

Excel 2003

Introduction to Excel



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Introduction

Excel is a spreadsheet program. A spreadsheet, also called a worksheet, is an important business tool that helps to analyze and evaluate information. Worksheets are often used for maintaining lists, budgets and financial reporting, inventory management, cost estimating, and interactive forms.

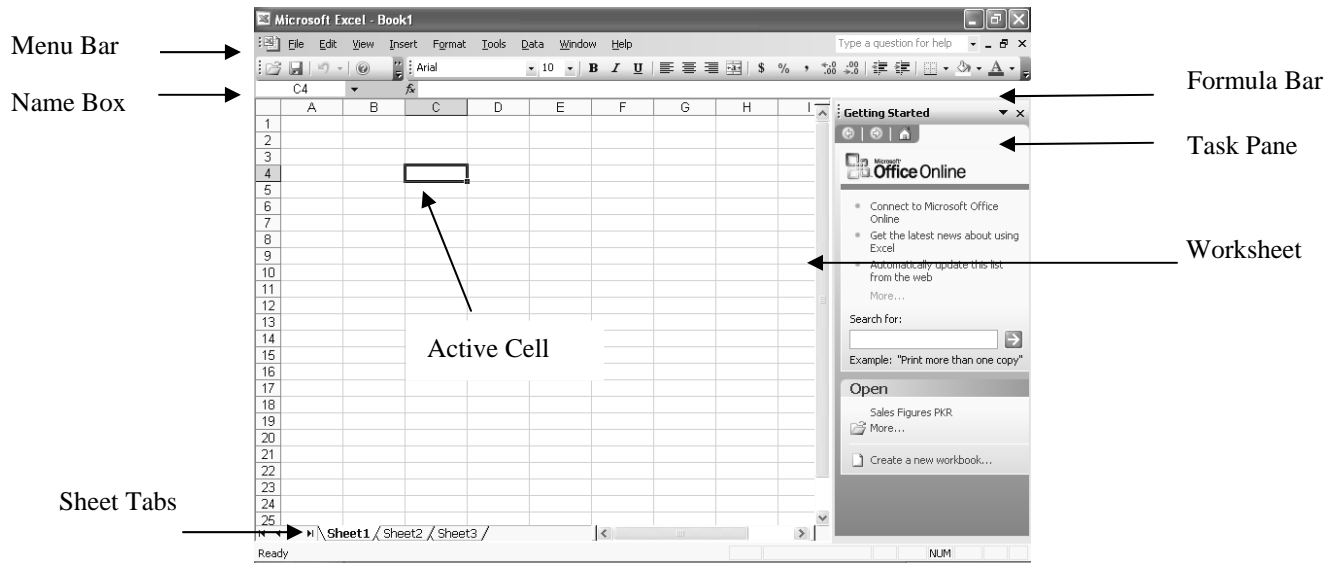
This manual will outline many tasks that you will need to perform to complete various assignments that you will receive as a student here at The University of Akron. The tasks discussed in this manual are:

- Creating a New Spreadsheet
- Opening an Existing Spreadsheet
- Save As
- Creating a Folder
- Sorting and Maintaining Lists
- Creating Formulas
- Using Functions
- Formatting Worksheets
- Inserting a Page Break
- Using Comments
- Inserting Charts
- Using Help

Getting Started

Creating an Excel Workbook

You will create and enter data into a worksheet. The image below shows the basic elements of a worksheet.



The document window, usually called the **work window**, contains the **workbook** that you are using. When a new workbook is started in Excel, there are three worksheets. Worksheets may be added or removed from the workbook.

Each **worksheet** in the workbook consists of a series of columns and a series of rows. Columns are assigned alphabetic labels from A to IV (256 columns). Rows are assigned numeric labels from 1 to 65,536 (65,536 rows). This means that there are **16,777,216** cells in each Excel worksheet.

A **cell** is the rectangular area where a column and a row intersect. Each cell is identified by a **cell reference**, such as **A1**, which is its column and row location. The **active cell** is the cell in which you are currently working. Excel identifies the active cell with a dark border that outlines one cell. In the example above, C4 is the active cell.

Editing Cells

If it is necessary to change the contents of a cell, or clear the contents of the cell, follow these instructions.

To clear the contents of a cell, click in that cell to make it the active cell and press the Delete key on your keyboard.

To replace the contents of a cell, click in that cell to make it the active cell and **type over** the existing contents.

To edit the existing contents, double-click inside the cell. The insertion point will appear within the cell. Then, use the arrow keys on the keyboard to position the insertion point where needed and make the change.

To remove the formatting in a cell, click on **Edit, Clear, Formats** from the menu.

Using the Formula Bar

Below the standard and the formatting toolbars is the formula bar, which displays the contents of the active cell. A cell's contents are the text, numbers, or formulas that you enter into it. As you type or edit data, the changes appear in the formula bar.

When a formula is entered into a cell, the formula bar contains the formula, not the results of the formula which are displayed in the worksheet.

The screenshot shows the Microsoft Excel interface. The formula bar at the top displays the formula `=SUM(G3:G12)`. Below the formula bar is a worksheet with columns labeled A through G. Row 2 contains headers: LASTNAME, FIRSTNAME, DEPARTMENT, RANK, YEARHIRED, SEX, SALARY. Rows 3 through 12 contain employee data. Row 13 has a 'Total' label in column E and the value '\$415,544' in column G. An arrow points from the text 'The contents of the cell are displayed in the Formula Bar.' to the formula bar. Another arrow points from the text 'The results of the formula are displayed in the cell.' to the cell G13.

	A	B	C	D	E	F	G
1							
2	LASTNAME	FIRSTNAME	DEPARTMENT	RANK	YEARHIRED	SEX	SALARY
3	Smith	Alicia	Accounting	Full	1989	F	\$49,955
4	Jacobson	Andrew	Management	Full	1971	M	\$56,281
5	Comensoli	Angela	Finance	Associate	1978	F	\$44,212
6	Nelsen	Beth	Finance	Full	1977	F	\$52,339
7	Coats	Bill	Accounting	Assistant	1990	M	\$45,371
8	Jackson	Carole	Accounting	Instructor	1992	F	\$33,781
9	Bressette	Cheryl	Accounting	Instructor	1987	F	\$36,582
10	Doepke	Cheryl	Accounting	Full	1978	F	\$52,105
11	Wolter	Christine	Accounting	Associate	1983	F	\$44,918
12							
13					Total		\$415,544

The **contents** of the cell are displayed in the Formula Bar.

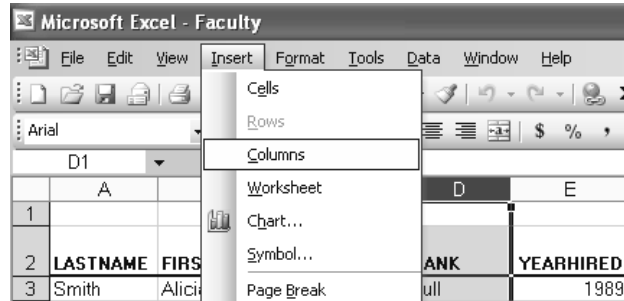
The **results of the formula** are displayed in the cell.

In the above picture, you see the sum of the cells G3 through G12 in cell G13. That is the result of the formula. In the formula bar, the formula is displayed, which is the actual contents of cell G13.

If the values in cells G3 through G12 are changed, Excel automatically will recalculate the sum and display the new results in cell G13.

Inserting Rows and Columns

To insert a row or column into a worksheet, position the insertion point anywhere in the row or column where the new row or column is to be inserted. From the menu, click on **Insert, Rows** or **Columns**. Alternatively, right click on the column or row header. From the shortcut menu that appears, select **Insert**.

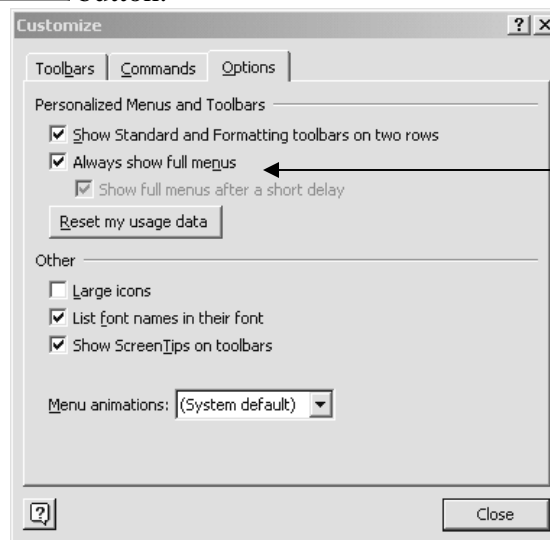


In the example above, a column will be inserted between COLUMN C and COLUMN D.

Customizing the Display of the Formatting and Standard Toolbars

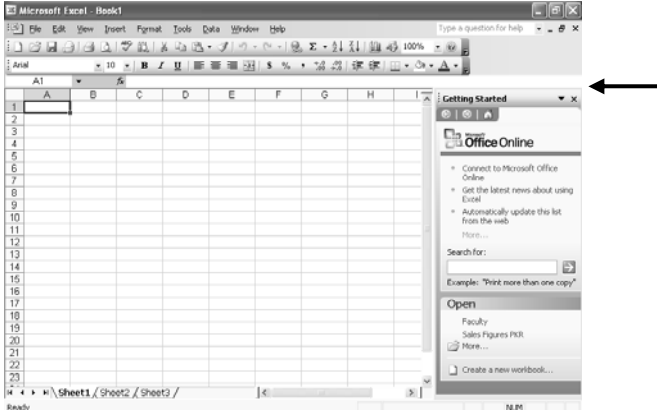
To display the toolbars on two separate rows, follow these steps:

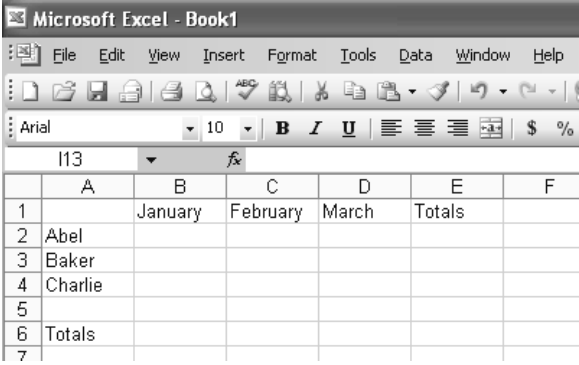
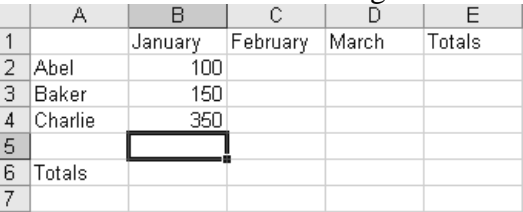

1. From the menu, click on **Tools, Customize**. The Customize dialog box is displayed.
2. Click on the **Options** tab.
3. Click to place a checkmark in the box, **Show Standard and Formatting toolbars on two rows**.
4. Click on the **Close** button.


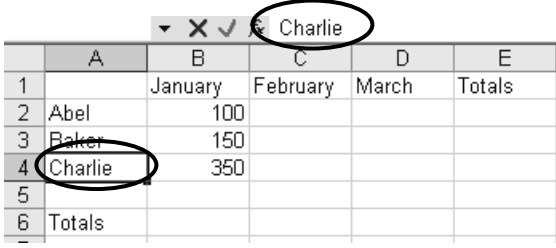




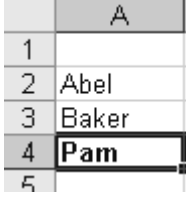
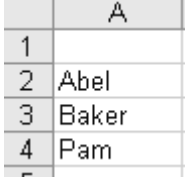


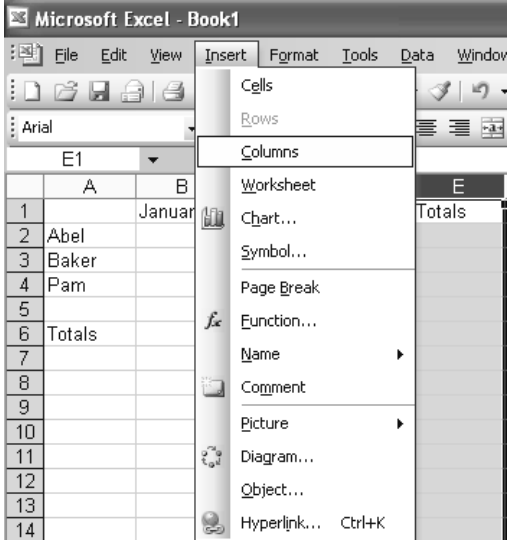
Place a checkmark in the box for **Always show full menus**.

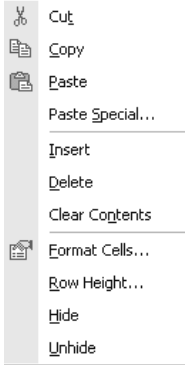

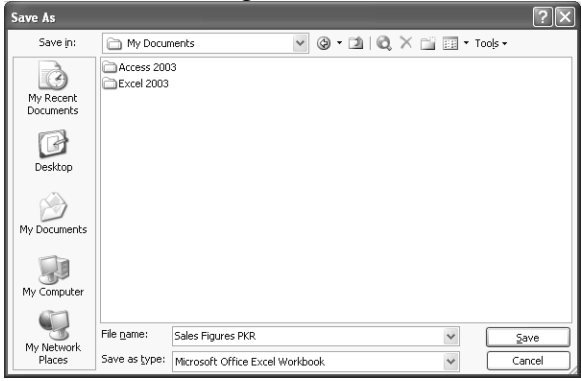
Step by Step - Create a New Workbook and enter Values and Labels

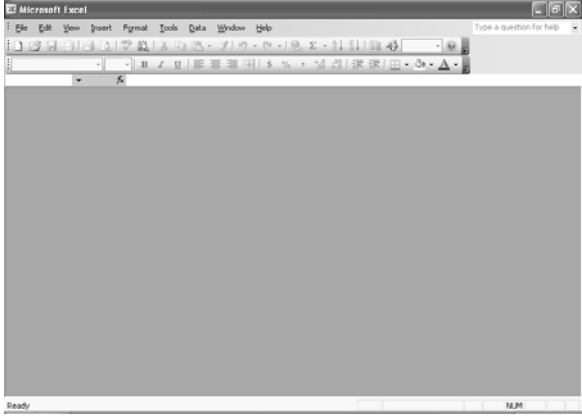
What you do	What happens																																				
<ol style="list-style-type: none"> To start Excel, click on Start, Programs, and Microsoft Excel. 	<p>Excel is opened and a new workbook is opened.</p>  <p>On the right side of the work window is the task pane. It can be closed with its X or View, Task Pane from the menu. View, Task Pane can be used to display the task pane if it is not displayed.</p>																																				
<ol style="list-style-type: none"> Click in cell A2 to make it the active cell. Type Abel. When finished with your typing, press the Enter key on the keyboard. In cell A3, type Baker. Press the Enter key. Complete the typing in column A as shown. 	<p>The entries for column A are completed.</p> <table border="1" data-bbox="727 987 1166 1297"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Abel</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Baker</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Charlie</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Totals</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><i>NOTE:</i> When you press Enter, two things occur. Excel knows that you are done with your typing and the active cell becomes the cell that is down one row.</p> <p>You may use other keys to tell Excel that you are done typing and move into another cell. The Tab key on your keyboard moves to the next cell to the right. Shift + Tab moves to the next cell to the left. The arrow keys move in the direction of the arrow.</p>		A	B	C	1				2	Abel			3	Baker			4	Charlie			5				6	Totals			7				8			
	A	B	C																																		
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6	Totals																																				
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8																																					

What you do	What happens
<p>8. Click in cell B1 to make it the active cell.</p> <p>9. Type January.</p> <p>10. Press the Tab key or the right arrow key to move to cell C1.</p> <p>11. Type the entries for cells C1 through E1.</p> <p>12. Be sure to press the Enter key to complete your entry in cell E1</p>	<p>The entries for cells B1 through E1 are completed.</p>  <p>The contents of cells A2 through A4, A6 and cells B1 through E1 are labels. To Excel, <u>there are two basic types of content, content used for calculation (value) and content not used for calculation (label)</u>. By default, Excel will align labels on the left side of the cell.</p>
<p>13. Click in cell B2 to make it the active cell.</p> <p>14. Type the numbers in cells B2 through B4.</p> <p>You may want to use the numeric keypad, on the right side of your keyboard, to enter the numbers.</p>	<p>The entries for cells B2 through B4 are completed.</p>  <p>The contents of cells B2 through B4 are values. Values are content used for calculation. The value may be a set of digits or a formula. By default, Excel will align values on the right side of the cell.</p>
<p>15. Click in cell A4.</p> <p>16. Type Charles.</p> <p>17. Click on the Enter  tool on the Formula bar.</p>	<p>The contents of the cell are replaced with the label, Charles.</p> <p>The Enter tool is used to complete an edit and remain in the current active cell.</p>

What you do	What happens
<p>18. Click in the Formula Bar after the word Charles to place the insertion point.</p> <p>19. Backspace to erase the es in Charles.</p> <p>20. Type ie to change the name to Charlie.</p> <p>21. Click on the Enter  tool.</p>	<p>The label Charles is changed to Charlie.</p> 
<p>22. Press the Delete key on the keyboard.</p>	<p>The contents of the active cell are deleted.</p>
<p>23. Click on the Undo  tool on the standard toolbar.</p>	<p>The contents of the cell are undeleted.</p>
<p>24. Double click in cell A4 to place the insertion point inside the cell.</p> <p>25. Use the arrow keys to move the insertion point, if necessary, and erase the ie and replace it with es.</p> <p>26. Click on the Enter  tool.</p>	<p>The label Charlie is changed to Charles.</p>
<p>27. Click on the Bold  tool.</p>	<p>The contents of the cell are in bold type.</p>
<p>28. Press the Delete key on the keyboard.</p> <p>29. Type your name.</p> <p>30. Click on the Enter  tool.</p>	<p>The delete key erases only the contents of the cell. The contents of the cell are changed to your name. The formatting (bold) remains.</p> 
<p>31. From the menu, click on Edit, Clear, Formats.</p>	<p>The formatting (bold) is removed from the cell.</p> 

What you do	What happens																																																								
<p>32. To insert a column for April, click on the column heading for column E to select that column.</p> <p>33. From the menu, click on Insert, Columns.</p>	<p>Column E is selected and the Insert menu is displayed, before you click on Columns.</p>  <p>After you click on Columns in the Insert menu, a column is inserted at column E. All columns of data, from the selected column, E, and forward, are moved one column to the right.</p> <table border="1" data-bbox="727 1035 1279 1199"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>January</td> <td>February</td> <td>March</td> <td></td> <td>Totals</td> </tr> <tr> <td>2</td> <td>Abel</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Baker</td> <td>150</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Pam</td> <td>350</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Totals</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	F	1		January	February	March		Totals	2	Abel	100					3	Baker	150					4	Pam	350					5							6	Totals												
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<p>34. To insert a row, click on the row header to select that row. In this example, click on the row 2 header.</p> <p>35. From the menu, click on Insert, Rows.</p>	<p>A row is inserted at row 2. All rows from the selected row, 2, and greater are moved one row down.</p> <table border="1" data-bbox="727 1308 1320 1507"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>January</td> <td>February</td> <td>March</td> <td></td> <td>Totals</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Abel</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Baker</td> <td>150</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>Pam</td> <td>350</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>Totals</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><i>NOTE:</i> To insert more than one row or column, select more than one by dragging through the headers. Then, from the menu, click on Insert, Rows (or Columns).</p>		A	B	C	D	E	F	1		January	February	March		Totals	2							3	Abel	100					4	Baker	150					5	Pam	350					6							7	Totals					
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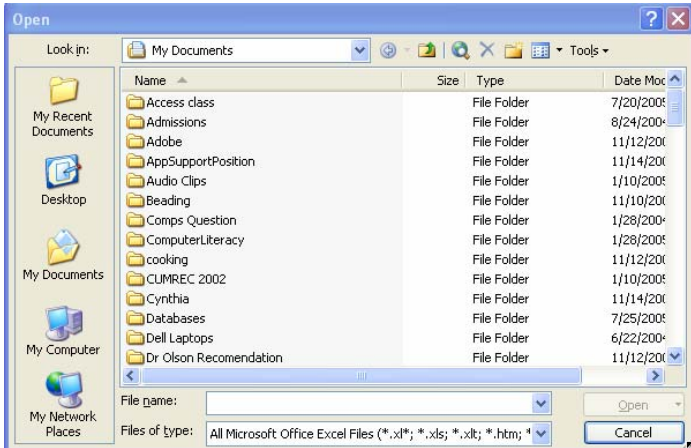
What you do	What happens
<p>36. To delete a row, click on the row header. In this example, click on the row 2 header.</p> <p>37. From the menu, click on Edit, Delete</p>	<p>The row is deleted.</p> <p><i>NOTE:</i> The same procedure can be followed to delete a column. Select the column by clicking on its header. From the menu, click on Edit, Delete.</p> <p><i>ALTERNATIVE PROCEDURE:</i> Place the mouse pointer over the row or column header and right click. From the shortcut menu that appears, click on Delete.</p> 
<p>38. To save your spreadsheet, click on the Save  tool in the standard toolbar.</p> <p>39. In the Save As dialog box, at Save In, select the disk and folder in which to save your work.</p> <p>40. In the File name area of the dialog box, type in Sales Figures XXX where XXX are your initials. Ex: Sales Figures PKR</p> <p>41. Click on the Save button that is inside the dialog box.</p>	<p>The Save As dialog box</p>  <p>Your worksheet is saved as Sales Figures XXX in the folder you chose. The filename is displayed in the title bar of your Excel work window.</p>

What you do	What happens
42. Click on File, Close in the menu.	<p>The work window is closed and the application window for Excel remains open.</p>  <p>The screenshot shows the Microsoft Excel application window. The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The toolbar contains various icons for file operations and editing. The main workspace is a large, empty gray area. The status bar at the bottom indicates 'Ready' and 'N/A'.</p>

TIP: To enter a fraction, such as 1/8, type a zero and a space, then type 1/8. The zero and a space tell Excel that this is a fraction and not a date.

