Introduction to Microsoft Excel 2000

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Welcome to Microsoft Excel 2000. This program is designed to make your number crunching needs easy to accomplish. Let's see how this is done.

Screen Layout
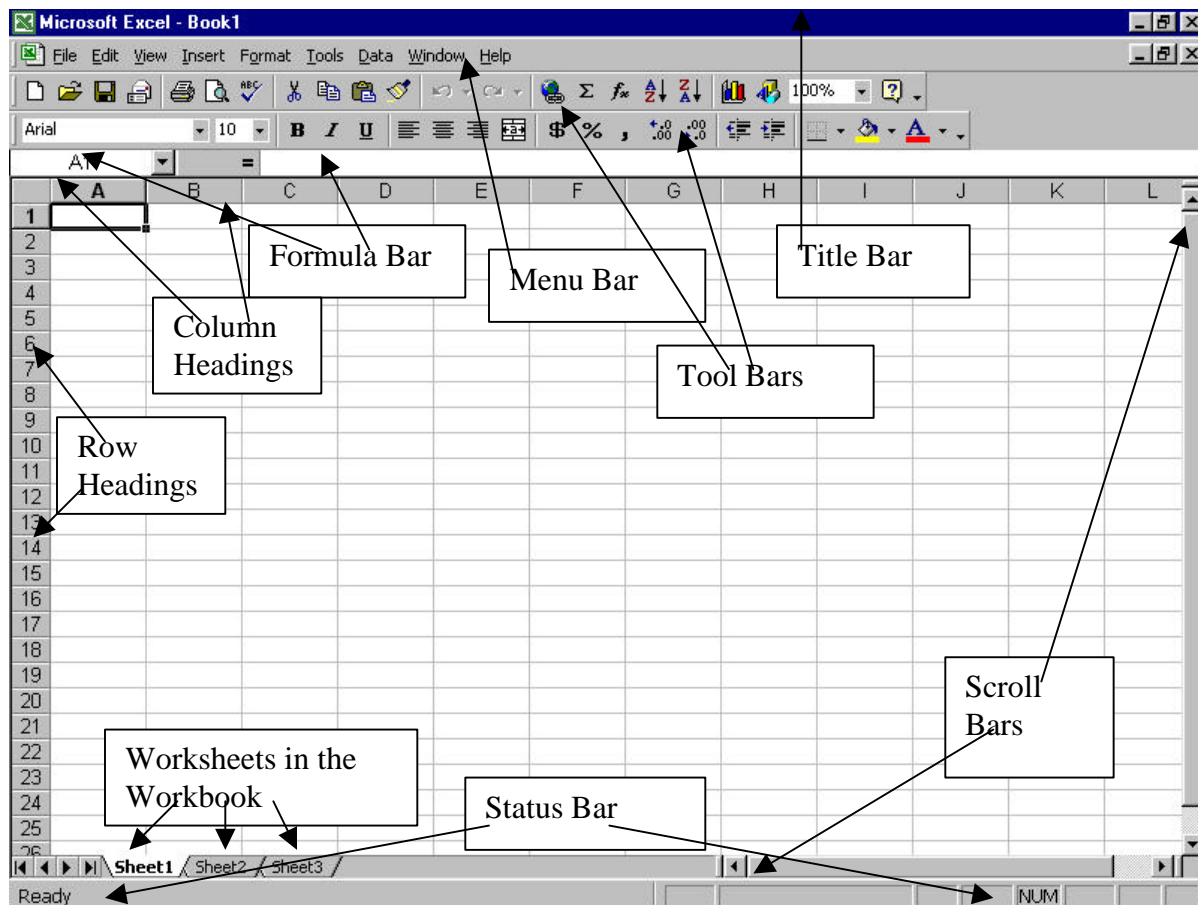
Title Bar

At the very top of the screen is the Title Bar. If the Title Bar is colored, it designates the active window. On the left side of the title bar is the Excel icon. Double Clicking on the Excel Icon will exit the program. On the right side of the title bar is the minimize button, the maximize or restore button, and the "X" Exit button.

Menu	The second line is the menu. Use the mouse to click on the option desired, or ALT key plus the underlined character of the option for keyboard access to the menu.
Toolbars	The next two lines are toolbars. Excel provides 16 different toolbars, although you'll normally display only two or three at any one time. Microsoft's "factory settings" display only the Standard and Formatting toolbars. You can display any available toolbar by **opposite mouse-clicking on any toolbar** displayed on your screen and selecting the toolbar from the drop-down menu that appears. Placing the mouse pointer on the icon brings up a word description of what the icon does. The Toolbars provide a quicker access to functions normally found in the menu, maybe buried under several selections. You can select or unselect Toolbars by choosing **View, Toolbar,** or by clicking on the toolbar with the opposite mouse button and unselecting, or selecting from the list.
Formula Bar	Displays the contents of the selected cell in the worksheet. You can edit the contents of a cell from the formula bar.
Scroll Bars	The Scroll Bars allow quick movement both Vertically (on the right side of the document window, and Horizontally (at the bottom of the document window). To the left of the horizontal scroll bars, are the worksheet pages, and to their left is the icons to move between worksheets.

Status Bar	The bar at the bottom of the screen displays information about a selected command or an operation in progress.
	• When a command is selected, the left side of the status bar briefly describes the command.
	• The left side of the status bar also indicates operations in progress, such as opening or saving a file, copying cells, or recording a macro.
	The right side of the status bar shows whether keys such as CAPS LOCK, SCROLL LOCK, or NUM LOCK are turned on.

Using HELP!!

Help is accessed by selecting Help from the menu bar. This is done either with the mouse (point and click) or using the ALT + H key from the keyboard. Once Help is selected, several options appear in the menu:
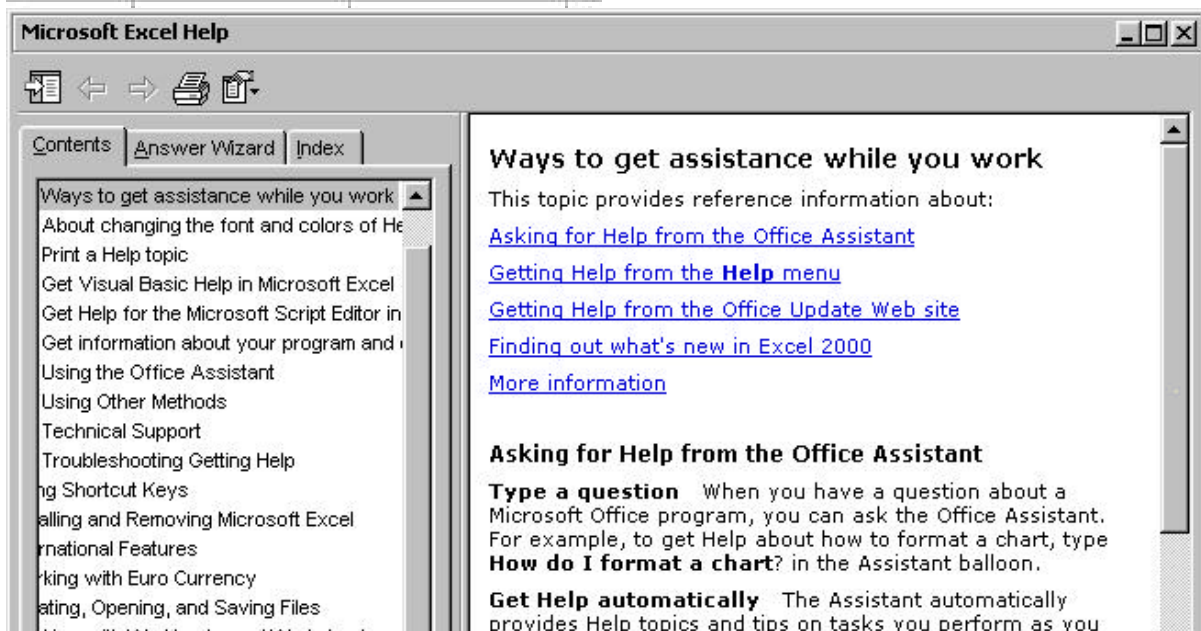
Microsoft Excel Help (F1)	Office Assistant provides the ability to search for specific topics or select from options. Or you can choose to turn off the Office Assistant and Help would go to Contents and Index.
Contents and Index	The Contents section provides a series of mini topics from which to choose. The Index shows a comprehensive list of functions.
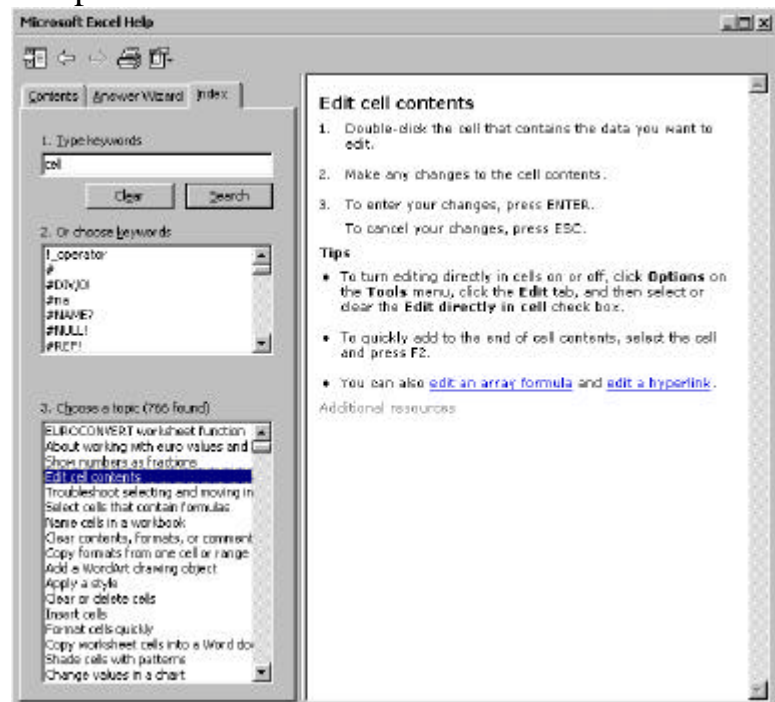
What's This?	Point and click at the function you want to know more about. A comment box will pop up to tell you about the item.
Microsoft on the Web	Addresses to the World Wide Web for Excel Information.

Lotus 1-2-3 Help   Additional Help for Lotus Users.
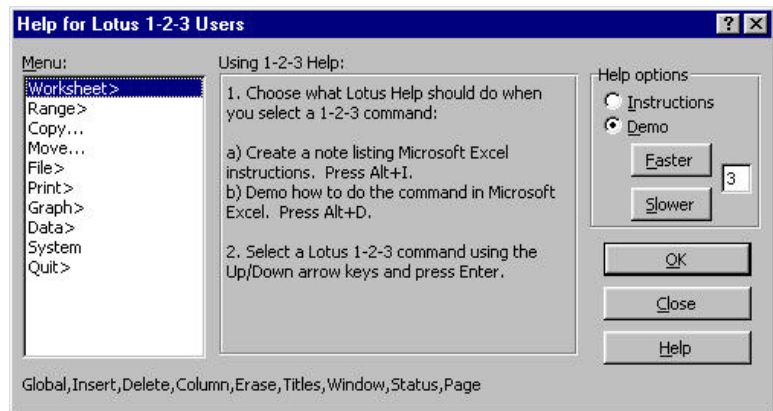
Detect and Repair   Feature of Office 2000 to fix problems found in
                               trying to work with Excel.
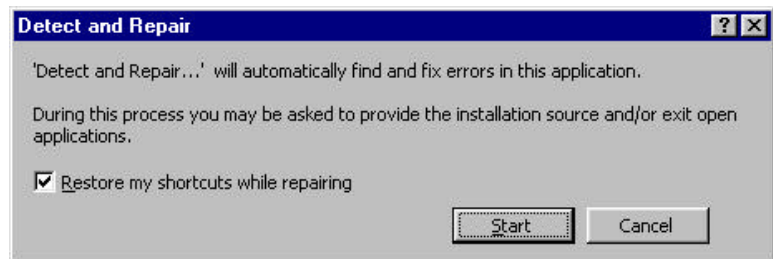
About Microsoft Excel   About Microsoft Excel has information as to the
                               version of Excel you are using, and additional
                               system information.

