

Introduction to Excel

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INTRODUCTION TO EXCEL

Excel is a program which allows you to quickly and easily enter, manipulate and display (both in tables and with charts) your data. Perhaps think of it as a program to handle numbers the way word processors handle words. For example, if eventually you want to take your data into SPSS or some other type of program to manipulate, but first you need to do some calculations (percentages maybe), some sorting and general data clean-up, Excel would be very useful. It is more flexible and has more capability for this data massaging than does SPSS. You may even find that Excel can handle all the statistics you might want to do, and the charting is easy and again more flexible than in some other programs.

How to Use This Document

The best way to use this document is to take it with you into the computer lab, start up Excel, and follow along as I introduce you to some of the functions, uses and features of Excel 11.0. If you can't run Excel right now, just ignore the places where I suggest things to try. Please note that the versions of Excel on the Macintosh and PC are practically identical; therefore this document will suffice for both. Here I will describe what you see when you bring up Excel, what commands you find under the menu bar, how you go about entering and manipulating data - basically how to get started with Excel. The last page gives you some short tips, reminders and other useful information.

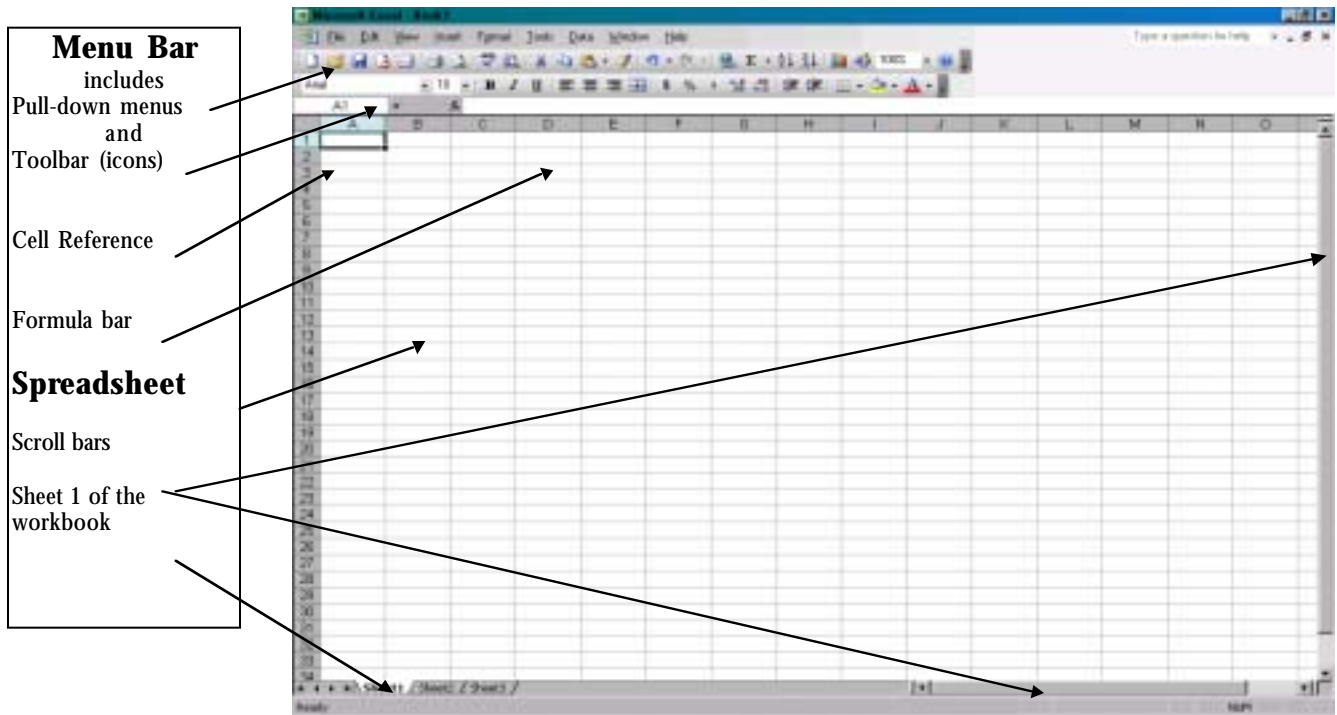
The Excel Window

On the next page is a snapshot of the Excel window, with one worksheet of one workbook being viewed. Each Excel file, known as a workbook, is made up of three worksheets by default. Storing several worksheets together in one Excel file is a convenient way to organize and link together different types of data. Take a minute to look at the parts that are labeled: menu bar, tool bars, formula bar, status bar, scroll bars, column and row headers, and the grid making up the spreadsheet area. Use this page as a reference if you're not sure what part of the screen I'm referring to later in this document.

