

LAB # 03

Statement Purpose:

This lab will provide a hands-on experience of **Microsoft Excel**. Microsoft Excel is an example of a program called a “spreadsheet.” Spreadsheets are used to organize real world data, such as a check register or a rolodex. Data can be numerical or alphanumeric (involving letters or numbers). The key benefit to using a spreadsheet program is that you can make changes easily, including correcting spelling or values, adding, deleting, formatting, and relocating data. You can also program the spreadsheet to perform certain functions automatically (such as addition and subtraction), and a spreadsheet can hold almost limitless amounts of data—a whole filing cabinet’s worth of information can be included in a single spreadsheet. Once you create a spreadsheet, you can effortlessly print it (as many copies as you want!), save it for later modifications, or send it to a colleague via e-mail. Microsoft Excel is a very powerful calculator—This lab covers just a small number of its features!

Activity Outcomes:

The lab will teach students to **prepare different spreadsheets** by:

- Using Title Bar, Formula Bar and Standard Toolbar
- Using and Formatting Cells
- Inserting and Sorting data
- Using Formula and Cell References

Instructor Note:

As a pre-lab activity, read Chapters 1B and 10 from the book (*Introduction to Computers* by Peter Norton, 6th edition (2013), McGraw Hill) to gain an insight about computer software.

1) Stage J(Journey)

Introduction

Microsoft Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering and financial needs. In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives (using pivot tables and the scenario manager). It has a programming aspect, Visual Basic for Applications, allowing the user to employ a wide variety of numerical methods, for example, for solving differential equations of mathematical physics, and then reporting the results back to the spreadsheet. It also has a variety of interactive features allowing user interfaces that can completely hide the spreadsheet from the user, so the spreadsheet presents itself as a so-called application, or decision support system (DSS), via a custom-designed user interface, for example, a stock analyzer, or in general, as a design tool that asks the user questions and provides answers and reports. In a more elaborate realization, an Excel application can automatically poll external databases and measuring instruments using an update schedule,^[12] analyze the results, make a Word report or PowerPoint slide show, and e-mail these presentations on a regular basis to a list of participants..

2) Stage a1 (apply).

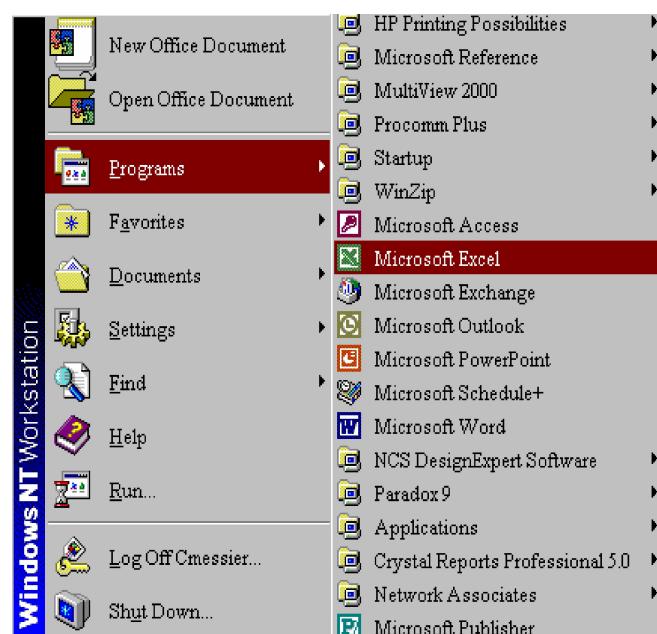
Lab Activities:

Activity 1:

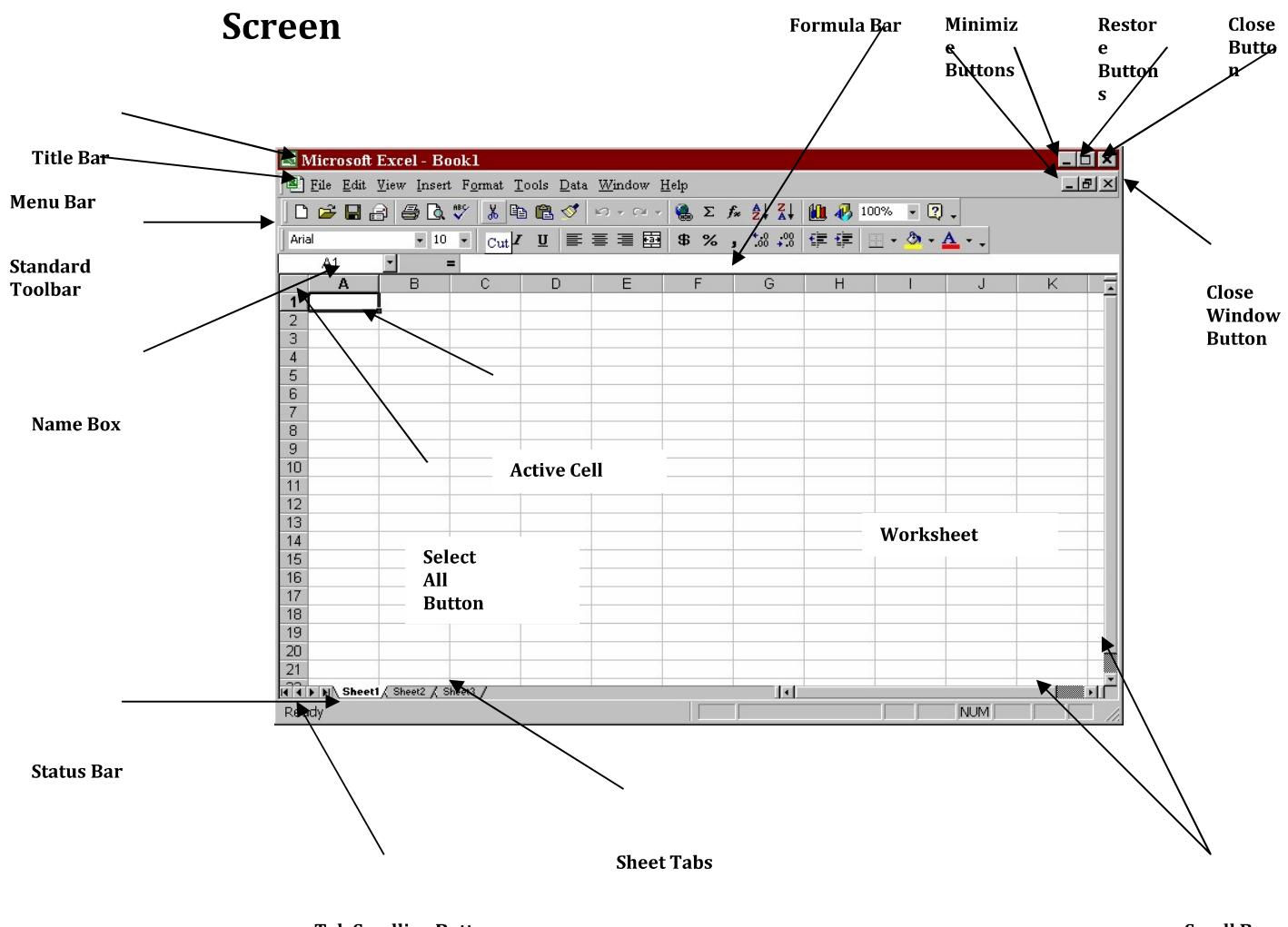
Opening Microsoft Excel

Solution:

1. Click on the **START** button.
2. Click on **PROGRAMS**.
3. Click on **MICROSOFT EXCEL**.



The Excel Screen



Title Bar:	Displays the name of the current program and workbook.
Menu Bar:	Displays the names of the Excel menus.
Standard: Toolbar	Displays the buttons of the most frequently used functions.
Name Box:	Displays the coordinates of the active cell.
Formula Bar:	Displays the contents of the active cell.
Status Bar:	Displays information about a selected command as well as the status of certain keys, such as CapsLock and NumLock
Scroll Bars:	Used to move through the worksheet. You can move up, down, left, and right.
Select All Button	Selects every cell in a worksheet.
Sheet Tabs:	Displays the names of the worksheets within a workbook.
Tab Scrolling Buttons:	Used to scroll through the worksheets in a workbook.
Worksheet:	A single page in a workbook, divided into rows and columns. Columns and rows intersect to form cells.
Active Cell:	The cell surrounded by a border where you enter or edit data.
Minimize button:	Minimizes the window to a button on the Windows taskbar.
Maximize/Restore button	Toggles (switches back and forth) between displaying a window in its maximum size and restoring a window to its previous size.
Close Window Button:	Closes the current window.
Close Button:	Closes the current program.

