Microsoft Excel 2007

Chapter 5
Applying Formulas and Functions

objectives

5.1 Create Formulas

5.2 Enforce Precedence

5.3 Apply Cell References in Formulas

5.4 Apply Conditional Logic in Formulas

5.5 Using Vlookup in Formulas

5.4 Apply Conditional Logic in Formulas

Creating Conditional Formulas

- You can use a formula to display specific results when certain conditions are met. To do so, you create a formula that uses the conditional logic provided by the IF() function or one of its variations. A basic formula that uses the IF() function performs a logical test and then returns one of two results based on whether the logical test evaluates as TRUE or FALSE.

  The correct syntax for the IF() function is as follows:

  =IF(logical_test,value_if_true,value_if_false)

- The logical test and the result can include text strings or calculations. Enclose text strings within the formula in quotation marks. Do not enclose numeric values or calculations in quotation marks.

Nesting Functions

- You can nest additional functions within an IF() function so that Excel evaluates multiple conditions before returning a result. You can use nested functions to do the following:
- Perform a calculation that results in an argument used by the IF() function, like this:

=IF(SUM(D1:D8)>=80;"Congratulations, you passed!";"Sorry, you failed. ")

- Combine multiple logical tests, like this:
  *=IF(AND(Year=2011,Month="July"),B2*C4,"No")*

You can add logical tests to a conditional formula by using the following functions:

- AND() Returns a value of TRUE only if every logical test within it is TRUE.
- OR() Returns a value of TRUE if any logical test within it is TRUE.
- NOT() Reverses the logical outcome of a logical test, so if the test is TRUE, NOT returns FALSE.

- For example, NOT(A1=3), returns TRUE as long as the value in cell A1 is not equal to 3. You use this function when you want to check whether a cell is not equal to a certain value.

- You place the AND(), OR(), and NOT() functions before the associated arguments.

➢ To use a series of conditional logic arguments in a formula

➜ Nest one or more additional functions within the IF() function, like this:

=IF(OR(Month="June",Month="July",Month="August");"See you next school year!";"Enjoy the school year!")

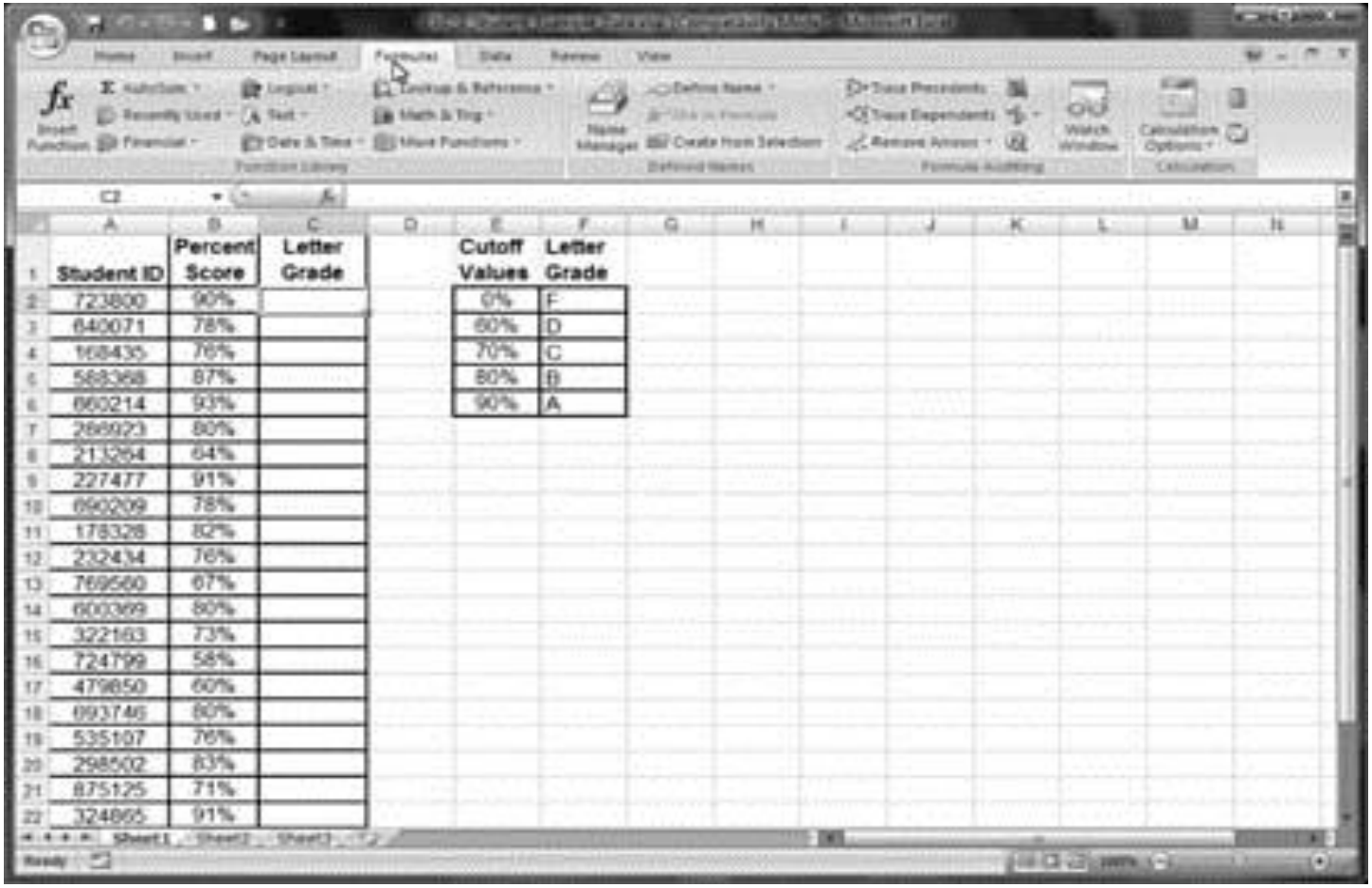
5.5 Using Vlookup in Formulas (See Book 1)