The Spreadsheet Grid

Let's look first at the spreadsheet itself. Each cell on the spreadsheet can be labeled with its column and row header, like cells B4 and D8 on the reference page. Click on different cells on your spreadsheet, notice:

- 1) The cell you click on is highlighted and becomes the "active cell." Anything you type is entered in the active cell.
- 2) The left most part of the formula bar shows which cell is active (A1 on the reference page).
- 3) The mouse pointer is a thick cross when you're on the spreadsheet, but changes to an arrow or some thin crosses in other areas of the screen (more about this later).



Selection

Before you can do anything in Excel you must have selected some part of the spreadsheet grid, be it a cell(s), row(s) or column(s). Here are the most common ways of selecting:

- 1) **CLICK AND DRAG** - Click in the desired cell and while holding the mouse button down, drag to the last cell of interest. The cells you're selecting are highlighted as you drag. This is the slowest way to select, but if you only need a few cells it works well.
- 2) **CLICK SHIFT-CLICK** - Click in the first cell you want, release the mouse button and use the scroll bars to go to the part of the spreadsheet with the last cell you want. Hold down the Shift key and click on the last cell. All cells in between are highlighted and selected. As you can see, this method is very useful for selecting a large number of cells, although you can just as easily use it to select a smaller number of cells. For example, try selecting cell A1, scroll right to column M and shift-click on M15.
- 3) **CTRL KEY** - This technique is for selecting non-contiguous cells. Begin by using either method 1 or 2 above to select several adjacent cells. Now hold the CTRL key down and select additional cells either individually by just clicking, or as a group using Click and Drag. Try selecting columns 1, 3 and 5, for example.

TIP: You can select a whole row or column by selecting either the letter or number header. For example, click on the B and the entire second column is selected. Click on the 4 on the left and the entire 4th row is selected.

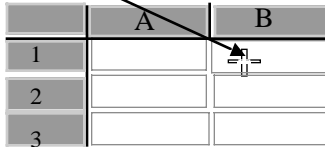
- 4) **SELECT ALL BUTTON OR EDIT/SELECT ALL** - Just as it says; selects the whole spreadsheet.

TIP: Once you have cells selected, you can scroll around using the scroll bars, select things from the menu, or click the buttons on the toolbars, but if you click anywhere on the spreadsheet itself your selection is canceled.

Pointers and What they Mean

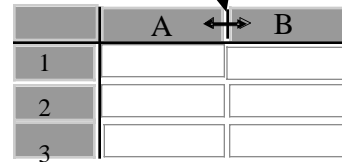
You may have noticed that as you move the mouse around the screen, the mouse pointer symbol changes. Here I want to briefly tell you what these pointers mean and how you can use them. First, when the pointer is pointing to the buttons or menu you see an arrow. However, if the mouse is on the spreadsheet grid, you see the thick cross used to select cells.

This symbol tells you that if you click now you will select a cell.



	A	B
1		
2		
3		

Now put the mouse right between the A and B for the column headers. You should see a symbol like this. By clicking and dragging, you can change the width of the columns.



	A	B
1		
2		
3		

In an unused part of the spreadsheet, say cell E2, type a number and hit return. Now click on that cell again, notice that the lower right corner of the cell has a little box on it. (Note: This box is harder to see in the Mac version than the PC version of Excel.) If you put the mouse over that box, the pointer changes to a thin cross. [Symbol] Click and drag down a few rows, maybe 5 or so, and release. See how it fills in all the cells with the number? Better yet, enter a 1990 and 1991 in cells E2 and E3, select both cells, center the pointer over the box and drag down a few cells (View 1 below). You can quickly fill in a series of numbers this way (View 2). The same capability is available under the menus, Edit/Fill/Series.

View 1.

	A	B	C	D	E	F
1						
2					1990	
3					1990	
4					1990	
5					1990	
6					1990	
7					1990	
8						

View 2.

	A	B	C	D	E	F
1						
2					1990	
3					1991	
4					1992	
5					1993	
6					1994	
7					1995	
8						

TIP: Remember the status bar at the bottom of the screen? Try one of the things you just did again, but this time look at the status bar to see what sort of information it gives you.