Tip

Move the mouse pointer over a button on the toolbar and a ToolTip will appear. This is the name of the button which gives a brief description of its purpose.

Activity 2: OPENING AND CLOSING A WORKBOOK

Opening a New Workbook:

1. Click on the **FILE** menu.
2. Click on **NEW**.
3. Click **OK**

OR

1. Click on the **NEW** button. 

Open an Existing Workbook:

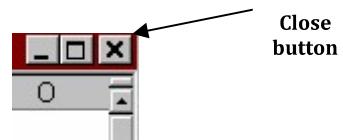
1. Click on the **FILE** menu.
2. Click on **OPEN**.
3. Once the explorer window opens, select the files you wish to open.
4. Click **OPEN**.

OR

1. Click on the **OPEN** button .
2. Once the explorer window opens, select the file you wish to open.
3. Click **OPEN**.

Closing a Workbook:

1. Click on the **CLOSE WINDOW** button in the top-right corner of the window.



OR

1. Click on the **FILE** menu.
2. Click **CLOSE**.

Activity 3: NAVIGATING THROUGH A WORKSHEET

TO MOVE	PRESS
Left one column	[←] or Shift + Tab
Right one column	[→] or Tab
To the first column in the worksheet	[Ctrl] [←]
To the last column in the worksheet	[Ctrl] [→]
To the last column in the row with data	[Ctrl] [→]
To the first column in the row with data	[Ctrl] [←]
Up one row	[↑] or Shift + Enter
Down one row	[↓] or Enter
To the next worksheet Page	[Ctrl] [Page Down]
To the previous worksheet Page	[Ctrl] [Page Up]
Up one screen	[Page Up]
Down one screen	[Page Down]
Beginning of worksheet	[Ctrl] [Home]
To the last cell with data	[Ctrl] [End]
Left one screen	[Alt] [Page Up]
Right One Screen	[Alt] [Page Down]

Activity 3: Moving Between Worksheets:

1. Click on the desired sheet tab at the bottom left of the Excel window.



Activity 5: Scrolling Through a Worksheet

1. Click on the left, right , up, or down scroll arrows to move one column/row.

OR

Drag the horizontal or vertical scroll box along the scroll bar to move the window in the corresponding direction.

OR

Click the scroll bar (either to the left or right of the horizontal scroll box, or above or below the vertical scroll box) to move the window in the direction of the mouse pointer.

Activity 6: Renaming Worksheets

1. Double-click the desired sheet tab.
2. Type the new name.
3. Press **ENTER**.

Tip

You can right-click a sheet tab to insert or delete worksheets.

Activity 7: Selecting Cells

Single Cell:

1. Click on the desired cell.
The cell will have a black border, which indicates that this is the active cell.

	A	B	C
1			
2			
3			
4			
5			

A Range of Cells:

Using the Mouse

1. Click on the cell in the upper, left-hand corner of the range.
2. Move the mouse pointer to the lower, right-hand corner and release.

Using the Keyboard

1. Click on the cell in the upper, left-hand corner of the range.
2. Hold down the **SHIFT** key
3. Click on the cell in the lower, right-hand corner of the range.

OR

1. Hold down the **SHIFT** key while pressing the arrow keys.

	A	B	C	D
1				
2				
3				
4				
5				
6				
7				

Nonadjacent Cells

1. Click on the first cell.
2. Hold down the **CTRL** key.
3. Click on the remaining desired cells.

A Single Row or Column:

1. Click on the desired row or column heading.

	A	B	C
1			
2			
3			
4			
5			
6			

More Than One Adjacent Column or Row:

1. Click and move the mouse pointer over the desired rows and columns.

Every Cell in A Worksheet:

1. Click on the **SELECT ALL** button.

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Activity 8: CREATING A WORKSHEET

Entering Data:

1. Select a cell.
2. Enter the data.
3. Press **ENTER** or click on the  in the formula bar

Entering a Range of Data:

1. Select the cells.
2. Enter the date
3. Press **ENTER**.
4. Continue until all cells are filled.

Editing Data:

1. Double-click the cell.

OR

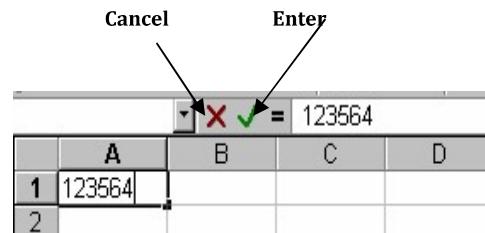
1. Click on the cell.
2. Click on the formula bar.

OR

1. Click on the cell
2. Press F2.

OR

1. Click on the **CANCEL** button in the formula bar to erase data before it is entered.



Activity 9: CREATING FOLDERS

You can create your own folders to organize your files. You can also create folders within folders.

1. Click on the **FILE** menu.
2. Click **SAVE AS**.
3. Click on the **CREATE NEW FOLDER** button 
4. Type the desired name for the folder in the space provided



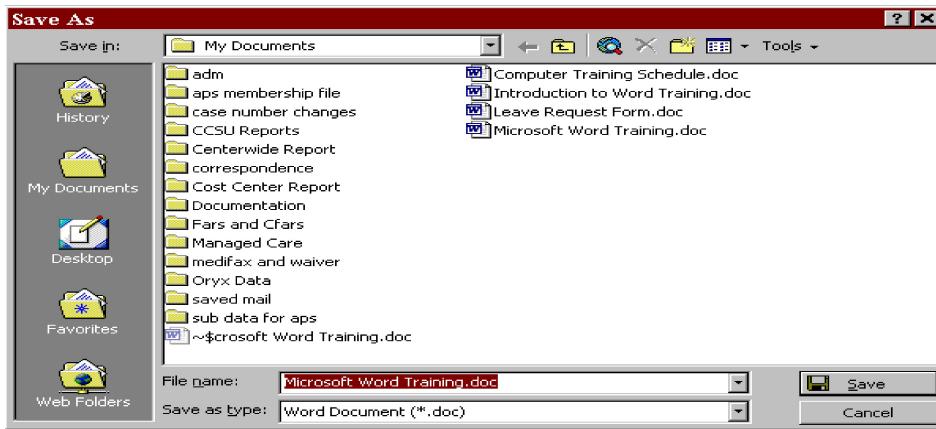
Activity 10: SAVING A DOCUMENT

Use **SAVE AS**: when you are saving a new document and you need to name it or if you are opening a document and saving it with a new name. This does not replace the old file.