- Suppose you have a two tables,
  1. Student scores
  2. Letter Grade (Named by **Cutoff Values**)

Student ID	Percent Score	Letter Grade	Student ID	Percent Score	Letter Grade
723800	90%		322163	73%	
640071	78%		724799	58%	
168435	76%		479850	60%	
588368	87%		693746	80%	
660214	93%		535107	76%	
286923	80%		298502	83%	
213264	64%		875125	71%	
227477	91%		324865	91%	
690209	78%		736643	82%	
178328	82%		214971	58%	
232434	76%		880789	69%	
769560	67%		109401	88%	
600369	80%				

Cutoff Values	Letter Grade
0%	F
60%	D
70%	C
80%	B
90%	A

- Select the Formulas tab as shown



Student ID	Percent Score	Letter Grade
723800	90%	
640071	78%	
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600369	80%	
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724799	58%	
479850	60%	
693746	80%	
535107	76%	
298502	83%	
875125	71%	
324865	91%	

Cutoff Values	Letter Grade
0%	F
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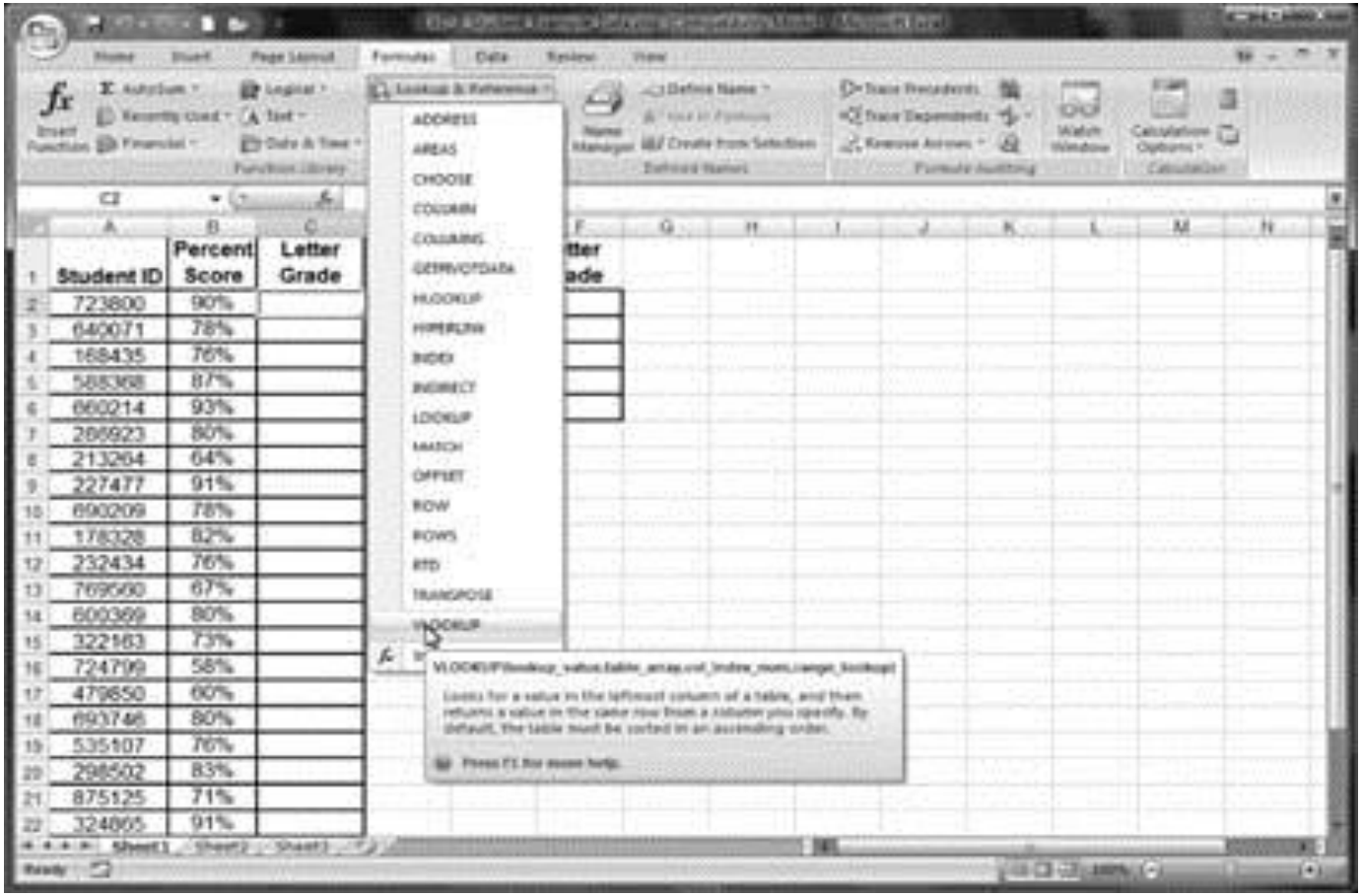
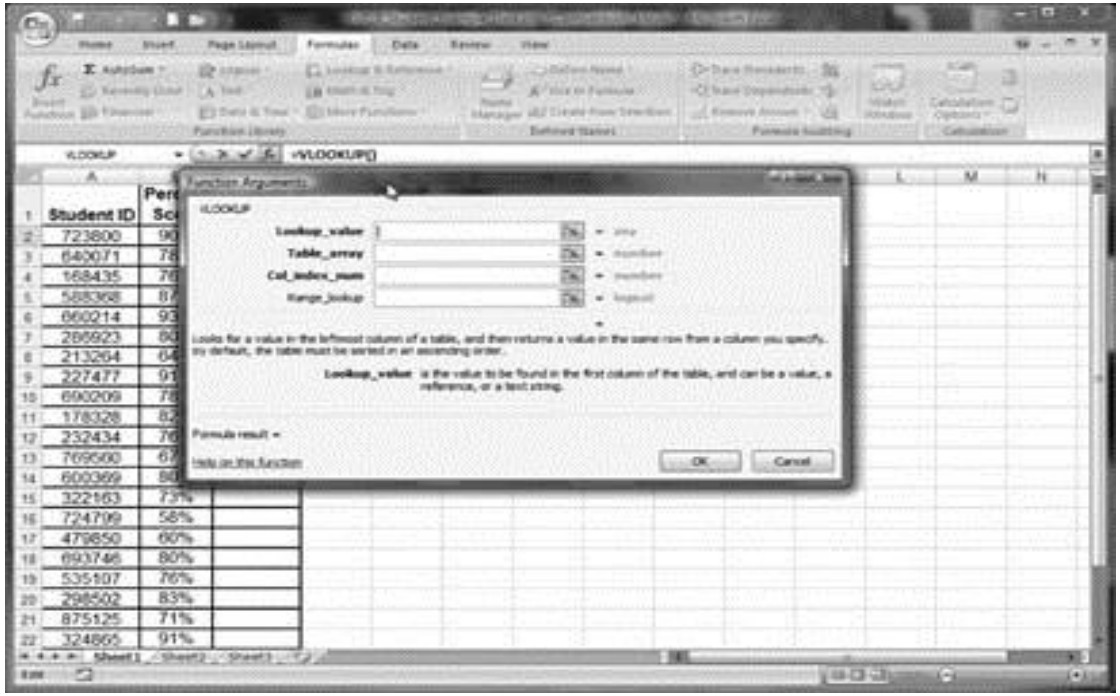
80%	B
90%	A

- Select “Lookup and Reference”