Worksheet Basics

Whenever you start Microsoft Excel, a blank workbook opens, ready for you to work. This workbook consists of several worksheets in which you can enter and edit information. When you start working in Excel, you can either begin working on the blank workbook that Excel creates, or you can open an existing file.

All new Excel projects start as multi-page books. This makes it easier to create related worksheets. For instance, if you are taking care of several account numbers, you can have a worksheet for each account, and a top "consolidation sheet."

Creating a Worksheet - Type the following text and numbers. Use TAB to move from column to column. Use Backspace key if you make a mistake before pressing enter.

Categories	January 1995	February 1995	March 1995
Books	14	20	22
Pencils	30	35	32
Crayolas	4	10	8

- As you start typing, the text will appear in the active cell *and* in the Formula bar. Pressing the Enter key or clicking the checkmark button in the Formula bar concludes the text entry and places the text in the active cell.
- Press TAB to move to the next cell, or use the arrow keys to move down or across.
- If you change your mind before you press enter, you can press the ESC key or click on the X button in the Formula bar to cancel the entry.
- You can type up to 255 characters per cell. It will only display 10 characters until the cell is resized.
- After you have entered text, you can easily increase cell sizes later or word-wrap text to accommodate the entries.

Entering and Editing Data

Entering Data	You can enter three types of information in a cell: Text Numbers Formulas
	Normally Row 1 is the column headings. (Example above = Categories, Jan99, Feb99, Mar99)
	Column A is the row labels. (Example above = Categories, Books, Pencils, Crayolas)
	The program will format a cell based on the type of data put in the cell. Text is left justified. Numbers are right justified. Formulas always begin with the = (equal sign)
Changing Column Width	Column A is not large enough to fit the information in cell A1. To readjust the column width, place the cursor on the divider line between Column A and B until the cursor changes to 4 sided arrow.

Column Divider Line
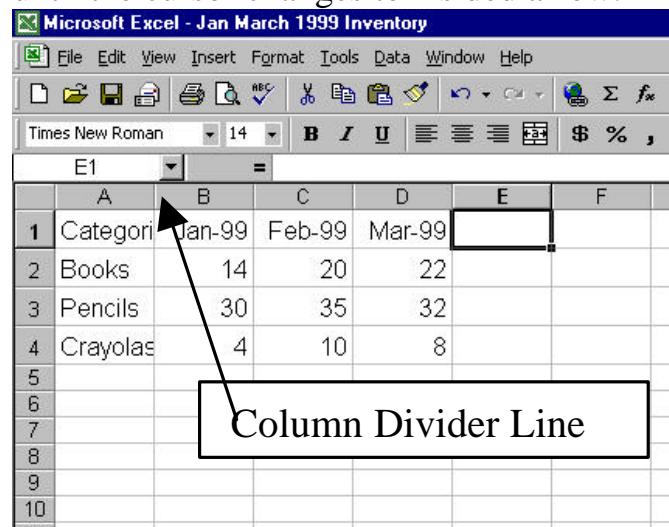
Double click the cursor, and the column will readjust to the width of the largest number of characters in column A.

Display Numbers as	To change the look of the numbers to be currency,

Dollars
you need to first highlight the columns and then change the formatting for the cells.

To highlight, click on the Column letter at the top of the screen for Column B.
The whole column should be highlighted.

Because we are going to change the formatting for all three columns (B through D), hold down the mouse and slide it from B to D on the column letters so all three columns are highlighted.

Hold down mouse button and slide across all three column letters.
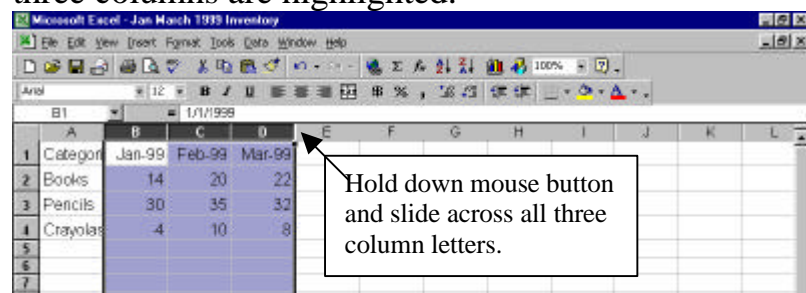
Once highlighted, select FORMAT, CELLS, and make sure the NUMBER tab is selected. Select Currency, and decide if you want any decimals, or if you want to use the $ dollar sign.
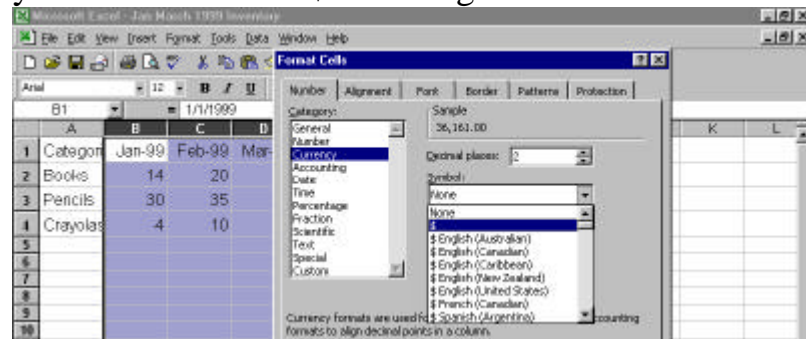
Even the Date Changed to Currency!
We had a slight problem with this. The column headings also changed to currency because the date (January 99, etc.) is stored as a number. Not a problem, however. You can go in and change just the information on Row 1 to display the date correctly.

First, highlight Row 1 by clicking the #1 in the left margin.

Then select FORMAT, CELL, NUMBER, and DATE. Pick the date displayed as the abbreviated month and last 2 digits of the year.
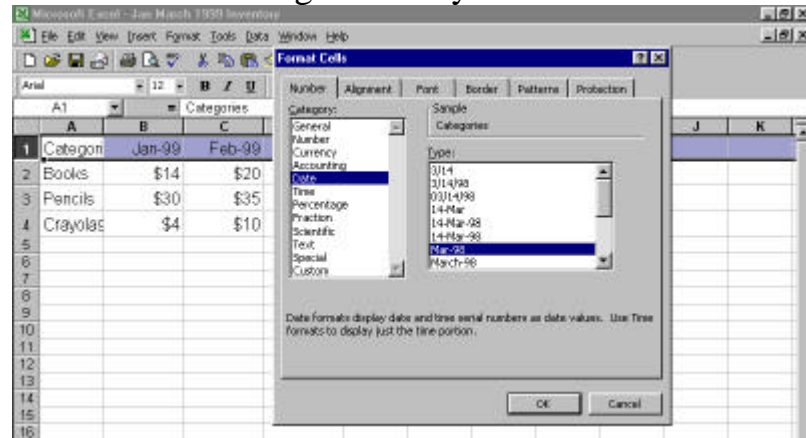
Add the Columns

Now that the spreadsheet is formatted to look the way you want, we need to total each column to see how much was sold in January, February and March.

Place your cursor in cell B5 to create the formula to total the column.

Σ To create the formula, you can go the easy way, by selecting the Sigma icon on the toolbar. This is a "wizard" that will anticipate you want to add the column of numbers above (or to the side if there are numbers there), and create the =SUM formula for you. It will also "box in" the cells to be added. If you agree with this, you simply press Enter.

Copy the Formula to the other months

You can now take the formula created for January 99 and copy it to the other months. The easy way to do this is as follows:

With the cursor in cell B5 (location of the formula), if you will look in the lower right corner of this cell, you will see a small box. Point your mouse on the box, and hold down the mouse button as you drag over to column D. Let go of the mouse and the formula will copy over.

Find the Average Dollar Sales for Books

To find the average monthly sales for Books, you need to create another formula. This cannot use the Sigma icon because you are not just adding.

To create the formula from scratch, move the cursor to cell E2.

In Cell E2, type an equal sign = to let the program know you are going to create a formula.

The formula for Average is as follows:
=AVERAGE
The range of cells you now put in will need to be surrounded by parentheses, so type the first parentheses.
You now need to give the program the range of cells to be averaged, and you can either type in these cells or use the mouse to highlight the cells.
To use the mouse, move the mouse to cell B2, hold it down and drag to D2. You should see the cell numbers showing up in the formula. Let go of the mouse , and type in the end parentheses. Press enter to calculate the formula.
The formula should look like this:
=AVERAGE(B2:D2)

	A	B	C	D	E	F
1	Categori	Jan-99	Feb-99	Mar-99		
2	Books	$14	$20	$22	$19	
3	Pencils	$30	$35	$32		
4	Crayolas	$4	$10	$8		
5		$48	$65	$62		
6						
7						
8						

Microsoft Excel - Jan March 1999 Inventory
File Edit View Insert Format Tools Data Window Help
Arial   10
E2   =   =AVERAGE(B2:D2)

Copy Corner
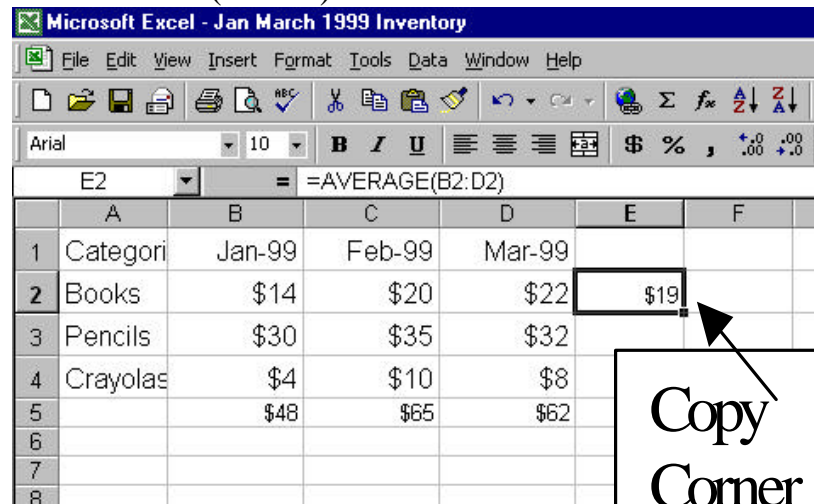
To copy the formula to the other two categories, point your mouse to the small box in the lower right corner of the cell. Hold down and drag to cell E4.

Save the file again | As often as you remember, save the file. There is a shortcut for this on the Standard toolbar. Click on the icon that looks like a diskette and it will update the file.

Print the File | First, look at FILE, PRINT PREVIEW and see if this is how you want to print the file.

If so, close Print Preview, and select File, Print. But, if you would like to change the way it prints by having gridlines showing, you need to make some changes first. So close Print Preview, and select FILE, PAGE SETUP, SHEET.

