

Application

Course: *Microcomputer
Application*

Subject: *Microsoft Excel
2003*

Terms and Definitions

Microsoft Excel :Is simply defined as an electronic **spreadsheet** program from Microsoft.

Spreadsheet : Is the software (Program) that enables to store, manipulate, and chart numerical data and composed of a huge amount of cells.

Worksheet: Is a single page of a spreadsheet consists of 256 numbers of columns labeled in letters A to IV and about 65,536 numbers of rows labeled in numbers starting by 1

Terms and Definitions...

- **Cell address :** Is a name given to a cell that describes the location of an insertion point (cursor). E.g. A1, B5 e.t.c.
- **Workbook :** Is the collection of worksheets stored under one name. By default when you open an excel file (Workbook) it display 3 worksheets, however you can add/ delete some worksheets.
- **Cell :** Is simply the intersection between rows and columns, where you enter, edit, format your data.



ADVANTAGES.

- A spreadsheet is of great advantages.
 - ❖ Used to analyze and summarize Mathematical, Statistical and Financial data.
 - ❖ Used to create a budget for your monthly living expenses.
 - ❖ Used to analyze returns in the stock market, develop a business plans e. t .c

RUNNING MICROSOFT EXCEL APPLICATION

a) Using Start Button

- i. Click on “**Start**” button
- ii. Select “**Programs**” command
- iii. Click on “**Microsoft Excel**” option

b) Using Run Command

- i. Click on “**Start**” command.
- ii. Click on “**Run**” utility
- iii. Type “**EXCEL**” in the Run dialog box
- iv. Click on “**Ok**” button

MICROSOFT EXCEL 2000 SCREEN

1. TITLEBAR: -

- Is the bar that lies at the top of the window screen and displays **program icon, current file name, current program name and window control buttons** (i.e. Close, Minimize and Maximize/Restore).

2. MENUBAR: -

- Is the bar that normally lies below the title bar and displays **commands** in pull down list (Menus).
- Excel contains about nine different menus, e.g. **File, Edit, View, Insert, Format, Tools, Data, Window and Help.**
- Each menu has an underlined letter so that you can alternatively access that menu-using keyboard.

Microsoft Excel 2000

Screen...

3. TOOLBARS (ICON BARS):

- These are the bars distributed on the screen that displays commands in form of icons for quick access of a particular command.
- Examples;
 - i. **Standard toolbar:** - Is the bar that normally lies below the menu bar.
 - ii. **Formatting toolbar:** - Is the bar that normally lies below the Standard toolbar
 - iii. **Drawing bar:** - Is the bar that normally lies above the status bar. e. t. c

Screen...

4. SPREADSHEET

- Is the area where you enter, edit and format your text (records) that made up of a huge number of cells

5. FORMULA BAR

- Is the bar that normally lies above the spreadsheet and displays cell address and its contents (formula)

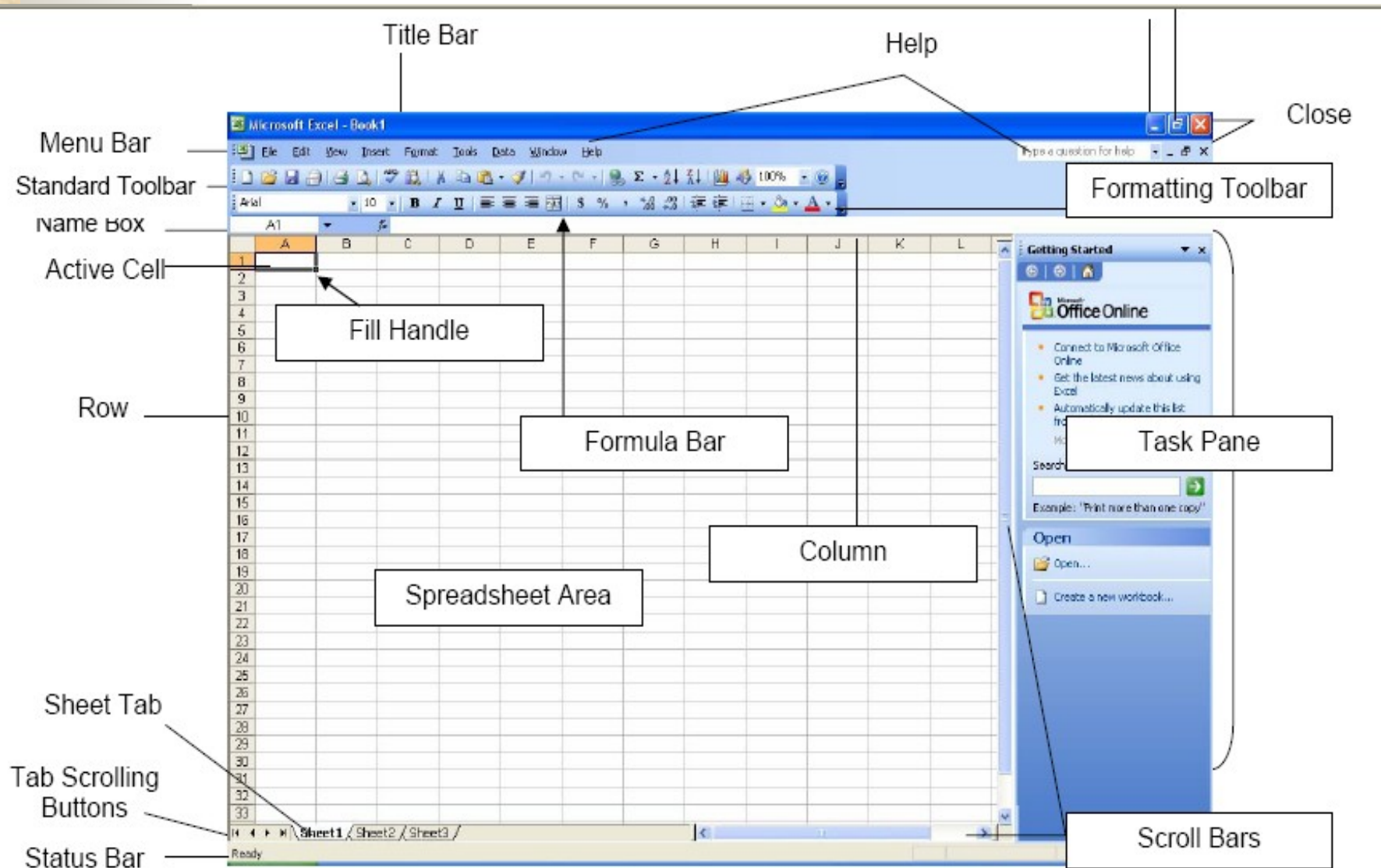
6. SCROLL BARS

- Are the bars that lies vertically at the right side and horizontally below the spreadsheet used to view hidden parts of a worksheet. (i.e. Vertical scroll bar and Horizontal Scroll bar)

7. ROW AND COLUMN HEADINGS.

- Are the headings that describes a column name (i.e. A - IV) and row name (i.e. 1 - 65,536)

Screen...