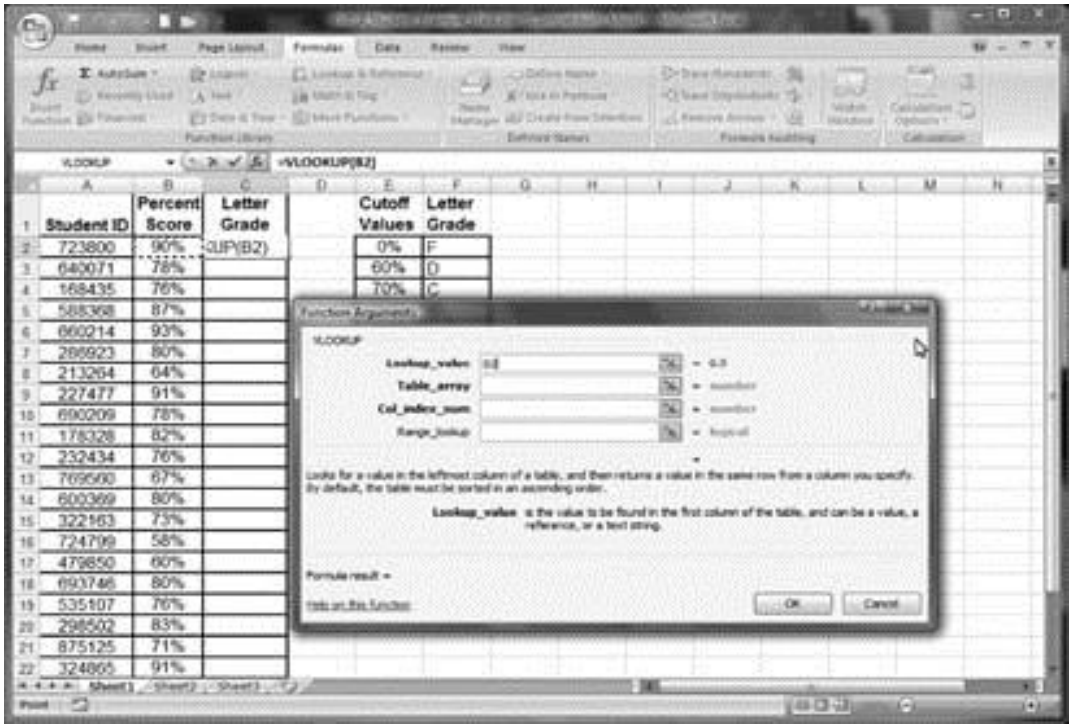
- Check out the **VLOOKUP** function and read its description



- We have the dialog box for entering the parameters of VLOOKUP

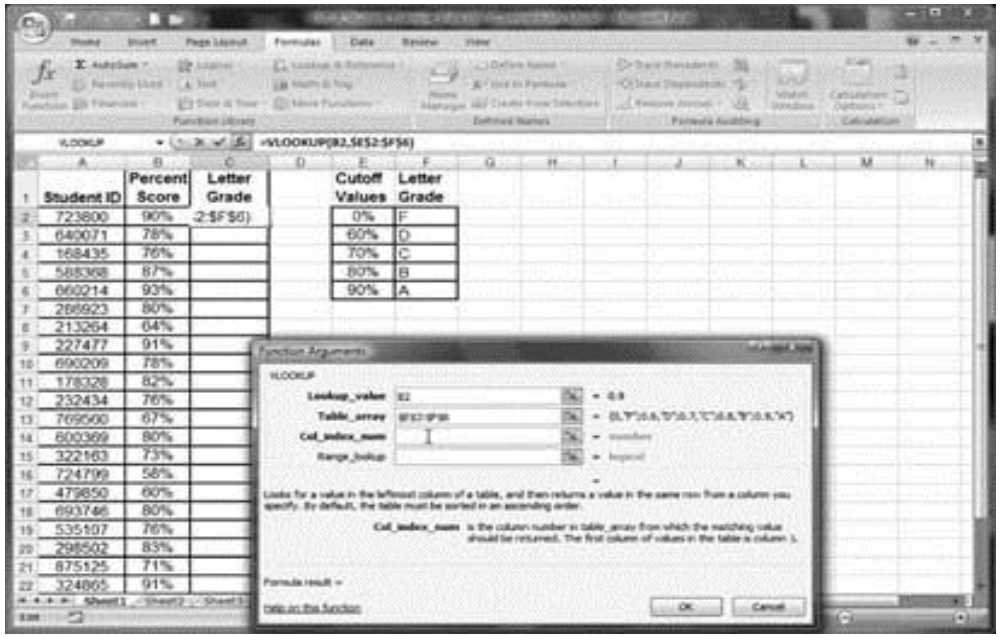


- Select the Lookup_value parameter and read its description.
- For cell C2, the value that we need to look up a letter grade for is in cell B2.
- Click on cell B2 to set it as the Lookup_value, Notice that the function in cell C2 has been updated with this parameter value