Data Entered	Result
1/8	8-Jan
0 1/8	1/8

Step by Step - Open an Existing Workbook

What you do	What happens
<p>1. From the menu choose: File, Open</p>	<p>The Open box displays.</p> 
<p>2. Locate the file and select it by clicking one time with the left mouse button.</p> <p>Click on the Open button.</p>	<p>The file opens in Excel.</p>

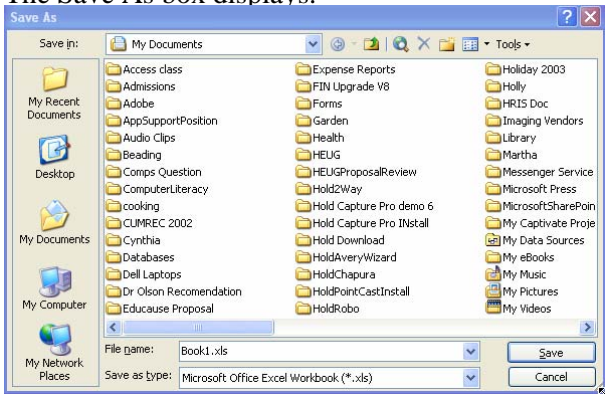

Save As

After you create a new workbook, you will need to save the file with a name. When you are saving documents it is a good practice to store your documents in folders. After you create folders, you can sort and store your Excel workbooks in an organized manner that will allow for easy retrieval of your work.

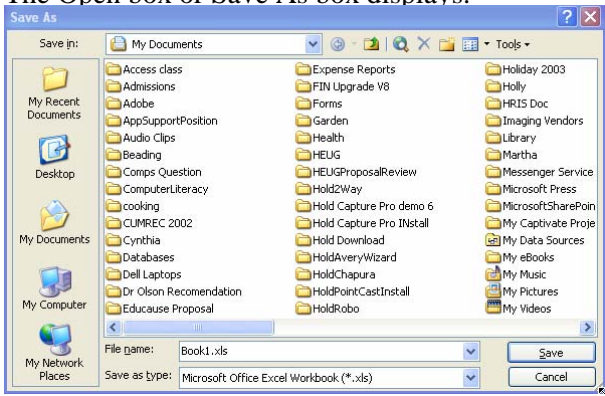

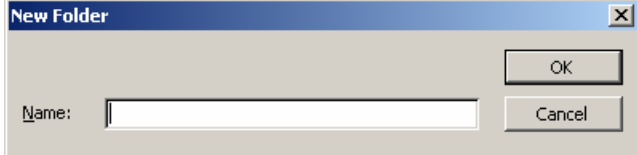
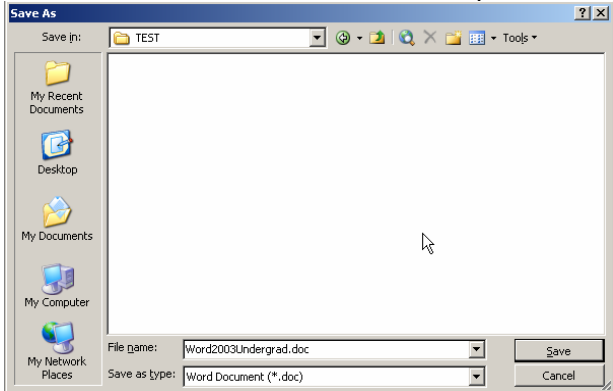
Definitions

Word	Definition
Save As	Save As allows you to save a file with a new name, extension, or location.

Step by Step - Use Save As

What you do	What happens
<p>1. From the menu choose: File, Save As</p>	<p>The Save As box displays.</p> 
<p>2. To change the location of the file, use the down arrow in the Save in field to find the new location.</p> <p>In the File name field, enter a name for the file.</p> <p>Leave the Save as type field as Excel Workbook (.xls).</p>	
<p>3. Click on the Save button.</p>	
<p>4. You can also use the Save  button on the Standard toolbar.</p>	<p>Note: You only get the Save As box if that is the first time you save the file.</p>

Step by Step - Create a New Folder

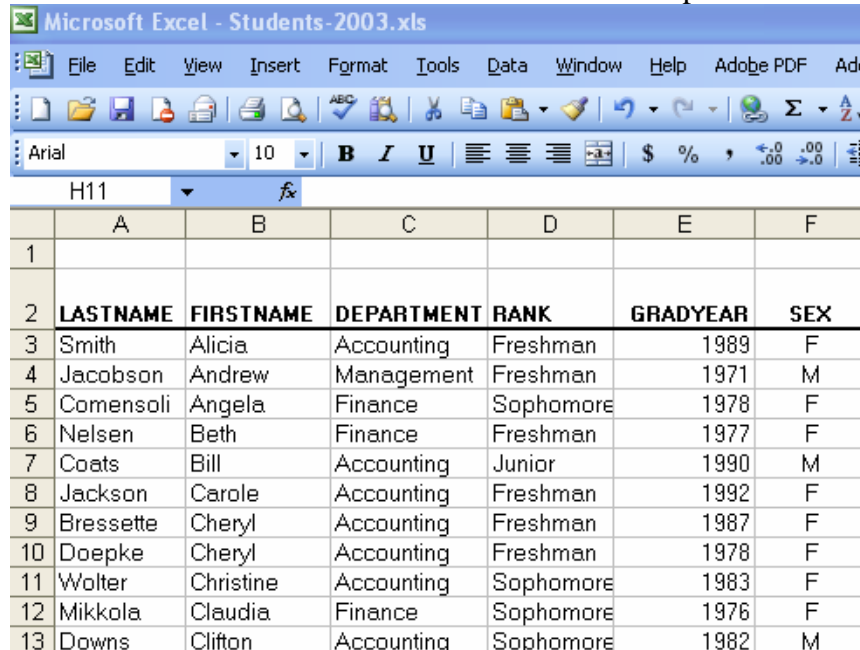
What you do	What happens
<p>1. From the menu choose: File, Open OR File, Save As</p> <p>Note: If you are starting a new project and you are working on a new file you will most likely use the option of File, Save As (this will allow you to save the file and create a new folder at the same time).</p>	<p>The Open box or Save As box displays.</p> 
<p>2. Go to the location where you want the new folder to be placed.</p> <p>For example, if you want the folder to be at the root of My Documents, be sure the Look in field (or Save in field) says My Documents.</p>	
<p>3. Click on the Create New Folder button  at the top of the box.</p>	<p>The New Folder box displays.</p> 
<p>4. Enter a name for the new folder.</p> <p>Click on the OK button.</p>	<p>The new folder is named and it is now open.</p> 
<p>5. You can now save files in the new folder for better organization.</p>	

Sorting and Maintaining Lists

Discussion

One use of a worksheet is to manage lists of data, such as student lists, phone lists, and budget transaction lists. Using Excel, you can store and update data, sort data, search for and retrieve data, summarize and compare data, and create reports.

In Excel, a **list** is a collection of similar data stored in a structured manner, in rows and columns. In the example below, the worksheet shows a portion of a faculty list. Within an Excel list, each column represents a **field** that describes some attribute or characteristic of an object, person, place, or thing. When related fields are grouped together in a row, they form a **record**, a collection of fields that describes a person, place, or thing. For example, the data for each student-first name, last name, department, rank, graduation year, and sex-represents a record. A collection of related records makes up an Excel list.



The screenshot shows the Microsoft Excel 2003 interface with a worksheet titled "Students-2003.xls". The worksheet contains a table with 7 columns and 13 rows. The first row (row 2) contains field names: LASTNAME, FIRSTNAME, DEPARTMENT, RANK, GRADYEAR, and SEX. The subsequent rows (rows 3-13) contain data for 11 faculty members.

	A	B	C	D	E	F
1						
2	LASTNAME	FIRSTNAME	DEPARTMENT	RANK	GRADYEAR	SEX
3	Smith	Alicia	Accounting	Freshman	1989	F
4	Jacobson	Andrew	Management	Freshman	1971	M
5	Comensoli	Angela	Finance	Sophomore	1978	F
6	Nelsen	Beth	Finance	Freshman	1977	F
7	Coats	Bill	Accounting	Junior	1990	M
8	Jackson	Carole	Accounting	Freshman	1992	F
9	Bressette	Cheryl	Accounting	Freshman	1987	F
10	Doepke	Cheryl	Accounting	Freshman	1978	F
11	Wolter	Christine	Accounting	Sophomore	1983	F
12	Mikkola	Claudia	Finance	Sophomore	1976	F
13	Downs	Clifton	Accounting	Sophomore	1982	M


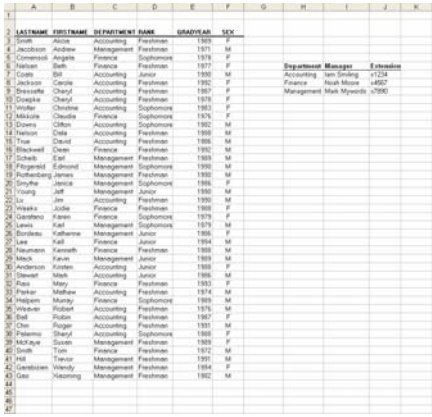
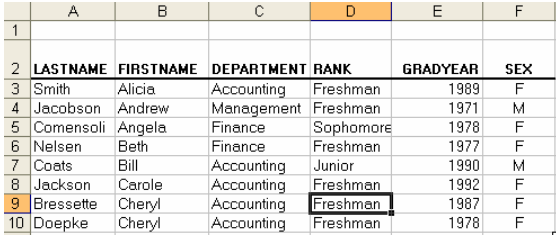
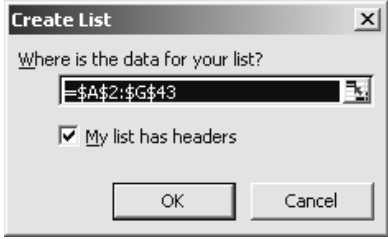
KEY IDEA: Excel has rules for managing lists. If your data follows the rules, Excel will function as noted in this lesson.

- A. Within the rows of data, there are no blank rows and no blank columns. A null field value (a field with no value) is allowed. However, a row with no record or a column with no field values and no field name is not allowed.
- B. The row directly above the first row of data contains the field names.


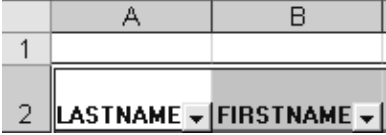




Before creating a list, you will want to do some planning. As you think about how you will use the list, consider the types of reports, queries, and searches you may need. This process should help you determine the kind of information to include for each record and the contents of each field.

Step by Step – Use the Create List Command¹

What you do	What happens
<ol style="list-style-type: none"> Click on the Open  tool in the standard toolbar, or click on File, Open from the menu. Locate the workbook you wish to open. 	
<ol style="list-style-type: none"> Click in any of the cells within the list. 	
<ol style="list-style-type: none"> From the menu, click on Data, List, Create List. Alternatively, you can press CTRL + L . 	<p>The list is identified by the "marquee" and the Create List dialog box is displayed. The data range for the list is given (as absolute cell references) and the box is checked for "My list has headers."</p> 

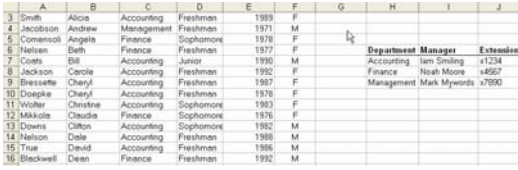
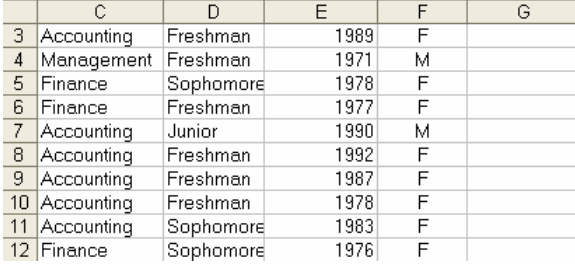
¹ The Create List command cannot be used in a workbook that is being shared. You must remove the workbook from shared use first, use Create List and then share the workbook, again.

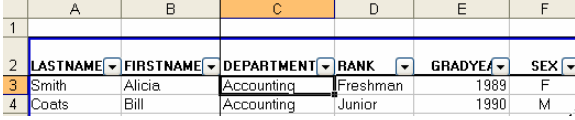
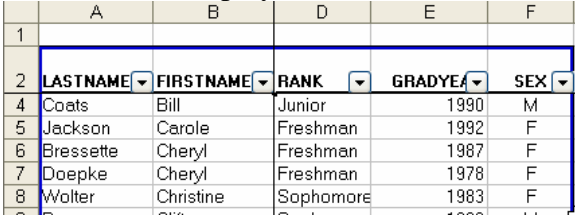
What you do	What happens
<p>5. Click on OK.</p>	<p>Note the following:</p> <ol style="list-style-type: none"> The list is highlighted in the worksheet. The AutoFilter arrows  are displayed in the cells of the header row.  <ol style="list-style-type: none"> The List toolbar is displayed. (If it does not display, select View, Toolbars, List from the menu.)  <p>A special, blank row is included in the list range at the end of the list. The row has an asterisk in the first column to indicate that it is the Insert Row.</p> 
<p>6. Click in any cell inside the list to remove the highlighting and keep the list active.</p>	<p>The list is surrounded by a dark blue border.</p> <p>NOTE: If you click in a cell outside of the list, the list's border becomes less prominent and the auto filter arrows are not displayed. The list is deactivated.</p>

Freeze Panes

In larger worksheets, where all the data can not be displayed on a single screen, scrolling vertically or horizontally can remove rows of labels or columns of data that are necessary to identify the records. Without these rows or columns for identification, the data has little meaning. The Freeze Panes command allows you to maintain the display of certain rows and/or columns of data when you scroll.

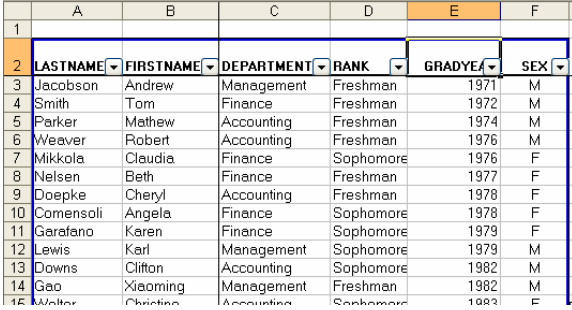

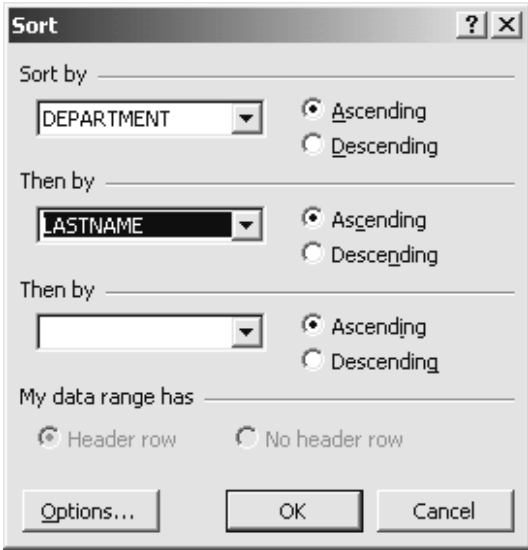
Step-by-Step – Freeze Panes

What you do	What happens
<p>1. Use the vertical scroll bar on the right side of the work window to scroll down a few rows.</p>	<p>Note that the row of field names has scrolled from view. It is difficult to identify the type of data that is stored in each column.</p> 
<p>2. Use the horizontal scroll bar on the bottom left side of the work window to scroll left a few columns.</p>	<p>The data stored in the first columns, LastName and FirstName, identifies the record. Without the names, the remaining data has little meaning.</p> 

What you do	What happens
<p>3. Press Ctrl + Home to return to cell A1.</p> <p>4. Use the following guidelines to lock rows and/or columns:</p> <ul style="list-style-type: none"> ▪ To lock rows, select the row below where you want the split to appear. ▪ To lock columns, select the column to the right of where you want the split to appear. ▪ To lock both rows and columns, click the cell below and to the right of where you want the split to appear. <p>Note that the rows needed for identification are above the active cell. The columns needed for identification are to the right of the active cell.</p>	 <p>In this particular example if we wanted to always see the data in the Lastname and Firstname columns and the field names, we would need to click on cell C3. The rows needed for identification are above the active cell (C3). The columns needed for identification are to the right of the active cell (C3).</p>
<p>5. In the menu, click on Window, Freeze Panes.</p>	<p>Lines are displayed below row 2 and between columns B and C. The rows above the active cell are frozen. The columns to the left of the active cell are frozen.</p>
<p>6. Scroll down in the worksheet.</p> <p>7. Scroll to the right in the worksheet.</p>	<p>Rows 1 and 2 remain displayed. Columns A and B remain displayed.</p> 
<p>8. From the menu, click on Window, Unfreeze Panes to return to normal viewing.</p>	<p>The worksheet scrolls without columns or rows frozen in place.</p>

Step by Step - Sort Data

To sort data in an Excel list, click on the AutoFilter arrow for the column by which to sort. You also may use the Data, Sort command in the menu.

What you do	What happens
<p>1. To sort an Excel list by one field:</p> <ol style="list-style-type: none"> Click on the AutoFilter arrow for the column by which to sort. Select Sort Ascending or Sort Descending from the choices that appear. <p>The Sort choices are at the top of the AutoFilter list.</p>	<p>The list is sorted by the values in the GradYear field. Excel knows to keep the records together.</p>  <p> KEY IDEA: You do not need to select (highlight) any of the columns, rows, or cells yourself.</p>
<p>2. To sort an Excel list by more than one field:</p> <ol style="list-style-type: none"> The active cell should be within the list. In the menu, click on Data, Sort. In the Sort dialog box, select the primary sort field. Then, if several records have the same value in that field, indicate the secondary sort field. You may sort by a tertiary field, as well. <p>In this example, sort by Department in Ascending order, and then by LastName in Ascending order. First, Excel will group and sort the records by Department. Second, within each Department, Excel will sort the records by LastName.</p>	<p>The Sort dialog box is displayed with your choices.</p> 


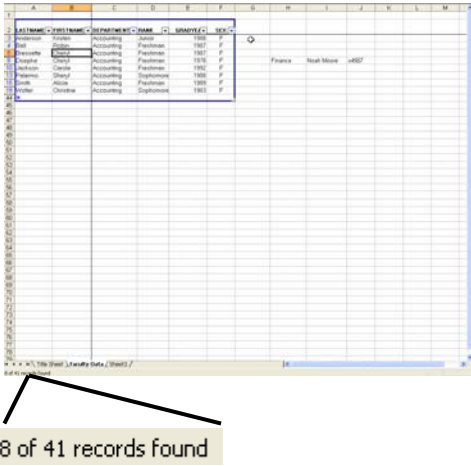
What you do		What happens					
3. Click on OK .		The list is sorted as you specified.					
	A	B	C	D	E	F	
1							
2	LASTNAME	FIRSTNAME	DEPARTMENT	RANK	GRADYEA	SEX	
3	Anderson	Kristen	Accounting	Junior	1988	F	
4	Bell	Robin	Accounting	Freshman	1987	F	
5	Bressette	Cheryl	Accounting	Freshman	1987	F	
6	Chin	Roger	Accounting	Freshman	1991	M	
7	Coets	Bill	Accounting	Junior	1990	M	
8	Doepke	Cheryl	Accounting	Freshman	1978	F	
9	Downs	Clifton	Accounting	Sophomore	1982	M	
10	Jackson	Carole	Accounting	Freshman	1992	F	
11	Lu	Jim	Accounting	Freshman	1990	M	
12	Nelson	Dale	Accounting	Freshman	1988	M	
13	Palermo	Sheryl	Accounting	Sophomore	1988	F	
14	Parker	Mathew	Accounting	Freshman	1974	M	
15	Smith	Alicia	Accounting	Freshman	1989	F	
16	Stewart	Mark	Accounting	Junior	1986	M	
17	True	Devid	Accounting	Freshman	1986	M	
18	Weaver	Robert	Accounting	Freshman	1976	M	
19	Wolter	Christine	Accounting	Sophomore	1983	F	
20	Blackwell	Dean	Finance	Freshman	1992	M	
21	Comensoli	Angela	Finance	Sophomore	1978	F	
22	Garafano	Karen	Finance	Sophomore	1979	F	
23	Halpern	Murray	Finance	Sophomore	1989	M	
24	Lee	Kell	Finance	Junior	1994	M	
25	Mikkola	Claudia	Finance	Sophomore	1976	F	
26	Nelsen	Beth	Finance	Freshman	1977	F	
27	Neumann	Kenneth	Finance	Freshman	1988	M	
28	Reis	Mary	Finance	Freshman	1993	F	
29	Smith	Tom	Finance	Freshman	1972	M	
30	Weeks	Jodie	Finance	Freshman	1988	F	
31	Bordeau	Katherine	Management	Junior	1986	F	
32	Fitzgerald	Edmond	Management	Sophomore	1990	M	
33	Gao	Xieoming	Management	Freshman	1982	M	
34	Garabizien	Wendy	Management	Freshman	1994	F	
35	Hill	Trevor	Management	Freshman	1991	M	

Filter Lists

The Excel AutoFilter feature allows you to filter the data to view only the records that meet certain criteria. The records that do not meet those criteria will be hidden from view. For example, you could ask to see only the records for the females in the Accounting Department, as shown here.