CLOSING MICROSOFT EXCEL APPLICATION

a) Using Control Buttons

- i. Click on 'Close' button at top corner of the screen.

b) Using Program Icon

- i. Click on the Program icon at the top left corner of the screen.
- ii. Click on 'Close' command.

c) Using Keyboard

- i. Hold down 'Alt' key.
- ii. Press 'F4' key

d) Using Menu Bar

- i. Click on 'File' menu
- ii. Click on 'Exit' command.

OPENING A BLANK WORKBOOK

a) Using New Office Documents command

- i. Click on “Start” button.
- ii. Click on “New Office Documents” command
- iii. Select “Blank Workbook” icon
- iv. Click on “Ok” button

b) Using Menu bar

- i. Click on “File” menu
- ii. Click on “New” command
- iii. Select “Blank Workbook” icon
- iv. Click on “Ok” button



Entering Data in a Worksheet

ADDING TEXT IN WORKBOOK

- i. Select a cell you wish to add text
- ii. Type your text.
- iii. Press “Enter” key

RESIZING COLUMN WIDTH AND ROW HEIGHT

- i. Point at the right border of a column heading, you wish to resize until mouse pointer changed shape.

OR: Point at the bottom border of a row heading you wish to resize until mouse pointer changed shape.

- ii. Drag the border inward to reduce or outward to enlarge the size of the column or row.

OR: Double click on the border and the column/row will automatically adjust.

ENTERING DATA IN A WORKSHEET

- Types of data that can be entered in an Excel Worksheet

1.Label

Any text is considered as label

2.Constant

These are all numerical values and symbols

3.Formula

These include all formula which can be entered and the formula starts with

SAVING A NEW WORKBOOK

1. Click on 'File' menu
2. Click on 'Save' or 'Save as...' command
OR: Click on 'Save' icon on a Standard toolbar
OR: Hold-down "Ctrl" key, then Press on 'S' key

NOTE: Save As dialog box will appear.

3. Select the location under at 'Save in' text box
4. Type the name for a file at 'File name' text box
5. Click on 'Save' button

Hands on Practice

■ Enter the data as shown below and answer the questions which are in the next slide.

	A	B	C	D
1	Training Room	Number of Studen	Module	Instructor
2	TR1	20	Ms-Word	Machumu
3	TR2	15	Ms-Excel	Mukurasi
4	TR3	17	Internet	Jesca
5	TR4	25	IT Essential	Kighenda
6	Software	20	Ms-Access	Abdalah
7	Executive	16	Introduction	Maryamu
8	Conference	20	Ms-Word	Teddy
9	Cisco	20	Internet	Mugogo

OPENING AN EXISTING WORKBOOK

- i. Click on 'File' menu.
- ii. Click on 'Open' command.

OR: Click on 'Open' icon on a standard toolbar

OR: Hold-down 'Ctrl' key, then Press on 'O' key

NOTE: Open dialog box will appear.

- iii. Select the location of the file, at 'Look in' text box
- iv. Click on the name of a file you wish to open
- v. Click on 'Open' command.

EDITING A WORKBOOK

a) Replacing text.

- i. Click on a cell you wish to replace its record.
- ii. Type a new record.
- iii. Press “Enter” key

b) Adding text in existing text.

- i. Select a cell you wish to add more text.
- ii. Press ‘F2’ key

OR: Click on a text you wish to edit at the
formula bar

OR: **Double click** on a cell you wish to edit its
text.

- iii. Start editing your text.
- iv. Press ‘Enter’ key when you are done

SAVING CHANGES IN EXISTING WORKBOOK

a) USING MENU BAR

- i. Click on '**File**' menu
- ii. Click on '**Save**' command

OR: Click on '**Save**' icon on a Standard toolbar

OR: Hold-down **Ctrl** key, then Press on '**S**' key

APPLYING MERGE AND CENTER

- Select a **range** of cells you wish to merge and center
- Click on "**Merge and Center**" icon on Formatting toolbar.

SAVING A WORKBOOK WITH A PASSWORD

- i. Click on 'File' menu
 - ii. Click on 'Save as...' command.
- NOTE: 'Save As...' dialog box will appear.
- iii. Click on 'Tools' command.
 - iv. select 'General Options' command.
 - v. Type a password to open, and then Click on 'OK' button
 - vi. Re-type the password to confirm and then click on 'Ok' button
 - vii. Click on 'Save' button when you are done.



Formula & Functions

FORMULAS AND FUNCTIONS

- The distinguishing feature of a spreadsheet program such as Excel is that it allows you to create mathematical **formulas** and execute **functions**.
- The ability to perform calculations is one of the purposes of using a spreadsheet program. Some examples on the types of calculations that can be done are, **totals, subtotals, count, average, standard deviation** and much more.

FORMULAS AND FUNCTIONS...

a) Formulas

- ❖ A **Formula** is simply described as the instructions for performing calculations.
- ❖ The best way to construct a formula is to use **Cell References** instead of typing **numbers** in the formula. This enables Excel to automatically **update** the results of formulas when you change values in the cells referenced.
- ❖ Formula is entered in a worksheet cell and must begin with an **Equal sign** "=", then includes the **addresses** of the cells whose values will be manipulated with appropriate **operands** placed in between.

Examples of Formulas

<i>Operator</i>	<i>Meaning</i>	<i>Example</i>
+	Addition	=A7+A9
-	Subtraction	=A7-A9
*	Multiplication	=A7*A9
/	Division	=A7/A9
^	Exponents	=5^3

Functions...

- ❖ A **Function** is simply the preset formula that come with spreadsheet applications.
- ❖ Normally a function simplifies formula that you can type in manually.
E.g. Instead of **=E4+E5+E6+E7+E8+E9+E10**,
you can type **=SUM (E4:E10)**
- ❖ Functions perform calculations by using specific values, called **arguments**, in a particular order called **syntax**.
- ❖ The syntax of a function always begins with an **equal sign (=)**, the **function name**, and the **arguments** contained within the parenthesis.

Functions...

Function	Example
SUM	=SUM(A1:A10)
AVERAGE	=AVERAGE(B1:B10)
MAXIMUM & MINIMUM	=MAX(C1:C100), & =MIN(C1:C20)
COUNT	=COUNT(D1:K1)
IF	=IF(CONDITION,"TRUE","FALSE")
NESTED IF	=IF(cond1,"True",IF(cond2,"True",IF(cond3,"True","False")))
COUNTIF	=COUNTIF(B1:B30,"Criteria")
SQRT	=SQRT(D10)
TODAY	=TODAY()

Formulas And Functions...

Copying Formulas

-
- ❖ The **data fill** feature allows you to copy formulas to adjacent cells.
- ❖ In Excel, you can use the **fill handle** to accomplish the above task. It helps to avoid **errors** and to **save time** when you are entering formulas in your spreadsheet.
- ❖ The **fill handle** is a small black box located in the lower right corner of the selected cell.
- ❖ When the cursor is placed over the fill handle it changes to a **thin black cross**. You can then use the cursor to drag across adjacent cells.
- ❖ Excel will copy the formula with the appropriate cell references to the new cells.

Formulas And Functions...

Common Error Messages

When writing formulas it is easy to make a mistake. Below are some common error messages.