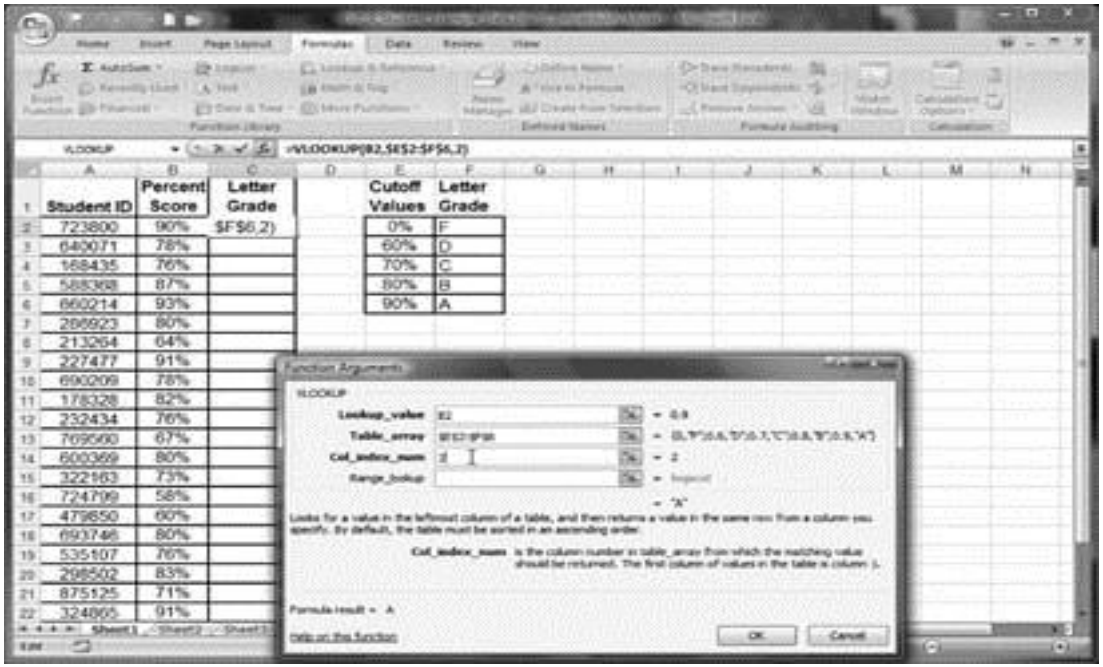


- The range of cells with the table from which we can look up the appropriate letter grade is E2:F6.

- Use the mouse to select this range. Wait before moving to the next parameter!



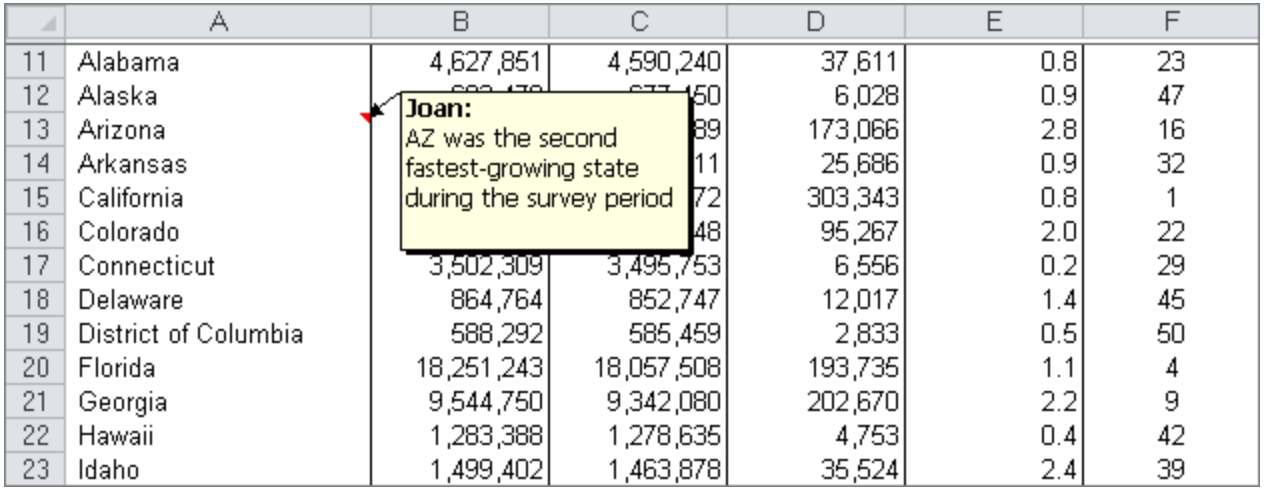
- The Col_index_num is the column number from the lookup table that holds the value we want to look up.
- Columns are numbered starting with far left column as 1, the next as 2, and so on.
- For our example, we need to enter a 2 in this parameter