To have gridlines, make sure Gridlines is checked. If you'd like to see the column headings (A, B, C) and the row numbers (1, 2, 3) displayed in the printout, select Row and Column Headings.
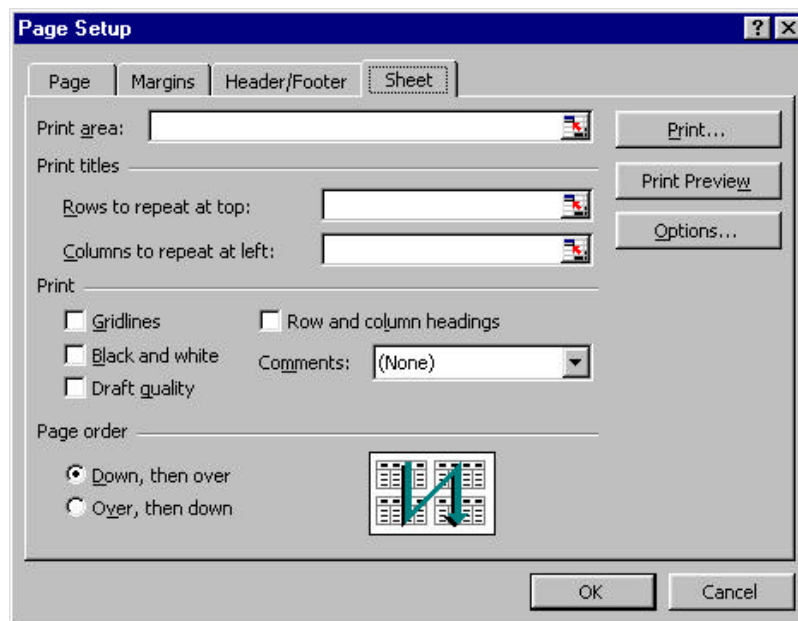
As you can see, you can also change margins and add a header and/or footer from Page Setup by going to

the different tabs. You can also use Print Preview to see how your changes will affect the look of the spreadsheet.

When actually ready to print, choose FILE, PRINT and get the following Print menu.
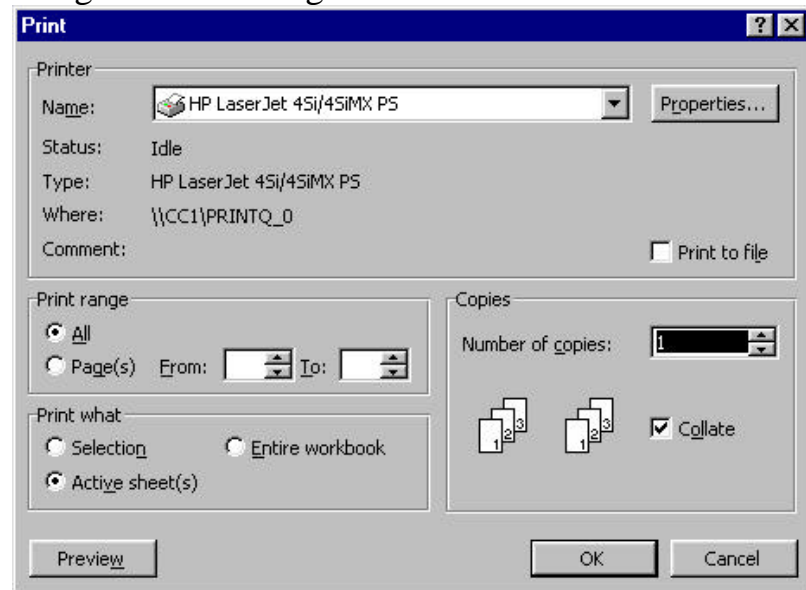
Under "Print What" you can print just the active sheet in which you are working, only what you have highlighted, or the entire workbook.

Create Another Spreadsheet – Part-Time Student Payroll	Scenario: You have six student workers who need to be paid. In addition to calculating the individual paychecks, you also need to know what your total outlay for Part-time payroll is, as well as the total number of hours worked. To accomplish this, we will create a workbook that will include each Month's payroll details, and a summary sheet to show the total to date for the fiscal year.
Create a new Workbook	To create a new workbook, select FILE, NEW, and press Enter. The new workbook will have 3 worksheets already created. We need to label the worksheets something other than "Sheet 1" "Sheet 2", etc. Because the first sheet will be the summary sheet for each month's grand totals, we need to rename the sheet to say – Summary for FY2000 Payroll To accomplish this, place your mouse on the Sheet 1 tab, and click the Opposite Mouse Button (right button for right handed folks, left button for left handed folks). A special menu will appear, one item of which is to rename the tab. Select Rename, and change the name from Sheet 1 to Summary for FY 2000 Payroll

Change Sheet 2 Tab	Change the Sheet 2 tab to read – September 1999 Payroll. Because we are going to be changing the formatting dramatically for the Detail Payroll Sheet, we will be copying the contents to a new sheet. Sheet 3 will not be used, so we can go ahead and delete it (opposite mouse click on Sheet 3, and select Delete from the menu). SAVE THE FILE – Save the workbook with FILE, SAVE, and name it FY2000 Parttime Payroll
Create Summary Sheet	Select the Summary sheet tab, and type in label information. Cell A1: Part-Time Payroll for FY 2000 Cell A3: Month Cell B3: Hours Worked Cell C3: Total Salary Cell A4: September 1999
Automatic List	Once this information is typed in, we can use the automatic list to create the rest of the months through August 2000. 1. Make sure the cursor is in the September 1999 cell. 2. There should be a small black box in the lower right corner of the cell when it is highlighted. 3. Place the cursor on that little black box, hold down the regular mouse button, and keep it down as you drag the cursor down the column. 4. You should see a tool tip pop up to let you know when it reaches August 2000. Let up on the mouse button, and the list will be automatically completed.
Do the	In Cell A17, put the word TOTALS.

Housekeeping – Center Title over 3 Columns, and Resize the Columns to fit data	Center the title in cell A1 between the 3 columns on the screen. First highlight cells A1, B1, and C1, by holding down the mouse in cell A1 and dragging to C1. Then select the "Merge and Center" command on the Standard Toolbar Readjust the columns to proper size by placing the mouse on the divider line between column A and B labels, and double click to resize. Do the same for B and C, and C and D.
Column Formatting, Column Totals, and SAVE THE FILE	Column C will be holding Currency, so needs to be formatted to display as currency. Click the letter C on the column heading. The whole column should highlight. Select Format, Cell, Number, Currency. Add the formula to add the column totals, by moving your cursor to Cell B17 and put in the formula: =SUM(B4:B15) Use the same cell logic in Cell C17: =SUM(C4:C15) You are now finished with this worksheet until you start copying data from the monthly worksheets. SAVE THE FILE!! You don't want to have to reenter any of the formatting, so save the file often.
Create Monthly Payroll Detail Sheet for September 1999	Click the Sheet tab for September 99 Payroll to move to it. 1. Create the title of the spreadsheet by moving to cell A1 and typing: Hourly Payroll – September 1999 2. Type the following Column Headings: 3. Cell A3: Name 4. Cell B3: Hourly Rate 5. Cell C3: Hours Worked 6. Cell D3: Salary Total The Students names will be entered starting in Cell A4.

A4: Ringo Starr
A5: Paul McCartney
A6: George Harrison
A7: Julian Lennon
A8: Emmitt Smith
A9: Troy Aikman

Hourly Rates are:
B4: $10
B5: $15.45
B6: $10
B7: $3.65
B8: $20
B9: $20

Hours Worked in September are:
C4: 99.5
C5: 102.6
C6: 88.1
C7: 88.3
C8: 75
C9: 103.1

Enter totals as follows:
A11: Total Hours Worked
A12: Total Salary

Format the Columns	Column B needs to be formatted for Currency: 1. Click the Letter B above the column to highlight the entire column. 2. Select FORMAT, CELL, NUMBER, and select Currency. 3. Select OK to exit. 4. Click the letter C above the column to highlight. 5. Select FORMAT, CELL, NUMBER, Number, and make sure to change the number of decimals to 1, and check to use the comma as the 1000 separator. 6. Select OK to exit. 7. Click the letter D above the column to highlight. 8. Select FORMAT, CELL, NUMBER, Currency. 9. Select OK to exit.
Create the Formula to find their salaries	In Cell D4, create the formula to calculate the salary. =ROUND(B4*C4) and press Enter. 1. Move your cursor back to the cell. 2. Place the mouse on the small black box in the right corner of the cell. 3. Hold down the mouse button, and drag down 5 rows to cell C9. The ROUND part of the formula will make sure the total is actually what is viewed on the screen. Otherwise the "stored" number might be 99.46592 instead of the "visual" number of 99.47. The program will actually use the 99.46592 when adding the column or calculating unless you use ROUND.
Total the Columns	The only columns that need to be totals are Columns C and D. In cell C11, type the following formula: =sum(C4:C9) In cell C12, type the following formula: =sum(D4:D9)

SAVE THE FILE	Save your work, by pressing the Save icon or going to FILE, SAVE.
Copy the totals to the Summary Sheet	To copy these totals to the Summary sheet, 1. First move the cursor to the "Total Hours Worked" column (C11). Select EDIT, COPY. 2. Move to the Summary worksheet, by clicking the sheet tab at the bottom of the worksheets. 3. Move cursor to the cell that will hold the totals hours worked for the month of September (B4). 4. Click inside the cell, and then do an opposite mouse click to bring up the alternative menu. Select PASTE SPECIAL. 5. When the screen comes up, select PASTE LINK that is in a box in the lower left of the Paste Special dialog screen. 6. You should now see the Total from the previous worksheet.
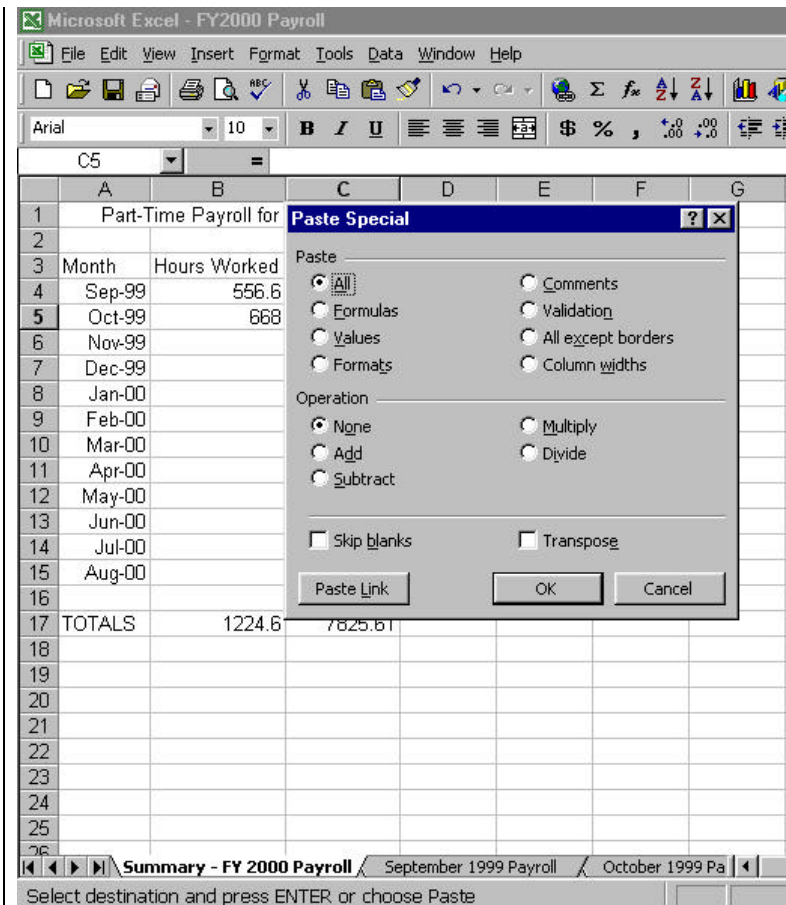
Repeat for Total Salary.