- i. **#####** - Means that the contents of the cell can't be displayed correctly as the column is too narrow.
- ii. **# REF!** - Means that a cell reference is not valid.
- iii. **# NAME?** - Means that Excel does not recognize text contained within a formula.

ABSOLUTE CELL REFERENCE & RELATIVE CELL REFERENCE

a) Relative References

- **Relative Cell Reference** adjusts copied formulas so that the cell references are changed relative to their new location.
- By default, Excel is copying the formula relative to where you are, and where you are going.
- Example; the original formula, in cell **B6** is **=SUM(B2:B5)**, when this formula copied one cell to the right (i.e. **C6**), then Excel automatically updates the formula using a Relative reference, making the new formula **=SUM(C2:C5)**.

ABSOLUTE CELL REFERENCE & RELATIVE CELL REFERENCE...

b) Absolute References

- **Absolute Cell Reference** do not adjust copied formula therefore the cell references are maintained.
- There are instances when you might want to use a **constant** in a formula. In this case you would use an Absolute Cell Reference
- To create an absolute cell reference, you will need to add **dollar signs** (\$) in front of the **column** and **row** elements for the cell referenced.
- Example; The original formula in cell **B8** is **=B7*\$C\$1**, since the amount of the increase is in cell **C1** (i.e. 5%). When we copy the formula in **B8** to **column C8**, the only cell number to change is **B7** to **C7**, while the **\$C\$1** cell remained constant in the copy process.

Hand on Practice

- Copy the data below and Create the formula to find VAT of 20% on cell C2

	A	B	C	D
1	Product	Price before Tax	VAT [20%]	Taxed Price
2	Furniture	560,000.00		
3	Printers	450,000.00		
4	Scanner	12,000.00		
5	Laptop	1,500,000.00		

D2

Hand on Practice

- Copy the data as shown and answer the questions below

	A	B	C	D	E	F	G
1	Name	Maths	Chemistry	Physics	Total	Average	Remark
2	William	34	23	12			
3	Neema	55	45	0			
4	Kazimbaya	67	66	67			
5	Queen	90	70	89			
6	Sikudhani	87	80	40			

- Create a formula to find total and average score for each student
- Using IF Function create a formula on the remark column that if average score is greater than 70 remark "**REGISTER** " otherwise "**DON'T REGISTER**"