Use **SAVE**: when you are saving changes made to an existing document. The old information will be overwritten.

Save As:

1. Click the **FILE** menu.
2. Click **SAVE AS**.



3. Click on the **SAVE IN** drop down list to select the drive and folder where you wish to save this document.
4. In the **FILE NAME** text box, type in the name you wish to give this document.
5. Select "*Microsoft Excel Workbook*" from the **FILE TYPE** text box.
6. Click **SAVE**

Save:

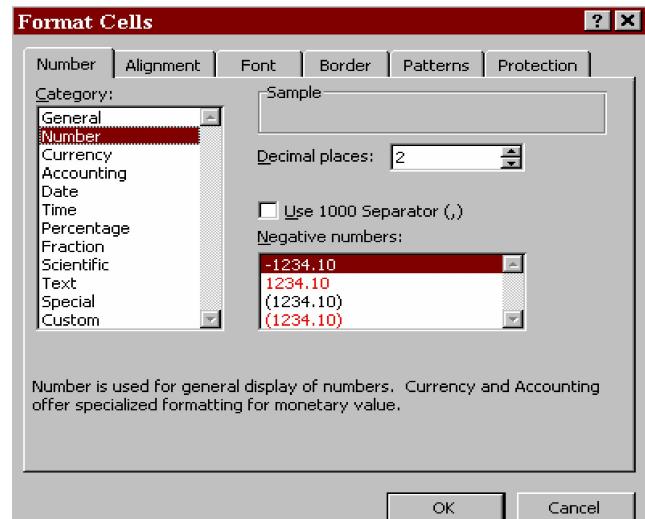
1. Use the **SAVE** button  or press [Ctrl] [S]

Activity 11: FORMATTING CELLS, ROWS, AND COLUMNS

Numbers:

Formatting can be done before or after data is entered.

1. Select the cell(s)
2. Click on the **FORMAT** menu.
3. Click on **CELLS**.
4. Select a format from the **CATEGORY** list.
5. Click on the number of decimal places to be used, if applicable.
6. Click **OK**.

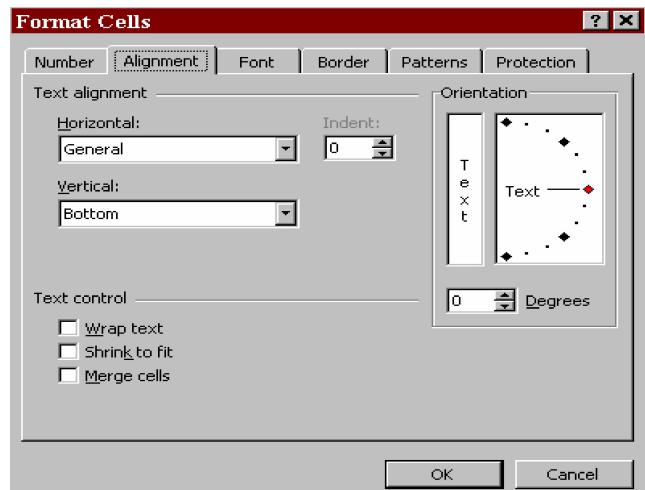


OR

1. Select the cell(s).
2. Right-click
3. Click on **FORMAT CELLS** and follow steps 4-6 from above.

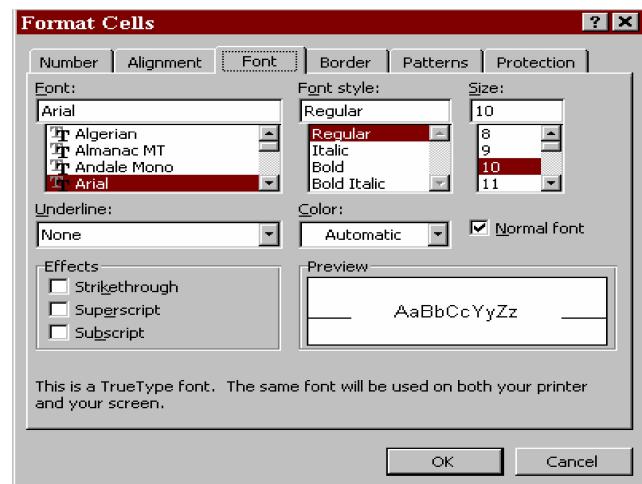
Cell Alignment:

1. Select the cell(s).
2. Click on the **FORMAT** menu.
3. Click the **ALIGNMENT** tab.
4. Choose the desired alignment by clicking on the drop down menu in the horizontal section.
5. Click **OK**.



Change Font:

1. Select the cell(s).
2. Click on the **FORMAT** menu.
3. Click on **CELLS**.
4. Click on **FONT**.
5. Make changes and click **OK**.



The Formatting Toolbar can also be used to make changes.

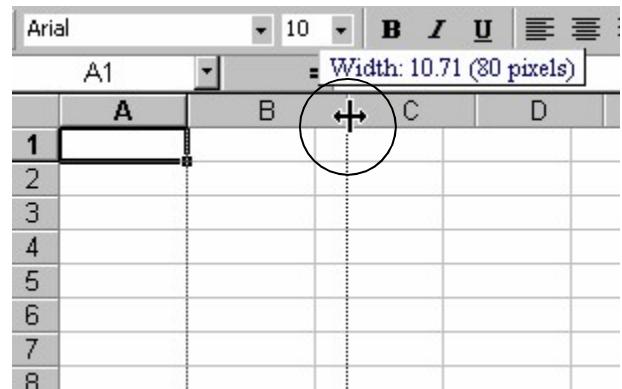
1. Select the cell(s).
Click on the desired
2.

A screenshot of the Windows XP Formatting Toolbar. The toolbar includes buttons for font selection, font size, bold, italic, underline, center alignment, merge/center, and decimal increase/decrease. Arrows point from labels to specific buttons: 'Italic' to the italic button, 'Left' to the left align button, 'Right' to the right align button, 'Currency' to the currency symbol button, 'Increase Decimal' to the increase decimal button, 'Font' to the font dropdown, 'Font' to the font size dropdown, 'Bold' to the bold button, 'Underline' to the underline button, 'Center' to the center align button, 'Merge/Cente' to the merge/center button, and 'Decrease' to the decrease decimal button.

Resize Columns And Rows:

Adjust the width of a column:

1. Move the mouse pointer to the right of the column heading border until it turns into a double headed arrow
2. Click and drag to the border to the right or left.
3. Release the mouse at the desired width.



OR

1. Move the mouse pointer to the right of the column heading border until it turns into a double headed arrow.
2. Double-click. The column is automatically resized to fit the widest entry.

Adjust the width of Multiple Columns:

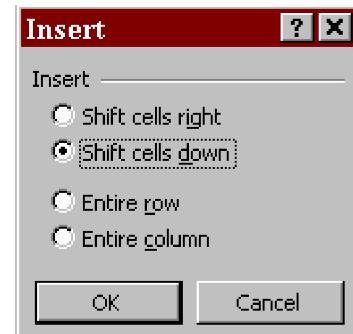
1. Select desired columns.
2. Click on the **FORMAT** menu.
3. Click on **COLUMN**.
4. Click on **WIDTH**.
5. Enter the desired width.
6. Click **OK**.



Activity 12: INSERTING, DELETING, AND MERGING CELLS

Inserting Cells:

1. Select the cell(s) above or to the left of the cells you want to move.
2. Click on the **INSERT** menu.
3. Click on **CELLS**.
4. Click on appropriate selection.
5. Click **OK**.



OR

1. Select the cell(s) above or to the left of the cells you want to move.
2. Right-click.
3. Click on **INSERT**.
4. Follow steps 3-5 from above.