1. Go to the September 1999 Payroll worksheet.
2. Move to the Total for Total Salary (D12) and select EDIT, COPY.
3. Move to Summary Worksheet by clicking the sheet tab at bottom of worksheet.
4. Move to the cell that will hold the total salary for September 1999 (C4).
5. Click inside the cell, and then do an opposite mouse click to bring up the alternative menu. Select PASTE SPECIAL.
6. When the screen comes up, select PASTE LINK that is in a box in the lower left of the Paste Special dialog screen.
7. You should now see the Total from the previous worksheet.

SAVE THE FILE.

Create the October 1999 worksheet

To copy the contents of the September 1999 worksheet to another:

1. Point mouse to the Sheet tab at bottom of worksheet that says September 1999.
2. Opposite mouse click, and select Move or Copy.
3. When the quick menu comes up, make sure you put a check by the "COPY" box.
4. You want the copy to go after September 1999.
5. Select OK.
6. You will see another sheet that will say September 1999 (2).
7. You will need to rename the (2) copy to October 1999.
8. Change the title line to show October 1999 instead of September.
9. Delete the number of hours worked by the individuals.
10. Enter in the new data when you know it, and the salaries will automatically recalculate.
11. Go through the same steps as above in the "Copy The Totals to the Summary Sheet" to copy and "Paste Special" the totals to the summary.

Use the same steps for November 1999 and each successive month

You can either create all the worksheets at this time, or wait until the new month begins to copy to the new month so you can include any employee changes or salary changes.

SAVE OFTEN.

Part-Time Payroll for FY 2000 (Summary - FY 2000 Payroll)

	A	B	C
1	Part-Time Payroll for FY 2000		
3	Month	Hours Worked	Total Salary
4	Sep-99	556.6	7825.61
5	Oct-99	668	
6	Nov-99		
7	Dec-99		
8	Jan-00		
9	Feb-00		
10	Mar-00		
11	Apr-00		
12	May-00		
13	Jun-00		
14	Jul-00		
15	Aug-00		
17	TOTALS	1224.6	7825.61

Hourly Payroll - October 1999 (October 1999 Payroll)

	A	B	C	D
1	Hourly Payroll - October 1999			
3	Name	Hourly Rate	Hours Worked	Salary Total
4	Ringo Starr	$10.00	103.0	$1,030.00
5	Paul McCartney	$15.45	140.0	$2,163.00
6	George Harrison	$15.45	75.0	$1,158.75
7	Julian Lennon	$3.65	100.0	$365.00
8	Emmitt Smith	$20.00	120.0	$2,400.00
9	Troy Aikman	$20.00	130.0	$2,600.00
11	Totals		668.0	$9,716.75

Printing

To print the workbook, use FILE, PRINT. When the menu appears, be sure to select Print entire workbook to print the Summary and all the months of payroll detail. If you only want to print one worksheet, be sure your cursor is in the worksheet to be printed, and select the Print icon on the standard toolbar.

Do you want today's date showing on the printout?

If you have some additional information to put in a header or footer, you can set it up using FILE, PAGE SETUP. Use the Header or footer to print the name of the worksheet, the name of the workbook file, and/or today's date. If you are printing several variations of the file, you may want to include the print time of day as well, so you can refer to a specific printout.

APPENDIX A

Moving Around in a Worksheet - Selecting Cells

You can select several cells at once by holding down either the Shift or Ctrl key while you click the mouse. When you select more than one adjacent cell, you are selecting a *range* of cells. To select several non-adjacent cells, you simple click the first cell, hold down CTRL, and click the next cell that you want.

TO SELECT	DO
Multiple cells	Click the first cell in the range. Hold down Shift and click last cell in the range.
Non Adjacent Cells	Click on first cell to activate it, then hold down Ctrl, and click the next cell to select only those two cells.
Entire Row	Click on a row number
Entire Column	Click on column's letter heading
Range of Cells	Click and Drag mouse to highlight
Entire Worksheet	Click on empty cell in top left corner above Row 1, and to the left of Column A
TO SELECT	**DO**
Non Adjacent Rows	Click on row number, hold down Ctrl, and click on a different row number.
Non Adjacent Columns	Click on Column letter, hold down Ctrl, and click on different column letter.
Keyboard – select entire row	With a cell active in the row, press Shift + spacebar.
Keyboard – select entire column	With a cell active in the column, press Ctrl + spacebar.
Keyboard – entire worksheet	Ctrl + Shift + Spacebar

To *extend* selections in any direction, hold down the SHIFT key and press the appropriate arrow key.

Moving Around in a Cell

TO MOVE	PRESS
Left one cell	Left Arrow
Right one cell	Right Arrow
Up one cell	Up Arrow
Down one cell	Down Arrow
Up one screen	Page Up
Down one screen	Page Down
To the first cell in a row that contains data	Ctrl + Left Arrow
To the last cell in a row that contains data	Ctrl + Right Arrow
To the start of the worksheet	Ctrl + Home
To intersection of last row & column containing data	Ctrl + End

Keyboard Commands

Function Keys — You can use the 12 function keys to access features.

F1	Display Help or the Office Assistant
Shift F1	What's This?
Alt F1	Insert a chart sheet
Alt Shift F1	Insert a new worksheet
F2	Edit the active cell
Shift F2	Edit a cell comment
Alt F2	"Save As" command
Alt Shift F2	"Save" command
F3	Paste a Name into a formula
Shift F3	Paste a function into a formula
Ctrl F3	Define a name
Ctrl Shift F3	Create names by using row and column labels
F4	Repeat the last action
Shift F4	Repeats the last find (Find Next)
Ctrl F4	Closes the window
Alt F4	Closes Microsoft Excel

F5	Go To
Shift F5	Display the Find dialog box
Ctrl F5	Restores window size
F6	Move to the next pane
Shift F6	Move to the previous pane
Ctrl F6	Move to the next workbook window
Ctrl Shift F6	Move to the previous window
F7	Checks spelling
Ctrl F7	Move command (document Control menu)
F8	Extend a selection
Shift F8	Add to the selection
Ctrl F8	Resize the window
Alt F8	Display the Macro dialog box
F9	Calculates all sheets in all open Workbooks
Shift F9	Calculates the active worksheet
Ctrl F9	Minimizes the workbook
F10	Make the menu bar active
Shift F10	Display a shortcut menu
Ctrl F10	Maximize or restore the workbook window
F11	Create a chart
Shift F11	Insert a new worksheet
Ctrl F11	Insert new Microsoft Excel 4.0 macro Sheet
Alt F11	Display Visual Basic Editor
F12	Save As command
Shift F12	Save command
Ctrl F12	Open command
Ctrl Shift F12	Print command

Transition Navigation Keys

When you choose the **Options** command from the **Tools** menu and select **the Transition Navigation Keys** check box on the Transition tab, the

following keyboard shortcuts are in effect.

Navigation Keys	Ctrl + Left Arrow	Left one page
	Ctrl + Right Arrow	Right one page
	Ctrl + Page Up	In a workbook, next sheet
	Ctrl + Page Down	In a workbook, prev. sheet
	Tab	Right one page
	Shift + Tab	Left one page
	Home	Selects cell in the upper-left Corner of the sheet

Function Keys	F5	Go To Command
	F6	Next window of same workbook
	Shift F6	Previous pane of the same window

In Data Find Mode	Left Arrow	Moves to the previous field of the current record
	Right Arrow	Moves to the next field of the current record
	Home	Moves to the first record
	End	Moves to the last record

Text-Alignment Prefix Characters	' (apostrophe)	Aligns data in the cell to the left
	" (double quote)	Aligns data in the cell to the right
	^ (caret)	Centers data in the cell
	\ (backslash)	Repeats characters across the cell

Keys for Windows 95 / 98 / NT	**Alt+Tab**	Switch to the next program
	Alt+Shift+Tab	Switch to Previous Program
	Ctrl+ESC	Show the Windows START Menu
	Ctrl+W	Close the active workbook window
	Ctrl+F5	Restore the active workbook window
	Ctrl+F6	Switch to next workbook window
	Ctrl+Shift+F6	Switch to previous workbook window
	Ctrl+F7	Carry out the MOVE command
	Ctrl+F8	Carry out the SIZE command
	Ctrl+F9	Minimize the workbook window to an

		icon
	Ctrl+F10	Maximize or restore the workbook window
	Alt+0	Select the folder list in the Open or Save as dialog box (arrow keys to select a folder)
	Alt+*number*	(1 is the leftmost button, 2 is the next, and so on) Choose a toolbar button in the Open or Save As dialog box (file menu)
	F5	Update the files visible in the Open or Save As dialog box
Format Data by Using Shortcut Keys	**Alt+'**	(**' is the apostrophe**) Display the Style command (format menu)
	Ctrl+1	Display the Cells command (format menu)
	Ctrl+Shift+~	Apply the General number format
	Ctrl+Shift+$	Apply the Currency format with 2 decimal places (negative numbers appear in parenthesis)
	Ctrl+Shift+%	Apply the Percentage format with no decimal places
	Ctrl+Shift+^	Apply the Exponential number format with two decimal places
	Ctrl+Shift+#	Apply the Date format with the day, month, and year
	Ctrl+Shift+@	Apply the Time format with the hour and minute, and indicate A.M. or P.M.
	Ctrl+Shift+!	Apply the Number format with two decimal places, 1000 separator, and – for negative values
	Ctrl+Shift+&	Apply the outline border
	Ctrl+Shift+_	Remove all borders
	Ctrl+B	Apply or remove bold formatting

Ctrl+I	Apply or remove italic formatting
Ctrl+U	Apply or remove underline
Ctrl+Shift+(	Unhide rows
Ctrl+0 (zero)	Hide columns
Ctrl+Shift+)	Unhide columns

Work in Cells or the Formula Bar by using Shortcut Keys

= (Equal sign)	Start a formula
ESC	Cancel an entry in the cell or formula bar
F2	Edit the active cell
Backspace	Edit the active cell and then clear it, or delete the preceding character in the active cell as you edit the cell contents
F3	Paste a name into a formula
Ctrl+F3	Define a name
F9	Calculate all sheets in all open workbooks
Shift+F9	Calculate the active worksheet
Alt+=	Insert the AutoSum formula
Ctrl+;	Enter the date
Ctrl+Shift+:	Enter the time
Ctrl+K	Enter a hyperlink
ENTER	Complete a cell entry
Ctrl+Shift+*	Copy the value from the cell above the active cell into the cell or the formula bar
Ctrl+'	**(' is the single left quotation mark)** Alternate between displaying cell values and displaying cell formulas
Ctrl+'	**(' is the apostrophe)** Copy a formula from the cell above the active cell into the cell or the formula bar
Ctrl+Shift+Enter	Enter a formula as an array formula
Ctrl+A	Display for Formula Palette after you type a valid function name in a formula

	Ctrl+Shift+A Insert the argument names and parentheses for a function, after you type a valid function name in a formula
	Alt+Down Arrow Display the AutoComplete list
Enter Data by Using Shortcut Keys	**ENTER** Complete a cell entry
	ESC Cancel a cell entry
	F4 or Ctrl+Y Repeat the last action
	Alt+Enter Start a new line in the same cell
	Backspace Delete the character to the left of the insertion point, or delete the selection
	Delete Delete the character to the right of the insertion point, or delete the selection
	Ctrl+Delete Delete text to the end of the line
	Arrow Keys Move one character up, down, left or right
	HOME Move to the beginning of the line
	Shift+F2 Edit a cell comment
	Ctrl+Shift+F3 Create names from row and column labels
	Ctrl+D Fill down
	Ctrl+R Fill to the right
	Ctrl+Enter Fill the selected cell range with the current entry
	Enter Complete a cell entry and move down in the selection
	Shift+Enter Complete a cell entry and move up in the selection
	Tab Complete a cell entry and move to the right in the selection
	Shift+Tab Complete a cell entry and move to the left in the selection

Using Page Setup Change the Look of the Worksheet

Page Setup

Use the **Page Setup** command located on the **File** menu to get the right look for your printout.