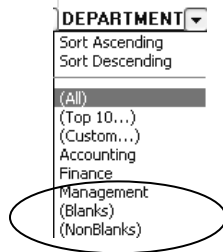
	A	B	C	D	E	F
1						
2	LASTNAME ▼	FIRSTNAME ▼	DEPARTMENT ▼	RANK ▼	GRADYEA ▼	SEX ▼
3	Anderson	Kristen	Accounting	Junior	1988	F
4	Ball	Robin	Accounting	Freshman	1987	F
5	Bressette	Cheryl	Accounting	Freshman	1987	F
8	Doepke	Cheryl	Accounting	Freshman	1978	F
10	Jackson	Carole	Accounting	Freshman	1992	F
13	Palermo	Sheryl	Accounting	Sophomore	1988	F
15	Smith	Alicia	Accounting	Freshman	1989	F
19	Wolter	Christine	Accounting	Sophomore	1983	F
44	*					
45						

Step by Step - Filter Lists using AutoFilter

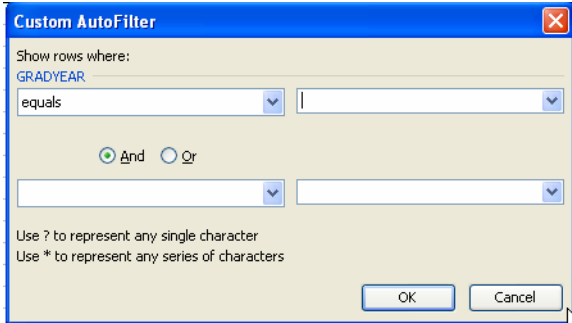
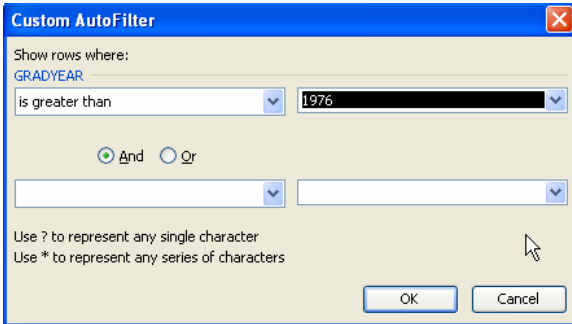
What you do	What happens																																																																
<p>1. Click in any cell in the list.</p> <p>The active cell should be a cell in the list to display the AutoFilter arrows.</p>	<p>A down arrow appears in each of the header row cells.</p> <table border="1" data-bbox="727 394 1300 548"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>LASTNAME</td> <td>FIRSTNAME</td> <td>DEPARTMENT</td> <td>RANK</td> <td>YEARHIRE</td> <td>SEX</td> <td>SALARY</td> </tr> <tr> <td>3</td> <td>Anderson</td> <td>Kristen</td> <td>Accounting</td> <td>Assistant</td> <td>1988</td> <td>F</td> <td>\$43,155</td> </tr> <tr> <td>4</td> <td>Ball</td> <td>Robin</td> <td>Accounting</td> <td>Instructor</td> <td>1987</td> <td>F</td> <td>\$35,723</td> </tr> <tr> <td>5</td> <td>Bressette</td> <td>Cheryl</td> <td>Accounting</td> <td>Instructor</td> <td>1987</td> <td>F</td> <td>\$36,582</td> </tr> <tr> <td>6</td> <td>Chin</td> <td>Roger</td> <td>Accounting</td> <td>Full</td> <td>1991</td> <td>M</td> <td>\$53,281</td> </tr> <tr> <td>7</td> <td>Coats</td> <td>Bill</td> <td>Accounting</td> <td>Assistant</td> <td>1990</td> <td>M</td> <td>\$45,371</td> </tr> </tbody> </table> <p>The down arrows are displayed on the screen, but they do not print.</p>		A	B	C	D	E	F	G	1								2	LASTNAME	FIRSTNAME	DEPARTMENT	RANK	YEARHIRE	SEX	SALARY	3	Anderson	Kristen	Accounting	Assistant	1988	F	\$43,155	4	Ball	Robin	Accounting	Instructor	1987	F	\$35,723	5	Bressette	Cheryl	Accounting	Instructor	1987	F	\$36,582	6	Chin	Roger	Accounting	Full	1991	M	\$53,281	7	Coats	Bill	Accounting	Assistant	1990	M	\$45,371
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7	Coats	Bill	Accounting	Assistant	1990	M	\$45,371																																																										
<p>2. Click the AutoFilter arrow  to the right of the column label and select the filter criteria from the drop-down list. You may click the AutoFilter arrow on multiple fields to filter on additional criteria.</p> <p>3. In our example (selecting all Females within the Accounting Department):</p> <ol style="list-style-type: none"> Click on the down arrow for the field named Department and click on the field value, Accounting. 	<p>Only the records that have an F as the field value in the Sex field and Accounting in the Department field are displayed. All the other records are hidden.</p>  <p>NOTE: When a list is filtered, Excel will change the color of the row numbers to blue to indicate that some rows of data are hidden. Also, a note appears in the left side of the status bar to indicate the number of records displayed and the total number of records in the list.</p> <p>If you filter one list and the worksheet has another list, the other list may not display fully. When AutoFilter hides a row, the row is hidden in its entirety.</p>																																																																
<p>4. To display all the records in the list, click on Data, Filter, Show All in the menu.</p>	<p>All the records in the list are displayed.</p>																																																																

What you do	What happens
5. To remove the AutoFilter arrows, click on Data, Filter, AutoFilter (which removes the checkmark on AutoFilter).	The AutoFilter down arrows are removed from the display.
6. To display the AutoFilter arrows, again, click on Data, Filter, AutoFilter (which places a checkmark on AutoFilter).	The AutoFilter down arrows are displayed.

NOTE: In any column (field) of a list, if there are cells with no entries (blanks), two additional choices are added to the AutoFilter drop-down list for that column – Blanks and NonBlanks. Select Blanks to see only the records without an entry in that column. Select NonBlanks to see only the records with an entry in that column.


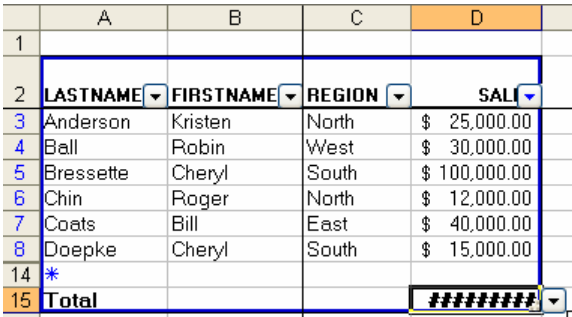


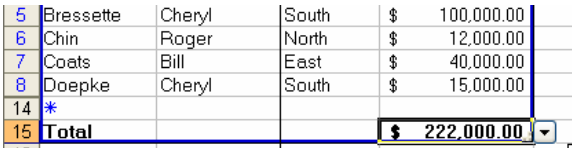


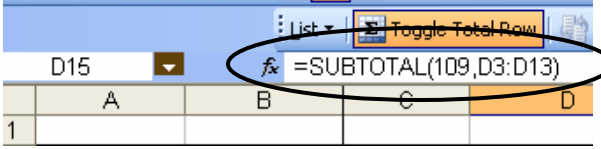
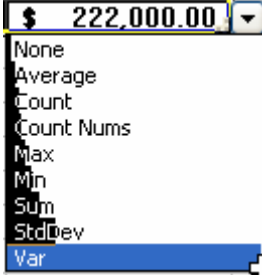
Step by Step - Filter a List Using a Custom Filter

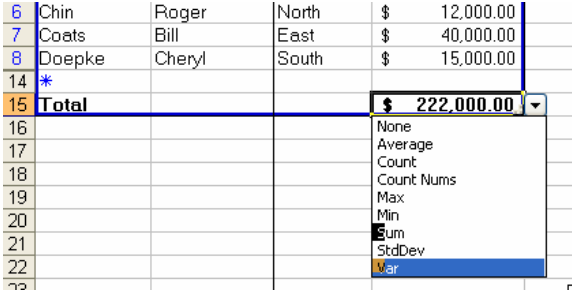


What you do	What happens
1. Click in any cell within the list to display the AutoFilter arrows.	The list is active.
2. Click on the AutoFilter arrow for the field to be filtered.	
3. Click on (Custom...) .	<p>The Custom AutoFilter dialog box is displayed.</p> 
4. You can click the first down arrow under the field name and select the appropriate criteria (equals, does not equal, is greater than, etc.) from the list that displays. Next, enter your desired criteria in the box on the right.	<p>The criterion that you entered is displayed.</p> <p style="text-align: center;">GradYear is greater than 1976.</p> 

What you do	What happens																																																																																																																																																																																																																																																																																								
<p>5. Click OK.</p>	<p>The list is filtered based on the criterion that you entered.</p> <table border="1" data-bbox="820 315 1396 1066"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> <tr> <th>1</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>2</th> <td>LASTNAME</td> <td>FIRSTNAME</td> <td>DEPARTMENT</td> <td>RANK</td> <td>GRADYEA</td> <td>SEX</td> </tr> </thead> <tbody> <tr><td>3</td><td>Anderson</td><td>Kristen</td><td>Accounting</td><td>Junior</td><td>1988</td><td>F</td></tr> <tr><td>4</td><td>Ball</td><td>Robin</td><td>Accounting</td><td>Freshman</td><td>1987</td><td>F</td></tr> <tr><td>5</td><td>Bressette</td><td>Cheryl</td><td>Accounting</td><td>Freshman</td><td>1987</td><td>F</td></tr> <tr><td>6</td><td>Chin</td><td>Roger</td><td>Accounting</td><td>Freshman</td><td>1991</td><td>M</td></tr> <tr><td>7</td><td>Coets</td><td>Bill</td><td>Accounting</td><td>Junior</td><td>1990</td><td>M</td></tr> <tr><td>8</td><td>Doepke</td><td>Cheryl</td><td>Accounting</td><td>Freshman</td><td>1978</td><td>F</td></tr> <tr><td>9</td><td>Downs</td><td>Clifton</td><td>Accounting</td><td>Sophomore</td><td>1982</td><td>M</td></tr> <tr><td>10</td><td>Jackson</td><td>Carole</td><td>Accounting</td><td>Freshman</td><td>1992</td><td>F</td></tr> <tr><td>11</td><td>Lu</td><td>Jim</td><td>Accounting</td><td>Freshman</td><td>1990</td><td>M</td></tr> <tr><td>12</td><td>Nelson</td><td>Dale</td><td>Accounting</td><td>Freshman</td><td>1988</td><td>M</td></tr> <tr><td>13</td><td>Palermo</td><td>Sheryl</td><td>Accounting</td><td>Sophomore</td><td>1988</td><td>F</td></tr> <tr><td>15</td><td>Smith</td><td>Alicia</td><td>Accounting</td><td>Freshman</td><td>1989</td><td>F</td></tr> <tr><td>16</td><td>Stewart</td><td>Mark</td><td>Accounting</td><td>Junior</td><td>1986</td><td>M</td></tr> <tr><td>17</td><td>True</td><td>David</td><td>Accounting</td><td>Freshman</td><td>1986</td><td>M</td></tr> 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<p>6. From the menu, select Data, Filter, Show All.</p>	<p>The filter is removed and the entire list is displayed.</p>																																																																																																																																																																																																																																																																																								

Step by Step - Use the Total Row in a List

What you do	What happens
1. Click in any cell of the list.	The active cell is within the list.
2. From the List toolbar, click on the Toggle Total Row tool .  Alternatively, click on Data, List, Total Row in the menu.	A Total Row is added at the bottom of the list, below the Insert Row. The last column is totaled.   The Toggle Total Row tool will sum the entries in the last column of the list if the entries are numeric. It will count the entries in the last column of the list if the entries are not numeric.
3. In this example, the ### displayed in D15 indicates that the D column is not wide enough to display the entry. Increase the width of the D column by placing the mouse pointer  on the boundary line between the D and E columns in the column header. Drag to the right.	The total for the last column of the list is displayed. 

What you do	What happens																		
<p>4. If you click in the cell for the total (D15 in this example), the formula will display in the Formula bar.</p> <p>Note the formula that Excel created in cell D15: SUBTOTAL(109,D3:D13)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>In the formulas created in the Total Row, there is a number such as the 109 that you see circled here. The number stands for a function name:</p> <table border="1"> <thead> <tr> <th>Number</th> <th>Function Name</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>= Average</td> </tr> <tr> <td>102</td> <td>= CountNums</td> </tr> <tr> <td>103</td> <td>= Count</td> </tr> <tr> <td>104</td> <td>= Max</td> </tr> <tr> <td>105</td> <td>= Min</td> </tr> <tr> <td>107</td> <td>= Standard Deviation</td> </tr> <tr> <td>109</td> <td>= Sum</td> </tr> <tr> <td>110</td> <td>= Variance</td> </tr> </tbody> </table> </div>	Number	Function Name	101	= Average	102	= CountNums	103	= Count	104	= Max	105	= Min	107	= Standard Deviation	109	= Sum	110	= Variance	<p>The formula bar</p> 
Number	Function Name																		
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<p>5. A down arrow appears on the right side of the cell. Click on the down arrow to select a different function from the shortcut menu that appears.</p>	<p>The shortcut menu</p>  <p>After you select a function from the menu, Excel writes a new formula using that function. When you save the workbook, the formula that is present is saved.</p>																		

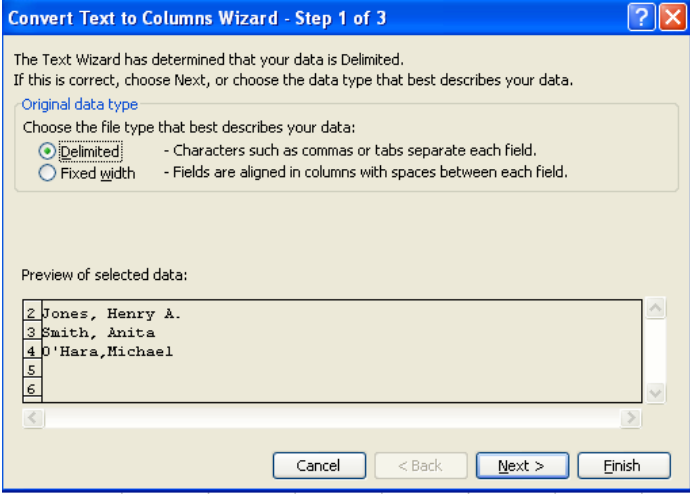
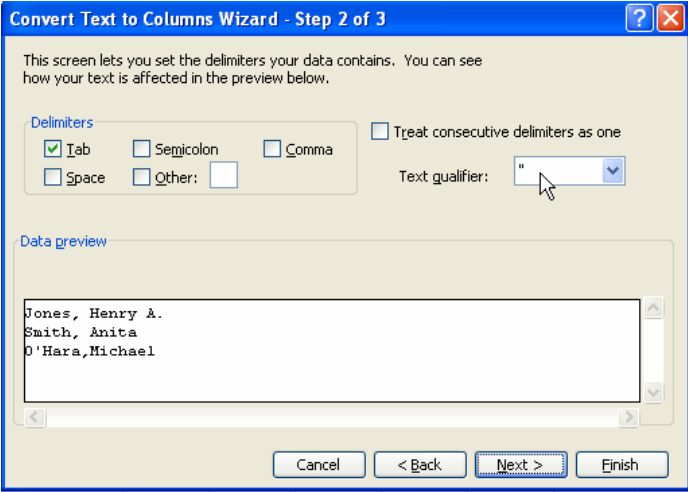
What you do	What happens																														
<p>6. Click on the down arrow to select a function or to select NONE.</p>	 <p>The screenshot shows an Excel spreadsheet with the following data:</p> <table border="1"> <tr><td>6</td><td>Chin</td><td>Roger</td><td>North</td><td>\$</td><td>12,000.00</td></tr> <tr><td>7</td><td>Coats</td><td>Bill</td><td>East</td><td>\$</td><td>40,000.00</td></tr> <tr><td>8</td><td>Doepke</td><td>Cheryl</td><td>South</td><td>\$</td><td>15,000.00</td></tr> <tr><td>14</td><td>*</td><td></td><td></td><td></td><td></td></tr> <tr><td>15</td><td>Total</td><td></td><td></td><td>\$</td><td>222,000.00</td></tr> </table> <p>A dropdown menu is open from the Total cell, showing the following options: None, Average, Count, Count Nums, Max, Min, Sum, StdDev, and Var.</p>	6	Chin	Roger	North	\$	12,000.00	7	Coats	Bill	East	\$	40,000.00	8	Doepke	Cheryl	South	\$	15,000.00	14	*					15	Total			\$	222,000.00
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14	*																														
15	Total			\$	222,000.00																										
<p>7. Turn off the Total Row by clicking  on again.</p>	<p>The Total Row no longer displays.</p>																														
<p>8. Display the Total Row by clicking on  .</p>	<p>The Total Row is displayed. If you toggle the row on again, the formula will be the one that you selected previously.</p>																														

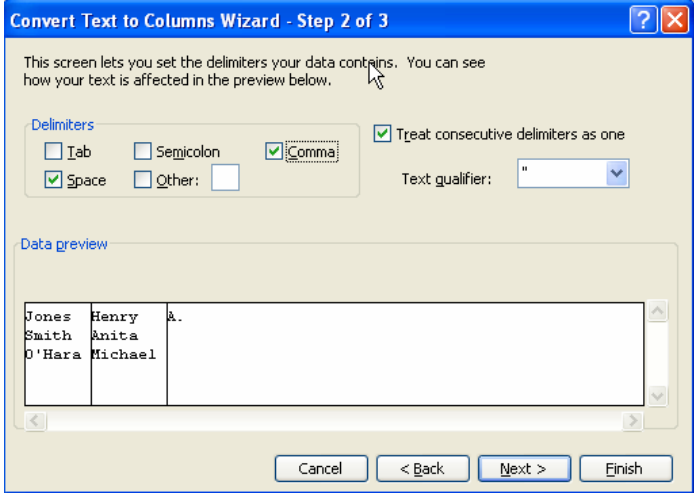
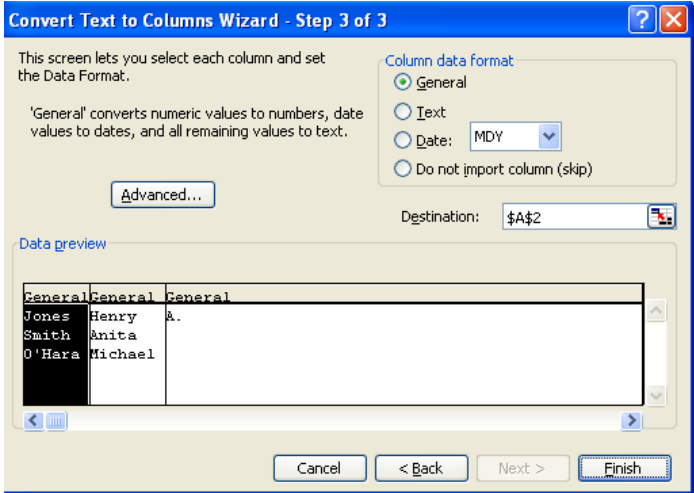
Step by Step - Split Text from Once Cell to Two or More Cells

	A	B	C
1	FullName	City	State
2	Jones, Henry A.	Akron	Ohio
3	Smith, Anita	Akron	Ohio
4	O'Hara,Michael	Barberton	Ohio
5			
6			

A worksheet may have text values in a single cell that you want to split into two or more cells. Let us use the above example and split the FullName into LastName and FirstName and Middle Initial, from one column of data to three columns of data.

What you do	What happens																														
<ol style="list-style-type: none"> 1. Insert the number of blank columns needed. <ol style="list-style-type: none"> a. Position the insertion point anywhere in the column where the new column is to be inserted. b. From the menu, click on Insert – Columns. 	<p>In this example, we need to insert two columns for FirstName and MiddleInitial.</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>FullName</td> <td></td> <td></td> <td>City</td> <td>State</td> </tr> <tr> <td>2</td> <td>Jones, Henry A.</td> <td></td> <td></td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>3</td> <td>Smith, Anita</td> <td></td> <td></td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>4</td> <td>O'Hara,Michael</td> <td></td> <td></td> <td>Barberton</td> <td>Ohio</td> </tr> </tbody> </table>		A	B	C	D	E	1	FullName			City	State	2	Jones, Henry A.			Akron	Ohio	3	Smith, Anita			Akron	Ohio	4	O'Hara,Michael			Barberton	Ohio
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<ol style="list-style-type: none"> 2. Select the cells that contain the text to be split. 	<p>We have selected cells A2:A4 which contain the FullName (which we want to split into multiple cells).</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>FullName</td> <td></td> <td></td> <td>City</td> <td>State</td> </tr> <tr> <td>2</td> <td>Jones, Henry A.</td> <td></td> <td></td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>3</td> <td>Smith, Anita</td> <td></td> <td></td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>4</td> <td>O'Hara,Michael</td> <td></td> <td></td> <td>Barberton</td> <td>Ohio</td> </tr> </tbody> </table>		A	B	C	D	E	1	FullName			City	State	2	Jones, Henry A.			Akron	Ohio	3	Smith, Anita			Akron	Ohio	4	O'Hara,Michael			Barberton	Ohio
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What you do	What happens
<p>3. From the menu, select Data, Text to Columns. The Convert Text to Columns Wizard is displayed.</p>	<p>The Convert Text to Columns Wizard:</p> 
<p>4. Select the Delimited option button. 5. Click on Next.</p>	<p>Step 2 of the Wizard appears:</p> 

What you do	What happens																														
<p>6. Select the delimiter (character) that separates the sections of the text. The delimiter is the character where you want to split the text.</p> <p>In this example, it is the comma (separating the last name from the first name and the space (separating the first name from the middle initial). The preview area indicates how the text will be separated.</p> <p>7. Click the Next button.</p>	<p>The space and comma are used as the delimiters for this example:</p> 																														
<p>8. In Step 3, make any changes in cell formats that you want.</p>	<p>We will not make any changes to the cell formats.</p> 																														
<p>9. Click on Finish.</p>	<p>The contents of the active cell are deleted.</p>																														
<p>10. The text has been split into multiple cells.</p> <p>Note: You could then add column headings for the two new columns (FirstName and MiddleInitial).</p>	<p>The worksheet appears as follows:</p> <table border="1" data-bbox="727 1501 1416 1633"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>FullName</td> <td></td> <td></td> <td>City</td> <td>State</td> </tr> <tr> <td>2</td> <td>Jones</td> <td>Henry</td> <td>A.</td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>3</td> <td>Smith</td> <td>Anita</td> <td></td> <td>Akron</td> <td>Ohio</td> </tr> <tr> <td>4</td> <td>O'Hara</td> <td>Michael</td> <td></td> <td>Barberton</td> <td>Ohio</td> </tr> </tbody> </table>		A	B	C	D	E	1	FullName			City	State	2	Jones	Henry	A.	Akron	Ohio	3	Smith	Anita		Akron	Ohio	4	O'Hara	Michael		Barberton	Ohio
	A	B	C	D	E																										
1	FullName			City	State																										
2	Jones	Henry	A.	Akron	Ohio																										
3	Smith	Anita		Akron	Ohio																										
4	O'Hara	Michael		Barberton	Ohio																										

Part A: Formulas

Formulas are mathematical equations that calculate new values from existing values. They allow you to use symbols called operators to add (+), subtract (-), multiply (*), and divide (/) numbers. **In Excel, each formula should begin with an equal (=) sign.** The equal sign tells Excel that everything in the cell is part of a formula.

Formulas can contain more than just numbers. They can also contain cell references. For example, if you type =B7+C7, Excel will add the values in cell B7 and cell C7. Using cell references instead of numbers is usually the best method to use for formulas because Excel automatically recalculates formulas if the value in a cell changes.




Some formula examples are:

=B7+C7+D7+E7	Sums the values of the 4 cells
=sum(b7:e7)	Sums the values of the 4 cells
=g64-g65	Subtracts the value in g65 from the value in g64
=(e200/12) *.15	Divides the value in e200 by 12. Then multiplies that answer by 15
=(f24*c10)-(f25*c10)	First , multiplies the value in f24 by the value in c10 Second , multiplies the value in f25 by the value in c10 Then subtracts the second value from the first value



The light bulb appears to indicate a tip for working with Excel.