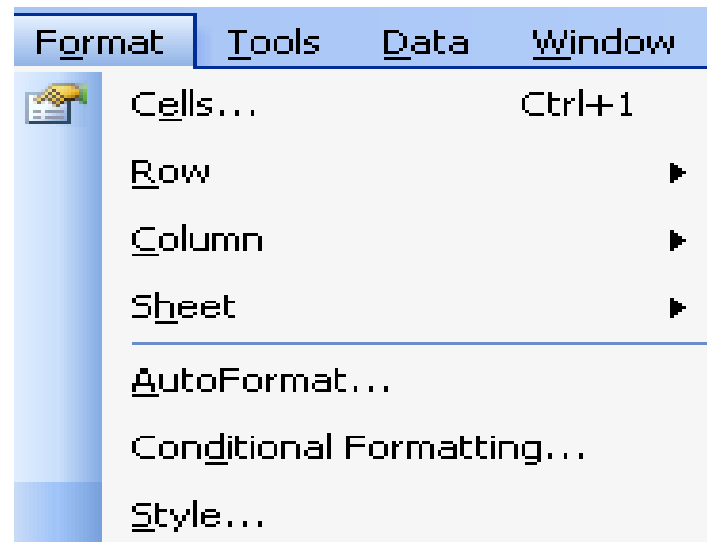
Formatting

FORMATTING CELLS

- Data in the worksheet can be formatted using the **Formatting toolbar**



or
Format menu



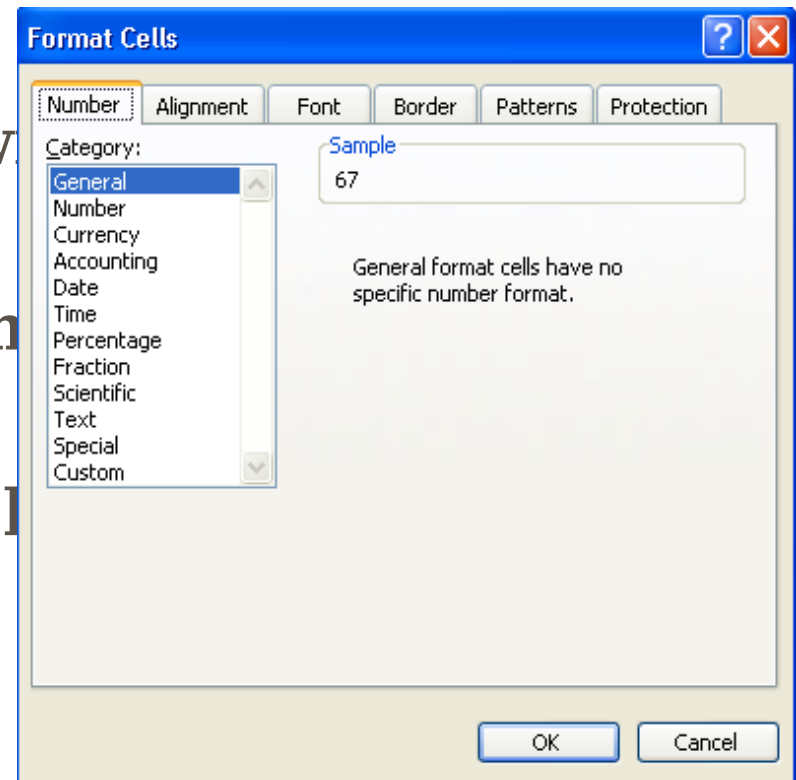


FORMATTING TEXT

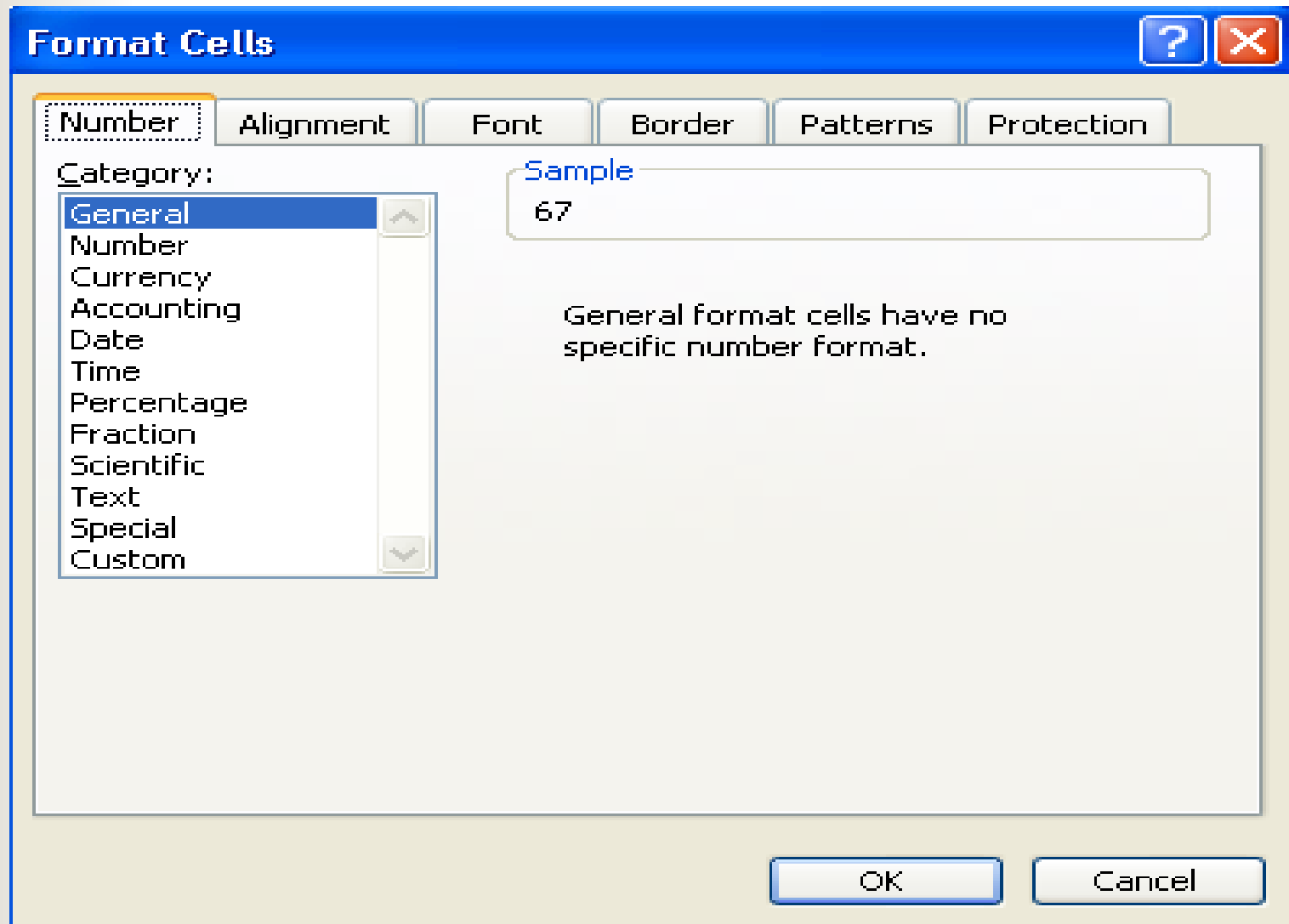
- Select a cell (s) you wish to format
- Click a command buttons on the formatting toolbar in order to change the Font size, Color, align text and font style.

NUMBER FORMATTING

- **Select the numbers you want to format**
- **Click Format menu**
- **Click Cells, a dialog box will appear**
- **Select a Number tab**
- **Select a category you want to format**
- **on the category List**
- **Apply the formats you wish**
- **Click OK button to apply**



NUMBER FORMATTING



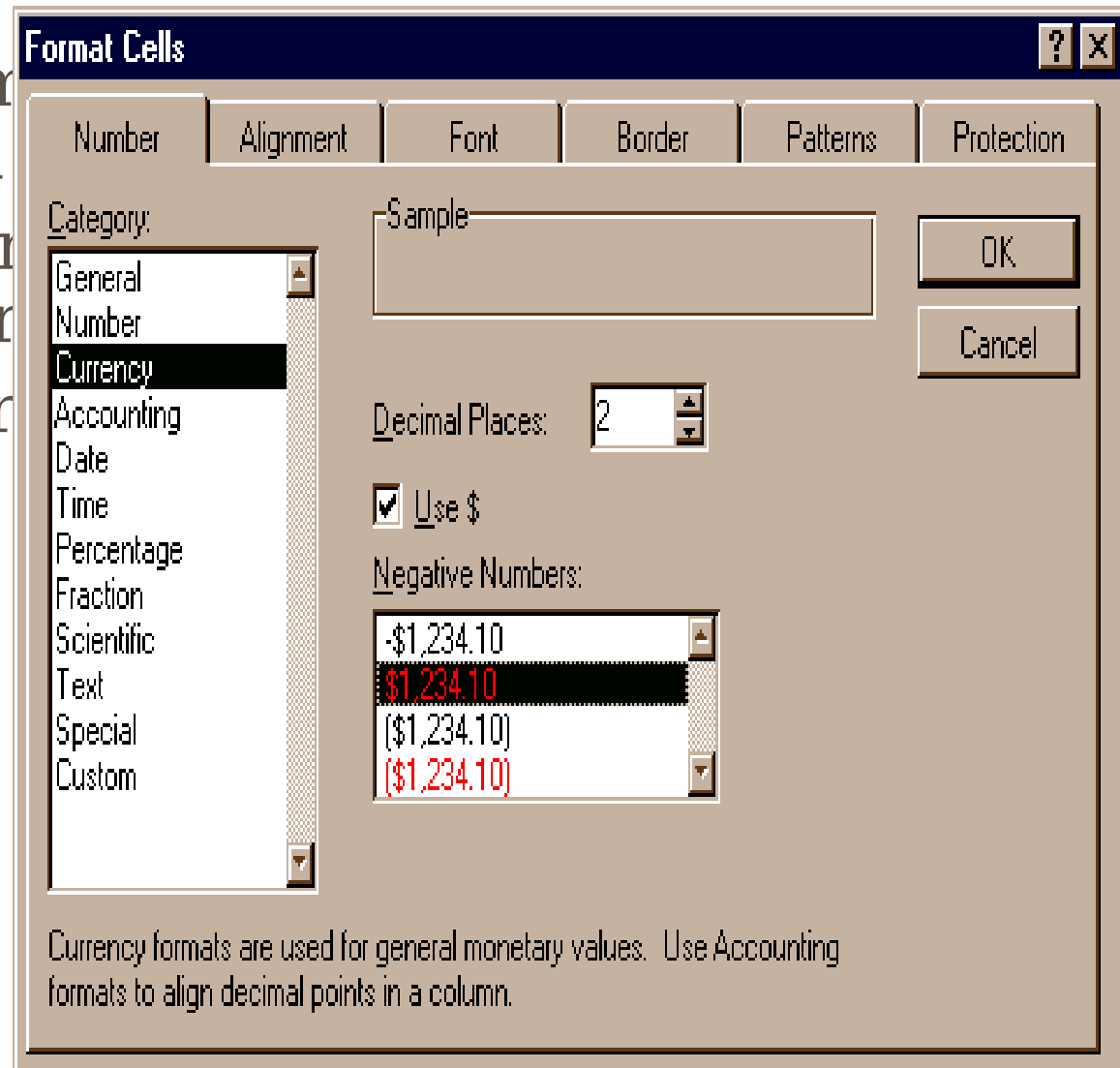


FORMATTING CELLS

- **Format Cells command** – controls the formatting for numbers, alignment, fonts, borders, and patterns (color).
 - Select the cells to which the formatting will apply
 - Execute the Format Cells command

NUMBER FORMATTING

- Choose Cells from the Format menu
- Click on a tab (for example, Number)
- Select format (for example, choose currency, 2 decimal places)
- Click OK