Page Change Page orientation, size, and scaling.
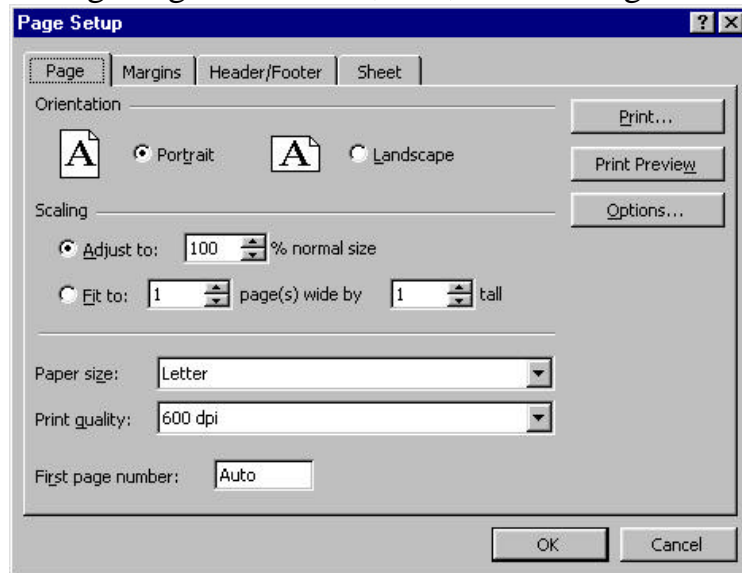
Margins Change margins for the entire page, for headers and footer locations, and centering horizontally or vertically on the page.
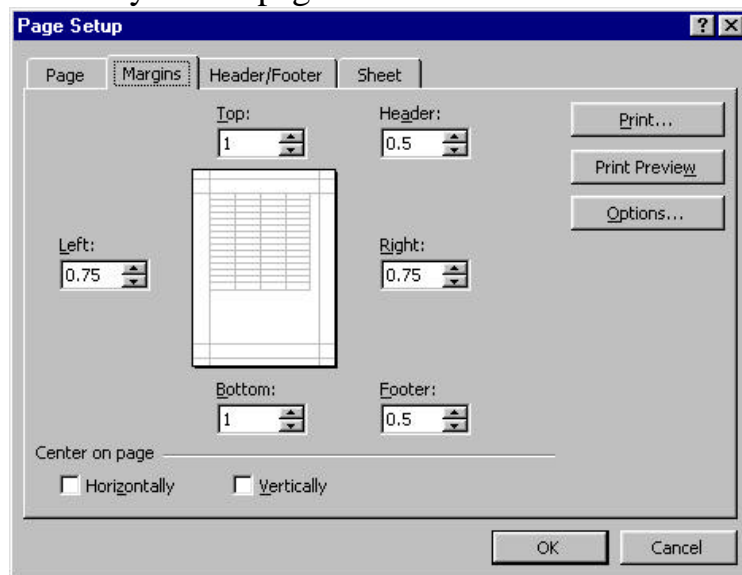
Header/Footers Create Headers and Footers.
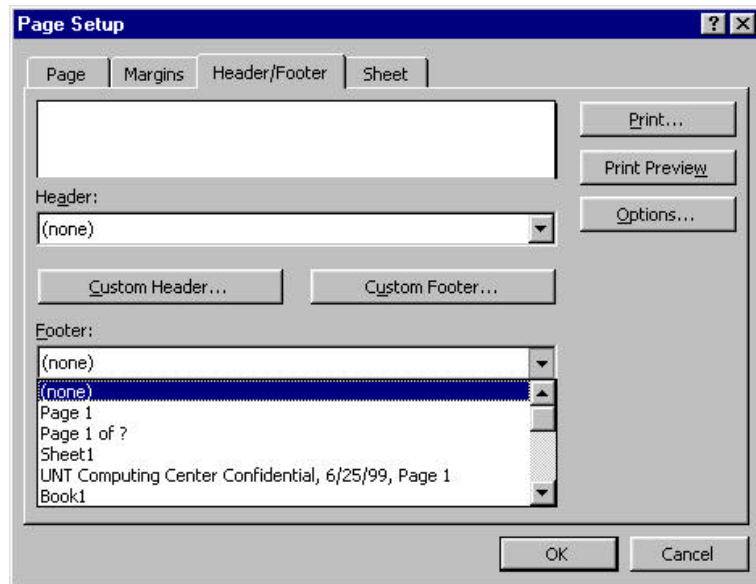
Sheet | Set up printing options, such as printing row titles and column titles, using gridlines, and page order to print when there are more columns than will fit on the page.

Different Ways to Save a Workbook

Saving the Workbook	Save the file with the name "Jan-March 1999 Inventory" by selecting FILE, SAVE, and typing the file name. Type up to 255 characters in a file name. Press Enter or select OK.

File menu:
- New...   Ctrl+N
- Open...   Ctrl+O
- Close
- Save   Ctrl+S
- Save As...
- Save as Web Page...
- Save Workspace...
- Web Page Preview
- Page Setup...
- Print Area
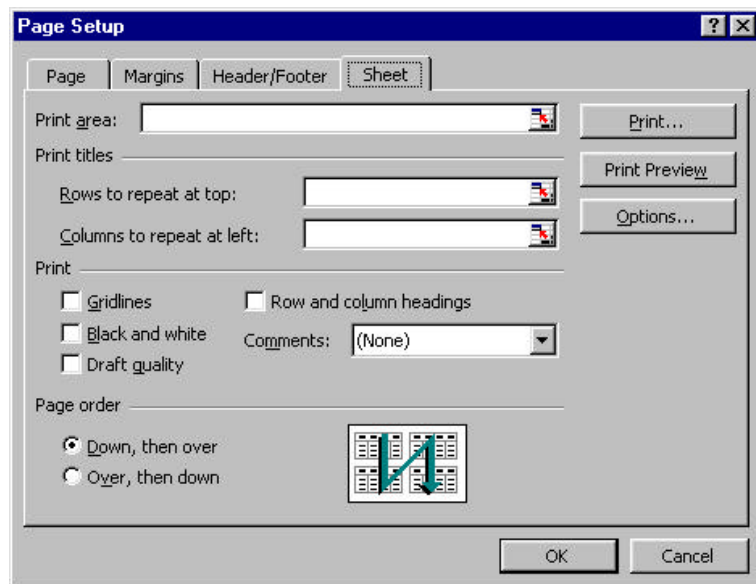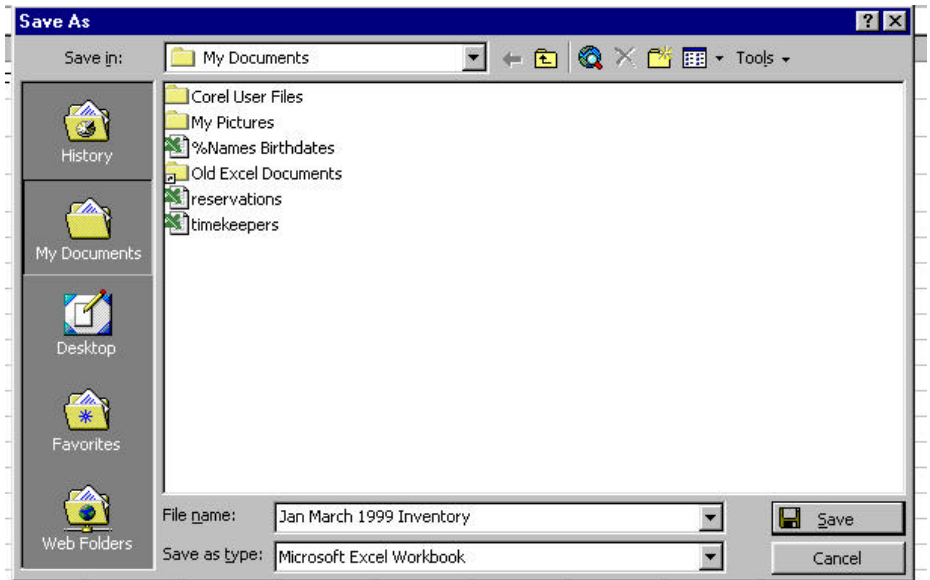- Print Preview
- Print...   Ctrl+P
- Send To
- Properties
- 1 Jan March 1999 Inventory
- Exit

Save As dialog:
Save in: My Documents
- Corel User Files
- My Pictures
- %Names Birthdates
- Old Excel Documents
- reservations
- timekeepers

File name: Jan March 1999 Inventory
Save as type: Microsoft Excel Workbook

File, Save	FILE, SAVE is used the first time you save the file, and anytime you want to save all the changes you are making. The Ctrl+S keyboard shortcut is a convenient way to save without visiting the File menu.
File, Save As	FILE, SAVE AS is used when you want to save the existing file, but with a different name or file TYPE. To change the file Type, click the icon after **Save As Type**: to see the different types. These include Lotus, dBase, MS-DOS text, Quattro Pro, Excel 4, 3, 2, 1 version, etc. When saved as MS-DOS text, it is in ASCII format and can be read by any package.

Save as Web Page | Use this procedure to put a worksheet on a Web page so that others can interact with the data. You can also put a worksheet on a Web page so that others can only view the data.

Before you save or publish data on a Web page, save your workbook as an .xls file so that you have a version you can modify if you want to later change your Web page.

Click the worksheet you want to put on a Web page.

1. On the **File** menu, click **Save as Web Page**.

2. Click **Publish**.

3. Make sure that **Items on** *sheetname* is selected in the **Choose** box and **Sheet   All contents of** *sheetname* is selected in the list.

4. Under **Viewing options**, select the **Add interactivity with** check box, and click the type of functionality you want for your worksheet.

5. To add a title to the published worksheet, click **Change**, type the title you want, and click **OK**.

6. In the **File name** box, click **Browse**, and locate the drive, folder, Web folder, Web server, or FTP location where you want to save or publish your Web page.

7. If you want to view the Web page in your browser after you publish it, select the **Open published Web page in browser** check box.

8. Click **Publish**.

• If you select a worksheet that contains a chart and publish it with interactive functionality, the chart will not be included on the Web page. To put an interactive chart on a Web page, you must save it

separately.

- Some formatting and features of your worksheet are not retained when you save it as a Web page.

- After you save your worksheet as a Web page, you can't open and modify the .htm file in Microsoft Excel without losing formatting and functionality. Use Microsoft FrontPage 2000 or data access page Design view in Microsoft Access 2000 to modify the Web page.

Save Workspace | You can save a group of workbooks in a customized workspace. You can open a group of workbooks in one step by creating a workspace file. A workspace file saves information about all open workbooks, such as their locations, window sizes, and screen positions.

When you open a workspace file by using the **Open** command (**File** menu), Microsoft Excel opens each workbook saved in the workspace. The workspace file does not contain the workbooks themselves, and you must continue to save changes you make to the individual workbooks.

1. Open the workbooks you want to open as a group.

2. Size and position the workbook windows as you want them to appear the next time you use the workbooks.

3. On the **File** menu, click **Save Workspace**.

4. In the **File name** box, enter a name for the workspace file.

Tip   To open the workbooks each time you start Microsoft Excel, save the workspace file in the XLStart

folder in your Excel folder. Save only the workspace file, not the workbook files, in the XLStart folder.

File Names   Type a name for your document in the File Name: box, then simply click the Save button.

Names can be up to 255 characters including spaces.