Chapter 6
Manage Comments and Manipulate Views

Manage Comments (Review Tab)

- In addition to tracking the changes made to a worksheet, you can attach comments to cells without affecting the worksheet functionality. A cell with an attached comment is identified by a red triangle in its upper-right corner. The comment itself appears in a box attached to the red triangle by an arrow. The text of the comment is preceded by the name of the person who added it. By default, comment boxes are hidden.



	A	B	C	D	E	F
11	Alabama	4,627,851	4,590,240	37,611	0.8	23
12	Alaska		50	6,028	0.9	47
13	Arizona		89	173,066	2.8	16
14	Arkansas		11	25,686	0.9	32
15	California		72	303,343	0.8	1
16	Colorado		48	95,267	2.0	22
17	Connecticut	3,502,309	3,495,753	6,556	0.2	29
18	Delaware	864,764	852,747	12,017	1.4	45
19	District of Columbia	588,292	585,459	2,833	0.5	50
20	Florida	18,251,243	18,057,508	193,735	1.1	4
21	Georgia	9,544,750	9,342,080	202,670	2.2	9
22	Hawaii	1,283,388	1,278,635	4,753	0.4	42
23	Idaho	1,499,402	1,463,878	35,524	2.4	39

- You can work with comments in the following ways:
- Display one comment or all comments.
- Move from comment to comment.
- Edit the content of a displayed comment.
- Resize or move a comment so that it does not obscure important information.

➢ **To insert a comment about a selected cell**

1. On the Review tab, in the Comments group, click the New Comment button.

Or Right-click the cell, and then click Insert Comment.

2. In the comment box, enter the comment.

➢ **To temporarily display a comment**

➜ Point to the cell to which the comment you want to display is attached.

➢ **To display or hide one comment**

➜ Click the cell to which the comment you want to display is attached, and then on the Review tab, in the Comments group, click the Show/Hide Comment button.

➜ Right-click the cell to which the comment you want to display is attached, and then click Show/Hide Comments.

➢ **To display or hide all comments**

➜ On the Review tab, in the Comments group, click the Show All Comments button.

➢ **To move among comments**

➜ On the Review tab, in the Comments group, click the Next or Previous button.

➢ **To edit a comment**

1. Click the cell to which the comment is attached, and then on the Review tab, in the Comments group, click the Edit Comment button.

Or

Right-click the cell to which the comment is attached, and then click Edit Comment.

2. Change the text in the comment box by using normal editing techniques.

➢ **To resize or move a comment**

1. Display the comment, and then click the comment box.

2. Drag its sizing handles to increase or decrease the size of the comment box.

Or Drag its frame to reposition the comment box.

➢ **To delete a comment**

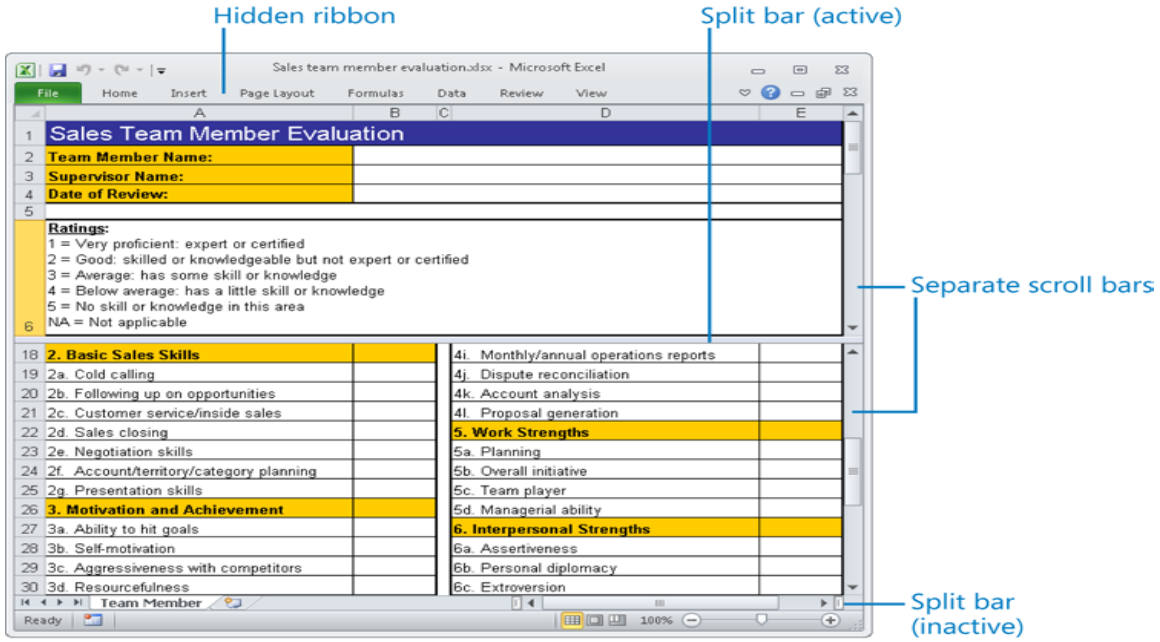
➜ Click the cell to which the comment is attached, and then on the Review tab, in the Comments group, click the Delete button.