Entering Data

Let's take a minute now to actually enter some practice data. You can enter text, numbers or formulas into your spreadsheet.

D2		=B2*C2			
	A	B	C	D	E
1	item	quantity	price /unit	total cost	
2	widget 1	5	\$ 0.78	\$ 3.90	
3					

Cell D2 holds the results of the formula shown in the formula bar.

Click on cell A1 to make it the active cell, type Name and hit Enter or Return. **Notice:**

- 1) You don't get a cursor in the cell itself, but when a cell is highlighted (active), whatever you type shows up there.
- 2) The stuff you type shows up both in the cell and in the Formula bar. (See the reference page if you don't remember which is the Formula bar.)
- 3) When you hit return the next cell is highlighted and ready to accept data.
- 4) Try clicking on cell A1 again, but now hit Tab instead of return. This moves you to the next column rather than the next row.

If you're following along you should now have cell B1 highlighted. Go ahead and type in Age, then tab over to cell C1 and type Income. Go back to the Name column and add some names, using Enter to move down the column. Add some ages and incomes too. You should end up with a window that looks something like this.

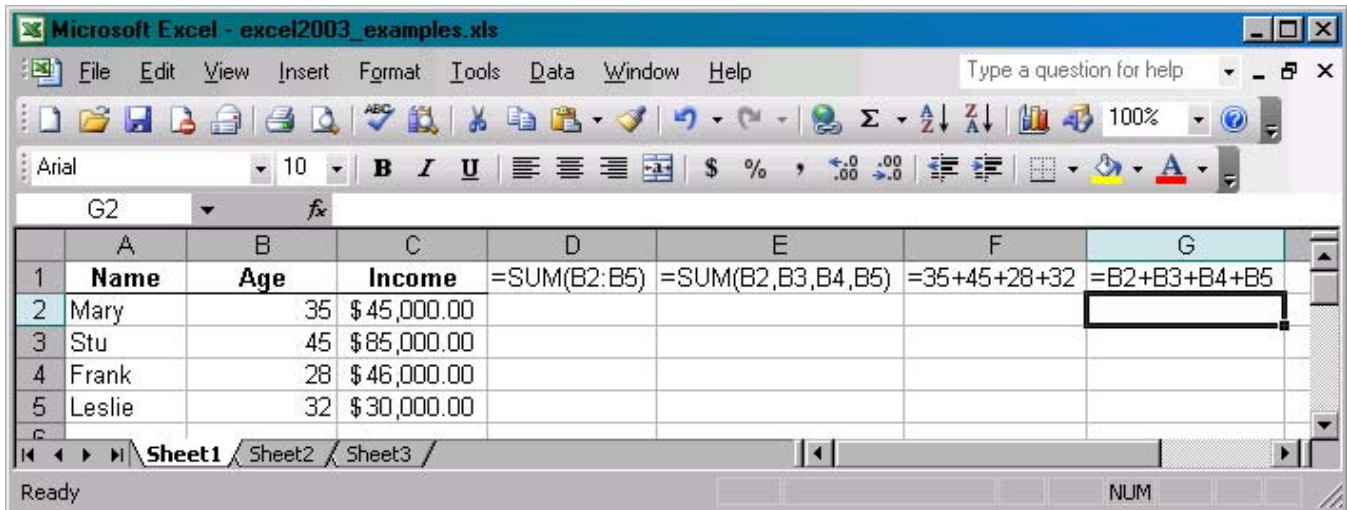
Microsoft Excel - excel2003_examples.xls								
File Edit View Insert Format Tools Data Window Help								
Arial 10 B I U \$ % .00 .00								
	A	B	C	D	E	F	G	H
1	Name	Age	Income					
2	Mary	35	\$45,000.00					
3	Stu	45	\$85,000.00					
4	Frank	28	\$46,000.00					
5	Leslie	32	\$30,000.00					
6								
7								
8								
9								
10								
11								
12								
13								

So far you've entered two of the three types of data that Excel will take - text and numbers. The last type of entry to look at is formulas (i.e., equations), demonstrated in the graphic below. A formula can be entered in various ways - an Excel defined function referencing other cells (see cell D1 below), using

numbers (cell E1), or as a numerical statement (cell F1), or your own statement referencing other cells (G1). All three methods will give the same result - the sum of Mary, Stu and Lori's ages.