Print Options
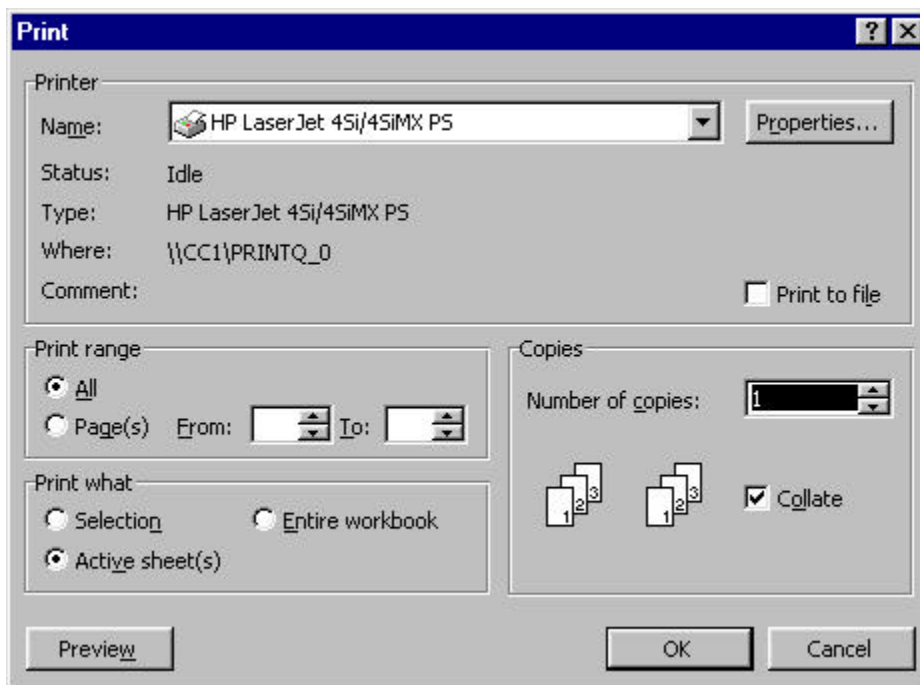
Printing a Worksheet   Printing is handled through the File menu. Select File, Print, OK.

To Preview on the screen before printing: Select File, Print Preview. When finished previewing, select CLOSE

Changing the Format of Cells, Rows, Columns, Sheets

Formatting the Cell

To change the appearance of the information in the cell, use FORMAT, CELL (or press Ctrl-1). You then have several subgroups to choose from. The first one is Number, then Alignment, Font, Border, Patterns, and Protection.

Format, Cell, Number

Choose from the categories shown to display the numbers in the cell (or range of cells).
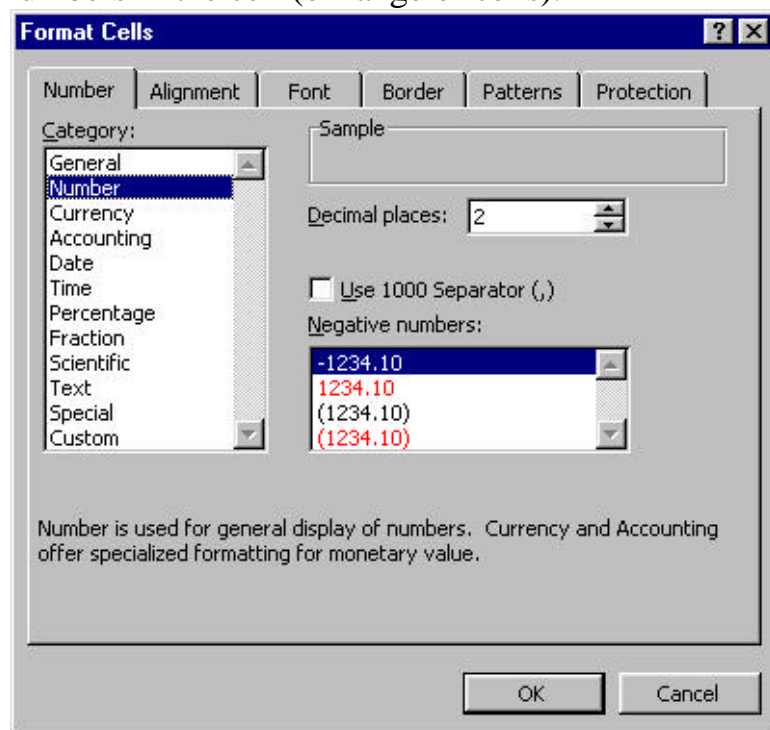
Each different category will have check-off information. The Number category above needs to know how many decimal places, and if you want to use the comma as the 1000 separator. Choose from the list how you want negative numbers displayed.

The currency category would need to know if you want to use the dollar sign, and how to handle negatives etc.

Format, Cell, Alignment	Choose from the types shown for Horizontal alignment, vertical alignment, and Orientation. You can also choose Text Control to wrap text within the cell.
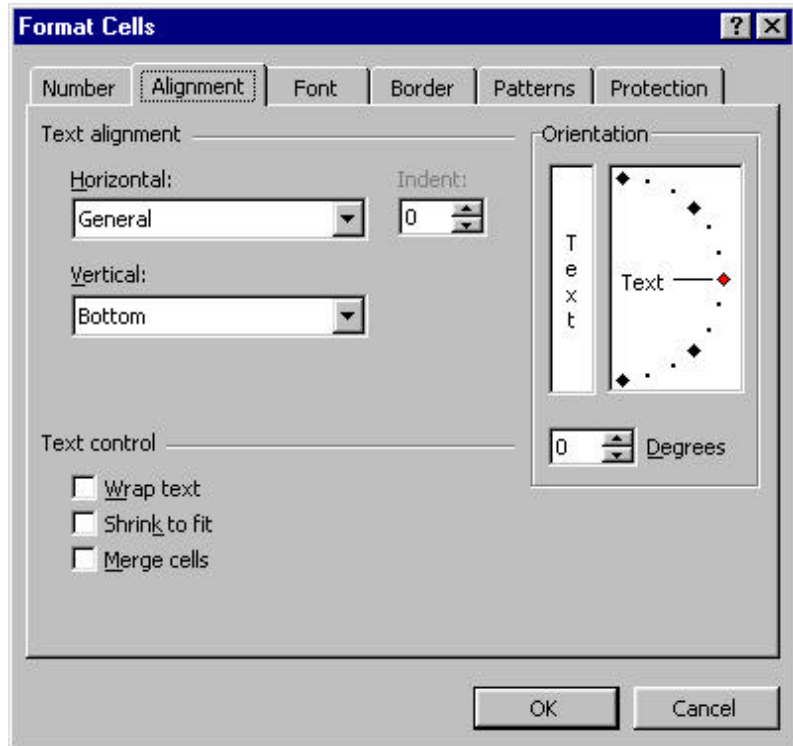
The default alignment is general which aligns text to the left, numbers to the right, and centers logical and error values.

This is also where you would choose to wrap text within a cell, and to merge cells together.

Format, Cell, Font Select the font, the style of the font, the size, whether or not to use underlines and underline style, color, any special effects.

Format Cells

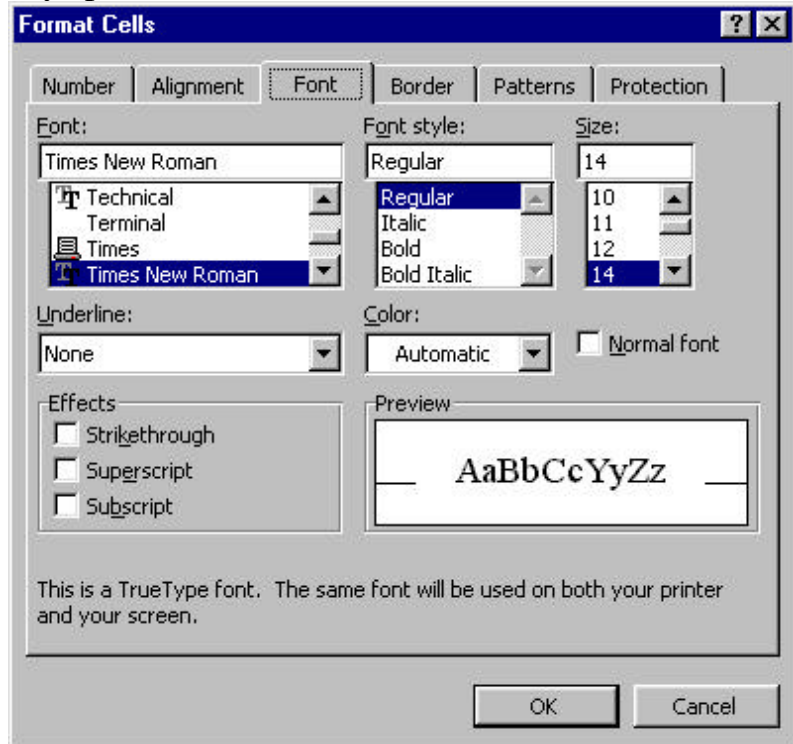Number | Alignment | Font | Border | Patterns | Protection

Font:
Times New Roman
- Technical
- Terminal
- Times
- Times New Roman

Font style:
Regular
- Regular
- Italic
- Bold
- Bold Italic

Size:
14
- 10
- 11
- 12
- 14

Underline:
None

Color:
Automatic

☐ Normal font

Effects
☐ Strikethrough
☐ Superscript
☐ Subscript

Preview

AaBbCcYyZz

This is a TrueType font. The same font will be used on both your printer and your screen.

OK | Cancel

Format, Cell, Border How do you want the border to look, on which sides do you want a border, do you want a different color?

Format Cells

Number | Alignment | Font | Border | Patterns | Protection

Presets
None | Outline | Inside

Border

Text

Line
Style:
None

Color:
Automatic

The selected border style can be applied by clicking the presets, preview diagram or the buttons above.
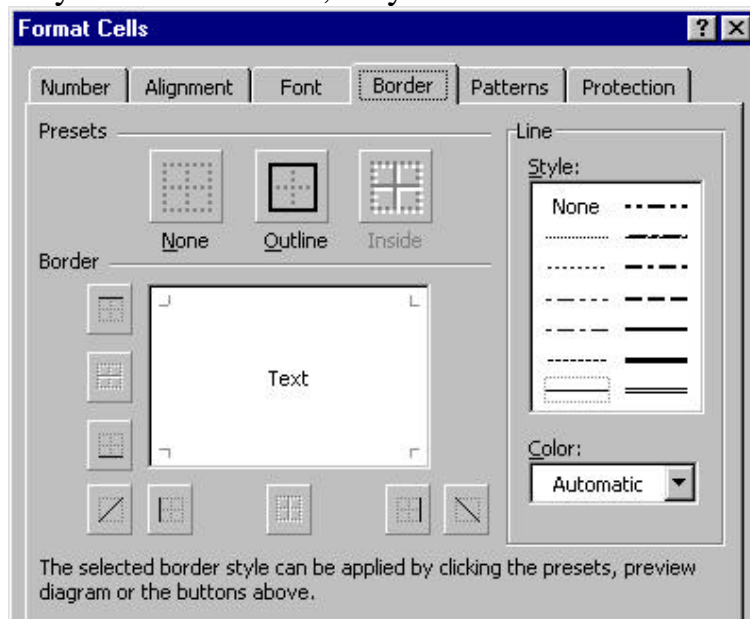
Format, Cell, Patterns Changes the pattern and pattern color of a selected

cell.
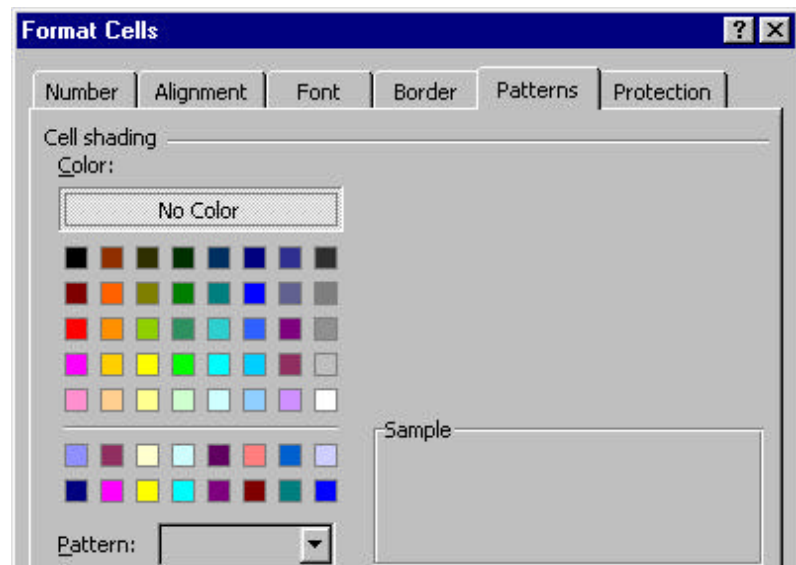
Format, Cell, Protection — You can select for the cell to be locked, but it will have no effect unless the worksheet is protected using Tools, Protection, Protect Sheet.