Step by Step - Type Formulas to Add Values and Use AutoSum





What you do	What happens																																				
1. To open a file, click on the Open tool  or choose FILE, OPEN from the menu.	Returns the Open dialog box.																																				
2. Click in cell you wish to add a formula for.	Places the insertion point in the cell.																																				
3. Type the formula, starting with the equal sign. For example: =b4+c4+d4	Excel uses color borders to indicate the cells that are referenced in the formula. If you cannot see color, the borders still are helpful to verify that the formula is correct. <table border="1" data-bbox="714 703 1185 819"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="5">January Sales</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>East</td> <td>North</td> <td>South</td> <td>Total</td> </tr> <tr> <td>4</td> <td>Richards</td> <td>5,000</td> <td>3,000</td> <td>3,500</td> <td>=b4+c4+d4</td> </tr> <tr> <td>5</td> <td>Selznick</td> <td>1,216</td> <td>1,300</td> <td>1,732</td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	1	January Sales					2						3		East	North	South	Total	4	Richards	5,000	3,000	3,500	=b4+c4+d4	5	Selznick	1,216	1,300	1,732	
	A	B	C	D	E																																
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5	Selznick	1,216	1,300	1,732																																	
4. Click on the Enter  tool in the formula bar.	Tells Excel you have completed your entry for that cell and keeps cell E4 as the active cell. Excel will calculate using the formula and display the formula answer in the cell as a value.																																				
5. Check your formula in the formula bar for accuracy. If changes need to be made, click in the formula bar to place the insertion point and make the changes. Then, click on the green check mark  .	You check for accuracy. <table border="1" data-bbox="714 1029 1169 1165"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="5">January Sales</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>East</td> <td>North</td> <td>South</td> <td>Total</td> </tr> <tr> <td>4</td> <td>Richards</td> <td>5,000</td> <td>3,000</td> <td>3,500</td> <td>11,500</td> </tr> <tr> <td>5</td> <td>Selznick</td> <td>1,216</td> <td>1,300</td> <td>1,732</td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	1	January Sales					2						3		East	North	South	Total	4	Richards	5,000	3,000	3,500	11,500	5	Selznick	1,216	1,300	1,732	
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6. To use the AutoSum tool, click in the cell you wish to add the formula for.	Places the insertion point in the cell.																																				




When you enter a formula in a cell, **the content of the cell is the formula**. The value you see (the answer to the formula) is displayed, **but is not the contents of the cell**.

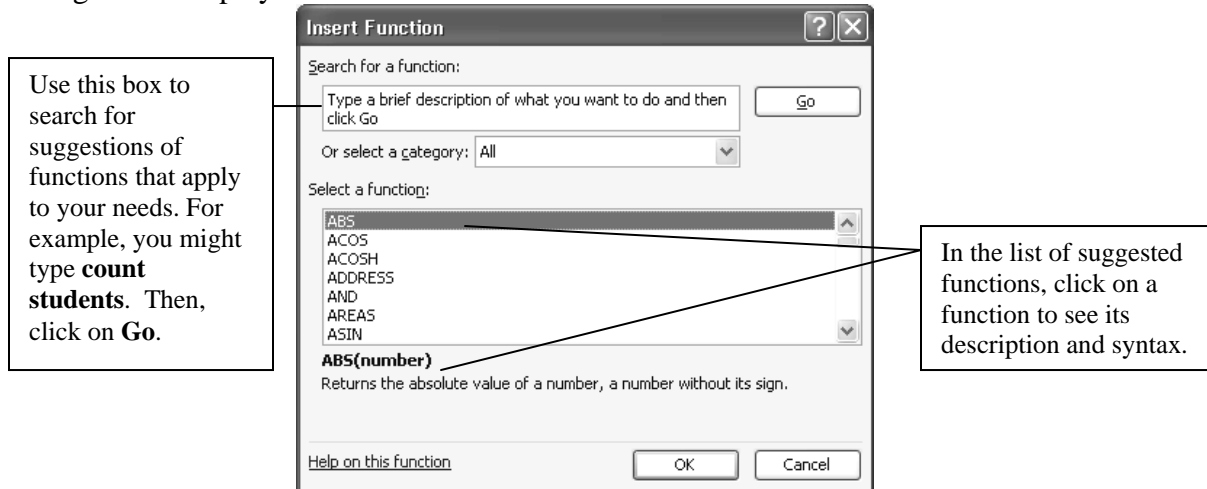


=b5+c5+d5
and
=sum(b5:d5)
are the same calculation.

What you do	What happens																																				
<p>7. Click on the AutoSum  tool.</p>	<p>Excel types the formula to add the numbers, using the function sum. The formula you see is =sum(b4:b9).</p> <table border="1" data-bbox="716 373 1187 680"> <thead> <tr> <th></th> <th><i>East</i></th> <th><i>North</i></th> </tr> </thead> <tbody> <tr> <td><i>Richards</i></td> <td>5,000</td> <td>3,000</td> </tr> <tr> <td><i>Selznick</i></td> <td>1,216</td> <td>1,300</td> </tr> <tr> <td><i>Robbins</i></td> <td>13,100</td> <td>13,200</td> </tr> <tr> <td><i>Wells</i></td> <td>2,000</td> <td>2,000</td> </tr> <tr> <td><i>Brown</i></td> <td>1,200</td> <td>1,200</td> </tr> <tr> <td><i>Riveland</i></td> <td>200</td> <td>300</td> </tr> <tr> <td></td> <td>=SUM(B4:B9)</td> <td></td> </tr> <tr> <td></td> <td>SUM(number1, [number2], ...)</td> <td></td> </tr> <tr> <td colspan="3"><i>Salesperson Average</i></td> </tr> </tbody> </table> <p>Note that Excel draws a “marquee” around the cells that are included in the formula.</p>		<i>East</i>	<i>North</i>	<i>Richards</i>	5,000	3,000	<i>Selznick</i>	1,216	1,300	<i>Robbins</i>	13,100	13,200	<i>Wells</i>	2,000	2,000	<i>Brown</i>	1,200	1,200	<i>Riveland</i>	200	300		=SUM(B4:B9)			SUM(number1, [number2], ...)		<i>Salesperson Average</i>								
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<p>8. Click on the Enter  tool in the formula bar to accept the formula that AutoSum typed.</p>	<p>You accept the formula as correct. The marquee disappears and the formula is entered in the cell.</p>																																				
<p>9. Sometimes, the “marquee” area that Excel has selected as the cells to include in the formula are not the correct cells. You can change the marquee area and select the appropriate cells.</p> <p>Click on the AutoSum  tool.</p>	<p>Excel does not select the group of cells that you want to add.</p>																																				
<p>10. With the mouse pointer as a white cross, drag across cells that you wish to be included in the sum. In this example, we want to select cells B5 through D5.</p>	<p>Excel revises the formula to sum the values in the cells that you selected.</p> <table border="1" data-bbox="716 1318 1187 1436"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="5">January Sales</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td><i>East</i></td> <td><i>North</i></td> <td><i>South</i></td> <td><i>Total</i></td> </tr> <tr> <td>4</td> <td><i>Richards</i></td> <td>5,000</td> <td>3,000</td> <td>3,500</td> <td>11,500</td> </tr> <tr> <td>5</td> <td><i>Selznick</i></td> <td>1,216</td> <td>1,300</td> <td>1,732</td> <td>=SUM(B5:D5)</td> </tr> </tbody> </table>		A	B	C	D	E	1	January Sales					2						3		<i>East</i>	<i>North</i>	<i>South</i>	<i>Total</i>	4	<i>Richards</i>	5,000	3,000	3,500	11,500	5	<i>Selznick</i>	1,216	1,300	1,732	=SUM(B5:D5)
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<p>11. Click on the Enter  tool in the formula bar to accept the formula that AutoSum typed.</p>	<p>You accept the formula as correct. The marquee disappears and the formula is entered in the cell.</p>																																				

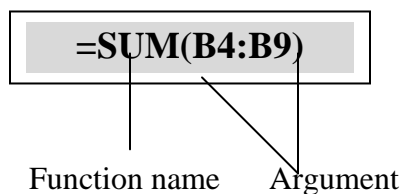
Part B: Learn About Functions

Excel includes over 300 preset formulas called functions. **Functions** allow you to perform advanced calculations, such as finding the sum of a range of cells, averaging a series of values, or calculating the monthly payment for a loan. For help to create a formula that uses a function, click on the **function tool**  in the Edit/Formula toolbar, or use the Insert, Function command from the menu. In either case, the Insert Function dialog box is displayed.



Functions consist of a **name** followed by one or more arguments in parentheses. **Arguments** are usually numbers or cell references, but they may also be text. Arguments can be quite complex, but in this course, you will be using simple ones like those in the function in step 10 of your previous exercise.

Look at the parts of the formula that used a function in step 11.



When you enter a formula in a cell, **the content of the cell is the formula**. The value you see (the answer to the formula) is displayed, **but is not the contents of the cell**.

The basic **syntax** for a formula that uses a function has three parts:

- Equals sign
- Function name - The function SUM adds the group of values listed within the parentheses that follow.
- Argument, enclosed in parentheses - In this formula, you see the argument (B4:B9), which is read as **B4 through B9**.

There are no spaces in a formula. This formula adds the values in cells B4 through B9. The answer to the calculation is displayed in the cell B10, where you placed the formula. Functions often include references to **ranges**. A range is a group of cells that all touch one another and form a rectangle in shape. In your example, B4:B9 is the range of cells to be added.

A **range reference** consists of two cell references separated by a colon, such as C3:G18. C3 is the upper-left cell in the range and G18 is the lower-right cell in the range. A range reference includes all cells within the range.

New Terms

Function	A function is a preset formula that performs calculations. Functions consist of the function name followed by its arguments in parentheses. Some common functions are the SUM, AVERAGE, MIN, MAX, and COUNT functions.
Function Name	The function name appears immediately after the equal sign. It tells Excel which function to apply to the argument in parentheses.
Argument	An argument indicates the values or cells upon which a function will act. Arguments are usually numbers or cell references, but they may also be text.
Range	A range is a group of cells.
Range References	A range reference is used in a formula or function to indicate a group of cells. Range references consist of two cell references separated by a colon, such as C3:G18.
Colon Symbol	A colon symbol inserted between two cell references in a formula defines a range of adjacent cells. It means “through,” as in saying, “cells C3 through G18.”
Syntax	The syntax of a function refers to the order of the function's arguments. In some functions, the order of the arguments determines how Excel calculates the function.


Step by Step – Type a Formula Using a Function

What you do	What happens
1. Click inside the cell where you wish to add the function.	Places the insertion point in the cell.
2. Type the function. For example: =sum(b6.d6	The function is typed to add the range of values in cells B6 through D6. Excel will change the period to a colon and will add the ending parenthesis.
3. Click on the Enter <input checked="" type="checkbox"/> tool in the formula bar.	Tells Excel you have completed your entry for that cell and keeps cell E6 as the active cell. Excel will calculate using the formula and display the formula answer in the cell as a value.
4. Many times it is useful to copy a formula to save time and avoid typing the same formula multiple times. Place your mouse pointer on the file handle (small black square) in the lower right corner of cell which contains the formula you wish to copy (in our example, cell E6). When the pointer looks like a thin black cross, hold down the mouse button and drag down to the last cell where you want to copy the formula to (in our example, cell E10).	Copies the formula from cell E6 to cells E7 through E10. This is called AutoFill . When a formula is copied down to the next cell in a column, Excel changes the formula by incrementing the row reference by one. In this example, =SUM(B6:D6) in cell E6 is copied to the next cell down as =SUM(B7:D7).
5. You can also select the cells to include in a function, rather than typing the cell reference(s) directly into the function. In this example, we will use the Average function. Click inside the cell where you wish to add the function. Begin by Typing the function: =average(

6. Instead of typing the range (in our example E4:E9), use your mouse to **select the cells E4:E9**.

Excel types the range reference for you. You do not need to type the ending parenthesis.

SUM					=average(E4:E9)					
	A	B	AVERAGE(number1, [number2], ...)			E				
1	January Sales									
2										
3		<i>East</i>	<i>North</i>	<i>South</i>	<i>Total</i>					
4	<i>Richards</i>	5,000	3,000	3,500		11,500				
5	<i>Selznick</i>	1,216	1,300	1,732		4,248				
6	<i>Robbins</i>	13,100	13,200	13,200		39,500				
7	<i>Wells</i>	2,000	2,000	3,500		7,500				
8	<i>Brown</i>	1,200	1,200	1,500		3,900				
9	<i>Riveland</i>	200	300	850		1,350				
10		22,716	21,000	24,282		67,998				
11										
12	<i>Salesperson Average</i>									
13	=average(E4:E9)									

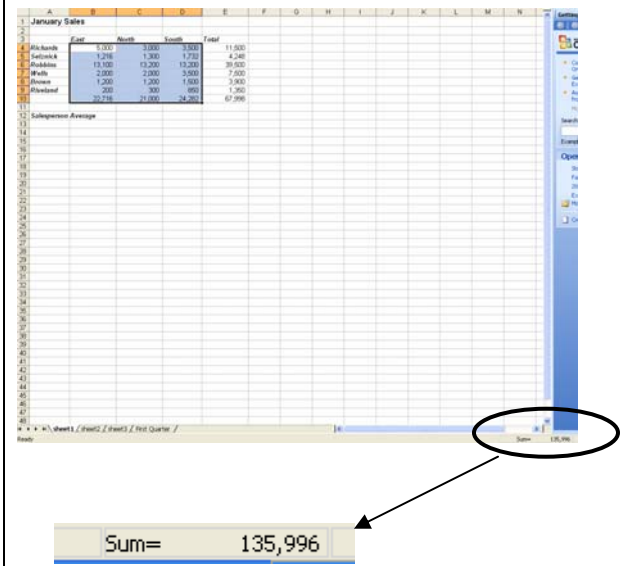
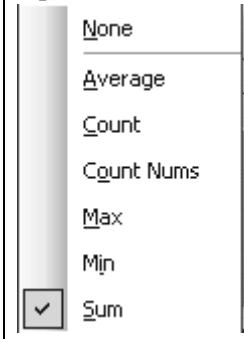
7. Click on the **Enter**  tool in the formula bar.

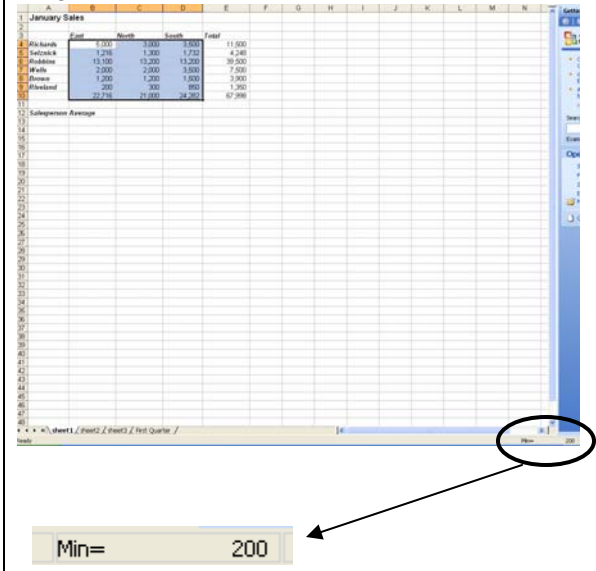
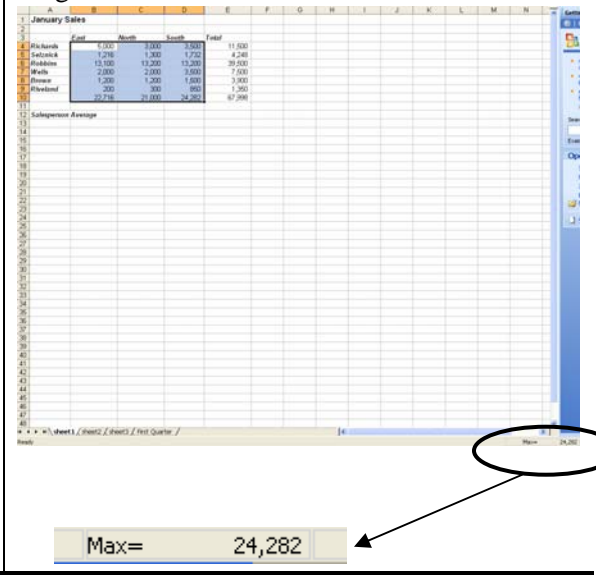
Accepts the typing and displays the answer to the formula.

Part C: Use AutoCalculate

The AutoCalculate feature on the status bar allows you to perform a function without inserting it into the worksheet. You can view the answer to common formulas without typing the formulas or including the formulas in your worksheet. The common functions that are available in AutoCalculate are: Average, Count, CountNums, Max, Min, Sum.

Step by Step – Use AutoCalculate

What you do	What happens
1. Select the cells you wish to autocalculate (average, sum, count, etc.).	Selects the cells in the range.
2. Look at the Sum value on the status bar.	<p>Shows the sum of the selected cells in the AutoCalculate area on the status bar.</p> 
3. Right click the Sum value on the status bar.	<p>Opens the AutoCalculate menu.</p> 

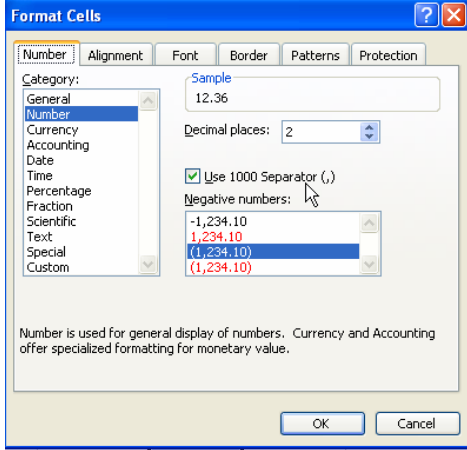
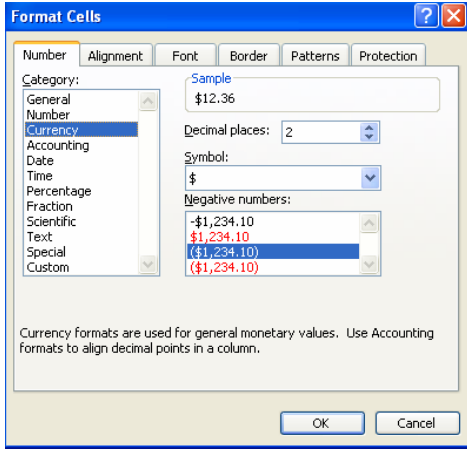
What you do	What happens
<p>4. Point to and click Min.</p>	<p>Displays the minimum value in the AutoCalculate area on the status bar. The function Min finds the smallest value in the cell range.</p> 
<p>5. Right click the Min value on the status bar.</p>	<p>Opens the AutoCalculate menu.</p>
<p>6. Point to and click Max.</p>	<p>Displays the maximum value in the AutoCalculate area on the status bar. The function Max finds the largest value in the cell range.</p> 



A Reference Guide for Formulas is provided in the Appendix of this manual.

Formatting Worksheets

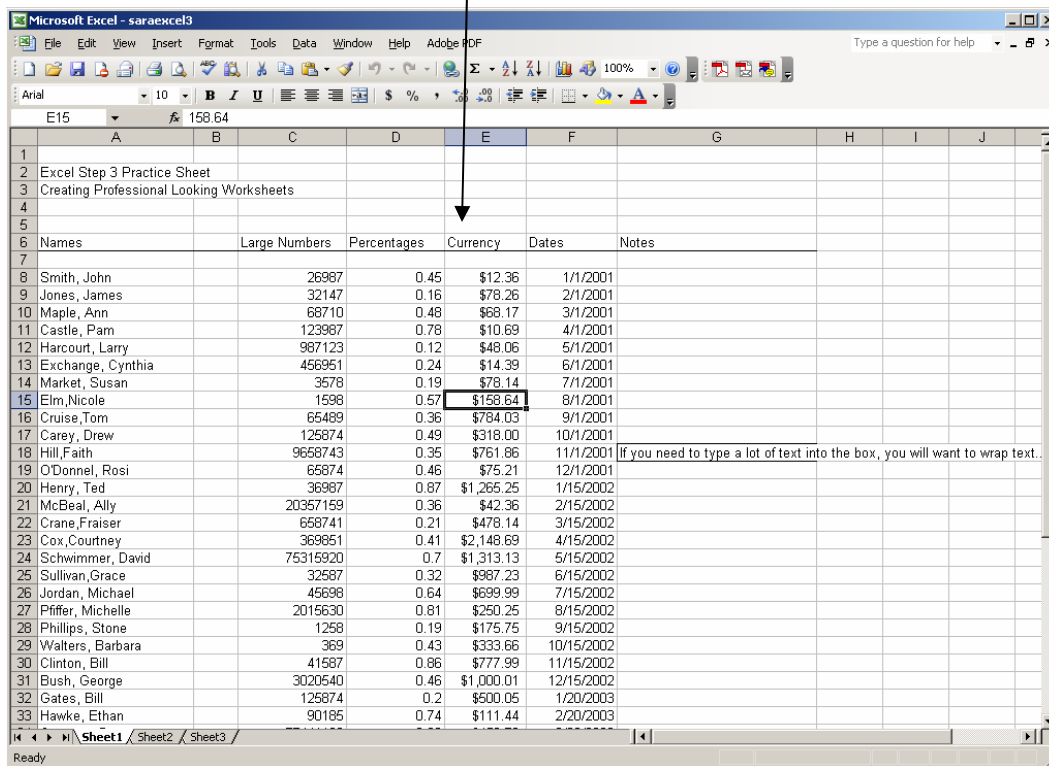
The following techniques will assist you in creating professional looking spreadsheets.

Step by Step - Format Numbers as Currency

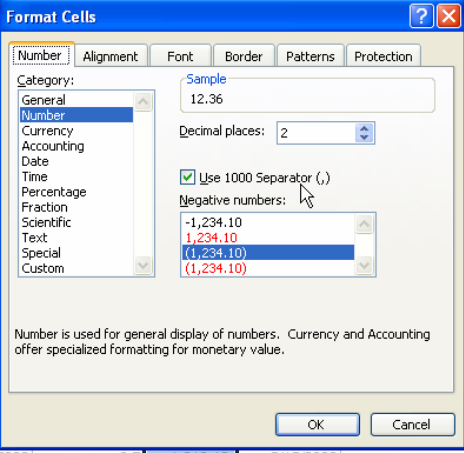
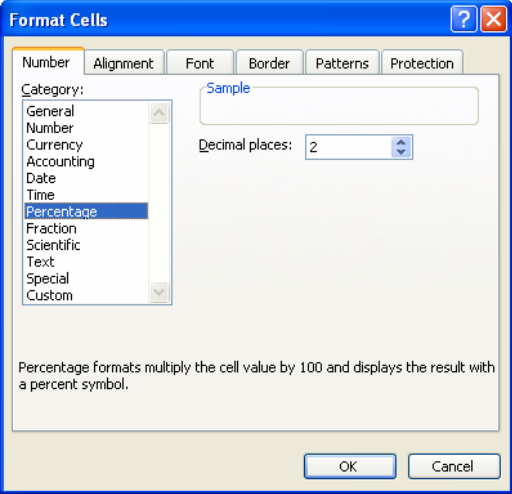
What you do	What happens
<p>1. To format cells: First, select the cells. Then, right-click and choose Format Cells. OR From the menu, choose Format; Cells.</p>	<p>The cells highlight. The Format Cells dialogue box opens.</p> 
<p>2. Click the Number Page.</p>	<p>Opens the number page which lists number categories</p>
<p>3. Click Currency in the Category list box.</p>	<p>Selects the Currency format and displays more options on the Number page.</p> 


What you do	What happens
4. To change the decimal place of the figure, use the Decimal Places field on the right side of the Number page. Change the decimal place to “2.”	Changes the selected information decimal place.
5. Click the OK button.	Closes the dialog box and applies the Currency format to the selected cells, as shown in screen shot.
6. An alternative method would be to use the Increase Decimal or Decrease Decimal toolbar icon.  and the Currency Style icon  .	Changes the selected information decimal place.