The methods in cells D1 and G1 are the ones I use the most. Notice, all have in common an equal (=) sign as the first character. This symbol must always be the first character in a cell where you want to do a calculation. You can edit a function as you would any other cell entry. Just click on the cell you want to change and edit up in the formula bar.

TIP: If you prefer to do your editing right in the cell, double-click on the cell you want to edit. Now you can edit directly in the cell rather than making changes in the formula bar.



What Can be Done with the Data

The buttons on the tool bars provide quick and easy access to many Excel features. When you hover the pointer on one of the buttons in the tool bar a message comes up telling you what that button does. Take a minute to see what the other buttons do. Each person will probably focus on a few buttons they use most often. I regularly use the Save, Print, Print Preview, Undo, Function, Chart Wizard and formatting buttons.

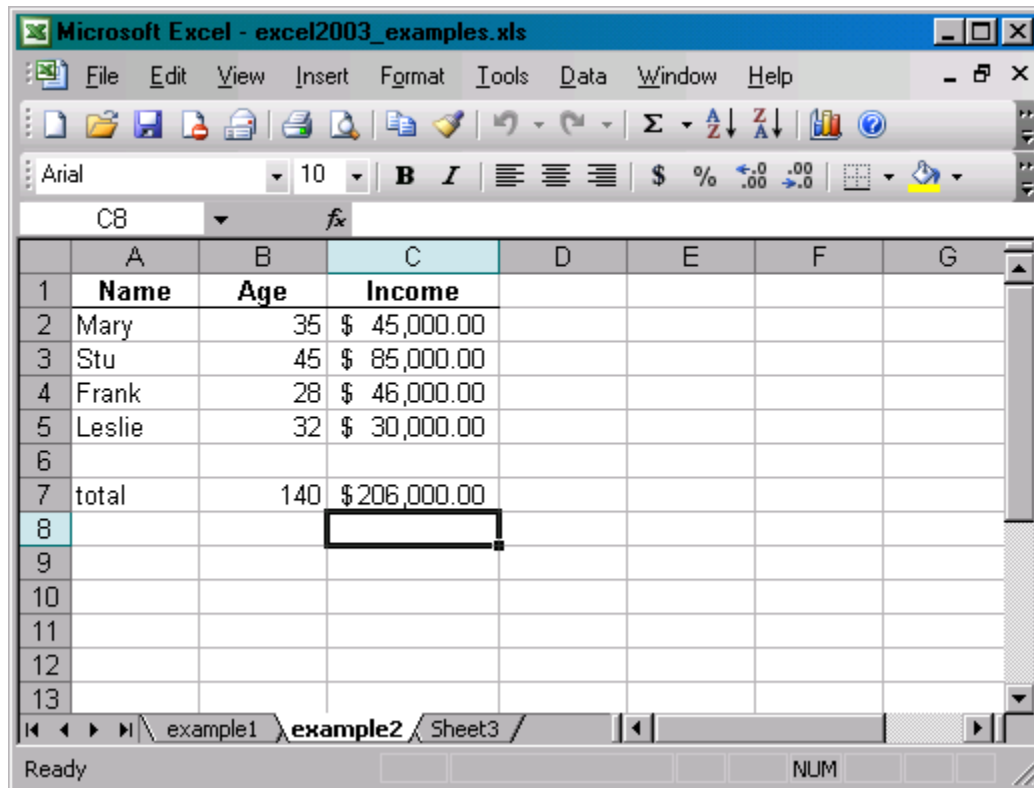
TIP: Undo is especially useful. It will undo the last actions that you have taken, but only in sequence. You can also redo those actions. Note that undo and redo are only available until you save the file, at which point you can no longer make changes prior to your save.

Take a minute to try some of the functions outlined here. Remember, the first step in manipulating your data is almost always to select some part of your spreadsheet. If you've been following along in Excel you now have a spreadsheet that looks like the graphic above, just without the function/formula stuff. After the following seven steps your spreadsheet should look something like the picture on the next page.

- 1) Create a line with the total computed for age and income. (Hint: Select the cell where you want the total, and then click the Sum button.) Notice how Excel puts something like the following in the cell for you, "= SUM(B2:B6)." You'll recognize this as one of the ways to enter a formula. Call this row "Total."
- 2) Center the title labels within their cells. (Hint: Select the cells you want to center and find the Center button.)
- 3) Make the title labels bold.
- 4) Using the method described in the "Pointers and What they Mean" section, widen the first column to 14 characters.
- 5) Insert a row between the first and second person. For this you have to use the menus, but first you'll have to make a selection, then use the Insert/Rows menu feature. (Hint: The row will be inserted above the

one you select.) Fill this new row in with some new name, age and income information. Notice, the totals change to reflect this new data.