Inserting Rows and Columns:

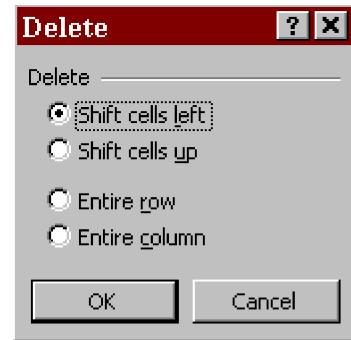
1. Select a cell to the left of the column or above the row that will be moved.
2. Click on the **INSERT** menu.
3. Click on **COLUMNS** or **ROWS**

OR

1. Right-click the column or row heading.
2. Follow steps 2-3 from above.

Deleting Cells:

1. Select the cell(s) to delete.
2. Click on the **EDIT** menu.
3. Click on **DELETE**.
4. Click on appropriate selection.
5. Click **OK**.

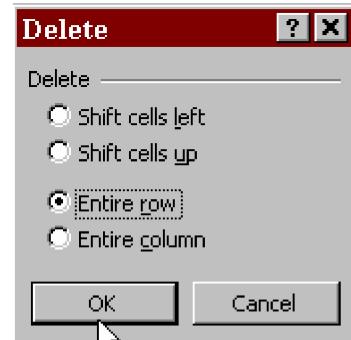


OR

1. Select the cell(s) to delete.
2. Right-click.
3. Follow steps 3-5 from above.

Deleting Rows and Columns:

1. Select at least one cell in the column or row.
2. Click on the **EDIT** menu.
3. Click on **DELETE**
4. Click on appropriate selection.
5. Click **OK**.



Merging Cells:

1. Select the cells you want to merge.
2. Click the **MERGE AND CENTER** button on the toolbar.

Tip

Click the **Undo** to reverse the last change made.
“undo the undo” click the **Redo** button .

Activity 13: PRINTING WORKSHEETS AND WORKBOOKS

Previewing a Worksheet:

To preview the worksheet before you print it, click the **PRINT PREVIEW** button



. To exit the Print Preview screen, click on **CLOSE**.

Setting the Print Area:

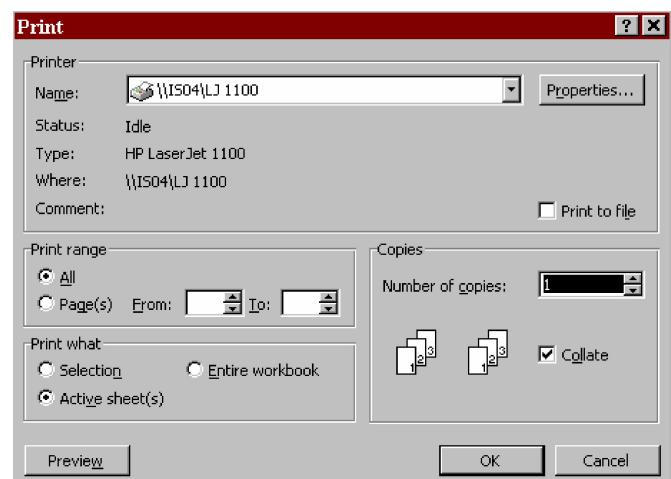
1. Select the area of the worksheet that is to be printed.
2. Click on the **FILE** menu.
3. Click on **PRINT AREA**.
4. Click on **SET PRINT AREA**.

Clearing the Print Area:

1. Click on the **FILE** menu.
2. Click on **PRINT AREA**.
3. Click on **CLEAR PRINT AREA**.

Printing:

1. Click on the **FILE** menu.
2. Click on **PRINT**. A dialog box will appear.
3. Select the options you wish to change (page name, name of printer, etc.)
4. Select the number of copies.
5. Click **OK**.



OR

1. Click the **PRINT** button on the toolbar.

Activity 14: CREATING FORMULAS

The following mathematical operators can be used in a formula:

- ^ **Exponentiation**
- * **Multiplication**
- / **Division**
- +
- **Addition**
- **Subtraction**

*****Operations should be performed in the order listed**

above. Entering a Formula:

1. Click on the desired cell.
2. Type = and the cell names.
3. Press **ENTER**.

OR

1. Click on the desired cell.
2. Type =
3. Click on the appropriate cell.
4. Enter the desired mathematical operator.
5. Repeat steps 3 & 4 until the formula is complete.
6. Press **ENTER** or click on the **✓** on the **FORMULA BAR**.

	SUM	A	B	C
1				
2			2002	
3				
4	Restaurants			
5	Bear Creek Café		50,375.44	
6				
7	Antler Bistro		39,246.51	
8				
9	Fox Take-Out		22,198.40	
10				
11	Total	=B5+B7+B9		
12				

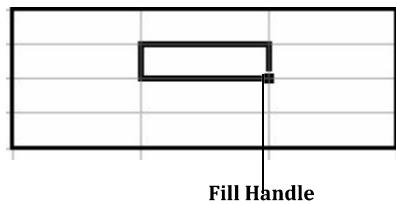
	A	B	C	D
1				
2		2002		
3		+ 2002		
4	Restaurants			
5	Bear Creek Café		50,375.44	
6				
7	Antler Bistro		39,246.51	
8				
9	Fox Take-Out		22,198.40	
10				
11	Total	111,820.35		
12				

Tip

You can use lowercase or uppercase letters when typing cell references.

Copying a Formula:

1. Select the cell with the formula you want to copy.
2. Point to the fill handle.
3. Move the fill handle to the last cell in the range.



Tip

The fill handle can be used to complete a series of years, dates, days, etc.

Editing a Formula:

1. Click on the appropriate cell.
2. Position the insertion point in the **FORMULA BAR**, or click on the **EDIT FORMULA** button  on the formula bar.
3. Make the changes and press

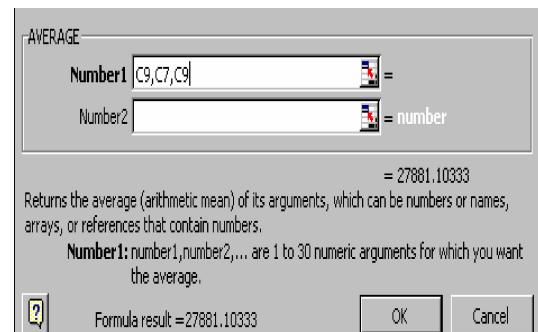
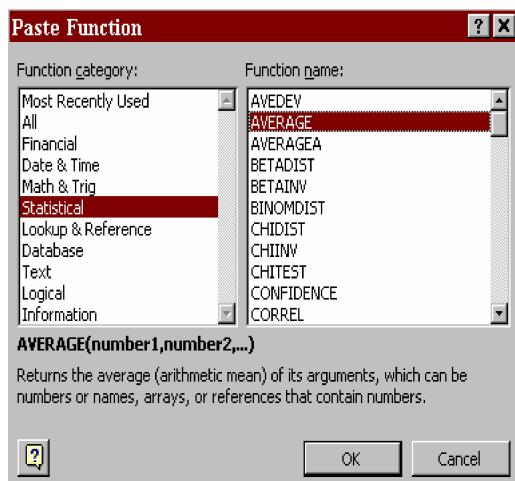
ENTER. Deleting a Formula:

1. Click on the appropriate cell
2. Press **DELETE**.

Activity 15: USING FUNCTIONS

A **function** is a special formula, "built-in" to Excel, that performs a specific task

1. Click on a cell.
2. Click the **PASTE FUNCTION** button  on the toolbar.
3. Select the desired function and enter necessary information.
4. Click **OK**.