An example of formatted currency:

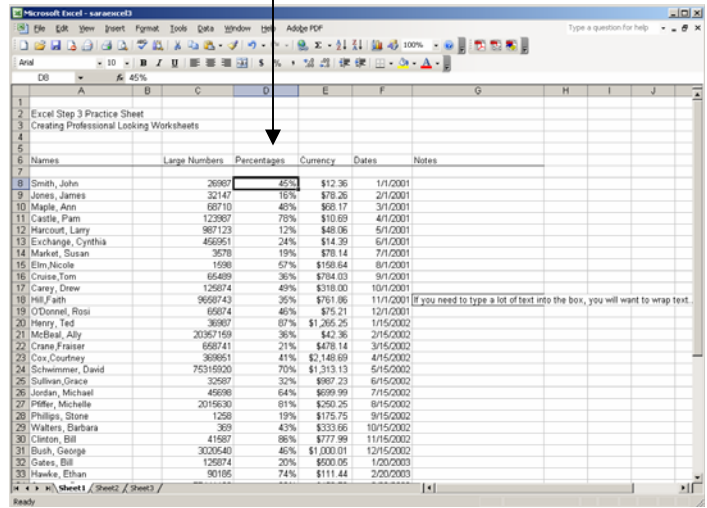


Step by Step - Format a Percentage

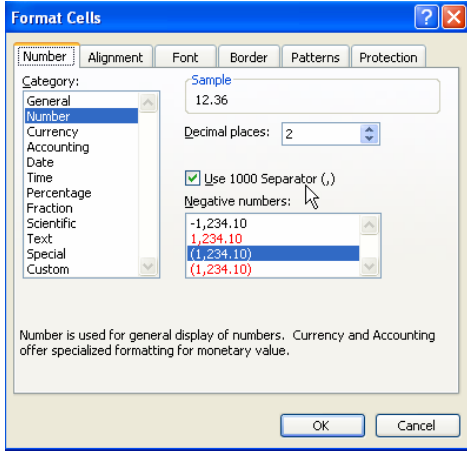
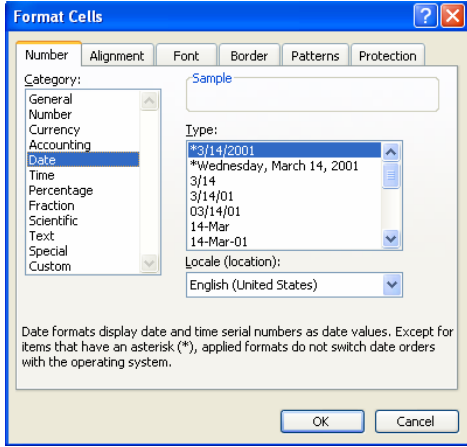
What you do	What happens
<p>1. To format cells: First, select the cells. Then, right-click and choose Format Cells. OR From the menu, choose Format; Cells.</p>	<p>The cells will highlight and the Format Cells dialog box opens.</p>
<p>2. Click on the Number Page.</p>	<p>Takes you to the number Page.</p> 
<p>3. To format the number as a percentage, select Percentage from the Category list box.</p>	<p>Selects the Percentage format and displays the option for decimal places on the right side of the page.</p> 
<p>4. Change the decimal place field to zero.</p>	<p>Default is set to 2 decimal places.</p>

<p>5. An alternate would be to click the Percent Style icon on the toolbar  .</p>	<p>Applies the new format to the cell, as shown in screen below.</p>
<p>6. Click the Save icon.</p>	<p>Saves the workbook.</p>

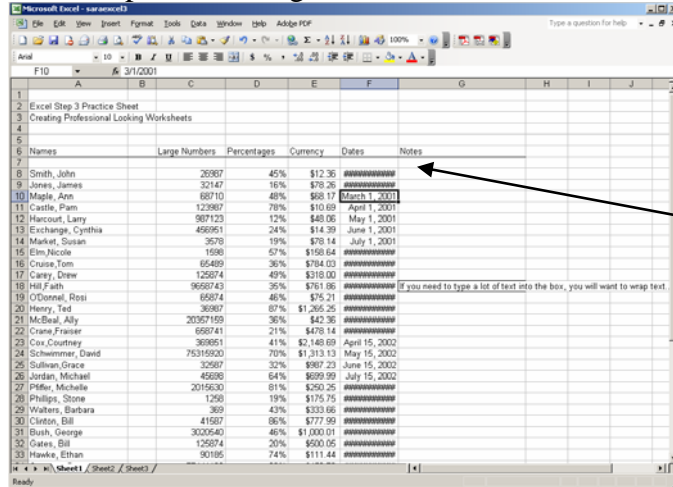
An example of a formatted percentage:




Step by Step - Format Dates

What you do	What happens
<p>1. To format cells: First, select the cells. Then, right-click and choose Format Cells. OR From the menu, choose Format; Cells.</p>	<p>The cells will highlight and the Format Cells dialog box will open.</p>
<p>2. Click on the Number page.</p>	<p>Take you to the Number page.</p> 
<p>3. Click Date in the Category list box, and then click on your choice from the Type list box.</p>	<p>Selects the Date category, and then selects the new date format.</p> 
<p>4. Click the OK button.</p>	<p>Closes the dialog box and applies the change to the dates in the selected cells.</p>
<p>5. Click the Save icon.</p>	<p>Reveals the worksheet, and then saves the workbook.</p>

An example of a change in the date format:




When the number sign is displayed across the cell, it means that the column is not wide enough to display the cells contents. Increase the column's width.

One way to increase the column's width is to place your mouse pointer in the column header on the dividing line between the columns. When your mouse pointer is on the dividing line, it becomes a double-headed arrow . Hold down the mouse button and drag the dividing line to the right, until you have the width you need. Then let go of the mouse button.

Step by Step - Align Text

By default, Excel left-aligns text and right-aligns numbers, but you can change the alignment of any cell. The contents can be left aligned, right aligned, centered, or justified. You can also center the contents of a cell across an entire range of cells.


What you do		What happens
1.	Select the cells you want to format.	The cells will highlight.
2.	In the formatting toolbar, click on the icon for the type of alignment you want. left align, center, or right align.	Per your selection, Excel will realign your selected cells.



An example of the re-aligned cells:

Right-aligned	Centered			Left-aligned
Names	Large Numbers	Percentages	Currency	Dates
Smith, John	26987	45%	\$12.36	January 1, 2001
Jones, James	32147	16%	\$78.26	February 1, 2001
Maple, Ann	68710	48%	\$68.17	March 1, 2001
Castle, Pam	123987	78%	\$10.69	April 1, 2001
Harcourt, Larry	987123	12%	\$48.06	May 1, 2001
Exchange, Cynthia	456951	24%	\$14.39	June 1, 2001
Market, Susan	3578	19%	\$78.14	July 1, 2001
Elm, Nicole	1598	57%	\$158.64	August 1, 2001
Cruise, Tom	65489	36%	\$784.03	September 1, 2001
Carey, Drew	125874	49%	\$318.00	October 1, 2001
Hill, Faith	9658743	35%	\$761.86	November 1, 2001

Step by Step - Merge Cells and Center Text

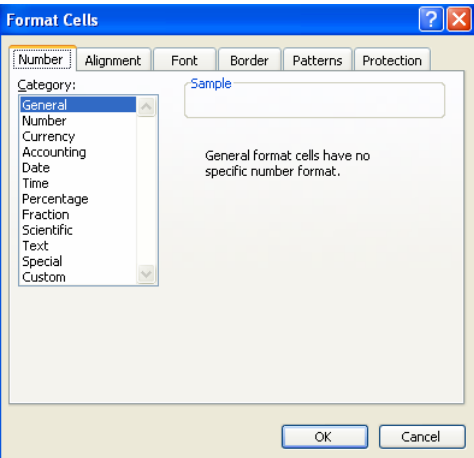
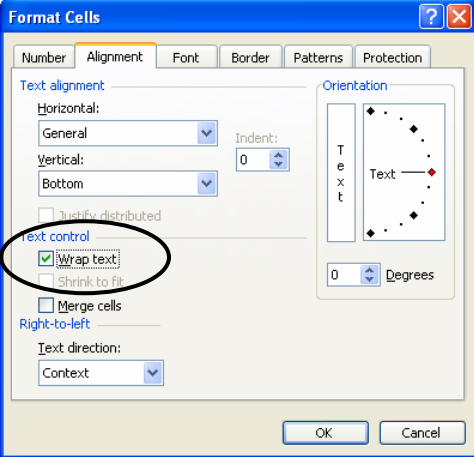
What you do		What happens
1.	Select the cells you want to format.	The cells will highlight
2.	Click on the toolbar icon, Merge and Center , to merge the cells into one larger cell and then center the text within the larger cell. 	Per your selection, Excel will merge your selected cells.
<p><i>Note:</i> You can unmerge cells by clicking on the Merge and Center tool again.</p>		

An example of merged cells with text centered:



	A	B	C	D	E	F	G
1							
2	Excel Step 3 Practice Sheet						
3	Creating Professional Looking Worksheets						
4							
5							
6	Names	Large Numbers	Percentages	Currency	Dates	Notes	
7							
8	Smith, John	26987	45%	\$12.36	January 1, 2001		
9	Jones, James	32147	16%	\$78.26	February 1, 2001		
10	Maple, Ann	68710	48%	\$68.17	March 1, 2001		
11	Castle, Pam	123987	78%	\$10.69	April 1, 2001		
12	Harcourt, Larry	987123	12%	\$48.06	May 1, 2001		
13	Exchange, Cynthia	456951	24%	\$14.39	June 1, 2001		
14	Market, Susan	3578	19%	\$78.14	July 1, 2001		
15	Elm, Nicole	1598	57%	\$158.64	August 1, 2001		
16	Cruise, Tom	65489	36%	\$784.03	September 1, 2001		
17	Carey, Drew	125874	49%	\$318.00	October 1, 2001		
18	Hill, Faith	9658743	35%	\$761.86	November 1, 2001		If you need to type a lot of text int
19	O'Donnell, Rosi	65874	46%	\$75.21	December 1, 2001		

Step by Step - Wrap Text within a Cell

The Wrap Text option specifies that text in the selected cell will break into lines within a cell.

What you do	What happens
1. Select the cells you want to format.	The cells will highlight.
2. Right-click, then trace to and click Format Cells .	Opens a shortcut menu, and then opens the Format Cells dialog box. 
3. Click the Alignment Page.	Opens the Alignment Page list.
4. Under Text Control, select the checkbox for Wrap Text .	Selects the Wrap Text category. 
5. Select OK	Return to your spreadsheet, and your selection of cells will be using word wrap.

Step by Step - Change Font and Font Size

What you do		What happens
1.	Select the cells that you want to make a font change to.	Highlights the cells.
2.	Click the Font down-arrow on the Formatting toolbar, then scroll down and click Times New Roman or whichever font you want. 	Opens the Font list box, then scrolls down the list and changes the text to Times New Roman or the desired font.
3.	Click the Font Size down-arrow on the Formatting toolbar, and then select the size. 	Opens the Font Size list box, and then increases the font size.



To quickly move to a particular font within the font drop down list:

Click on the drop down arrow.

With the list displayed, type the first letter of the font's name.



Scroll if needed.

Click on the font's name.

An example of a changed font:

	A	B	C	D	E	F	G
1							
2	Excel Step 3 Practice Sheet						
3	Creating Professional Looking Worksheets						
4							
5							
6	Names		Large Numbers	Percentages	Currency	Dates	Notes


Step by Step - Apply Bold and Italic Styles

What you do		What happens
1.	Select the cell that you want to change.	Selects the cells.
2.	Click the Bold icon on the Formatting toolbar. 	Applies bold formatting to the selected cells.
3.	Select the cell that you want to change.	Selects the cells.
4.	Click the Italics icon on the Formatting toolbar. 	Applies italic formatting to the selected cell.
5.	To bold or italicize non-connecting cells, click CTRL and click on the various desired cells to highlight them and then use the Bold or Italics icons.	This will highlight the random cells to which you want your formatting applied.

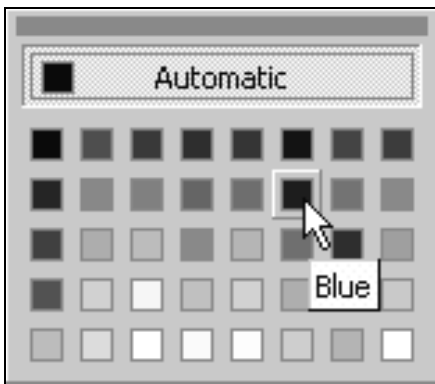
An example of Bold Formatting:

	A	B	C	D	E	F	G
1							
2	Excel Step 3 Practice Sheet						
3	Creating Professional Looking Worksheets						
4							
5							
6	<i>Names</i>	Large Numbers	Percentages	Currency	Dates	Notes	
7							
8	Smith, John	26987	45%	\$12.36	January 1, 2001		
9	Jones, James	32147	16%	\$78.26	February 1, 2001		
10	Maple, Ann	68710	48%	\$68.17	March 1, 2001		
11	Castle, Pam	123987	78%	\$10.69	April 1, 2001		
12	Harcourt, Larry	987123	12%	\$48.06	May 1, 2001		
13	Exchange, Cynthia	456951	24%	\$14.39	June 1, 2001		
14	Market, Susan	3578	19%	\$78.14	July 1, 2001		
15	Elm, Nicole	1598	57%	\$158.64	August 1, 2001		
16	Cruise, Tom	65489	36%	\$784.03	September 1, 2001		
17	Carey, Drew	125874	49%	\$318.00	October 1, 2001		
18						If you need to type a lot of text into the box, you will want to	

Step by Step - Change Text Color

What you do	What happens
1. Select the cells that you want to make a font color change to.	Selects the cells.
2. Click on the Font Color icon, then click the color of choice 	Opens the Font Color palette, and changes the color of the text in the selected cells to the chosen color.

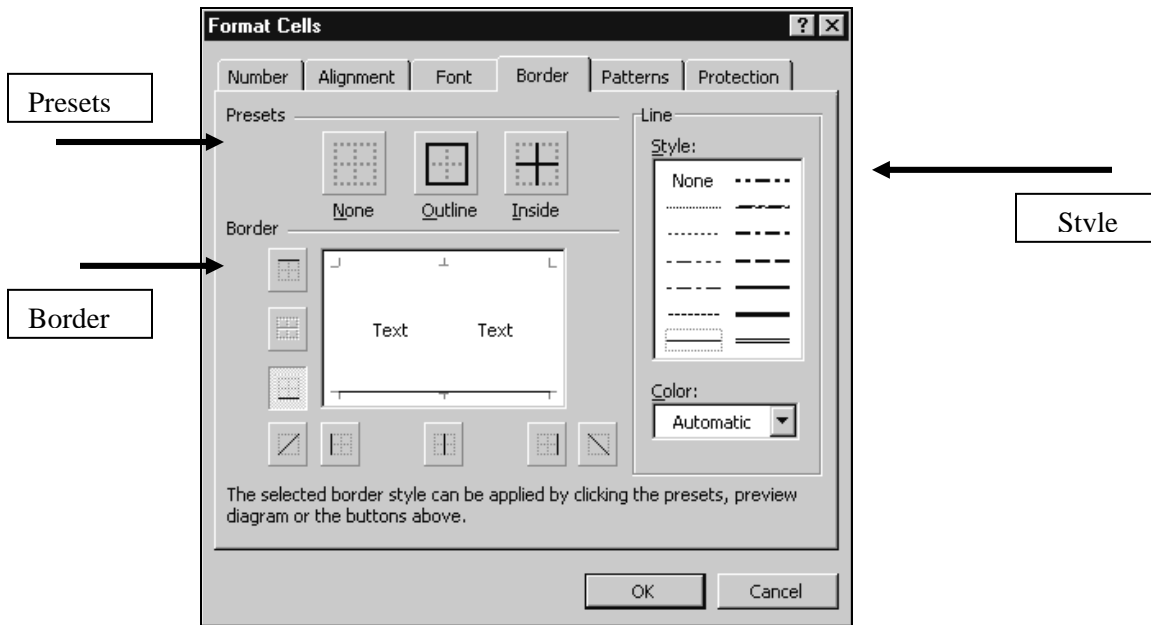
The Color Palette:



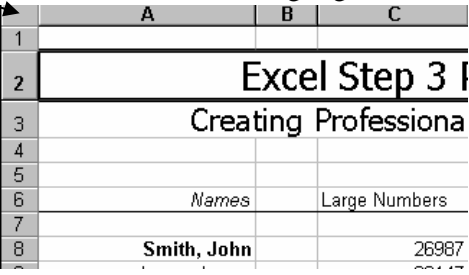
Step by Step - Apply a Single Border

What you do		What happens
1.	Select the cells that you want to add a border to.	Selects the cells.
2.	Click Format , then trace to and click Cells .	Opens the Format menu, and then opens the Format Cells dialog box.
3.	Click the Border tab.	Reveals the Border card.
4.	Click the desired Border icon(s) in the Presets area (None, Outline, or Inside) and the Border section.	Applies a border to the bottom of the preview image in the dialog box, as shown below.
5.	Select the Style of Border from the Line section.	Applies the style to the border
6.	Click the OK button.	Closes the dialog box and applies a single border to the bottom of the selected cells.

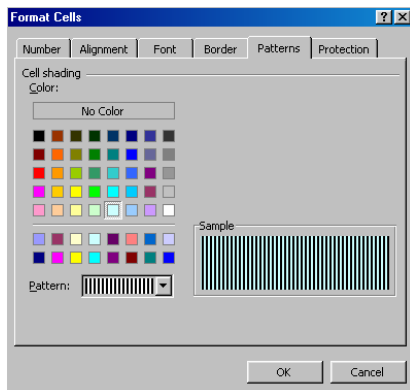
The Border Card with the Presets, Border and Style areas marked:



Step by Step - Apply Shading

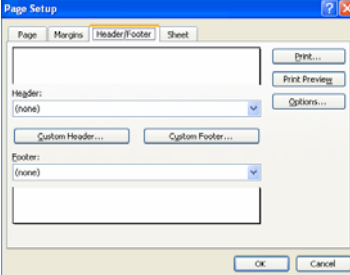


What you do	What happens
<p>1. Press Ctrl+Home, and then click the Select All button. (It is the gray colored rectangle at the junction of the row and the column headers.) An alternative method is to press Ctrl +A. or select the cells that you want to shade.</p>	<p>Moves to cell A1, then selects the entire worksheet or the cells highlighted.</p> 
<p>2. Click Format, then trace to and click Cells.</p>	<p>Opens the Format menu, and then opens the Format Cells dialog box.</p>
<p>3. Click the Patterns tab.</p>	<p>Reveals the Patterns card.</p>
<p>4. Select the color you wish to use. Select a pattern from the Pattern dropdown, if desired.</p>	<p>Shows a preview of how the color will appear in the worksheet.</p>
<p>5. Click the OK button, then click cell A1.</p>	<p>Closes the dialog and applies the color to the worksheet, then selects cell A1.</p>

The Cell Shading Color Palette and Patterns:

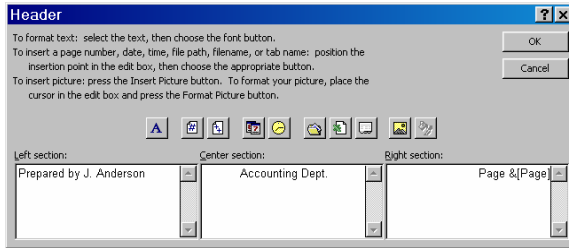


After shading is applied to the worksheet, the gridlines are no longer visible.

Step by Step - Create a Custom Footer

What you do	What happens
1. Double-click on the View option from the Menu bar.	Returns the Page Setup dialog box. 
2. Click the Custom Footer button.	Opens the Footer dialog box. 
3. Type your footer in the Left, Center, and/or the Right sections list boxes.	Enters the text.
4. If you want to add page numbers, then type <i>Page</i> in the Right section list box.	Moves the insertion point to the Right section list box, and then enters the text.
5. Enter a space, and then click the Page Number icon. 	Enters a space after Page, and then inserts a placeholder for the page number.
6. Click the OK button in the Footer dialog box.	Closes the Footer dialog box and displays the new footer in the Page Setup dialog box.
7. Click the OK button in the Page Setup dialog box.	Closes the Page Setup dialog box and shows the worksheet in Print Preview.

An example of the entry for a custom footer:



The header and footer will now show up on any new pages that are printed from the Sheet1 worksheet, but they will not appear on the other worksheets in the workbook. To set headers and footers for the other worksheets, click the sheet tab for the worksheet you want to print, then open the Page Setup dialog box and use the Header/Footer card to apply headers and footers.

If you want to use the same header or footer on more than one worksheet, first, select the worksheets you want to include.² Then, open the Page Setup dialog box and setup the header or footer.

² To select more than one worksheet, hold down the **CTRL** key and click on the sheet tab for each of the sheets that you want to select. The sheet tabs will appear as active, in white.

Step by Step - Preview the Worksheet

	What you do	What happens
1.	Click File , then trace to and click Print Preview .	Opens the File menu, and then displays the worksheet in Print Preview mode.
2.	Move the mouse pointer over the page.	Changes the mouse pointer to a magnifying glass pointer.
3.	Click the title (or anywhere) on the worksheet.	Zooms in on the worksheet.
4.	Click the worksheet again.	Zooms out to a full-page view.
5.	Click below the scroll box on the vertical scroll bar.	Shows the contents of the second page.
6.	Click the Close button on the Print Preview toolbar.	Closes Print Preview and returns to the worksheet.