Format, Row	Purpose is to adjust row height, and hide or unhide rows.

- You need to select only one cell in a row to change the height for the entire row.
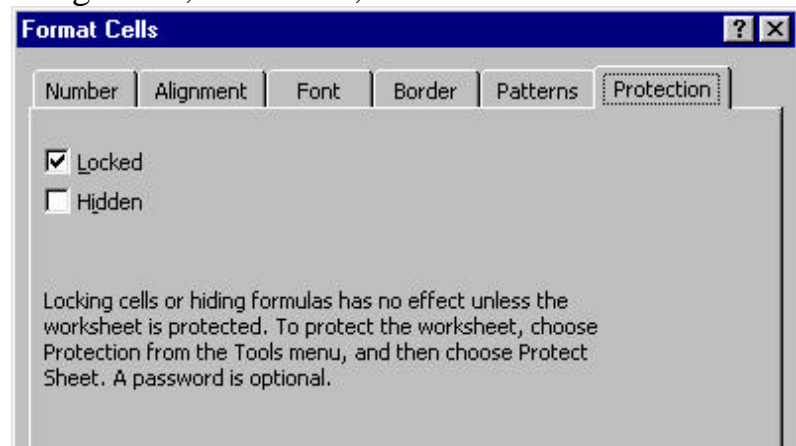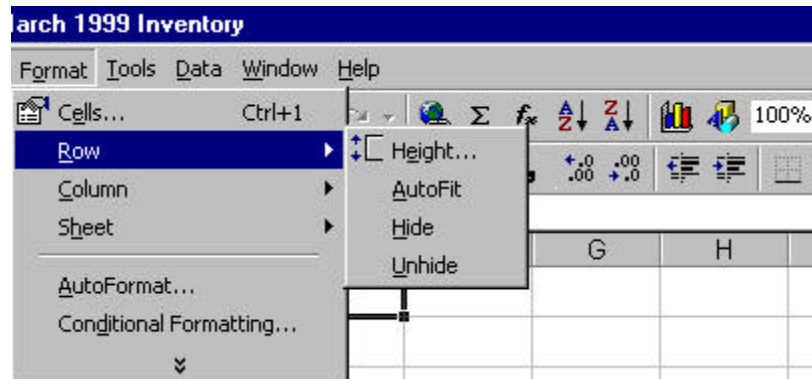- To change the height of all rows in a worksheet, select the entire worksheet.
- Double-click the bottom border of the row heading to adjust the row height for the best fit.
- The commands on the submenu are not available if the sheet is protected.

The Row Height can be a number from 0 to 409 representing the row height in points. If set to 0, the row is hidden.

The AutoFit command returns each row in the selection to the standard height within the row. The standard height for a row varies according to font size.

Format Column	Adjusts column width, and hides or unhides columns.

- You need to select only one cell in a column to change the width of the entire column.
- To change the width of all columns in a worksheet, select the entire worksheet.
- Double-click the right border of the column heading to quickly adjust the column width for the best fit.

- The commands on the submenu are not available if the sheet is protected.
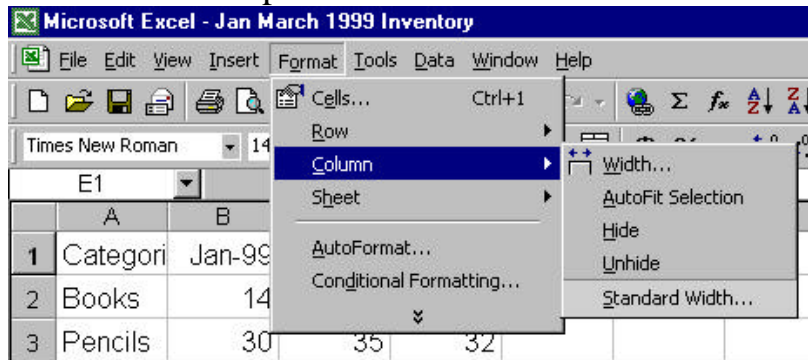
Width Command - Displays the Column Width dialog box. You can enter a number from 0 through 255 in the Column Width box. This number represents the number of characters that can be displayed in a cell using the standard font.

AutoFit Selection - Sets the column to the minimum width necessary to display the contents of the selected cells. If you change the cell contents later, you must fit the selection again.

Format Sheet

Allows you to rename the sheets in a workbook, hide or unhide them from view.
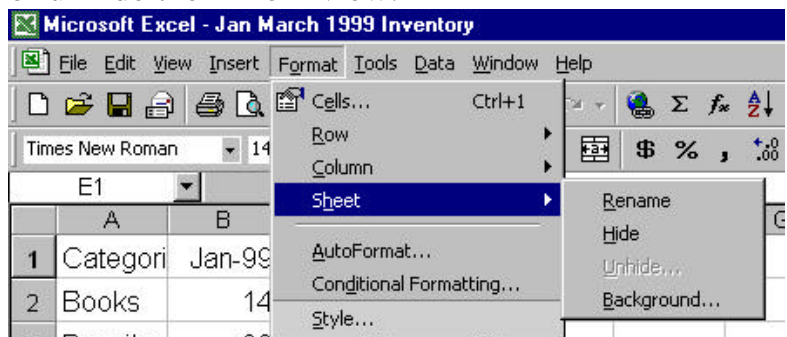
Format, AutoFormat

AutoFormat has a series of existing codes ready to be applied to your data sheet. First select the portion of the sheet, or the entire sheet to be affected by the codes, then choose FORMAT, AUTOFORMAT and select of the list provided. Additional options allow you to turn on or off certain factions, like changing the font, the patterns, etc.
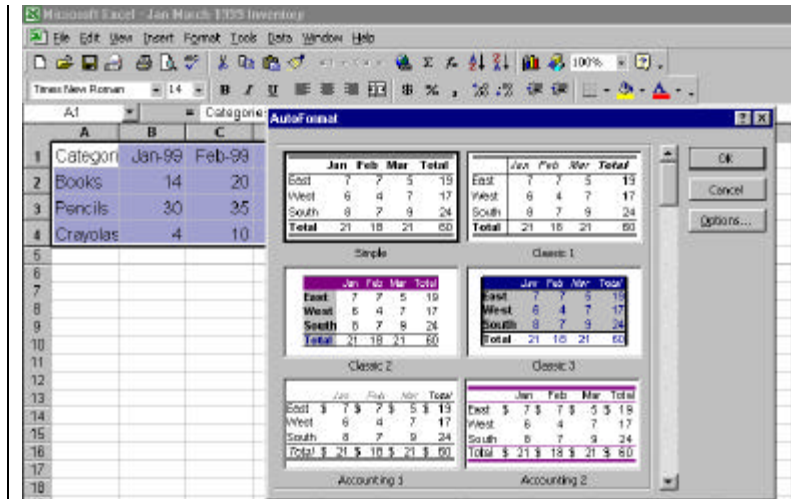
Conditional Formatting

Highlight data that meets conditions you specify

To highlight formula results or other cell values that you want to monitor, you can identify the cells by applying conditional formats.

For example, suppose a cell contains a formula that calculates the variance between forecast sales and actual sales. Microsoft Excel can apply green shading to the cell if the sales exceed forecast and red shading if sales fall short. If the value of the cell changes and no longer meets the specified condition, Microsoft Excel temporarily suppresses the formats highlighting that condition.
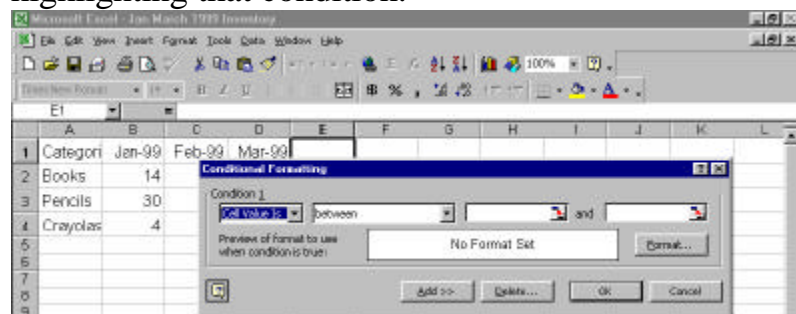
Conditional formats remain applied to the cells until you remove them, even though none of the conditions are met and the specified cell formats are

not displayed.

Format, Styles

A style can be applied to a cell, range of cells, or the entire selected worksheet by choosing the combination of formats you want and assigning them a name. You can redefine a style by changing the formatting characteristics. Cells formatted with the style are automatically updated to reflect the new formats.
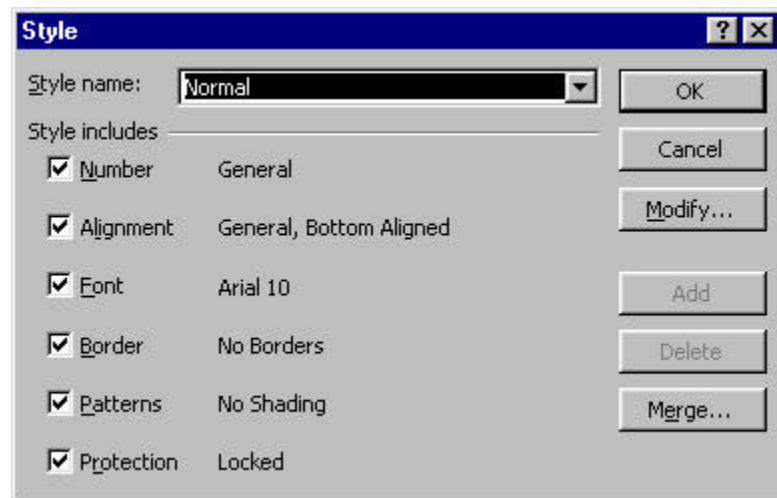
The types of formats you can include in a style are number, font, alignment, border, patterns, and protection.

If you select Modify, the Format Cells dialog box is displayed so you can select the formats you want to use in a style.

Alt + ' (Apostrophe) activates the Style box.