Using Autosum:

Autosum is a button on the toolbar which allows you to total adjacent cells.

1. Select the cell that will contain the total.
2. Click on the **AUTOSUM** button  on the toolbar.
3. Modify the formula if needed.
4. Press **ENTER**

	Average	X	✓	=	=SUM(B2:B4)
1					
2					4
3					5
4					6
5					=SUM(B2:B4)
6					

Activity 16: MOVING DATA

Cutting, Copying, and Pasting :

Cutting text removes data from a cell while copying duplicates the data so that it can be pasted to another location.

1. Select the cell(s) that contain the data to be cut or copied.



2. Click on the **CUT** or **COPY** button.

3. Select the cell(s) where the data will be pasted.



4. Click on the **PASTE** button.

Copying Data Using the Fill Handle:

1. Select the cell(s) that contain the data to be copied.

2. Drag the fill handle to the desired cells.

Paste Special:

Paste Special allows you to choose which parts of a cell you want to paste. You can paste only the cell's formatting, formula, or width if desired.

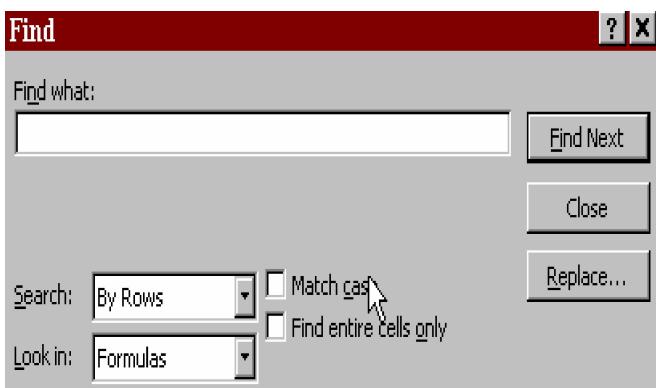
1. Select the cells that you want to cut or copy.
2. Click on the **CUT** or **COPY** button.
3. Select the cell(s) where the data will be pasted.
4. Click on the **EDIT** menu.
5. Click on **PASTE SPECIAL**.
6. Click on the desired paste option.
7. Click **OK**.



Activity 17: FIND AND REPLACE

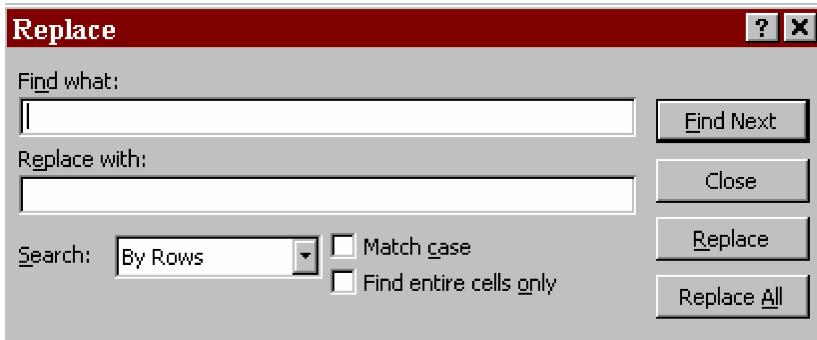
Find:

1. Go to the beginning of the document by pressing [Ctrl] [Home].
2. Click on the **EDIT** menu.
3. Click on **FIND**.
4. Click on the **FIND** tab in the dialog box that opens.
5. Enter the word or number you wish to find in the “**FIND WHAT**” text box.
6. Click on the **SEARCH** drop-down menu and click on rows or columns.
7. Click on the **LOOK IN** drop-down menu and click on formulas, values, or comments.
8. Click on **FIND NEXT**.
9. Click **OK** when finished.



Replace:

1. Repeat steps 1thru 3 from above.
2. Click on the **REPLACE TAB** in the dialog box that opens.
3. Enter the word or number you wish to find in the “**FIND WHAT**” text box.
4. Enter the word or number you wish to replace it with in the “**REPLACE WITH**” text box.
5. Click on the **SEARCH** drop-down menu and click on rows or columns.
6. Click on **REPLACE ALL** to replace every occurrence.

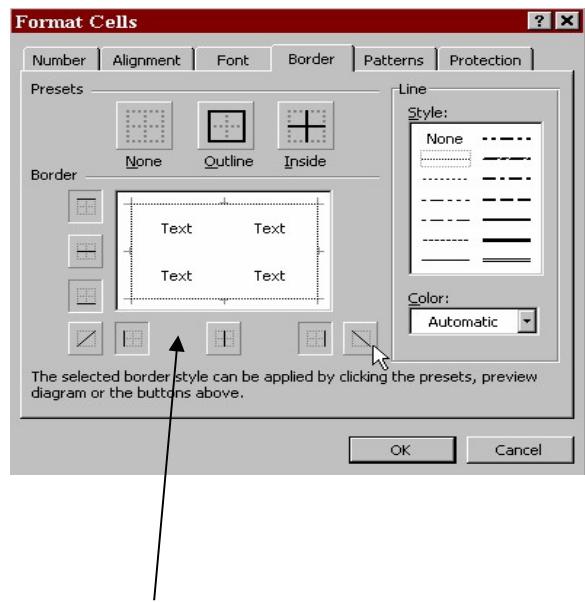


Activity 18: BORDERS AND SHADING

Adding Borders to Cells:

Borders can be placed around a cell, a range of cells, or an entire worksheet.

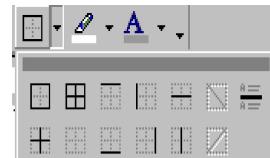
1. Select the cell(s).
2. Click on the **FORMAT** menu.
3. Click on **CELLS**.
4. Click on the **BORDER** tab.
5. Choose which edges you want to add the border to in the **PRESETS** and **BORDER** sections.
6. Select the desired border line type and color.
7. Click **OK**.



Border Preview Box

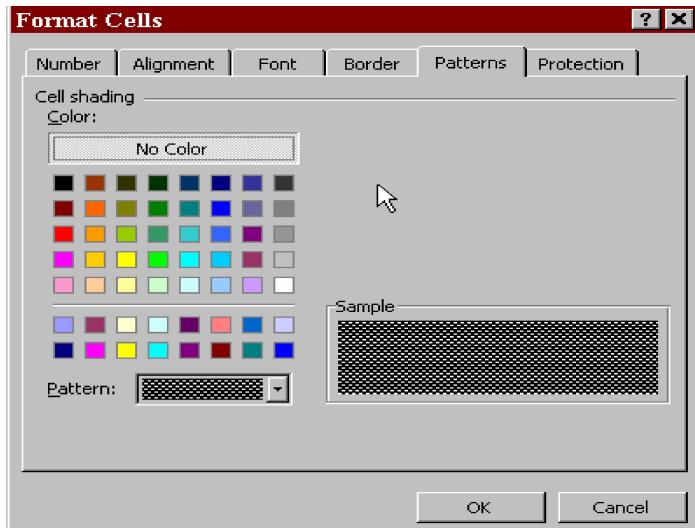
OR

1. Click on the **BORDERS** drop-down menu on the toolbar.
2. Select the desired options.



Adding Shading:

1. Select the cell(s).
2. Click on the **FORMAT** menu.
3. Click on **CELLS**.
4. Click the **PATTERNS** tab.
5. Select the desired color and pattern.
6. Click **OK**.