- 6) Insert another row above the “Total” row.
- 7) Put a dark border beneath the variable titles (first row) using the down arrow next to the border button to select which type of border you want. (Select the cells first.)



Menus

If you prefer the buttons, it's quite possible you will be able to do all your work using just them instead of the pulldown menus. However, the menus offer more commands and more options than the buttons. Click on the File option. This menu has the “big picture” commands - things like opening, closing and saving new or existing spreadsheets, printing and exiting the program. The names for the different menus give you a clue as to when you might need them. For instance, Edit contains commands like Cut, Copy and Paste, Data contains Sort and Filter, and you've already seen Insert.

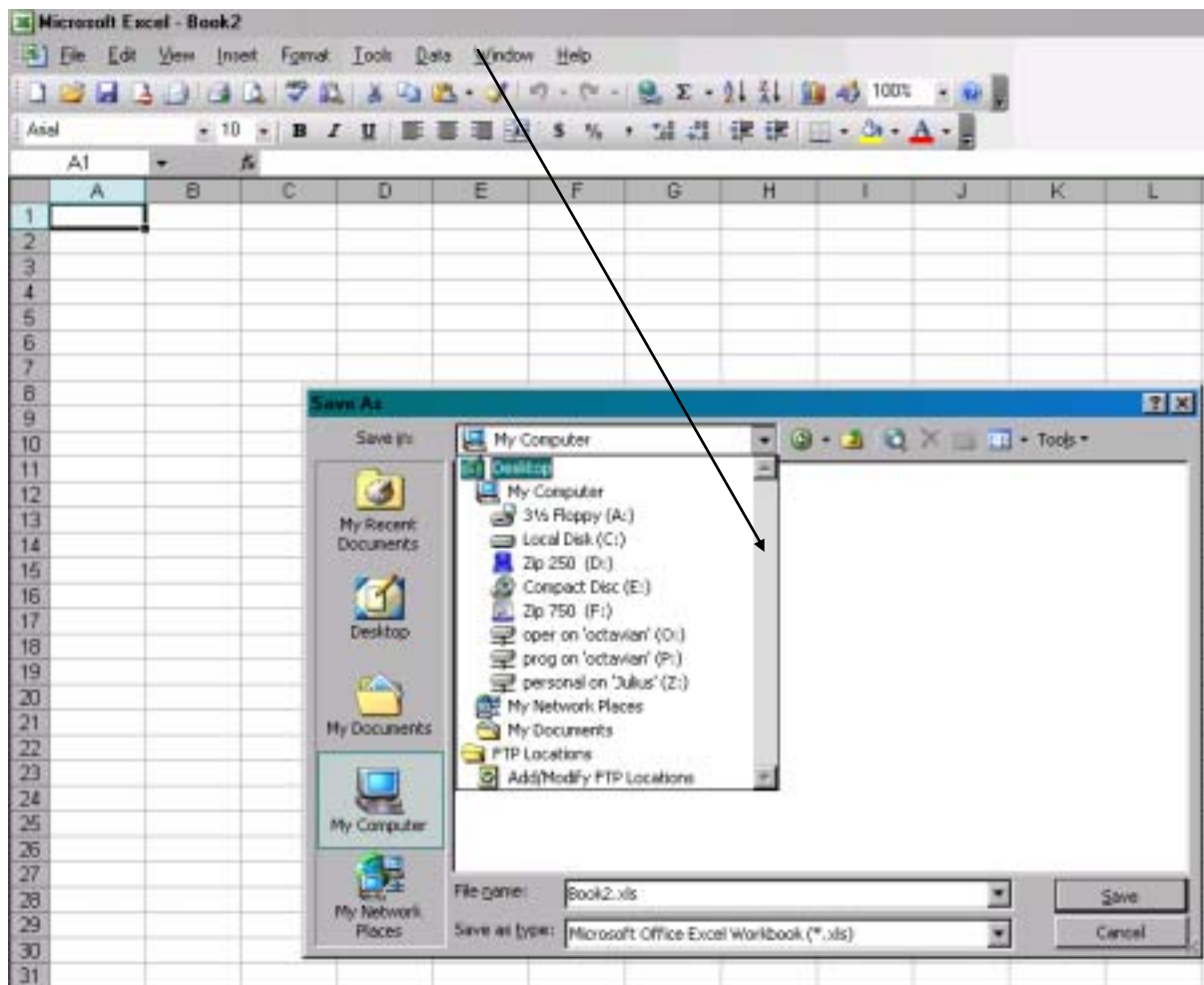
Take a minute now to look at the different capabilities under the various menu bar options. Some should look familiar to you because you saw the same command under the buttons. Let's take a minute to look at a couple of useful things that you can only get to through the menus.