An example of Print Preview:


The screenshot shows the Microsoft Excel 2003 Print Preview window. The title bar reads 'Microsoft Excel - saraexcel3'. The menu bar includes 'Next', 'Previous', 'Zoom', 'Print...', 'Setup...', 'Margins', 'Page Break Preview', 'Close', and 'Help'. The worksheet content is as follows:

Excel Step 3 Practice Sheet
Creating Professional Looking Worksheets

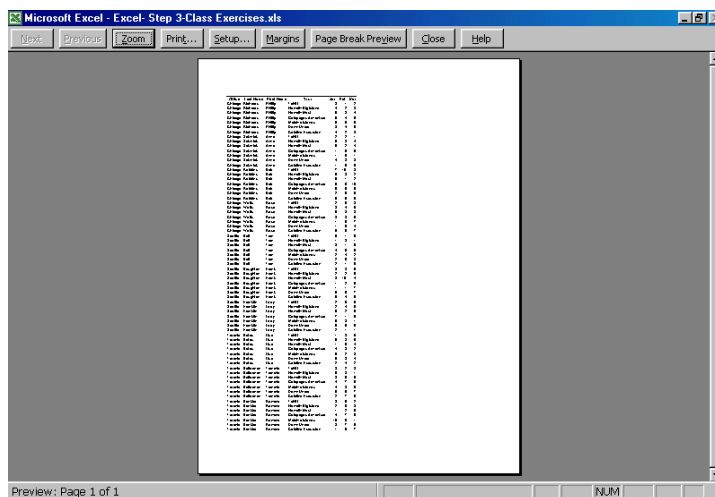
Names	Large Numbers	Percentage	Currency	Date	Notes
Smith, John	26987	45%	\$1236	January 1, 2001	
Jones, James	32147	16%	\$2826	February 1, 2001	
Maple, Ann	68710	48%	\$6817	March 1, 2001	
Case, Pam	123987	78%	\$1069	April 1, 2001	
Harcourt, Larry	987123	12%	\$4806	May 1, 2001	
Evillage, Cynthia	456951	24%	\$1439	June 1, 2001	
Harley, Cecilia	3578	19%	\$7814	July 1, 2001	
Ellis, Nicole	1598	57%	\$15864	August 1, 2001	
Chen, Tom	65489	36%	\$78403	September 1, 2001	
Cooley, Drew	125874	49%	\$31800	October 1, 2001	
Hill, Faith	968743	35%	\$70186	November 1, 2001	
O'Donnell, Paul	65514	46%	\$7521	December 1, 2001	
Harty, Ted	36987	87%	\$126525	January 15, 2002	
McNeal, Amy	20307159	36%	\$4236	February 15, 2002	
Craig, Frankie	68741	21%	\$47814	March 15, 2002	
Cox, Courtney	369851	41%	\$2,148,69	April 15, 2002	
Schulmer, David	75315920	79%	\$1,313.13	May 15, 2002	
Callahan, Grace	32587	32%	\$68723	June 15, 2002	
Jordan, Michael	45698	64%	\$69999	July 15, 2002	
Price, Michelle	2016530	81%	\$25925	August 15, 2002	
Phillips, Steve	1298	19%	\$17575	September 15, 2002	
Walker, Barbara	369	43%	\$33366	October 15, 2002	
Clark, Bill	41587	86%	\$7799	November 15, 2002	
Bird, George	3020540	46%	\$1,000.81	December 15, 2002	
Gates, Bill	125874	20%	\$50005	January 20, 2003	
Hawke, Ethan	90185	74%	\$11144	February 20, 2003	
Conroy, Sean	7144133	39%	\$45678	March 20, 2003	
Shaffer, Frank	89547	57%	\$32198	April 20, 2003	
Matthew, Dave	6540123	64%	\$125	May 20, 2003	
Fox, Peter	12587	23%	\$236	June 20, 2003	
Dick, Danny	3697510	45%	\$14258	July 20, 2003	
Moore, Mickey	98753210369	71%	\$300	August 20, 2003	
Moore, Mike	214587	87%	\$27163	September 20, 2003	
Brown, Clark	2145	93%	\$4547	October 20, 2003	
Campbell, George	65571	50%	\$6181	November 20, 2003	
McMull, Lyle	963014	10%	\$8366	December 20, 2003	

At the bottom of the window, it says 'Preview: Page 1 of 1' and 'CAPS'.

Step by Step - Change Page Orientation and Scaling

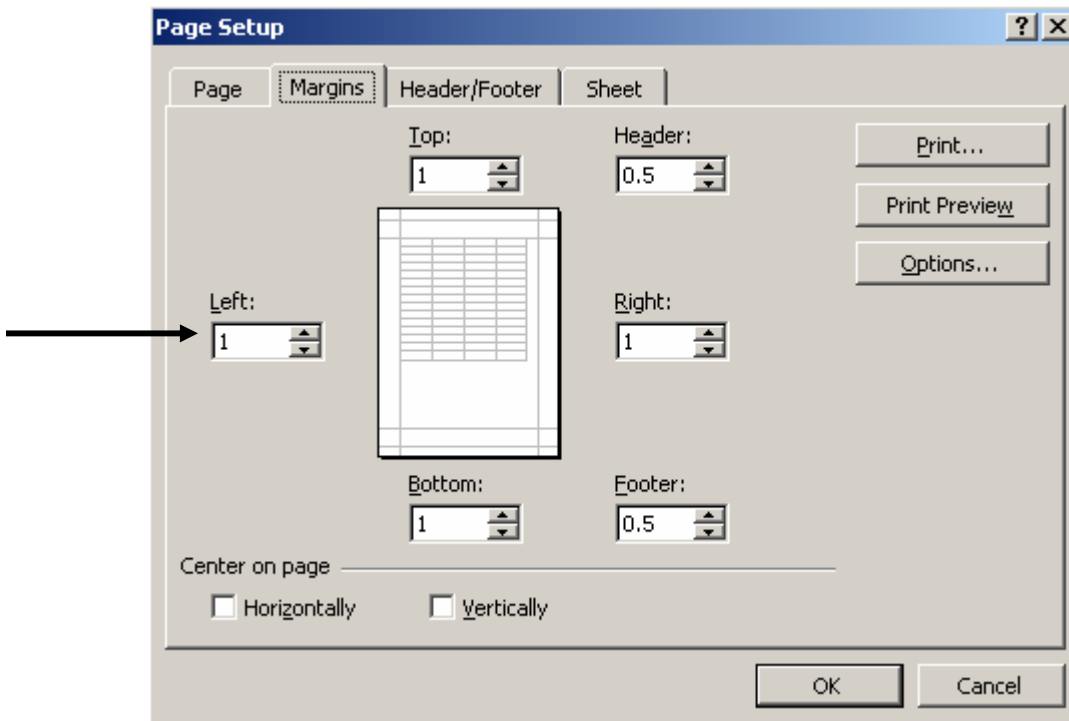
What you do		What happens
1.	Click on the Print Preview icon in the toolbar  .	The Print Preview view is displayed. If there is more than 1 page use the Next button on the toolbar to see the next page.
2.	Click on the Setup button in the toolbar.	This works the same as File, Page Setup to return the Page Setup dialog box.
3.	Select the Portrait option in the Orientation section.	Specifies that the page will be wider than it is tall.
4.	Select the Fit to Option in the Scaling section.	Specifies that the worksheet will be sized to fit on one page.
5.	Click the OK button.	Opens the Print Preview window and shows that the worksheet now fits on one page.
6.	Click on the Close button or the Esc key to return to the sheet.	The sheet displays.

An example of scaling:



Step by Step - Set Page Margins

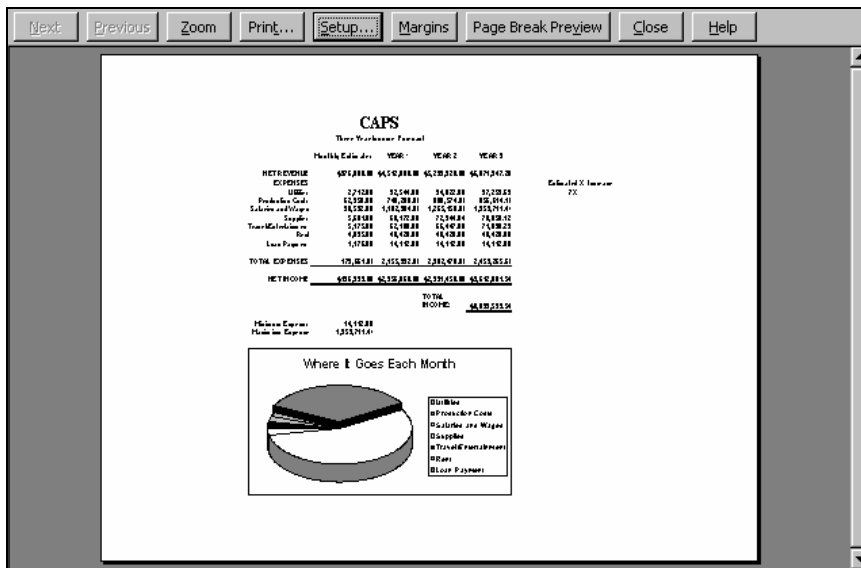
What you do	What happens
1. Click File on the menu bar, then trace to and click Page Setup .	Opens the File menu, and then opens the Page Setup dialog box.
2. Click the Margins tab.	Reveals the Margins card.
3. Double-click in the Left text box, then type 1, or the desired spacing.	Selects the text in the Left text box, and then sets the left margin to 1 inch.
4. Press the Tab key, and then type 1, or the desired spacing, in the Right text box.	Selects the text in the Right text box, and then sets the right margin to 1 inch.
5. Click the OK button.	Closes the Page Setup dialog box and shows the worksheet in Print Preview mode with new margins.



Step by Step - Adjust Centering

What you do		What happens
1.	Click File on the menu bar, then trace to and click Page Setup .	Opens the File menu, and then opens the Page Setup dialog box.
2.	Click the Margins Tab.	Reveals the Margin Card.
3.	Select the Horizontally and Vertically options in the Center on page section.	Specifies that the worksheet will be centered on the page and adjusts the preview image to show the change.
4.	Click the OK button.	Returns to Print Preview and applies the changes.

An example after adjustment for centering:



A Reference Guide for Printing Large Worksheets is provided in the Appendix of this manual.

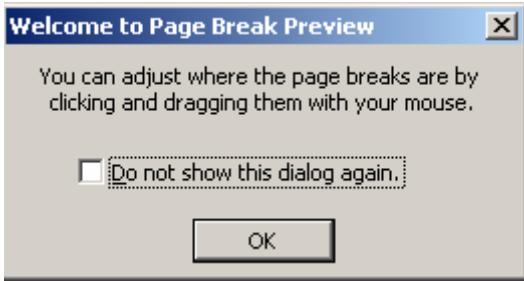
Page Breaks

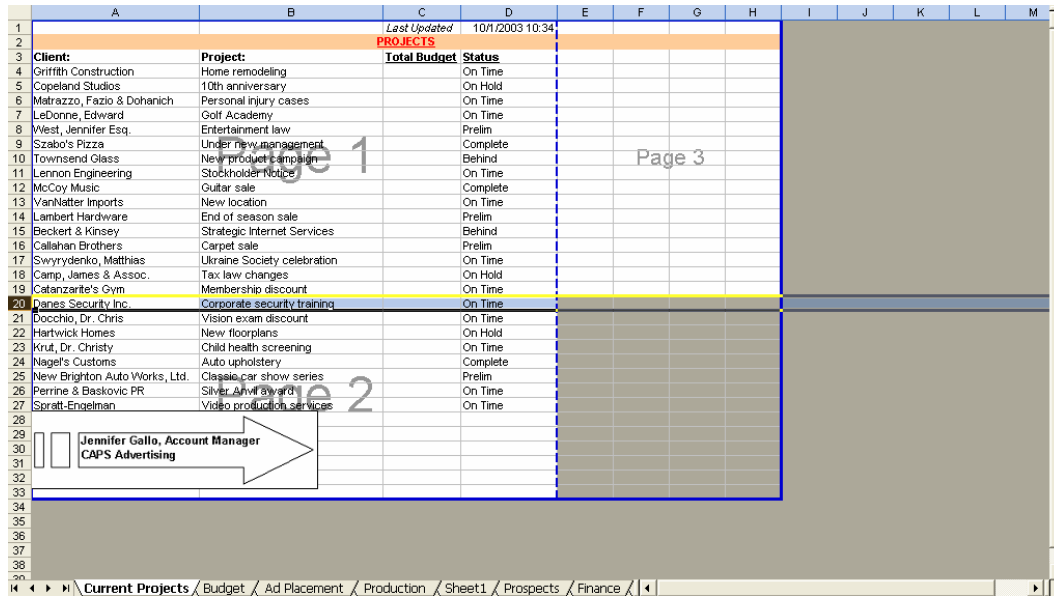
Step by Step - Insert A Page Break

You can insert page breaks to make the printed copy of the worksheet easier to read. You must have a printer driver installed on your computer if you want to perform printing-related tasks in Excel.

New Terms

Page Break	Use page breaks to tell Excel which rows and/or columns are to be printed on a page.
Page Break Preview Command	Use the Page Break Preview command on the View menu to see how the pages and page breaks will be formatted when the worksheet is printed.

What you do		What happens
1.	Click the row heading where you wish to place the page break.	Selects the row below where the page break will go.
2.	Double-click Insert on the menu bar, then trace to and click Page Break .	Displays the expanded Insert menu, then inserts the page break <i>above the selected row</i> .
3.	Click View on the menu bar, then click Page Break Preview .	Switches to Page Break Preview and opens the Welcome to Page Break Preview message box.
4.	Click the OK button in the Welcome to Page Break Preview message box.	Closes the Welcome to Page Break Preview message box and displays the worksheet showing the current page breaks, as well as the newly added page break, as shown in screen shot on the next page. 
5.	Click View on the menu bar, then trace to and click Normal .	Returns the worksheet to the normal view.



The Page Breaks Inserted Above Row 20

Step by Step - Move Page Breaks in Page Break Preview

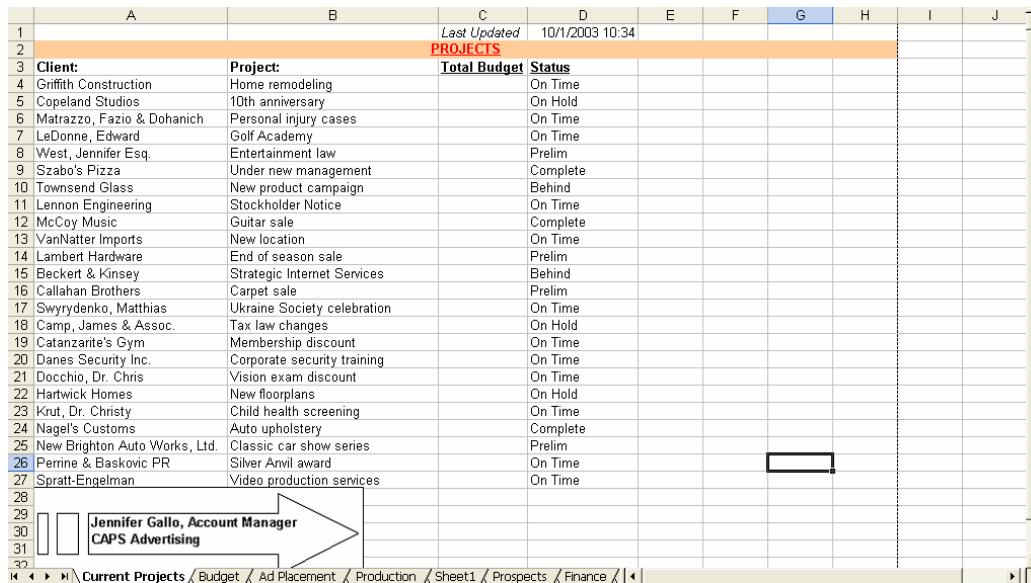
What you do	What happens
1. Click View on the menu bar, then click Page Break Preview .	Switches to Page Break Preview and opens the Welcome to Page Break Preview message box.
2. To remove the extra page, (page 3 in our example), place cursor on vertical blue dotted line and drag to the right to meet the end of page 3.	Moves Page 1 and Page 2 horizontally, and removes excess pages of 3 and 4.
3. To adjust Page 1 and Page 2 vertically, place cursor on solid horizontal line (at row 20) and drag to above row 25.	Moves Page 1 down to row 24 and Page 2 to start at Row 25.
4. Click View on the menu bar, then trace to and click Normal .	Returns the worksheet to the normal view.

Step by Step - Remove A Page Break

New Terms

Remove Page Break Command	Use the Remove Page Break command on the Insert menu to remove a page break from the current worksheet.
----------------------------------	---------------------------------------------------------------------------------------------------------

What you do	What happens
1. Click the Print Preview button on the Standard toolbar.	Opens Print Preview showing the first page of the worksheet.
2. Scroll down.	Shows the second page of the worksheet.
3. Click the Close button.	Closes Print Preview .
4. Click the row heading below where the page break will go.	Selects the row below the page break.
5. Click Insert on the menu bar, then trace to and click Remove Page Break .	Removes the page break from the worksheet, as shown in screen shot.
6. Click the Save button.	Saves the workbook.



The Worksheet After Removing The Page Break


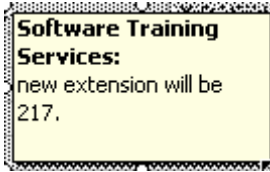
Using Comments

Step by Step - Add A Comment

Comments are notes that you can attach to individual cells on a worksheet. You can use them to provide instructions, to explain a particular section of a worksheet, or as a reminder. Cells with comments have a small triangle in the upper-right corner. When you place the mouse pointer over the cell, the comment appears in a text box next to the cell. The name of the person who added the comment appears in the text box, so comments added by other users in a shared workbook are easy to identify.

New Terms

Comments	Comments are notes that you can attach to individual cells on a worksheet. Cells with comments have a small triangle in the upper-right corner. Comments appear when you place the mouse pointer over the cell.
Comment Command	Use the Comment command on the Insert menu to begin entering a comment for the selected cell.

What you do		What happens
1.	Click the cell where you wish to add a comment.	Selects the cell.
2.	Double-click Insert on the menu bar, then trace to and click Comment .	Opens the Insert menu, then shows a comment text box for the selected cell. 
3.	Type the comment in the comment text box.	Enters the comment in the comment box. 
4.	If you select another cell, the comment will be hidden. By default, a small red triangle in the upper right corner of the cell indicates the existence of a comment for the cell.	Selects another cell and hides the comment.

5. Place the mouse pointer over the cell where you just added the comment. The comment will appear.	Shows the comment for the cell, as shown in screen shot.
-----------------------------------------------------------------------------------------------------	----------------------------------------------------------

	E	F	G	H	I	J	K	L	M	N	
1	StateOrProvince	PostalCode	CompanyName	Title	WorkPhone	WorkExtension	MobilePhone	FaxNumber	EmailName	LastMeetingDate	Conta
2	IL	55511	Channel 11	Advertising Coordinator	3035551212	x184		3035551209			
3	IL	55511	Channel 13	Advertising Coordinator	3035558889	x141		3035558800			
4	IL	55511	Channel 5	Advertising Specialist	3035552360	x245		3035552366			
5	IL	55511	Channel 7	Advertising Director	3035551133	x360		3035551103			
6	MI	33322	AutoWeekly	Advertising Editor	2025554618	x217		3035551009			
7	IL	55511	City Tribune	Advertising Manager	3035555050	x340		3035551000			
8	IL	55511	Daily Journal	Advertising Director	3035554990	x203		3035551009			
9	IL	55511	Garden Gazette	Advertising Editor	3035557700	x111		3035551717			
10											
11											
12											
13											
14											
15											
16											
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18											
19											
20											

The Comment Added To Cell J6

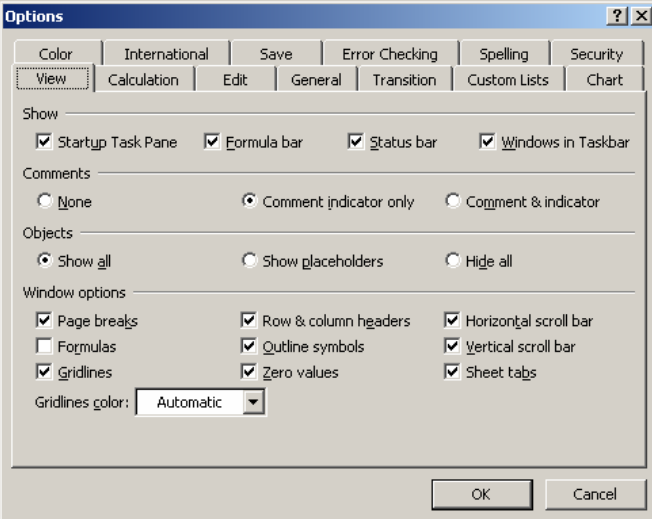


To print the comments in a workbook, click **File** on the menu bar, then trace to and click **Page Setup**. In the Page Setup dialog box, click the **Sheet** tab, then use the comments down arrow to select whether the comments will print at the end of each worksheet or as they are displayed on each sheet.



You can also add a comment by right-clicking a cell, then tracing to and clicking **Insert Comment**.

Step by Step - Hide or Display Comments and their Indicators

What you do	What happens
1. On the Tools menu, click Options , and then click on the View tab.	Opens the Options dialogue box. Displays the View tab.
2. To hide comments, even when you rest the pointer over the cells that contain them, and also clear the comment indicators in the corners of the cells, select None under Comments .	<p>The Option box:</p> 
3. To display comments when you rest the pointer over cells that contain them, and also show the comment indicators, select Comment indicator only .	
4. To display both comments and indicators regardless of mouse position, select Comments & indicator .	



You can also hide an individual comment by right-clicking the cell, and then clicking on **Hide Comment**.

Step by Step - Edit A Comment

New Terms

Edit Comment Command	Use the Edit Comment command on the Insert menu to begin editing the comment for the selected cell.
-----------------------------	-----------------------------------------------------------------------------------------------------

	What you do	What happens
1.	Click the cell with the comment you wish to edit, double-click Insert on the menu bar, then trace to and click Edit Comment .	Selects the cell, opens the Insert menu, then selects the comment box on the worksheet.
2.	Edit the comment as needed.	Modify the comment.