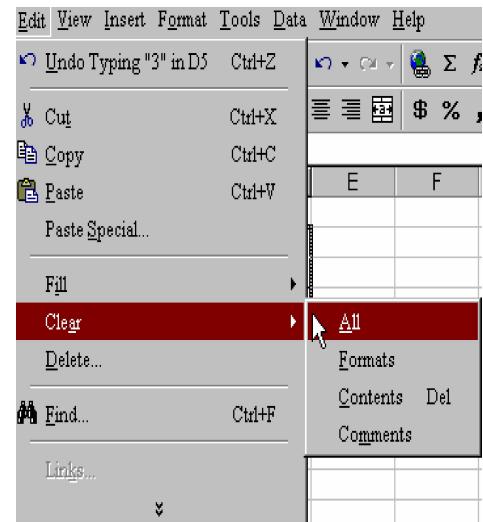
OR

1. Click on the **FILL COLOR** drop-down menu on the toolbar.
2. Click on the desired color.

Clearing Cell Contents and Formats:

The **delete** key deletes values, but does not delete formatting. The **Clear** command deletes contents, formatting, or both.

1. Select the cell(s).
2. Click on the **EDIT** menu.
3. Click on **CLEAR**.
4. Click on the desired option.

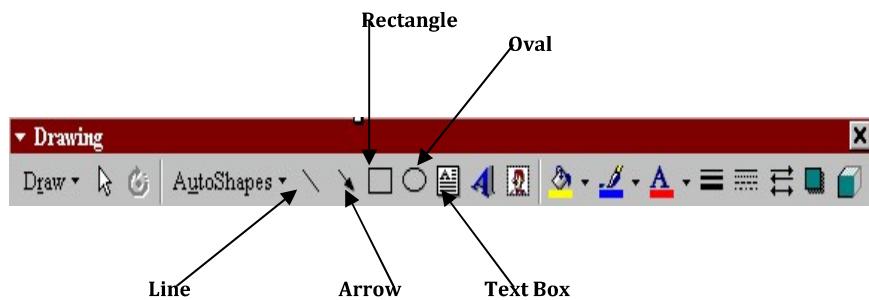


Displaying the Drawing Toolbar:

1. Click on the **VIEW** menu.
2. Click on **TOOLBARS**.
3. Click on **DRAWING**.

OR

1. Click on the **DRAWING** button on the toolbar.



Creating Lines and Objects:

1. Click the button on the **DRAWING** toolbar for the line or object you want to create.
2. Drag to the desired location in the worksheet.

Resizing Lines and Objects:

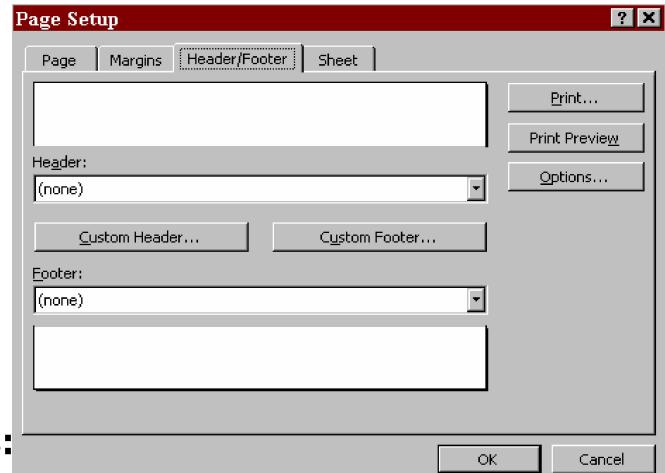
1. Click on the line or object to select it.
2. Move the mouse pointer over a sizing handle.
3. Move the sizing handle until the desired size is reached.

Deleting Lines and Objects:

1. Click on the line or object.
2. Press the **DELETE** key.

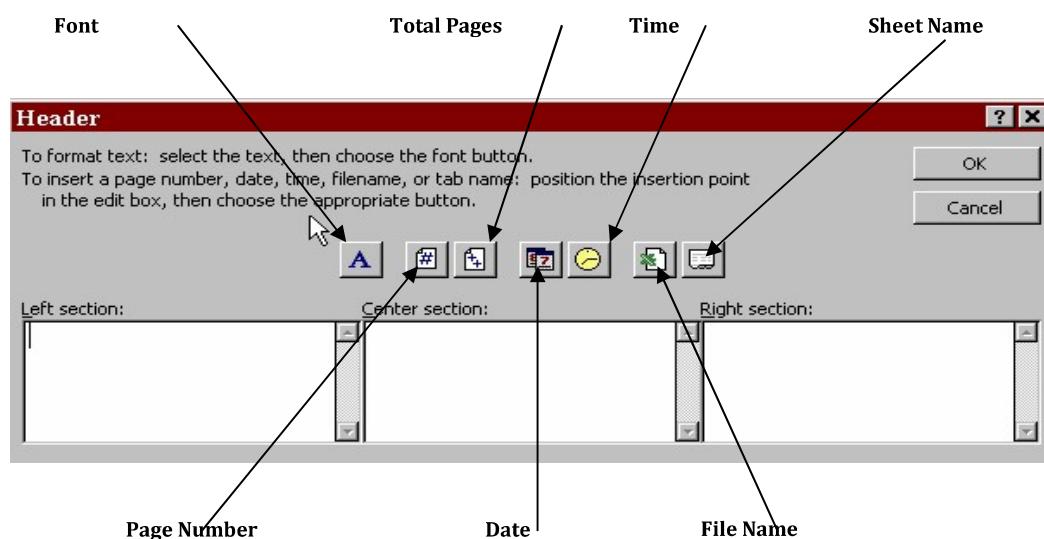
Activity 19: ADDING HEADERS AND FOOTERS

1. Click on the **VIEW** menu.
2. Click on **HEADER AND FOOTER**.
3. Click on the header or footer drop-down menu and select the desired header and footer.
4. Click **OK**.



Customizing Headers and Footers:

1. Repeat steps 1 & 2 from above.
2. Click on the **CUSTOM HEADER** or **CUSTOM FOOTER** button.

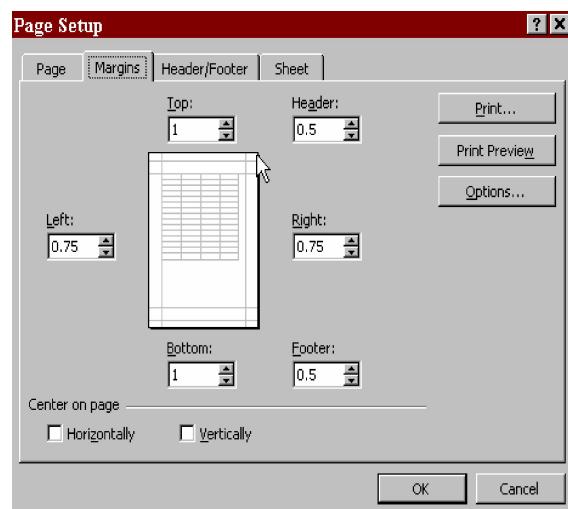


3. Type desired text and field codes into the appropriate sections.
4. Click **OK** in the Header/Footer dialog box.
5. Click **OK** in the Page Setup dialog box.

Activity 20: MAKING CHANGES TO THE PAGE LAYOUT

Changing Margins:

1. Click on the **FILE** menu.
2. Click on **PAGE SETUP**.
3. Click on the **MARGINS** tab.
4. Change the margins by clicking on the arrows or typing a new setting into the text box.
5. Click **OK**.



Inserting and Deleting Page Breaks:

Insert

1. Select a cell below and to the right of where you want the page break to be added.
2. Click on the **INSERT** menu.
3. Click on **PAGE BREAK**.