➜ Right-click the cell to which the comment is attached, and then click Delete Comment.

Views Tab → window group

Freezing and Splitting Windows

- It can be cumbersome to work in a worksheet that is too long or wide to display legibly in the program window because you have to scroll up and down or back and forth to view data. Similarly, it can be tedious to have to switch back and forth between multiple worksheets in the same workbook if you frequently need to access information in both of them.
- You can view multiple parts of a worksheet at one time by freezing rows or columns so that they stay in view while you scroll the rest of the worksheet. You can also split the window and then independently scroll and work in two views of the worksheet at one time.



➢ To freeze the first row or column of a worksheet

➜ On the View tab, in the Window group, click the Freeze Panes button, and then click Freeze Top Row or Freeze First Column.

➢ To freeze multiple rows or columns

1. Select the row below or column to the right of those you want to freeze, by clicking the row heading or column heading.

2. On the View tab, in the Window group, click the Freeze Panes button, and then click Freeze Panes.

➢ **To simultaneously freeze columns and rows**

1. Select the cell that is below and to the right of the intersection of the row and column you want to freeze.

2. On the View tab, in the Window group, click the Freeze Panes button, and then click Freeze Panes.

Tip: **You can freeze as many columns and rows as you like depending on what cell is selected when you execute the Freeze Panes command. Selecting a cell in row 1 freezes only columns. Selecting a cell in column A freezes only rows.**

➢ **To unfreeze all rows and columns**

➜ On the View tab, in the Window group, click the Freeze Panes button, and then click Unfreeze Panes.

➢ **To split the window vertically or horizontally**

➜ click the split bar to the row or column where you want to split the window.

➢ **To remove a split**

➜ click the split bar that divides the pane.

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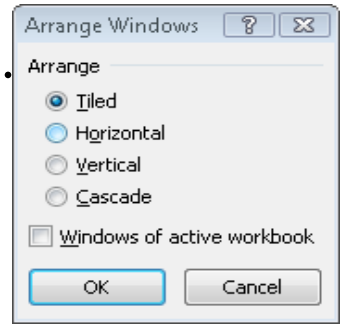
Displaying Multiple Windows

You can open multiple windows that all display the current spreadsheet and then arrange those windows in a variety of ways.

You can also open and arrange multiple workbook windows.



➢ **To open a second instance of a workbook in a separate window**

➜ On the View tab, in the Window group, click the New Window button.

➢ To arrange multiple program windows

1. In the Window group, click the Arrange All button.

2. In the Arrange Windows dialog box, click Tiled, Horizontal, Vertical, or Cascade.

3. To include only windows displaying views of the current workbook, select the Windows of active workbook check box.

4. In the Arrange Windows dialog box, click OK.

Switching Worksheet Views

- From the View toolbar at the bottom of the program window, or from the View tab, you can switch among three views of a worksheet:
  - Normal The worksheet is displayed in the window at 100 percent magnification or at whatever zoom level you select. Page breaks are indicated by black dashed lines.
  - Page Layout Each worksheet page appears as it will when printed, with space between the individual pages. A ruler appears at the left edge of the window next to the optional row headings. The page header and footer are visible and you can select them for editing.
  - Page Break Preview The entire worksheet is displayed in the window, with page breaks indicated by bold blue dashed lines and page numbers displayed in the center of each page. You can change the page breaks by dragging the blue lines.

➢ **To display a standard worksheet view**

➜ On the View tab, in the Workbook Views group, click the Normal, Page Layout, or Page Break Preview button.

Customizing the Program Window

To maximize your work area, you can display the three views in full-screen mode, so that only the title bar is visible. To increase the vertical space of the work area but still have easy access to commands, you can hide the ribbon so that only its tabs are visible, hide the row and column headings, and hide the Formula Bar.