	A	B	C	D	E	F	G	H	I	J
1	FirstName	LastName	Address	City	StateOrProvince	PostalCode	CompanyName	Title	WorkPhone	WorkExtensio
2	Rick	Bowman	1854 Media Center Parkway	Jefferson	IL	55511	Channel 11	Advertising Coordinator	3035551212	x184
3	Karen	Fisher	7000 Bridlewood Blvd.	Jefferson	IL	55511	Channel 13	Advertising Coordinator	3035556889	x141
4	Melissa	Stevenson	5201 Commerce Way			55511	Channel 5	Advertising Specialist	3035552360	x245
5	Mark	Dobson	900 Woodford Dr.			55511	Channel 7	Advertising Director	3035551133	x360
6	Bridget	McDonald	1950 Hudson St.			33322	AutoWeekly	Advertising Editor	2025554618	x217
7	Darrell	Williams	11440 Ellington St.			55511	City Tribune	Advertising Manager	3035555050	x340
8	Wendy	Sorensen	1600 Park Lake Dr.			55511	Daily Journal	Advertising Director	3035554990	x203
9	Jack	Davis	2344 Plant Rd.	Jefferson	IL	55511	Garden Gazette	Advertising Editor	3035557700	x111
10										
11										
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You can also edit a comment by right-clicking the cell, then tracing to and clicking Edit Comment.

The Edited Comment

Step by Step - Remove A Comment

New Terms

Comments Command	Use the Comments command on the Clear submenu to remove comments from the selected cells.
-------------------------	-------------------------------------------------------------------------------------------

What you do	What happens
1. Click the cell which the contains the comment you wish to remove.	Selects the cell.
2. Click Edit on the menu bar, trace to Clear , then trace to and click Comments .	Opens the Edit menu, opens the Clear submenu, then removes the comment indicator from the cell.

J6		= x217			
	F	G	H	I	J
1	PostalCode	CompanyName	Title	WorkPhone	WorkExtension
2	55511	Channel 11	Advertising Coordinator	3035551212	x184
3	55511	Channel 13	Advertising Coordinator	3035558889	x141
4	55511	Channel 5	Advertising Specialist	3035552360	x245
5	55511	Channel 7	Advertising Director	3035551133	x360
6	33322	AutoWeekly	Advertising Editor	2025554618	x217
7	55511	City Tribune	Advertising Manager	3035555050	x340
8	55511	Daily Journal	Advertising Director	3035554990	x203
9	55511	Garden Gazette	Advertising Editor	3035557700	x111

The Comment Removed From J6

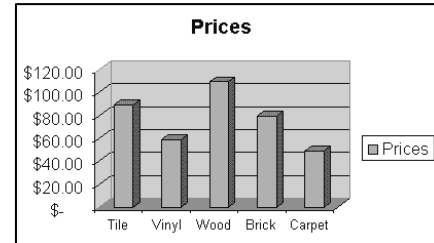


You can also remove a comment by right-clicking the cell, then tracing to and clicking Delete Comment.

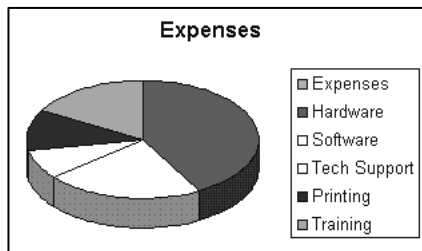
Charts


A chart is a visual representation of numeric values. Once a worksheet is finished, you can use it to generate charts. Excel can create dozens of different types of charts, including column, bar, line, pie, scatter, area, and surface charts. Displaying data in a well-designed chart can make the numbers more meaningful.

Charts are an alternative way to communicate what the numbers in a worksheet are stating. Charts are effective for making comparisons, analyzing data, and showing trends. For example, you might include a bar chart in a report to show how this term's enrollment compares to last term's enrollment or you could create a pie chart that shows the percentage of students by declared major.



To create a chart, you select the cells that contain the data you want to include in the



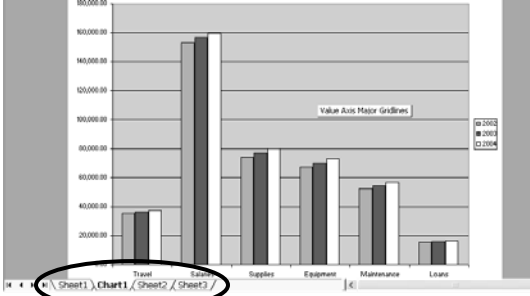
chart, and then click the Chart Wizard tool  on the Standard toolbar to begin creating it. You can choose the type of chart you want, apply visual effects, add titles and data labels, and change colors and borders. **If the data in the worksheet changes, the chart will automatically update to reflect the new information.**

There are two methods that can be used to create a chart in Excel:

- Use the F11 key to create the chart on a separate worksheet
- Use the Chart toolbar to create the chart on the same worksheet as the data


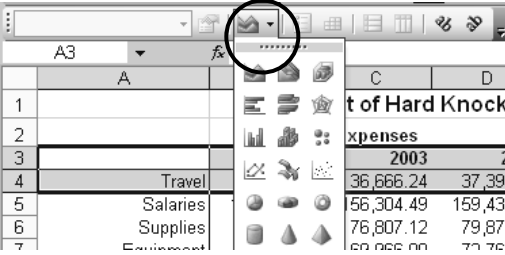
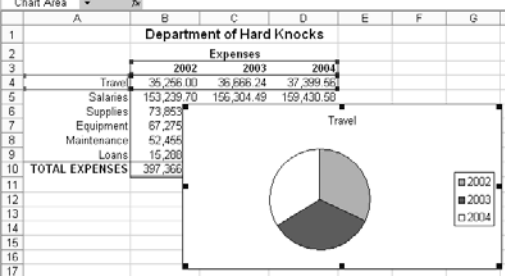
Step by Step – Create a Chart Using F11

Here is a quick way to create a chart. Once the chart is created, you use the techniques reviewed later in this manual to modify the chart.

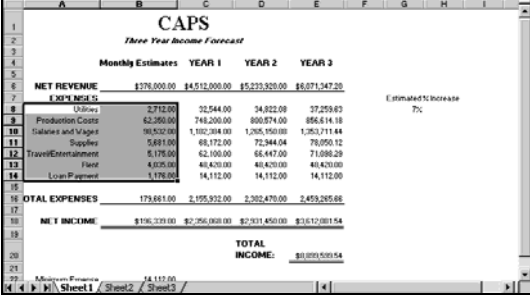
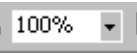
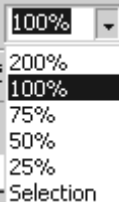

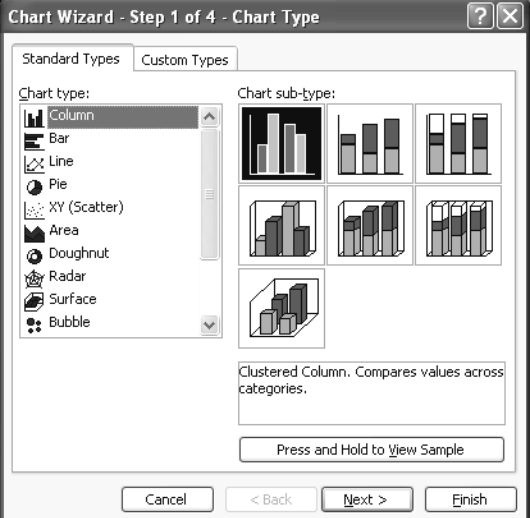
What you do	What happens																																																																														
<p>1. <u>SELECT THE DATA TO CHART.</u> Click in the first cell to include and drag to the last cell to select the range.</p>	<p>The numeric data and the labels for the chart are selected.</p> <table border="1" data-bbox="824 516 1351 781"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td colspan="4" style="text-align: center;">Department of Hard Knocks</td> </tr> <tr> <td>2</td> <td></td> <td colspan="4" style="text-align: center;">Expenses</td> </tr> <tr> <td>3</td> <td></td> <td style="text-align: center;">2002</td> <td style="text-align: center;">2003</td> <td style="text-align: center;">2004</td> <td></td> </tr> <tr> <td>4</td> <td>Travel</td> <td>35,256.00</td> <td>36,666.24</td> <td>37,399.56</td> <td></td> </tr> <tr> <td>5</td> <td>Salaries</td> <td>153,239.70</td> <td>156,304.49</td> <td>159,430.58</td> <td></td> </tr> <tr> <td>6</td> <td>Supplies</td> <td>73,853.00</td> <td>76,807.12</td> <td>79,879.40</td> <td></td> </tr> <tr> <td>7</td> <td>Equipment</td> <td>67,275.00</td> <td>69,966.00</td> <td>72,764.64</td> <td></td> </tr> <tr> <td>8</td> <td>Maintenance</td> <td>52,455.00</td> <td>54,553.20</td> <td>56,735.33</td> <td></td> </tr> <tr> <td>9</td> <td>Loans</td> <td>15,288.00</td> <td>15,899.52</td> <td>16,535.50</td> <td></td> </tr> <tr> <td>10</td> <td>TOTAL EXPENSES</td> <td>397,366.70</td> <td>410,196.57</td> <td>422,745.02</td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	1		Department of Hard Knocks				2		Expenses				3		2002	2003	2004		4	Travel	35,256.00	36,666.24	37,399.56		5	Salaries	153,239.70	156,304.49	159,430.58		6	Supplies	73,853.00	76,807.12	79,879.40		7	Equipment	67,275.00	69,966.00	72,764.64		8	Maintenance	52,455.00	54,553.20	56,735.33		9	Loans	15,288.00	15,899.52	16,535.50		10	TOTAL EXPENSES	397,366.70	410,196.57	422,745.02		11						12					
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<p>2. <u>PRESS F11.</u></p>	<p>The chart is created on a separate sheet. The sheet is placed before the active sheet.</p>  <p>The chart is a 3D bar chart with the following data series:</p> <table border="1" data-bbox="824 856 1351 1150"> <thead> <tr> <th>Category</th> <th>2002</th> <th>2003</th> <th>2004</th> </tr> </thead> <tbody> <tr> <td>Travel</td> <td>35,256.00</td> <td>36,666.24</td> <td>37,399.56</td> </tr> <tr> <td>Salaries</td> <td>153,239.70</td> <td>156,304.49</td> <td>159,430.58</td> </tr> <tr> <td>Supplies</td> <td>73,853.00</td> <td>76,807.12</td> <td>79,879.40</td> </tr> <tr> <td>Equipment</td> <td>67,275.00</td> <td>69,966.00</td> <td>72,764.64</td> </tr> <tr> <td>Maintenance</td> <td>52,455.00</td> <td>54,553.20</td> <td>56,735.33</td> </tr> <tr> <td>Loans</td> <td>15,288.00</td> <td>15,899.52</td> <td>16,535.50</td> </tr> <tr> <td>TOTAL EXPENSES</td> <td>397,366.70</td> <td>410,196.57</td> <td>422,745.02</td> </tr> </tbody> </table>	Category	2002	2003	2004	Travel	35,256.00	36,666.24	37,399.56	Salaries	153,239.70	156,304.49	159,430.58	Supplies	73,853.00	76,807.12	79,879.40	Equipment	67,275.00	69,966.00	72,764.64	Maintenance	52,455.00	54,553.20	56,735.33	Loans	15,288.00	15,899.52	16,535.50	TOTAL EXPENSES	397,366.70	410,196.57	422,745.02																																														
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Step by Step – Create a Chart Using the Chart Toolbar

Here is another quick way to create a chart. Once the chart is created, you use the techniques reviewed later in this manual to modify the chart.

What you do	What happens
1. ENTER THE DATA. Click on the Sheet tab to make that sheet active.	The Sheet is displayed.
2. DISPLAY THE CHART TOOLBAR. In the menu, click on View, Toolbars, Chart.	The Chart toolbar is displayed. 
3. SELECT THE DATA TO CHART. Click in the first cell and drag through the last cell to select the range.	The data to chart is highlighted.
4. SELECT THE CHART TYPE. On the Chart toolbar, click on the down arrow of the Chart Type tool and select the type of chart you want.	The Chart toolbar is shown with the chart types available on the Chart Type tool.  <p>In this example, the Pie chart was selected. After the Pie chart is selected, Excel draws the chart on the same worksheet as the data.</p>  <p>To reposition the chart, place the mouse pointer on the border of the chart and drag the chart to a new location.</p>

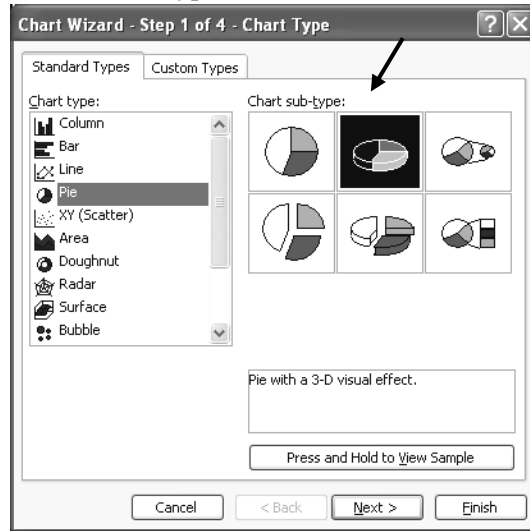
Step by Step – Create a Chart with the Chart Wizard

What you do	What happens
<p>1. Use the mouse to select the range of cells to include in the graph.</p>	<p>The cells in the range will be highlighted on the screen. This data will be included in the chart.</p> 
<p>2. On the standard toolbar, click on the down arrow of the View tool .</p>	<p>The list of views is returned.</p> 
<p>3. Click on the 75% view to select it.</p>	<p>Specifies that the worksheet will be viewed at 75% of the print size.</p>
<p>4. Click on the Chart Wizard tool  on the standard toolbar.</p>	<p>Starts the Chart Wizard. Step 1 of 4, “Chart Type,” is returned.</p> 

5. Note that there are two pages in the Step 1 box, Standard Types and Custom Types.

Select the desired chart type.

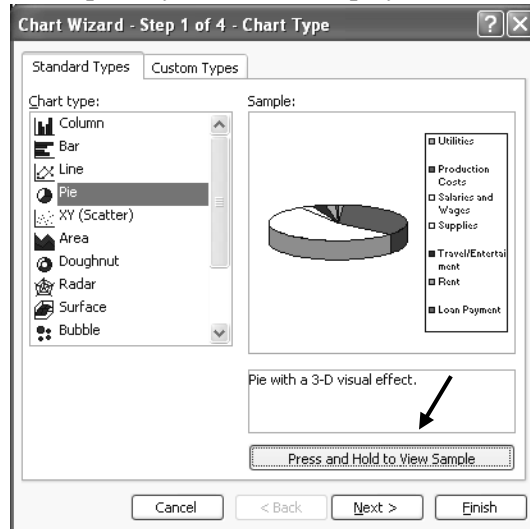
The “Pie with a 3-D Visual Effect” is selected as the Chart Type.



6. Click and hold down the mouse button on “**Press and Hold to View Sample**”.

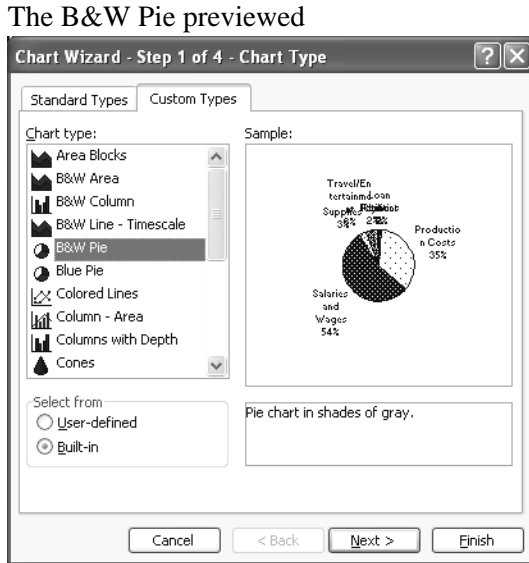
This allows you to see a sample of the chart of your selected data.

A sample of your chart is displayed.

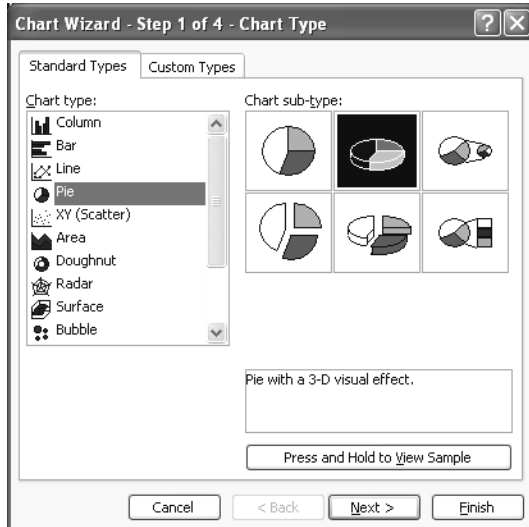


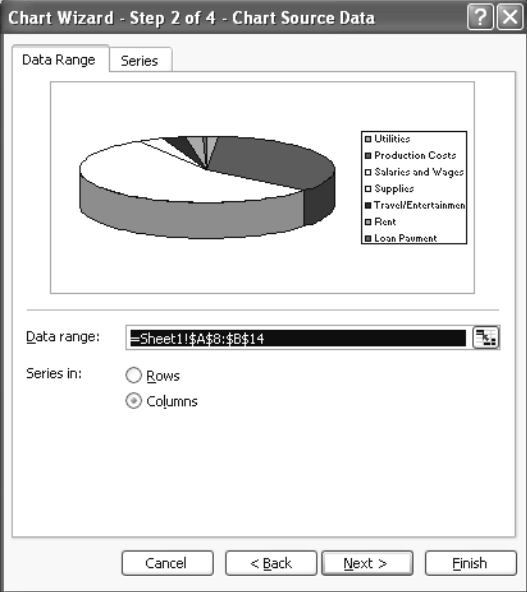

7. Click on the tab for “**Custom Types**” to view that page of the Chart Type box.

You can preview the various charts by clicking once on each of the choices in list.



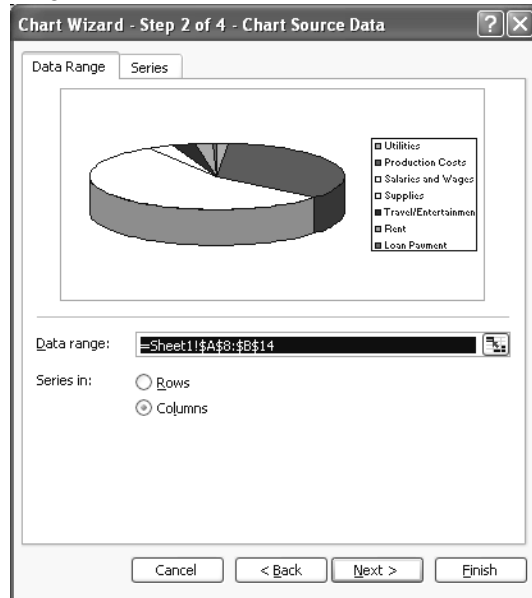
8. Click on the **Standard Types** tab to return to the first page of the box.



<p>9. Click the Next button.</p>	<p>Advances to Step 2 – Chart Source Data of the Chart Wizard.</p> 
<p>10. Note that there are two pages in the Chart Source Data box: Data Range and Series.</p>	<p>Verifies that the correct data will be charted.</p> <p>If you need to select a different range:</p> <ol style="list-style-type: none"> 1. Click the Expand/Collapse  button to the right of the Data Range text box. 2. Select the correct range. 3. Click the Expand/Collapse button to return to the wizard.

11. In this particular example, we will verify that the **Columns** option is selected in the **Series in** section.
 NOTE: The cell references in the Data Range text box are absolute. The chart will always refer to that range of cells, even if the data is moved to a different location on the worksheet.

Specifies that the series of data in the selected range be contained in columns.

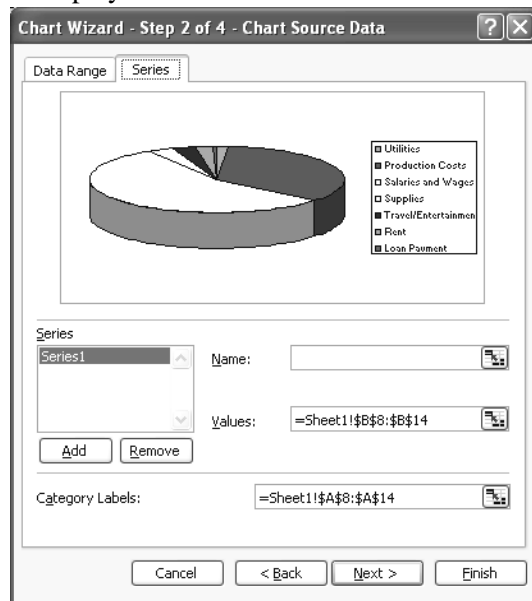


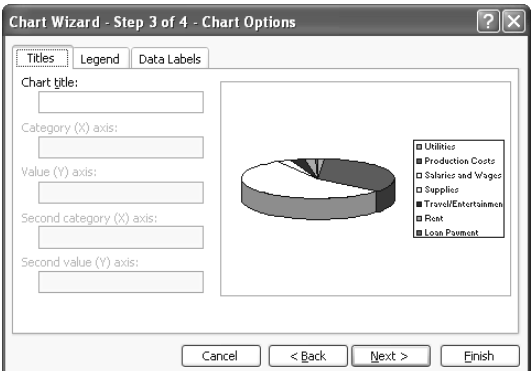
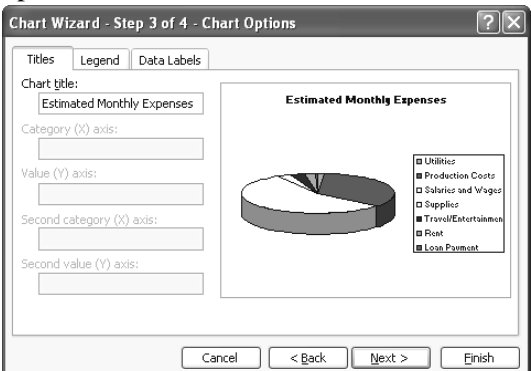
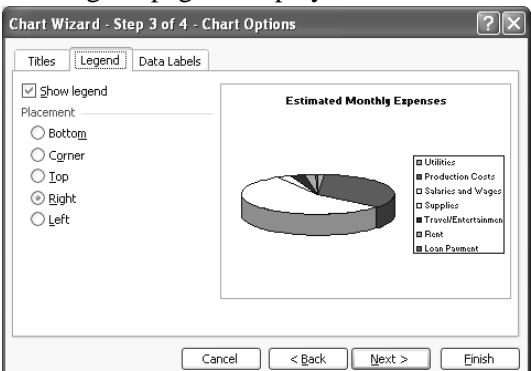
12. Click on the folder table for the **Series** page.

 On this page, you may add or modify the series of data that is being charted.

The Series page of the Chart Source Data box is displayed.