Delete

1. Follow steps 1 & 2 from above.
2. Click on **REMOVE PAGE BREAK**.

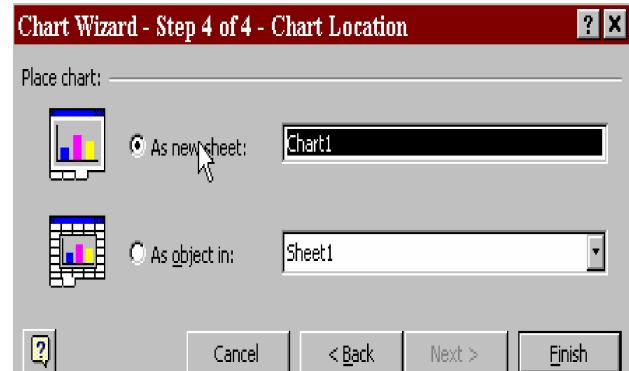
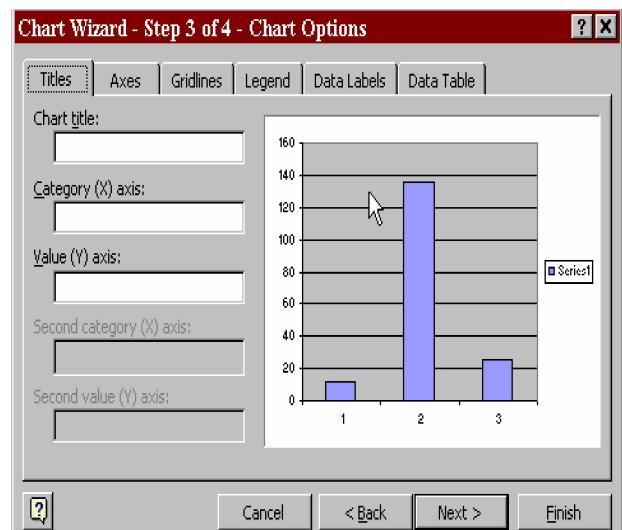
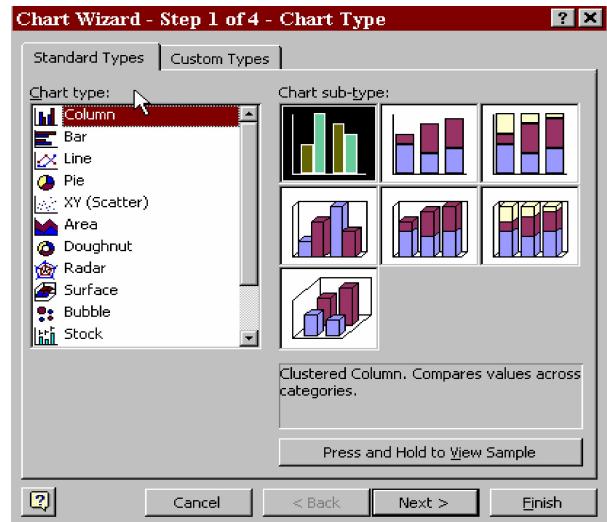
Previewing Page Breaks:

1. Click on the **VIEW** menu.
2. Click on **PAGE BREAK PREVIEW**.

Activity 21: CREATING CHARTS

Creating a Chart with the Chart Wizard

1. Select the desired data.
2. Click on the Chart Wizard button on the toolbar 
3. Click on the desired chart type and sub-type in the Step 1 of 4 dialog box and click **NEXT**.
4. Click **ROWS** or **COLUMNS** in the Step 2 of 4 dialog box.
5. Enter titles for the chart and axes in Step 3 of 4 dialog box click **NEXT**.
6. Click on **AS NEW SHEET** to create a chart sheet in the STEP 4 of 4 dialog box. Click on **AS OBJECT IN** to create an embedded chart.
7. Click **FINISH**.



Deleting a Chart Sheet:

1. Select the desired chart sheet tab.
2. Click on the **EDIT** menu.
3. Click on **DELETE SHEET**.
4. Click **OK**.

Previewing and Printing a Chart Sheet:

1. Click the desired chart sheet tab.
2. Click on the **PREVIEW** button on the toolbar. 
3. Click the **PRINT** button on the preview toolbar.

Tip

You can move and resize a chart the same way you move objects.

Activity 22: Getting HELP

Getting Help:

There are two types of help within Word. One is the Screen Tips and the other is the Office Assistant.

Screen Tip: A brief explanation about an item on the screen. It is used when you are unsure about what an item is or what it does..

To Activate Screen Tips:

1. Click on **HELP** on the Menu bar.
2. Click on **WHAT'S THIS?**
3. Click on the item you want to know about.

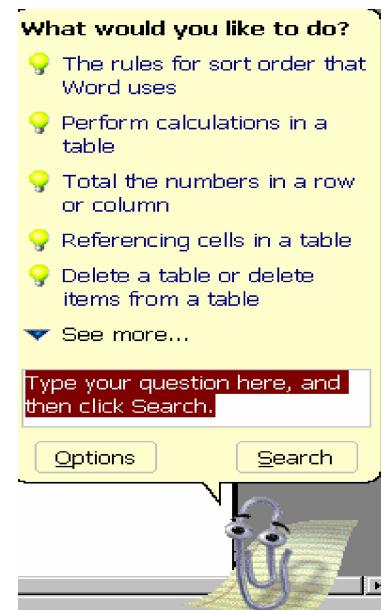
OFFICE ASSISTANT

Office Assistant: An animated icon displayed on the screen. When activated, it offers tips on how to use Word's features or you can search a topic for step-by-step instructions for completing a specific task.

If the Office Assistant is not visible, click on the OFFICE ASSISTANT button  on the MENU bar.

To Activate Office Assistant:

1. Click on the **ASSISTANT**. A window opens asking "What Would You Like To Do?"
2. The assistant automatically tries to guess what you need help on. If you do not see the topic you are looking for, type your question in the text box and click on the **SEARCH** button.
3. To view topic instructions click on the bullet of that topic.



To Deactivate Office Assistant:

1. Right click on the **ASSISTANT** and click **HIDE**.

3) Stage v (verify)

Home Activities:

1. Enter the information in the spreadsheet below. Be sure that the information is entered in the same cells as given, or the formulas below will not work.

	A	B	C	D	E	F	G
1	PSC 556: Policy Analysis						
2	Spring 1995						
3		EXAM	EXAM	EXAM			FINAL
4	STUDENT NAMES	STUDENT ID	#1	#2	#3	PART.	AVERAGE
5	Thomas, Steven	999-25-5683	94	65	89	90	
6	Alexander, Suzette	999-52-6938	93	91	97	80	
7	Richards, Billy Joe	998-71-2838	92	83	88	90	
8	Rasmussen, Betty	997-74-4447	95	94	90	90	

You will notice that when you enter the information in the first column, the text runs over into the next cell. To adjust the size of the column, once all the information is entered for the first column, click on the column heading (that is the letter A). Then open the FORMAT menu, select the COLUMN options, and then select the AUTOFIT SELECTION command.

2. Enter the formula below into cell G5 and copy it into cells G6 to G8. This demonstrates the use of a "relative reference" (e.g., C5) that points to the contents of a cell

G5: $=C5*.3+D5*.3+E5*.3+F5*.1$

Now copy this formula to cells G6, G7, and G8. To do this click on cell G5 to make it the active cell. Then open the EDIT menu and choose the COPY command (a flashing border should now appear around the cell G5). Now click on cell G6 and drag the pointer so the range of cells from G6 to G8 are now highlighted. At this point you need to open the EDIT menu again, but this time selected the PASTE option. Notice that when you copy this formula into other cells the row numbers for the cells change according to the row into which the formula has been copied.