Hands on Practice

- Copy the data below and answer all the questions written on the

	A	B	C	D	E
1	StudentName	Fee Paid	Score	Admission date	
2	Zainabu Kazimbaya	60000	0.9	2/4/2006	
3	Mwajabu Athuman	45000	0.75	4/6/2007	
4	Mwanamalundi Peter	3500	0.45	5/5/2007	
5	Mariam Ismaili	2500	0.65	8/9/2007	
6	Ramla Abdukadir	14000	0.34	11/2/2007	
7	Sarah Nebukadirezah	2500	0.8	8/9/2007	
8	Francis Majembe	1700	0.67	7/8/2007	
9					

Hands on Practice

- Insert a new row above the headings Row, merge cells A1 to D1 and *type* "Payment Collection 2007" as your heading
- Format the figures in the Paid Fee column to be in Tanzanian currency
- Format the *score numbers* for each student to be in *percentages*
- Change the font size of the *heading* to be 18 and apply any light color for shading.
- Format the *date of admission* to display the Month as a *text*
- *Rotate* the word score at an angle of negative 15 degrees.

ADDING A CURRENCY STYLE

- i. Select a range of cells you wish to apply **currency style**.
- ii. Click on currency style **icon** (\$) on the Formatting toolbar

CHANGING A CURRENCY STYLE

- i. Select a range of cells you wish to change its currency style.
- ii. Click on '**Format**' menu.
- iii. Click on '**Cells**' command.
- iv. Click on '**Number**' tab.
- v. Click on '**Currency**' category.
- vi. Select a symbol you want.
- vii. Click on '**Ok**' button.

SEPARATING NUMBERS FROM CURRENCY STYLE

- i. Select a range of cells you wish separate its numbers from currency.
- ii. Click on 'Format' menu.
- iii. Click on 'Cells' command.
- iv. Click on 'Number' tab.
- v. Click on 'Accounting' category
- vi. Confirm a symbol and then click on 'Ok' button.



Working with Worksheets

ADDING NEW COLUMN/ ROW OR WORKSHEET

- i. Click on a **Column(S)** heading/ **Row(s)** heading or **Worksheet name** beside a new one.
- ii. Click on “**Insert**” menu.
- iii. Click on the option you want. E.g. **Columns**, **Rows** or **Worksheet**.

Note:

- New **column(s)** is added at the left side of a selected column.
- New **row(s)** is added above a selected row(s)
- New **worksheet(s)** is added at the left side of a selected worksheet(s)

REMOVING COLUMN/ ROW OR WORKSHEET

- i. Click on a **Column(s)** heading/ **Row(s)** heading or **Worksheet name(s)** you wish to remove.
- ii. Click on **"Edit"** menu.
- iii. Click on **"Delete"** command.

OR: Click on **"Delete Sheet"** command, then click on **"Yes"** button to confirm.

Note:

- When you remove a Worksheet, it is permanently deleted i.e. you can't restore.

HIDING COLUMN/ ROW OR WORKSHEET

- i. Select the column/ row or sheet you wish to hide
- ii. Click on '**Format**' menu
- iii. Select the option you want.
E.g. **Column/ Row or Sheet**.
- iv. Click on '**Hide**' option.

UNHIDDING COLUMN/ ROW

- i. Select two columns or rows surrounding a hidden column or row.
- ii. Click on **“Format”** menu.
- iii. Click on **“Columns”** or **“Rows”** command
- iv. Click on **“Unhide”** option.

UNHIDDING A WORKSHEET

- i. Select two worksheets surrounding a hidden worksheet.
- ii. Click on **“Format”** menu.
- iii. Click on **“Sheet”** command
- iv. Click on **“Unhide”** command
- v. Select a sheet you wish to unhide, then click **“Ok”**

RENAMING A WORKSHEET

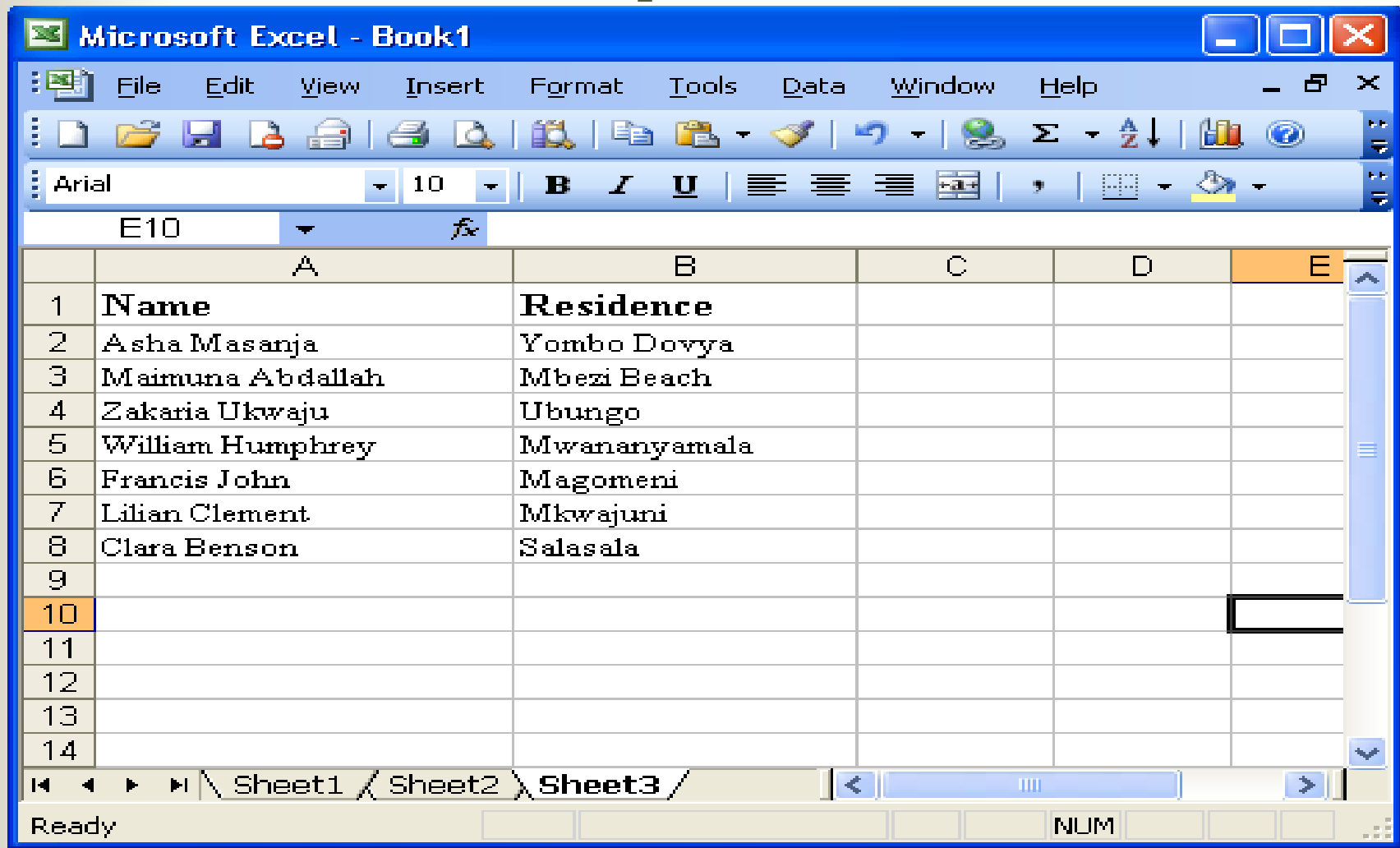
- i. Click on the sheet name you wish to rename.
- ii. Click on '**Format**' menu
- iii. Select '**Sheet**' command
- iv. Click on '**Rename**' option
- v. Type a new name.
- vi. Press '**Enter**' key

REARRANGING WORKSHEETS

- i. Press and hold down left mouse button over the sheet name you wish to rearrange.
- ii. Drag to a new position and then release the mouse button.