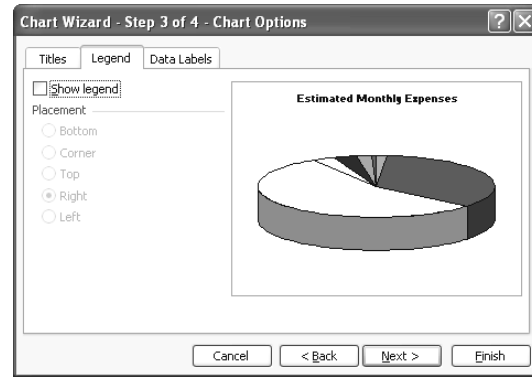
In a pie chart there is only one series of data, but in many other chart types you may have several data series. For example, in a column chart there could be a series of expenses for January, a second series of expenses for February, etc.



<p>13. Click the Next button.</p>	<p>Advances to Step 3 – Chart Options of the Chart Wizard.</p> 
<p>14. The Chart Options box for the pie chart has three pages:</p> <ul style="list-style-type: none"> ▪ Titles ▪ Legend ▪ Data Labels <p>To enter the chart title, click inside the Chart title text box and type the title for your chart.</p>	<p>Places the insertion point in the Chart title text box and enters the text. The preview image is updated to reflect the title.</p> 
<p>15. Click on the Legend tab.</p>	<p>The Legend page is displayed.</p> 

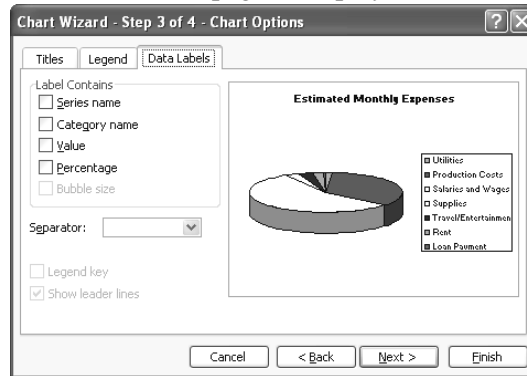
16. Select the appropriate text box to remove the legend or to change the placement of the legend.

In this example, the Legend is removed from the chart.



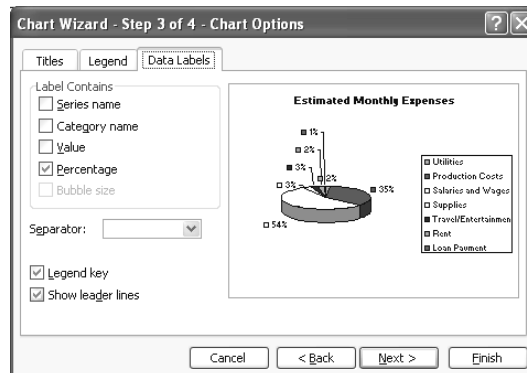
17. Click the **Data Labels** tab.

The Data Labels page is displayed.



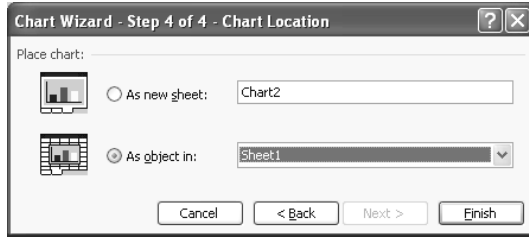
18. You can make the desired selections to change the label to: show the series name, category name, value, or percentage.

In this example, the label has been changed to show a percentage and the legend key is selected.



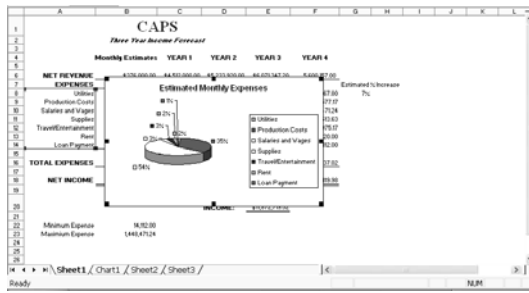
19. Click the **Next** button.

Advances to **Step 4 – Location** of the Chart Wizard, which determines where the chart will be placed in the workbook.



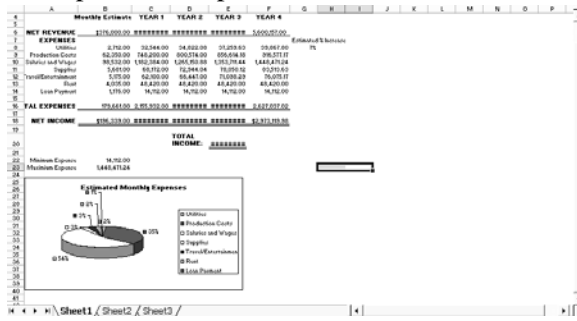
20. Make the appropriate selection to either create the chart as a new worksheet or to create the chart as an object and choose the location.

In this example, the sheet is saved as an object in Sheet 1 of the current workbook.



21. If you wish to adjust the location of the chart, with the mouse pointer on the border of the chart, drag and drop the chart to the desired location on the sheet.

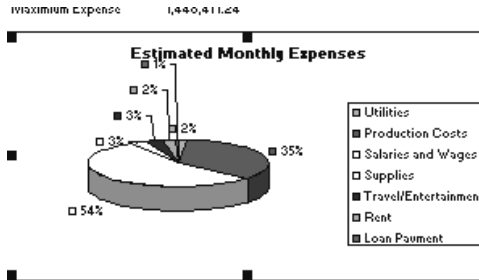
Example of the repositioned chart:



22. If you wish to revise your chart, be sure that the Chart is selected. When a Chart is selected, the file handles are visible.

To select a Chart, click in the white area of the chart. (When your mouse pointer is in the white area of a chart, the Tip says “Chart Area.”)

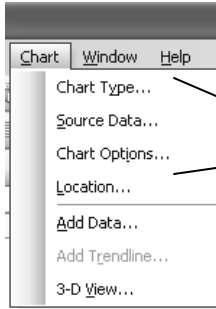
The file handles are displayed. The Chart is selected.



23. From the menu, click on **Chart**.

To revise or add your choices in the Chart Wizard, choose the step that you need.

The Chart menu is displayed.

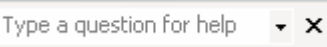

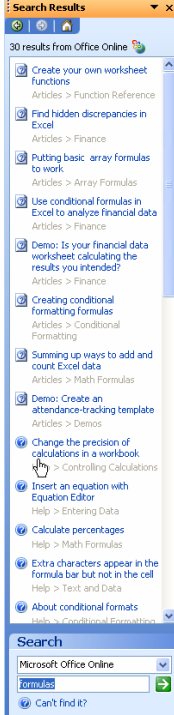


Note that these four choices are the four steps of the Chart Wizard

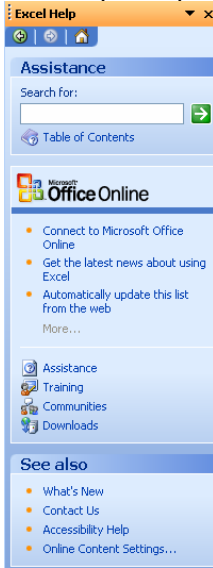

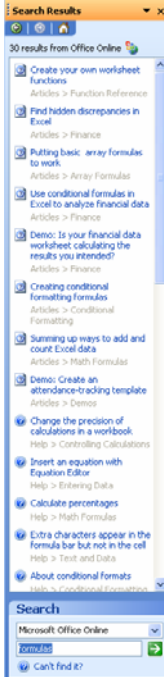
Using Help

A valuable tool when working with Excel is Help. There will be times when you cannot figure out how to accomplish a task in Excel. One of the best ways to seek help is to use Excel's built in Help System.

Option 1: Using Help Box

What you do	What happens
<p>1. At the top of the Excel window, you will see the Help box. It appears as follows:</p> 	
<p>2. You can enter a word or phrase for the question that you have.</p>	
<p>3. For example, if information on formulas is needed:</p>  <p>After you enter the word or phrase, press the Enter key.</p>	<p>The Search Results task pane displays.</p> 
<p>4. Notice that there are different types of help files. Some are actual templates, there are tutorials, there are step by step instructions, etc.</p> <p>Click on the item that you want to open in a new window.</p>	

Option 2: Using Excel Help Task Pane

What you do	What happens
<p>1. From any task pane, use the down arrow at the task pane title bar and select Help from the drop down list.</p>	<p>The Help task pane displays.</p> 
<p>2. In the Search for field, enter the word or phrase that you would like to research.</p> <p>Click on the Start searching  button.</p>	<p>The Search Results task pane displays.</p> 
<p>3. Click on the item that you want to open in a new window.</p>	



Formulas and the Sum Function in Excel

Formula Basics

A **formula** is a mathematical equation that calculates new values from existing values. In Excel, **each formula should begin with an equal sign**. The common operators used in formulas are: add (+), subtract (-), multiply (*), divide (/). As a rule, formulas do not contain spaces. When a formula is entered in a cell, **the content of the cell is the formula**. The value seen (the results of the formula) is displayed, **but is not the content of the cell**.

Sample Formulas

- =B7+C7+D7+E7** Sums the values of the 4 cells.
 - =sum(b7:e7)** Sums the values of cells b7 through e7. Sum is a function.
 - =g64-g65** Subtracts the value in g65 from the value in g64.
 - =(e200/12) *.15** Divides the value in e200 by 12. Then, multiplies that answer by .15.
 - =(f24*c10)-(f25*c10)** First, multiplies the value in f24 by the value in c10. Second, multiplies the value in f25 by the value in c10. Third, subtracts the second value from the first value.
- When typing a cell reference, you can use upper and/or lower case. B7 and b7 mean the same to Excel.

Order of Precedence

The order of precedence is the order in which Excel calculates a formula. A suggested acronym to help remember the order of precedence is **PEMDAS**. In each step, Excel will begin at the left of the formula and move to the right.

1. **Parentheses** – All calculations inside parentheses are performed first.
2. **Exponents** – All values with exponents are calculated.
3. **Multiplication and Division** – Any multiplication or division is performed.
4. **Addition and Subtraction** – Any addition or subtraction is performed.

content of cell results of formula

F10 =SUM(F4:F9)							
A	B	C	D	E	F	G	
1	January Sales						
2							
3	North	South	East	West	Total	Comparison to Salesperson Average	
4	Richards	3,000	3,500	5,000	4,500	16,000 Above	
5	Selznick	1,300	1,732	1,216	1,500	5,748 Below	
6	Robbins	13,200	13,200	13,100	14,100	53,600 Above	
7	Wells	2,000	3,500	2,000	3,100	10,600 Below	
8	Brown	1,200	1,500	1,200	1,600	5,500 Below	
9	Riveland	300	650	200	900	250 Below	
10		21,000	24,282	22,716	25,700	93,698	
11							
12	Salesperson Average						
13		15,616					

To Sum a Column of Values

1. Click in the cell in which to enter the formula.
2. Click on the AutoSum tool on the standard toolbar.
3. The formula will be displayed. Example: =SUM(F4:F9)
4. Click on the green checkmark on the formula toolbar.

How does Excel determine the cells to include in the formula? Excel knows only two types of cell content, values and labels (non-values). Excel reads up from the active cell, looking for values. As soon as it finds a cell that contains a label (non-value), it stops. Only, the cells with values are included in the AutoSum formula.

The SUM Function

AutoSum can be used to create a formula that sums the values in a range of cells. Sometimes, it may be preferable to enter the formula manually. To type the formula:

1. Type an equal sign.
2. Type the word **sum**.
3. Type a beginning parenthesis.
4. Type the name of the first cell in the group of cells.
5. Type a colon : .
6. Type the name of the second cell in the group of cells.
7. Type an ending parenthesis.

=sum(b4:e4)

Read as “equals sum b4 through e4.”



Common Functions in Excel

Function Basics

A function has three parts:

- Equal sign
- Function name
- Argument, enclosed in parentheses

=average(f4:f9)

There are no spaces in the formula.

Examples of Functions to Count

COUNTA Use this function to count the number of cells that contain data (are not empty) in the range specified within the parentheses.

Example: =COUNTA(A2:A653)

COUNT This function counts the number of cells that contain numbers (including values that are the result of formulas), dates or numbers stored as text in the range specified within the parentheses. Example: =COUNT(C2:C653)

COUNTIF Use this function to count the number of cells in the range specified that meet the criterion. The example formula would count the number of cells in the range E2 through E 653 that have the contents M.

Example: =COUNTIF(E2:E653,"M")

Additional examples of COUNTIF:

=COUNTIF(C2:C653,">=3.25") This formula counts the number of cells within the range that have a value greater than or equal to 3.25.

=COUNTIF(A2:C200,"") This formula counts the number of cells within the range that have no data. There is no character, no space between the quotation marks.

Help with Formulas

From the menu, click on **Help, Microsoft Excel Help**. In the Search box, type **examples of formulas** and click on the **Search** button.

Help with Excel Functions

From the menu, click on **Help, Microsoft Excel Help**. In the Search box, type **functions** and click on the **Search** button.

Ranges

Many formulas contain **ranges**, which are groups of cells that have common boundaries and form a rectangle in shape. Ranges may contain cells in a single row, a single column or may span several rows and columns. When typing a range, the range name is from the top left cell reference to the bottom right cell reference. A colon is entered between the first and the second cell reference. The colon is read as "through." Some examples of ranges are:

G4:G9 (G4 through G9)

B4:E9 (B4 through E9)

	A	B	C	D	E	F	G
1	January Sales						
2							
3		North	South	East	West	Total	Comparison to Salesperson Average
4	Richards	3,000	3,500	5,000	4,500	16,000	Above
5	Selznick	1,300	1,732	1,216	1,500	5,748	Below
6	Robbins	13,200	13,200	13,100	14,100	53,600	Above
7	Wells	2,000	3,500	2,000	3,100	10,600	Below
8	Brown	1,200	1,500	1,200	1,600	5,500	Below
9	Riveland	300	850	200	900	2,250	Below
10		21,000	24,262	22,716	25,700	93,698	
11							
12	Salesperson Average						
13		15,616					

	A	B	C
1	January Sales		
2			
3		North	South
4	Richards	3,000	3,500

	A	B	C
1	February Sales		
2			
3		North	South
4	Richards	24,000	26,000
5	Selznick	1,000	1,000
6	Robbins	12,500	
7	Wells	2,250	
8	Brown	80	
9	Riveland	30	
10			
11			

	A	B	C
1	March Sales		
2			
3		North	South
4	Richards	65,000	63,000
5	Selznick	6,000	6,500
6	Robbins	45,000	45,000
7	Wells	6,250	9,750
8	Brown	3,725	3,750
9	Riveland	1,250	1,250
10			

	A	B	C	D	E	F
1	First Quarter Sales					
2						
3		North	South	East	West	
4	Richards	93,000				
5	Selznick					
6	Robbins					
7	Wells					
8	Brown					
9	Riveland					
10						
11						

3-D Formulas

With multiple worksheets, some of the formulas may include values that are stored on different worksheets. A formula that references cells on more than one worksheet is using **3D references**. The formula is called a 3D formula. In a 3D formula, the cell reference will include the sheet name. For example, this formula sums the monthly totals for Richards, which are on sheet1 in cell B4, on sheet 2 in cell B4 and on sheet 3 in cell B4.

=sheet1!B4+sheet2!B4+sheet3!B4

In a 3-D formula, a cell is referenced by its sheet and cell name. **Sheet1!B4** is cell B4 on sheet1. An exclamation point is used to separate the sheet name from the cell name.



Using Large Worksheets in Excel

To Delete a Column

Select the column to be deleted by clicking on the column header. The entire column will be highlighted. From the menu, click on **Edit, Delete**. If a column is deleted in error, click on Edit, Undo in the menu.

Excel's Rules for Lists

1. Within the rows of data, there should be no completely blank rows and no completely blank columns. A null field value (a field with no value) is allowed. However, a row with no record or a column with no field values and no field name is not allowed.
2. The row directly above the first row of data contains the field names.

To Change the Width of All the Columns

This will make each column as wide as its widest entry. Select all the columns by clicking on the gray rectangle above the row 1 header and to the left of the column A header. All the columns and rows are highlighted. Place the mouse pointer on the right border of the column header for column A. With the mouse appearing as a double-headed arrow, double click.

	A	B	C	D	E
1	Term	Instructor Name	Course	Subje	Catalog N
2	2002 Summer	Knight,Catharine C	003966	5100	210
3	2002 Summer	Shabaya,Judith	003968	5100	210
4	2002 Summer	Ambrose,Brandi	003968	5100	210
5	2002 Summer	Barrett,Rebecca Ann	003967	5100	211
6	2002 Summer	Gribble,Brandilyn B	003967	5100	211
7	2002 Summer	Gribble,Brandilyn B	003967	5100	211
8	2002 Summer	Chappell,Cathryn A	003972	5100	410
9	2002 Summer	Yoder Jr,Walter H	003972	5100	410
10	2002 Summer	Chappell,Cathryn A	003972	5100	410
11	2002 Summer	Andrick-Hughes,Melissa Sue	003983	5100	420
12	2002 Summer	Dortch,Timothy A	003988	5100	480
13	2002 Summer	Buchanan,James H	003987	5100	490
14	2002 Summer	Alderman,Melba Kay	003987	5100	490
15	2002 Summer	Covrig,Duane M	003987	5100	490
16	2002 Summer	Savery,John R	003987	5100	490
17	2002 Summer	Savery,John R	003987	5100	490
18	2002 Summer	Savery,John R	003987	5100	490
19	2002 Summer	Bishop,Dwight A	003987	5100	490

Freezing Rows and Columns

When scrolling, the columns or rows of data needed to identify the records may scroll off the screen. Freezing will leave those identifying columns and rows in place as you scroll.

1. Choose the active cell so that the rows above and columns to the left are those to freeze. Click in the cell to make it active.
2. From the menu, click on **Window, Freeze Panes**.
3. Scroll down to note that the rows stay visible above the cell selected in step one. Scroll to the right to note that the columns stay visible to the left of the cell selected in step one.
4. From the menu, **Window, Unfreeze panes** to return to normal scrolling.

To Filter a List

1. Click anywhere inside the data to select an active cell.
2. From the menu, click on **Data, Filter, AutoFilter**. A down arrow will appear at the top of each row in the cell with the field name. (The arrows do not print.)
3. Set the criteria by making choices at the lists on the down arrows.
4. To remove the filter and view all the records, click on **Data, Filter, Show All** from the menu.
5. To remove the filter arrows, click on **Data, Filter, AutoFilter** to remove the checkmark.

Sorting Data in Lists

1. Click anywhere inside the data to select an active cell.
2. From the menu, select **Data, Sort**. The Sort dialog box appears. Excel will recognize and highlight the range of cells to use for the sort. (Do not select (highlight) any of the columns, rows or cells yourself. If you do, only those highlighted cells are sorted, not the rows, and your data will be scrambled.)
3. In the Sort dialog box at the down arrows, select the fields by which to sort. For each field, select to sort by ascending or descending order.
4. In the "My list has" frame of the Sort dialog box, click to select **Header row**, if the first row of data contains the field names. Then, click on **OK**.



Printing a Large Worksheet in Excel

From the menu, click on **File, Page Setup**. Follow any or all of these tips. Then, click on **OK**.

Format Multiple Worksheets

Changes made in the Page Setup dialog box will affect only the active worksheets. The tabs for active worksheets are white in color. To make changes on more than one worksheet, hold down the **CTRL** key and click on each worksheet tab before you select File, Page Setup. When the changes are completed, click on a worksheet tab for a worksheet that is not displayed on top.

Print the Gridlines

The gridlines are the lines that outline each cell. Although the gridlines are displayed on the screen, they do not print unless you request that they print.

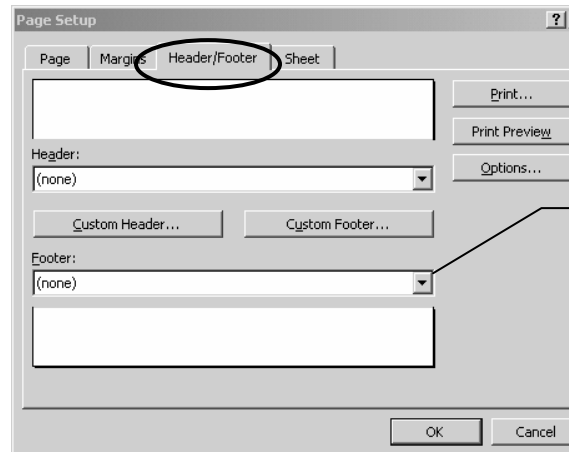
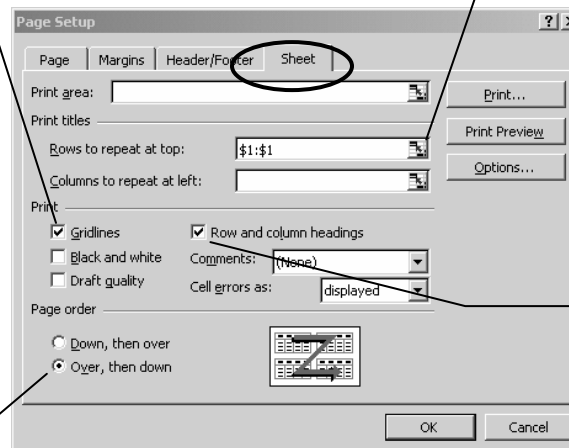
On the **Sheet** tab and in the **Print** frame, click to place a checkmark in the **Gridlines** checkbox.

NOTE: Gridlines will not print if “Draft quality” is checked.

Print Over, then Down


By default, Excel prints as many rows and their related columns, as fit on one page. Then, it moves down the worksheet to print the next set of rows. Example: If there are 50 rows with 16 columns in each row, rows 1 through 25 may print with their first 8 columns on page one. Then, Excel will print rows 26 through 50 with their first 8 columns on page two. It probably is preferable to print rows 1 through 25 with their first 8 columns on page one and rows 1 through 25 with their next 8 columns on page two. This is referred to as “printing over, then down.”

On the **Sheet** tab and in the **Page order** frame, click on the option button for **Over, then down**.



Print the Field Names as a Header Row on Each Page

This is done only one worksheet at a time.

1. On the **Sheet** tab, click on the **Expand/Collapse** button  for **Rows to repeat at top**. The dialog box collapses to allow a better view of the worksheet.
2. In the worksheet, click on the **row number** for the row which contains the text to repeat on all applicable pages. The row is surrounded by the marquee (dashed, moving lines).
3. Click on the **Expand/Collapse** button to expand the dialog box.

Print the Row and Column Headings of the Worksheet

Row headings are the row numbers and column headings are the letters. Printing these is helpful when each record has many columns and the record prints across several pages. The row numbers help to identify a specific record as you read across the pages.

In the **Print** frame, click to place a checkmark in the **Row and column headings** checkbox.

Page Numbering

1. Click on the **Header/Footer** tab.
2. Click on the down arrow for the **Footer** edit box. A list of footers, which come with Excel, is displayed.
3. Choose a footer, such as **Page 1**. This will print the word “Page” and the appropriate page number.