3. Enter the information below in the cell indicated.

B10: **Averages**

4. Enter the formulas below in the cells indicated. These formulas demonstrate three methods for calculating averages for a column of data.

C10: $=(C5+C6+C7+C8)/4$

D10: **=sum(d5:d8)/4**
E10: **=average(e5:e8)**

5. Enter the information below in the cells indicated. This will establish the weight each exam is given in a student's final average.

	Weights
B12:	.3
C12:	.3
D12:	.3
E12:	.3
F12:	.1

6. Enter the formula below into cell G5 and then copy it into cells G6 to G8. This demonstrates the use of an "absolute reference" (e.g., \$C\$12) that points to a specific cell in a spreadsheet. Notice that when the formula is copied into other cells, the absolute reference remains the same whereas the relative references change according to the location into which the formula is copied.

G5: **=\\$c\$12*c5+\\$d\$12*d5+\\$e\$12*e5+\\$f\$12*f5**

7. Make the changes to the cell contents indicated below and notice how the final averages change.

- a. D5: **74**
- b. C7: **98**
- c. C12: **.25** and E12: **.35**
- d. E12: **.30** and F12: **.15**

8. Just when you thought you were finished calculating final grades, you realize that you forgot someone. You know, that quiet student that always sits in the back of the room. Anyhow, you can start all over or simply insert a new row for the forgotten student.

- a. Move the cursor to row 6 and click once (on any cell in this row or the row heading). Open the INSERT menu, select ROWS option. Notice how a new row is inserted after row 6. Also, check the formulas entered into cells D11, E11, G5, G7, G8, and G9 have now all changed to accommodate the newly insert row.
- b. Now that an additional student has been added to your grade book, the formulas used to calculate the averages for Exams #1 and #2 are incorrect (this is because these formulas still assume only four grades are to be averaged. To correct this, copy the formula in cell E11 to cells C11 and D11.

- c. Enter the information below in the identified cells.

A6:	Linder, Barry
B6:	993-14-9283
C6:	81
D6:	73
E6:	83
F6:	65

- d. Notice that the exam averages change when the new student's grades are entered but a final average is not automatically calculated for him. This is because the formula was not copied into that new row. Copy the formula in cell G5 into cell G6. Now your grade roll is completed.

Your final spreadsheet should look like the one below.

	A	B	C	D	E	F	G
1	PSC 556: Policy Analysis						
2	Spring 1995						
3			EXAM	EXAM	EXAM		FINAL
4	STUDENT NAMES	STUDENT ID	#1	#2	#3	PART.	AVERAGE
5	Thomas, Steven	999-25-5683	94	74	89	90	85.9
6	Linder, Barry	993-14-9283	81	73	83	65	76.8
7	Alexander, Suzette	999-52-6938	93	91	97	80	91.65
8	Richards, Billy Joe	998-71-2838	98	83	88	90	89.3
9	Rasmussen, Betty	997-74-4447	95	94	90	90	92.45
10							
11		Averages	92.2	83	89.4		
12							
13		Weights	0.25	0.3	0.3	0.15	

9. IF statements can be used to automatically assign letter grades to each student.
- Enter the following formula.

$$H5: =if(g5>89,"A",if(g5>79,"B",if(g5>69,"C",if(g5>59,"D","F"))))$$
 - Copy the formula in cell H5 to cells H6 through H9.
 - The IF command evaluates the first logical test (i.e., G5>89). If the statement is true an "A" is assigned. If the statement is false, the next logical statement is evaluated (i.e., G5>79). To place an IF statement inside another IF statement is referred to as "nesting." Excel allows up to seven IF statements.
10. To save the grade sheet onto your diskette, open the FILE menu, select the SAVE AS command, and enter the following name at the blinking cursor in the shaded box: **A:GRADESHT.XLS**

4) Stage a2 (assess)

Assignment:

1. Enter the text below in the cells indicated.

A1: **Sure Balance Checkbook**
 A3: **Ck. #**
 B3: **Date**
 C3: **Item Description**
 D3: **Debit**
 E3: **Credit**
 F3: **X**
 G3: **Balance**

2. Modify column widths for columns A through F. Instead of selecting the best fit option, indicate precisely the column width desired. Follow the steps below.

Step 1: Open the FORMAT menu. Step 2: Select the COLUMN option. Step 3: Select the WIDTH option.

Step 4: Type the desired number of columns in the box labeled "Column Width" (e.g., 5).

Step 5: Click on <OK>.

Use the following widths for each column.

Column A: **5**

Column B: **8**

Column C: **30**

Column D: **10**

Column E: **10**

Column F: **1**

Column G: **12**

3. Format the numbers to show dollars and cents for all entries in columns D, E, and G. Follow the steps below.

Step 1: Click on the letter at the top of the column to be formatted. (The entire column should turn dark.)

Step 2: Open the FORMAT menu. Step 3: Select the CELLS option.

Step 4: The NUMBER option automatically should be selected (if not, click on the tab labeled NUMBER).

Step 5: Under the Category label, select the option CURRENCY.

Step 6: Under the Format Codes label, select the format -\$1,234.10 which is the third choice.

Step 7: Click on <OK>.

4. Format column B to enter the date of transactions. Follow the steps above but select the DATE as the category option and M/D/YY as the format codes option which is the first choice.

5. Enter the formulas below in the cells indicated.

G4: **=-d4+e4**

G5: **=g4-d5+e5**

6. Enter the information below in the rows indicated.

<u>Row</u>	<u>Ck. #</u>	<u>Date</u>	<u>Item Description</u>	<u>Debit</u>	<u>Credit</u>
4		1/30/92	January Paycheck		1795.86
5	100	2/1/92	Shell Oil Co.	42.64	
6	101	2/1/92	Pink Palace Enter.	87.34	
7		2/4/92	Cash (Auto Teller)	50	
8	102	2/6/92	Dr. D. J. Houston	75	
9	103	2/7/92	Rent	800	
10		2/10/92	Drug Sales		2500
11	104	2/11/92	Bail (Drug Arrest)	500	

12	105	2/12/92	Benny the Weasel	3200	
13		2/14/92	Rainy Day Quarter Fund		500

7. Copy the formula from cell G5 to cells G6 through G13.

8. Your checkbook should look like the one below.

	A	B	C	D	E	F	G
1	Sure Balance Checkbook						
2							
3	Ck. #	Date	Item Description	Debit	Credit	X	Balance
4		1/30/92	January Paycheck		\$1,795.86		\$1,795.86
5	100	2/1/92	Shell Oil Co.	\$42.64			\$1,753.22
6	101	2/1/92	Pink Palace Entertainment	\$87.34			\$1,665.88
7		2/4/92	Cash (Auto Teller)	\$50.00			\$1,615.88
8	102	2/6/92	Dr. David J. Houston (Gift)	\$75.00			\$1,540.88
9	103	2/7/92	Rent	\$800.00			\$740.88
10		2/10/92	Drug Sales		\$2,500.00		\$3,240.88
11	104	2/11/92	Bail (Drug Arrest)	\$500.00			\$2,740.88
12	105	2/12/92	Benny the Weasel (Extermination)	\$3,200.00			(\$459.12)
13		2/14/92	Rainy Day Quarter Fund		\$500.00		\$40.88

9. To save the checkbook onto your diskette, open the FILE menu, select the SAVE AS command, and enter the following name at the blinking cursor in the shaded box:

A:CHECKBK.XLS