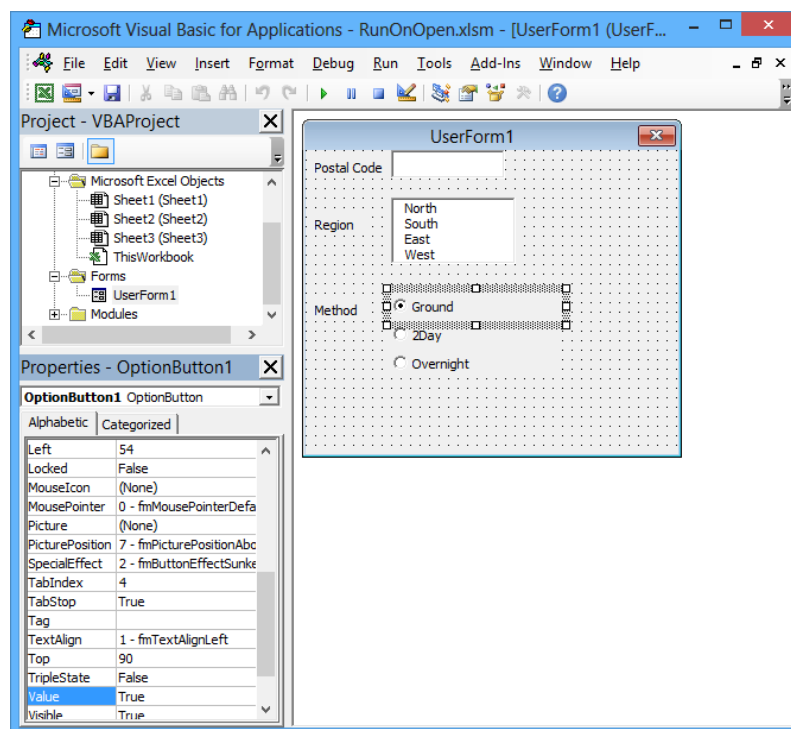
With option buttons, users can indicate whether an option, such as whether a delivery requires signature confirmation, is turned on or turned off. You can also create groups of option buttons that lets users select at most one option from the group at a time.

To add an option button to a UserForm, display the UserForm and then, in the Toolbox, click the Option Button control. Draw the option button on the UserForm. Its properties will be displayed in the Properties panel. The most common properties you'll change are the button's *Name* and *Caption* properties.

The *Name* property controls how you refer to the option button in your VBA code. To change the control's label text, you need to change the value of the *Caption* property. For example, you could change the caption property to read *Signature*.

TIP If you want an option button to be selected by default, change its *Value* property from *False* to *True*.

You can also create groups of option buttons where only one of the buttons can be selected at a time. For example, you might want a user to select a shipping method from among the options of ground, two day, three day, overnight, and priority overnight. To allow only one option button of those five to be selected at a time, you assign the same *GroupName* property value to each button. You could create the *Methods* group to allow one selection from the alternatives.



Adding graphics to UserForms

One way to add some visual interest or useful information to a VBA UserForm is by adding graphics. To add an image to a UserForm, display the UserForm in the Visual Basic Editor and then, in the Toolbox, click the Image button. Drag on the UserForm to define the frame within which the image should appear.

To select the graphic you want to display on the UserForm, click the image control on the UserForm and then, in the Properties panel, click in the box next to the Picture property name. Click the Browse button that appears, navigate to the folder that contains the image you want to add to the UserForm, click the image, and then click Open to display it.

Unless the image you selected fits exactly in the frame, just a portion of it is displayed on the UserForm. You can control the way the image fits within the frame by assigning the value you want to the *PictureSizeMode* property. That property has three possible values:

- **0 – *fmPictureSizeModeClip*** Displays as much of the image as possible within the frame
- **1 – *fmPictureSizeModeStretch*** Displays the entire image within the frame but stretches the image so that it fills the entire frame
- **3 – *fmPictureSizeModeZoom*** Displays the entire image within the frame but keeps the vertical and horizontal dimensions in their original ratio