HANDS ON PRACTICE

- Copy the data as shown on the worksheet above and answer all the question on the next slide



The screenshot shows the Microsoft Excel interface with the following data in the worksheet:

	A	B	C	D	E
1	Name	Residence			
2	Asha Masanja	Yombo Dovya			
3	Maimuna Abdallah	Mbezi Beach			
4	Zakaria Ukwaju	Ubungo			
5	William Humphrey	Mwananyamala			
6	Francis John	Magomeni			
7	Lilian Clement	Mkwajuni			
8	Clara Benson	Salasala			
9					
10					
11					
12					
13					
14					

The status bar at the bottom indicates 'Ready' and 'NUM'.



HANDS ON PRACTICE CONT...

- Insert a new Column between *Name* and *Residence Column* and name it Age type any numbers
- Insert a new row between *Maimuna* and *Zakaria* ,and type any entries as per columns headings
- Copy all the contents and paste in the *sheet number 2*

CHANGING TEXT ALIGNMENT

- i. Select the text you wish to change alignment.
- ii. Click on 'Format' menu.
- iii. Click on 'Cells' command.
- iv. Click on 'Alignment' tab.
- v. Under "Orientation" text box, set an angle you want.
- vi. Click on 'Ok' button when you are done

Note:

- Under "Text Control" text box you can apply a "Wrap text" effect in a Cell.

FREEZING AND UNFREEZING

- A **freeze** is a technique that involves halting all body motion, often in an interesting or balance-intensive position.
- Freezing action takes place on top and leftside of the current cursor position.
 - i. Click on '**Window**' menu.
 - ii. Click on '**Freeze panes**' commandOR; Click on '**Unfreeze panes**' command



Creating Charts



WORKING WITH CHARTS

- A **Chart** is the graphical representation of data.
- Using **Microsoft Excel**, you can represent numbers in a chart, by choosing from a variety of chart types.
- When you change your data, your chart will automatically **update**.
- You can use Microsoft Excel's **Chart Wizard** to take you through the process step-by-step to accomplish creating your chart.



CREATING A CHART

- i. Select the range of data in your spreadsheet that you wish to include in the chart.
- ii. Click on 'Insert' menu.
- iii. Click on 'Chart' command.

Note: Chart Wizard dialog box will appear

- iv. Select a Chart Type and Subtype, then click 'Next'
- v. Select data Series for the chart. Click 'Next' button
- vi. Click on "Titles" tab, type Chart Title, Category (X) axis, Value (Y) axis, and then click 'Next' button.
- vii. Select a location to place your chart. E.g. "As new sheet" or "As Object in..." option.
- viii. Click 'Finish' when you are done.

FORMATTING CHARTS

- You can modify your chart by using the Chart toolbar.



- Click on a down arrow beside “Chart Object” tool
- Select the object you wish to format. E.g. Legend
- Click on “Options” tool
- Select the tab you want, . Pattern, Font e.t.c.

Note; Under Pattern Tab, select the options you want, E.g. Border Style, Border Color, Border Weight, Shadow, Area (Fill) color or using Fill Effects colors.

- Click on “Ok” button when you are done.

Hands on Practice

	A	B	C
1	River	Length	
2	Malagarasi	350	
3	Ruvu	550	
4	Ruaha	600	
5	Songwe	450	

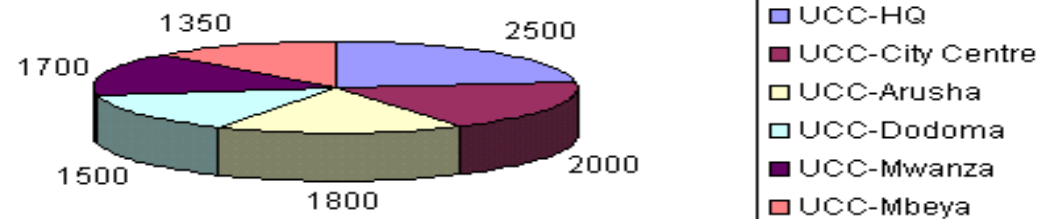
- Use the data above to create a 3D bar chart type
- Format the chart as much as you can

Hands on Practice

- Copy the data as shown below and create a pie chart then answer the questions on the next slide

	A	B	C	D	E	F	
1	Branch	Number of Students					
2	UCC-HQ	2500					
3	UCC-City Centre	2000					
4	UCC-Arusha	1800					
5	UCC-Dodoma	1500					
6	UCC-Mwanza	1700					
7	UCC-Mbeya	1350					

Number of Students





Hands on Practice

Using the data and the chart above do the following.

- Change the chart above to **Cylinder** chart type.
- Remove the data for **UCC-Dodoma**. Does the data in the chart changes?
- Change the data label of pie chart to **percentage** values



Printing a worksheet



PREVIEWING A WORKSHEET

- i. Select a worksheet you wish to preview.
- ii. Click on “**File**” menu
- iii. Click on “**Print Preview**” command

OR: Click on “**Print Preview**” icon on Standard toolbar.

- iv. Click on “**Close**” icon on Preview bar.

NOTE; You can apply **Margins** to help you to set your page. Also you can switch to **Page Setup** or **Printing** options.