Again, the first step in manipulating your data is almost always to select some part of your spreadsheet. Using one of the selection techniques outlined earlier, select all the cells or columns that have data in them (columns A, B and C). Go to the Format menu, select Columns and Auto Fit Selection. This command makes all cells fit your data and is not available from the buttons. Now undo the formatting; click on the Undo button or go to Edit/Undo on the menu bar.

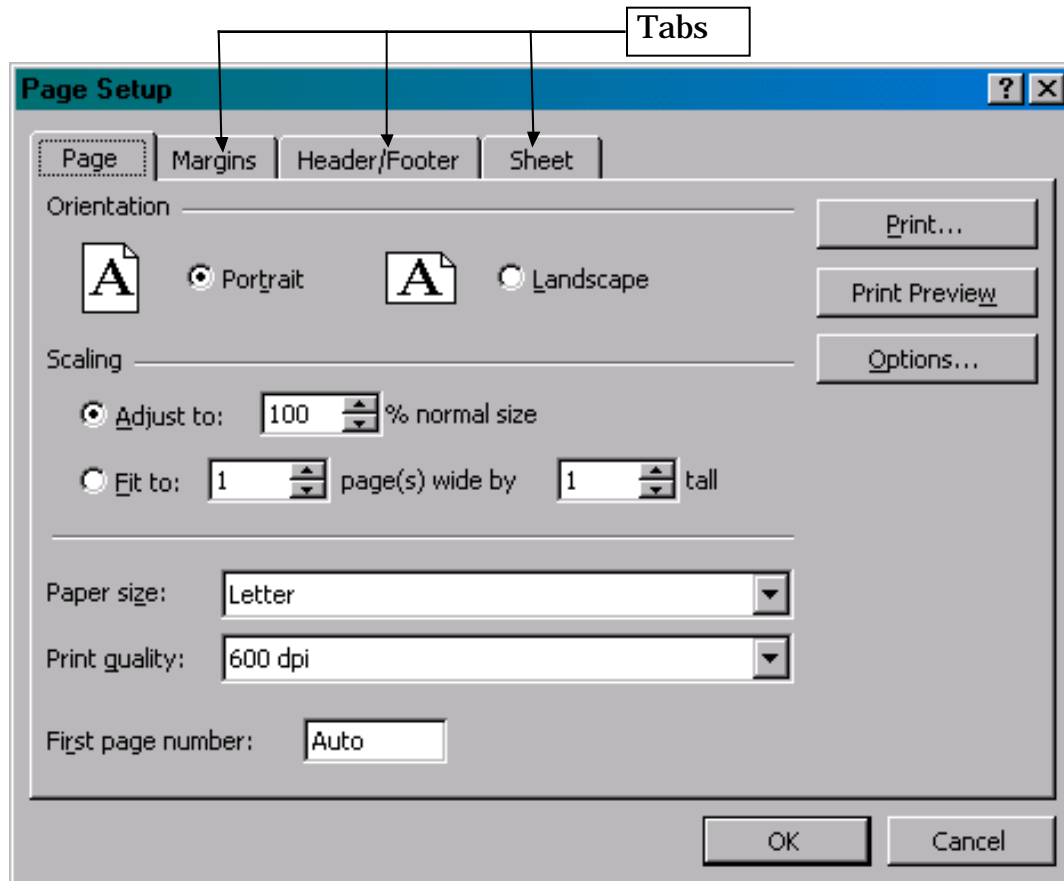
The next thing I want to show you is how to freeze part of your spreadsheet. Select column B, go to Window and select Freeze Panes. Now if you scroll to the right, the first column does not scroll and is always visible (try it!). If I had wanted the first row and first column to stay put, I would have selected cell B2 and then Window/Freeze Panes. To remove a frozen pane you can either Undo it (if you haven't done any other commands since the Freeze Panes), or go to Window/Unfreeze Panes.