Miscellaneous Commands

Deleting Text	Press **Backspace** key immediately after typing character. Select character or text, and press **Delete**. Use Edit, Delete to bring up the Delete dialog box. • If you delete an entire row or column, rows or columns are shifted to fill the space. • If you select less than an entire row or column, a dialog box appears asking whether to shift the surrounding cells up or to the left, or to delete the entire column or row. • A worksheet formula containing a reference to a deleted cell displays the #REF! value. • If you press Shift + click Delete button, it functions the same as the Insert button. • If you press Shift+click Delete Column button, it functions the same as the Insert Column button. • If you press Shift + click Delete Row button, it functions the same as the Insert Row button. • To remove the contents (formulas and data), formats, notes, or all three from selected cells, but not the cells themselves, use the CLEAR command.
Undo	There are three ways to Undo. 1. Edit, Undo reverses your last action. Choose Edit, Undo again to reverse the action before that, and so on. 2. If you press Ctrl + Z repeatedly, it will reverse previous actions. 3. The Undo toolbar button and its associated drop-down list menu let you undo multiple actions in sequence.

	The exact name of the Undo choice on the Edit menu changes as you work. It remembers which steps you last took, and so can sometimes say Undo Typing, Undo the cut., etc. Can't Undo appears on the Edit menu if you cannot undo the previous action.
	Immediately after you undo an action, this command changes to Redo.
	Shortcut Key: Ctrl + Z Alt + Backspace
Redo	Use the Redo command to undo an Undo. To redo your last action only, choose Edit, Redo.
Replacing Text	Combine the steps of deleting unwanted text, positioning the insertion point, and inserting replacement text. 1. Highlight the unwanted text. 2. Start typing. The old text disappears, and the new text snakes across the screen as you type.

APPENDIX B

Worksheet Formulas and Functions

Worksheet formulas are tools used in cells to calculate results.

How Formulas Calculate Values

A formula is an equation that analyzes data on a worksheet. Formulas perform operations such as addition, multiplication, and comparison on worksheet values; they can also combine values.

The formula will always begin with the equal sign (=). As soon as the equal sign is recognized by the program, the formula bar will allow you to look at the formula wizard.
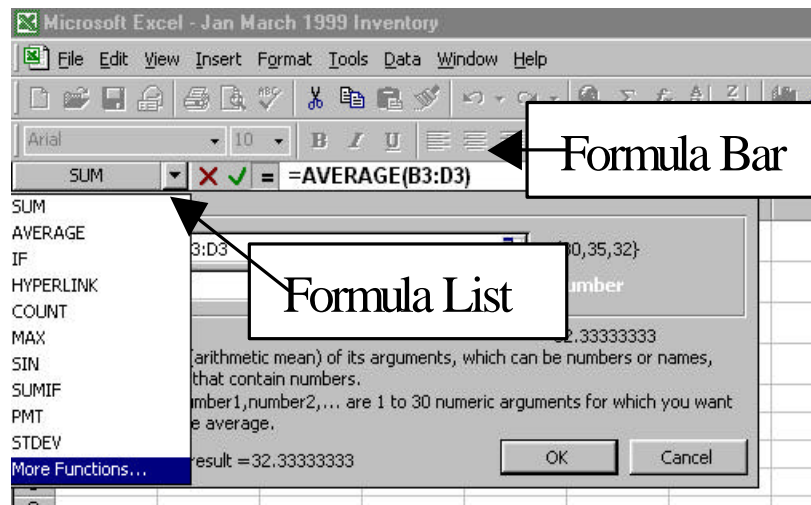
Formulas can refer to other cells on the same worksheet, cells on other sheets in the same workbook, or cells on sheets in other workbooks.

The following example finds the average number of books sold each month.
=average(B2:D2)
Totals the range of cells starting in B2 and ending in D2, and averages the total by the number of cells.

If you wanted to add these numbers you would change the formula to read:
=sum(B2:D2)
would add the contents of the three cells.

=max(B2:D2)
would find the cell with the highest value and return that value.

Formulas can definitely get more complicated than this, for example:
=(B2+25)/SUM(B4:D4)
= denotes a formula
B2 is a cell reference
+ is the Addition Operator
25 Is a Numeric Constant
/ is a Division Operator
SUM(B4:D4) is a Worksheet Function
B4:D4 is a Range Reference

Formula Syntax	Formulas calculate values in a specific order that is known as the syntax. The syntax of the formula describes the process of the calculation.
	A formula in Microsoft Excel begins with an equal sign (=), followed by what the formula calculates. For example, the following formula subtracts 1 from 5. The result of the formula is then displayed in the cell. =5-1
Calculation Operators in Formulas	Operators specify the type of calculation that you want to perform on the elements of a formula. Microsoft Excel includes four different types of calculation operators: arithmetic, comparison, text, and reference.
Arithmetic Operators	Arithmetic operators perform basic mathematical operations such as addition, subtraction, or multiplication; combine numbers; and produce numeric results.

Arithmetic operator	Meaning	Example
+ (plus sign)	Addition	3+3
– (minus sign)	Subtraction	3–1
	Negation	–1
* (asterisk)	Multiplication	3*3
/ (forward slash)	Division	3/3
% (percent sign)	Percent	20%
^ (caret)	Exponentiation	3^2 (the same as 3*3)

Comparison Operators	Comparison operators compare two values and then produce the logical value TRUE or FALSE.

Comparison

operator	Meaning	Example
= (equal sign)	Equal to	A1=B1
> (greater than sign)	Greater than	A1>B1
< (less than sign)	Less than	A1<B1
>= (greater than or equal to sign)		
	Greater than or equal to	A1>=B1
<= (less than or equal to sign)		
	Less than or equal to	A1<=B1
<> (not equal to sign)	Not equal to	A1<>B1

Text Operator	The text operator "&" combines one or more text values to produce a single piece of text.

Text operator   & (ampersand)

Meaning   Connects, or concatenates, two values to produce one continuous text value

Example   "North"&"wind" produce "Northwind"

Reference Operators	Reference operators combine ranges of cells for calculations.

Reference Operator

: (colon)

Meaning: *Range operator, which produces one reference to all the cells between two references, including the two references, Ex:* B5:B15

, (comma)

Meaning: *Union operator, which combines multiple references into one reference*, Ex: SUM(B5:B15,D5:D15)

  (single space)

Meaning: Intersection operator, which produces one reference to cells common to two references, Ex: SUM(B5:B15 A7:D7)

In this example, cell B7 is common to both ranges.

Using Cell and Range References

A reference identifies a cell or a range of cells on a worksheet and tells Microsoft Excel where to look for the values or data you want to use in a formula.

With references, you can use data contained in different parts of a worksheet in one formula or use the value from one cell in several formulas.

You can also refer to cells on other sheets in the same workbook, to other workbooks, and to data in other programs. References to cells in other workbooks are called **external references**. References to data in other programs are called **remote references**.

By default, Microsoft Excel uses the A1 reference style, which labels columns with letters (A through IV, for a total of 256 columns) and labels rows with numbers (1 through 65,536).

To refer to a cell, enter the column letter followed by the row number. For example, D50 refers to the cell at the intersection of column D and row 50. To refer to a range of cells, enter the reference for the cell in the upper-left corner of the range, a colon (:), and then the reference to the cell in the lower-right corner of the range. The following are examples of references.

To refer to	Use
The cell in column A and row 10	A10
The range of cells in column A and rows 10 through 20	A10:A20
The range of cells in row 15 and columns B through E	B15:E15
All cells in row 5	5:5
All cells in rows 5 through 10	5:10
All cells in column H	H:H
All cells in columns H through J	H:J

Depending on the task you want to perform in Microsoft Excel, you can use either **relative cell references**, which are references to cells relative to the position of the formula (D11), or **absolute references** (D11), which are cell references that always refer to cells in a specific location.

You can use the labels of columns and rows on a worksheet to refer to the cells within those columns and rows, or you can **create descriptive names to represent cells, ranges of cells, formulas, or constant values.**

Overview of Error Values

Microsoft Excel displays an error value in a cell when the formula for that cell cannot be calculated properly. If a formula includes a reference to a cell that contains an error value, that formula also produces an error value (unless you are using the special worksheet functions ISERR, ISERROR, or ISNA, which look for error values). You may have to trace the references back through a series of cells to discover the source of the error.

Error Value	Meaning
########	Not an error – the column is too small. Need to resize the column.
#DIV/0!	The formula is trying to divide by zero.
#N/A	No value is available. Usually, you enter this value directly into worksheet cells that will eventually contain data that is not yet available. Formulas referring to those cells will return #N/A instead of calculating a value.
#NAME?	Excel does not recognize a name used in the formula.
#NULL!	You specified an intersection of two areas that do not intersect.
#NUM!	There is a problem with a number.

| #REF! | The formula refers to a cell that is not valid. |
| #VALUE! | An argument or operand is of the wrong type. |

Using the Formula Palette

When you create a formula that contains a function, the Formula Palette helps you enter worksheet functions.

As you enter a function into the formula, the Formula Palette displays the name of the function, each of its arguments, a description of the function and each argument, the current result of the function, and the current result of the entire formula. To display the Formula Palette, click the = (equal sign) *Edit Formula* in the formula bar.

You can use the Formula Palette to edit functions in formulas. Select a cell that contains a formula, and then click Edit Formula (=) to display the Formula Palette. The first function in the formula and each of its arguments are displayed in the palette. You can edit the first function or edit another function in the same formula by clicking in the formula bar anywhere within the function.

Using Functions to Calculate Values	Functions are predefined formulas that perform calculations by using specific values, called arguments, in a particular order, called the syntax.

For example, the SUM function adds values or ranges of cells, and the PMT function calculates the loan payments based on an interest rate, the length of the loan, and the principal amount of the loan.

Arguments can be numbers, text, logical values such as TRUE or FALSE, arrays, error values such as #N/A, or cell references. The argument you designate must produce a valid value for that argument. Arguments can also be constants, formulas, or other functions.

=SUM(A10,B5:B10,50,37)

The syntax of a function begins with the function name, followed by an opening parenthesis, the arguments for the function separated by commas, and a closing parenthesis. If the function starts a formula, type an equal sign (=) before the function name. As you create a formula that contains a function, the Formula Palette will assist you . |
| *Using the Formula Palette to Enter and Edit Formulas* | When you create a formula that contains a function, the Formula Palette helps you enter worksheet functions. As you enter a function into the formula, the Formula Palette displays the name of the function, each of its arguments, a description of the function and each argument, the current result of the function, and the current result of the entire formula. To display the Formula Palette, click = in the formula bar. An alternative way to start the Formula Palette, from the Insert Menu, choose Function. |

You can use the Formula Palette to edit functions in formulas. Select a cell that contains a formula, and then click = to display the Formula Palette. The first function in the formula and each of its arguments are displayed in the palette. You can edit the first function or edit another function in the same formula by clicking in the formula bar anywhere within the function. Worksheet functions are calculation tools that can be used on worksheets to perform decision-making, action-taking, and value-returning operations automatically.

The functions are listed by category, such as "Financial", "Math & Trig", or "Statistical". When you select a function from the list box, the definition of the function and of its arguments will automatically appear for you, as well as the correct placement of commas and parentheses.

Types of Arguments

Arguments are the information that a function uses to produce a new value or perform an action. Arguments are always located to the right of the function name and are enclosed in parentheses. Most arguments are expected to be of a certain data type.

Arguments to a function can be any of the following:
- Numbers - examples are 5.003, 0, 150,266, and -30.05. Numbers without decimals are called integers. Numbers are accurate to 15 digits.
- Text - Text values used in formulas must be enclosed in double quotation marks. Text values can be a maximum of 255 characters long including quotation marks. A text constant that contains no characters is written as "" and is called "empty text."

- Logical values - The logical values are TRUE and FALSE. Logical arguments can also be statements that evaluate to TRUE or FALSE.
- Error values - Examples of error values are #DIV/0!, #N/A, #NAME?, #NULL!, #NUM!, #REF!, and #VALUE!.
- References - References can refer to single cells, ranges, or multiple selections, and can be relative, absolute, or mixed. Examples are A10, A10, A$10, R1C2, or R[10]C[-10].
- Arrays - Arrays allow you to customize how arguments and functions are entered in cells.