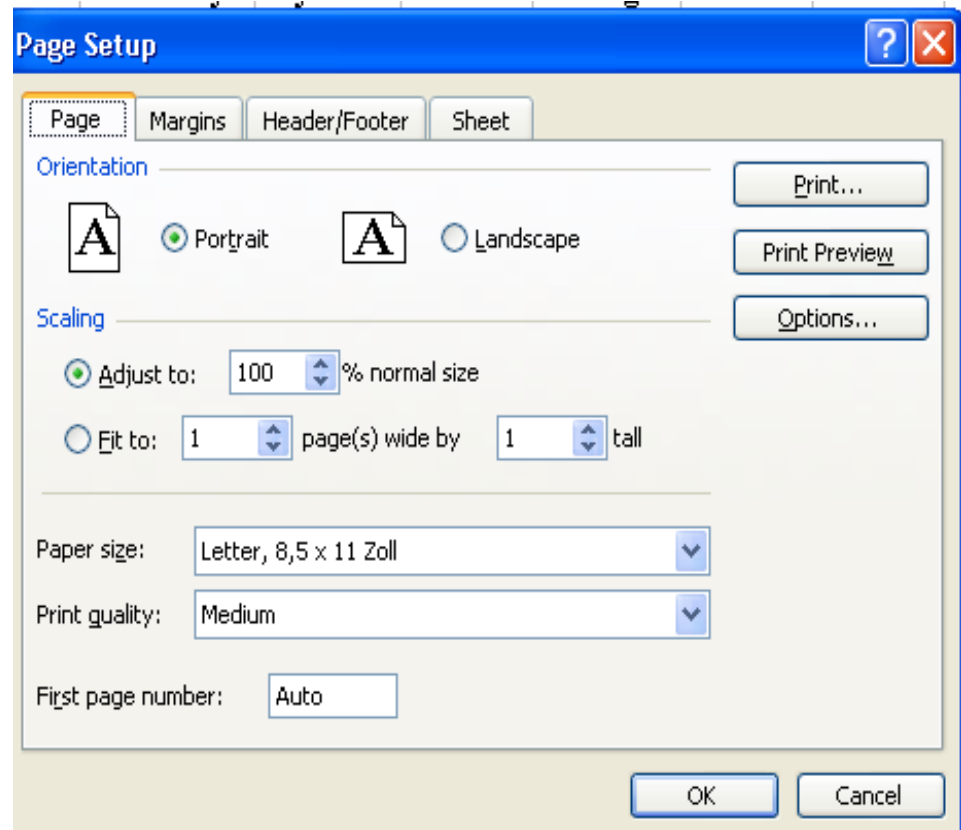


Printing a worksheet

- Before you print a worksheet you need to perform page set-up
- Click File menu
- Click Page set up
- A box will appear

Printing a worksheet

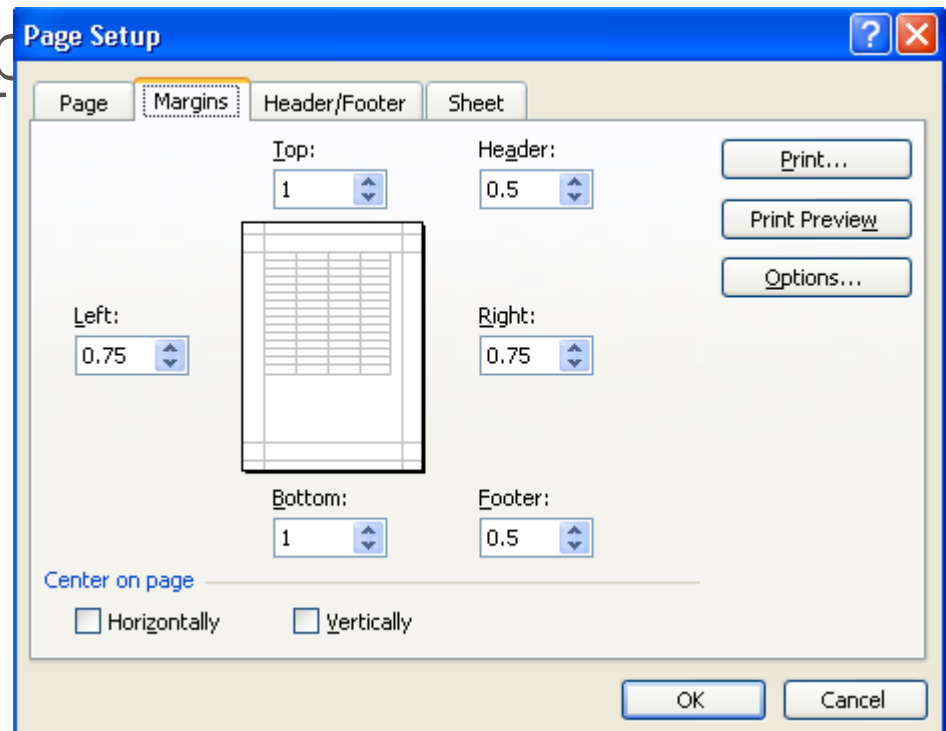
Use this Page Tab for setting orientation ,paper size ,and print quality



Printing a worksheet

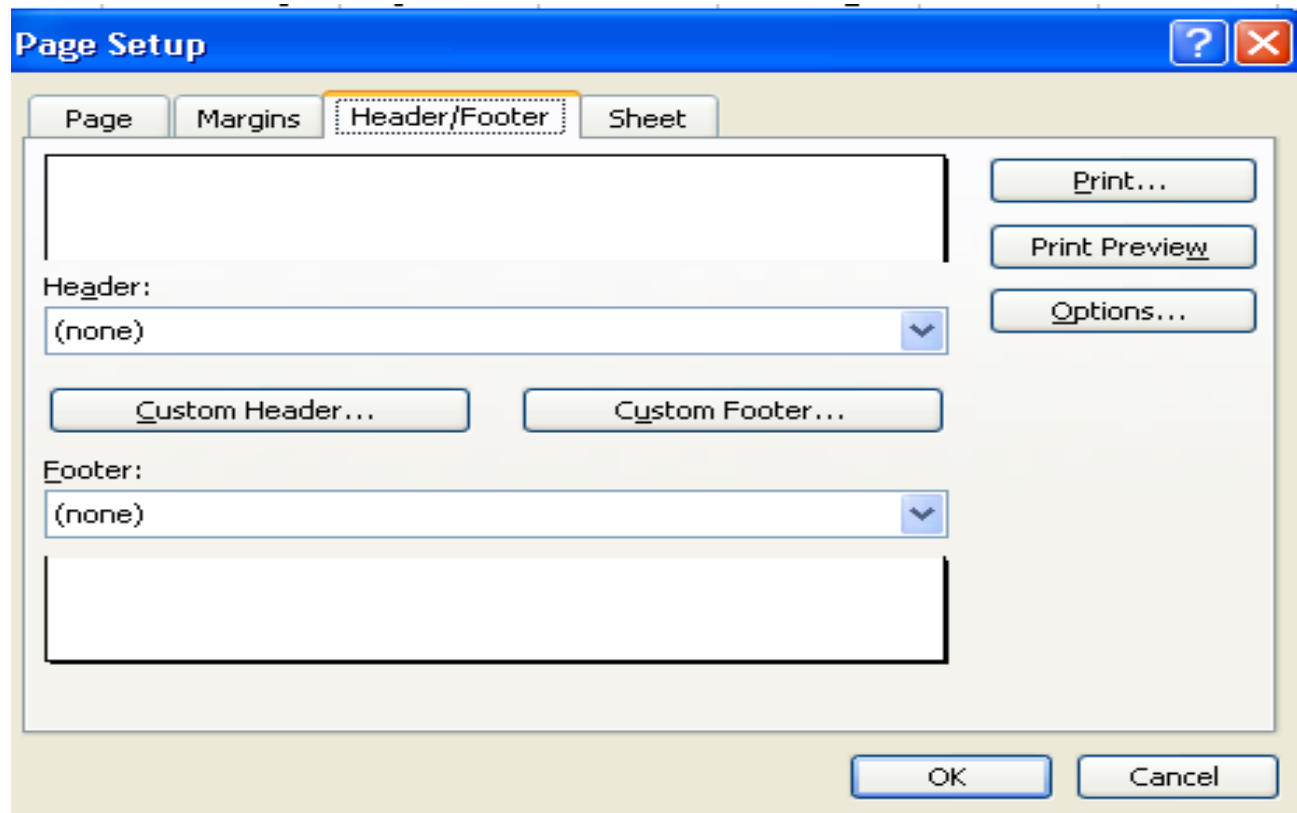
Use this Margin tab for setting the margins