Printing Saving

Save and Save As can usually be used interchangeably. Save As always opens the following window so you can enter the name under which your work will be saved, and where it should be saved (i.e. on your floppy vs. on the machine). Save will ask you for a name only the first time a document is saved and so takes less effort on your part. If you click SAVE, however, after opening an old file or after already saving a new document once before, Excel will automatically overwrite the pre-existing document with your current version. To save your work in a file named "practice.xls" on your disk (the A drive on a PC), the Save As window would look like this graphic. The Macintosh window will look different. If it's not clear how to save while working on a Mac, ask one of the consultants at CSSCR to show you. Click on the down arrow indicated below to navigate to the correct location for saving **Always** be aware of your file's location.



Use either the Print Preview button, or go to the File/Print Preview menu option to see how your chart will look when printed. If you're happy with it, go ahead and print using the buttons or menus. If you wish to make changes, such as removing the spreadsheet grid lines or changing the orientation, these things are found under File/Page Setup. (Grid lines are turned on and off under the Sheet Tab. Those irritating default print titles, like "Sheet 1" can be changed or removed under the Header/Footer tab.)

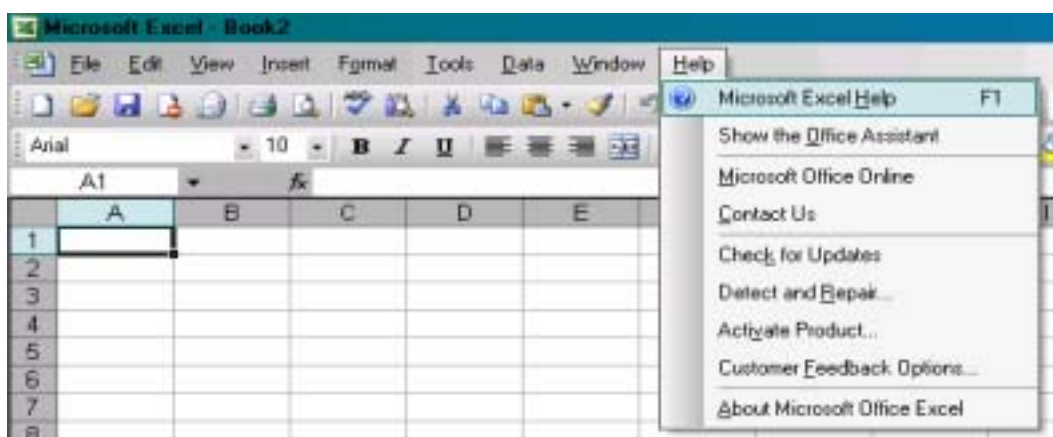


Charting

For help with charting pick up the Intermediate/Advanced Excel document.

Help!

If you can't find something you need, don't forget the on-line help in Excel. For example, say you want help on formatting some cells in your spreadsheet. Go to the Help menu and select "Search for Help on...." This brings up the help and search window.



In general, the Excel on-line help is quite useful, particularly the keyword search. The Microsoft Office Assistant is similarly available as a useful help tool. At CSSCR we also have manuals which can be checked out by leaving your photo ID as security. We also regularly offer classes on Excel. Finally, the Tips below show some of the commands a beginning Excel user would most likely use.

Quick Tips and Reminders

- * Don't panic, remember to Undo.
- * Save your work often.
- * To enter a formula, start with the '=' sign.
- * Flashing dashed lines from copy and cut commands can be removed with the Escape key (ESC).
- * Use the wizards (chart and function).
- * Default print titles are changed or removed under File/Page Setup/Headers/Footers.
- * Rest your mouse over a button to get information on what that button does.
- * Menus have more commands and more options within those commands than buttons.

Commonly Used Menu Features

FILE:	Opening and saving files, setting up for printing, quitting
EDIT:	Your typical editing commands like Cut, Copy and Paste. Undo and Fill are very useful.
VIEW:	What you see around the spreadsheet grid; toolbars, formula bar, status bar and other "bars."
INSERT:	Rows, Columns, Cells, Pictures, Functions (like the function wizard).
FORMAT:	Rows (height), Columns (width, auto fit), Cells, Auto Format.
TOOLS:	Spelling
DATA:	Sort, Filter (filter out unwanted information).
WINDOW:	List of your open windows, Split, Freeze Panes.
HELP!	