➢ **To hide all program window elements other than the title bar**

➜ On the View tab, in the Workbook Views group, click the Full Screen button.

➢ **To redisplay all program window elements**

➜ Press the Esc key.

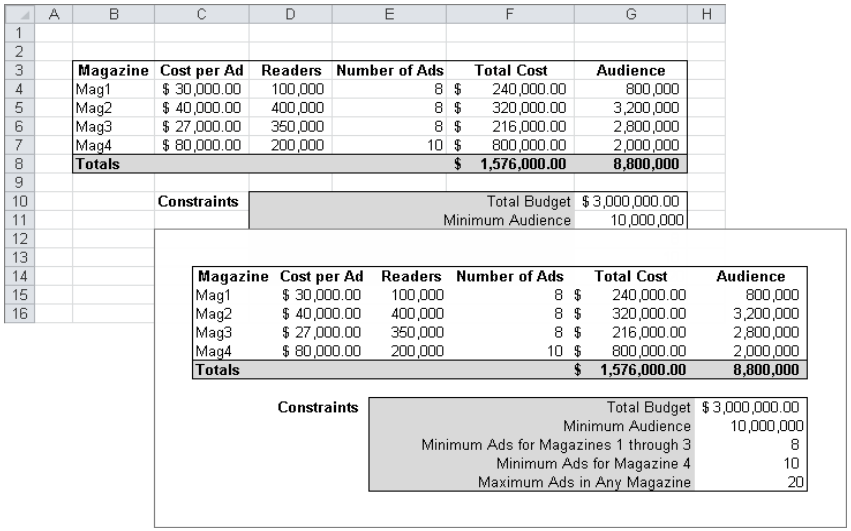
➜ Right-click the worksheet, and then click Close Full Screen.

➢ To hide or display the Formula Bar

➜ On the View tab, in the Show group, select or clear the Formula Bar check box.

Customizing Worksheet Appearance

- While you are developing a worksheet, you might want to see gridlines and row and column headings to efficiently move among cells. But when you distribute the final worksheet, you can turn off gridlines and headings for a cleaner look.



Magazine	Cost per Ad	Readers	Number of Ads	Total Cost	Audience
Mag1	$ 30,000.00	100,000	8	$ 240,000.00	800,000
Mag2	$ 40,000.00	400,000	8	$ 320,000.00	3,200,000
Mag3	$ 27,000.00	350,000	8	$ 216,000.00	2,800,000
Mag4	$ 80,000.00	200,000	10	$ 800,000.00	2,000,000
Totals				**$ 1,576,000.00**	**8,800,000**

Constraints	
Total Budget	$ 3,000,000.00
Minimum Audience	10,000,000

Magazine	Cost per Ad	Readers	Number of Ads	Total Cost	Audience
Mag1	$ 30,000.00	100,000	8	$ 240,000.00	800,000
Mag2	$ 40,000.00	400,000	8	$ 320,000.00	3,200,000
Mag3	$ 27,000.00	350,000	8	$ 216,000.00	2,800,000
Mag4	$ 80,000.00	200,000	10	$ 800,000.00	2,000,000
Totals				**$ 1,576,000.00**	**8,800,000**

Constraints	
Total Budget	$ 3,000,000.00
Minimum Audience	10,000,000
Minimum Ads for Magazines 1 through 3	8
Minimum Ads for Magazine 4	10
Maximum Ads in Any Magazine	20

➢ **To hide or display gridlines**

➜ On the View tab, in the Show group, select or clear the Gridlines check box.

➢ **To hide or display row and column headings**

➜ On the View tab, in the Show group, select or clear the Headings check box.

Changing the Zoom Level

➢ **To change the zoom level in 10 percent increments**

➜ On the Zoom toolbar, click the Zoom Out button (labeled with a minus sign) or the Zoom In button (labeled with a plus sign)

➢ **To change the zoom level dynamically**

➜ On the Zoom toolbar, move the Zoom slider to the left to zoom out or to the right to zoom in.

➢ **To set the zoom level to a specific percentage**

1. On the View tab, in the Zoom group, click the Zoom button.

Or

On the Zoom toolbar, click the Zoom level button.

2. In the Zoom dialog box, click a specific magnification level, or click Custom and then enter a value from 10 to 400. Then click OK.

➢ **To zoom in on selected cells**

1. Select the cell or cell range you want to zoom in on.

2. On the View tab, in the Zoom group, click Zoom to Selection.

Or

1. On the Zoom toolbar, click the Zoom level button.

2. In the Zoom dialog box, click Fit selection, and then click OK.

Thank you ☺