Of left, right, top



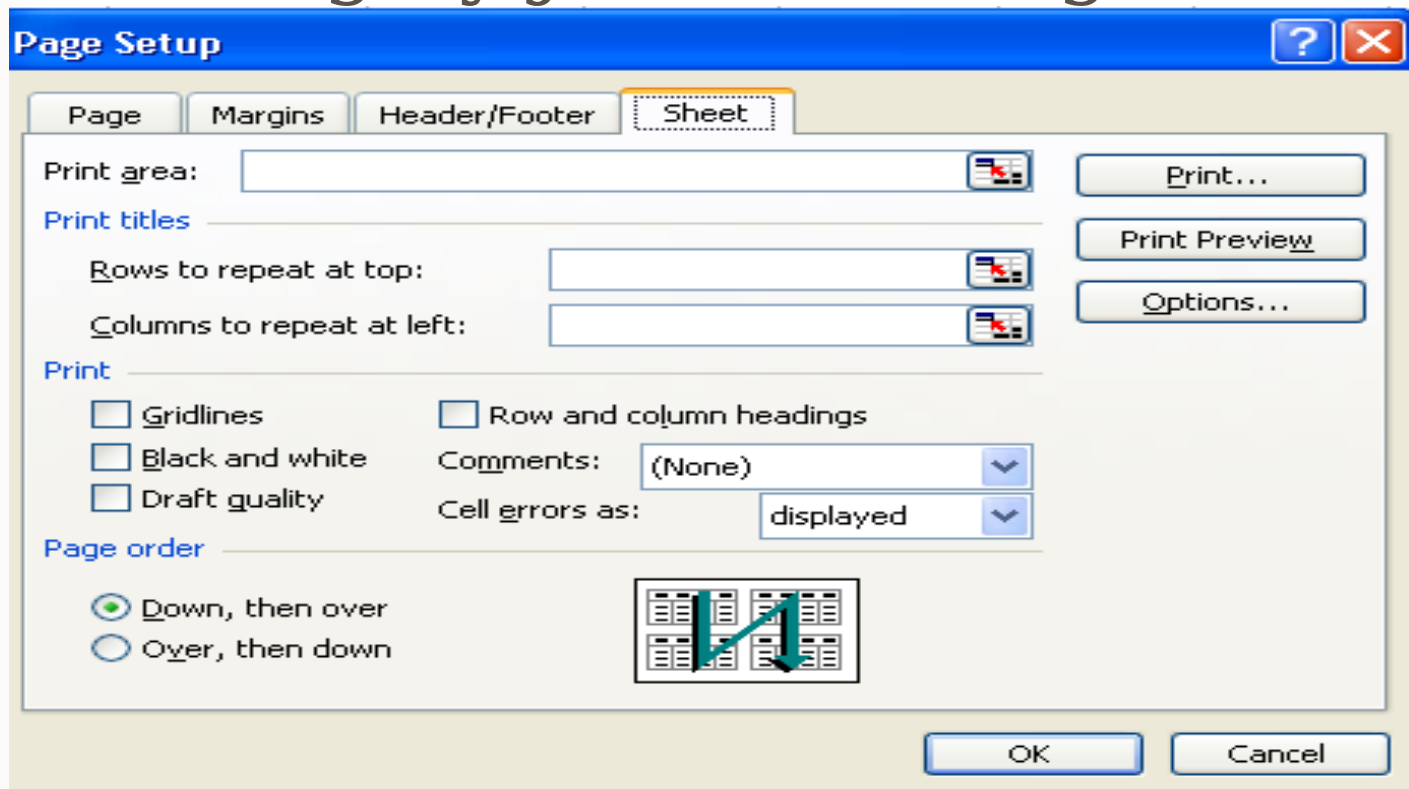
Printing a worksheet

- Use this tab for creating a header and footer on the worksheet



Printing a worksheet

- Use this tab if the you want to print Gridlines ,row and column heading by just checking the



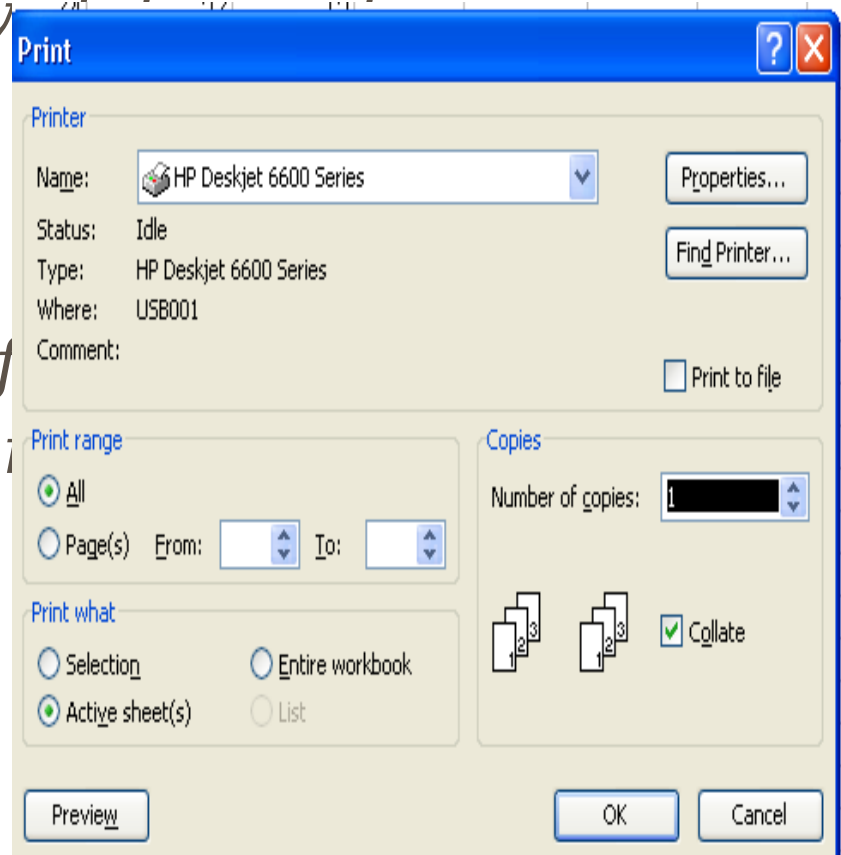
Printing a worksheet

After page set-up completion the last step is to print

a worksheet

Select a worksheet you want to print

1. *Click File menu*
2. *Click Print*
3. *Select a printer*
4. *Select/Type number of copies you want to print*
5. *Click Print Button*





Hand on Practice

- Do a page set-up of the worksheet on Hands on practice.
- Preview your work to see if there are Headers and footers ,Gridlines.

**Thank you for
listening**

