Microcomputer Applications

Spreadsheet with Microsoft Excel

Module 4

Training Department
training@udom.ac.tz

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Course Objectives

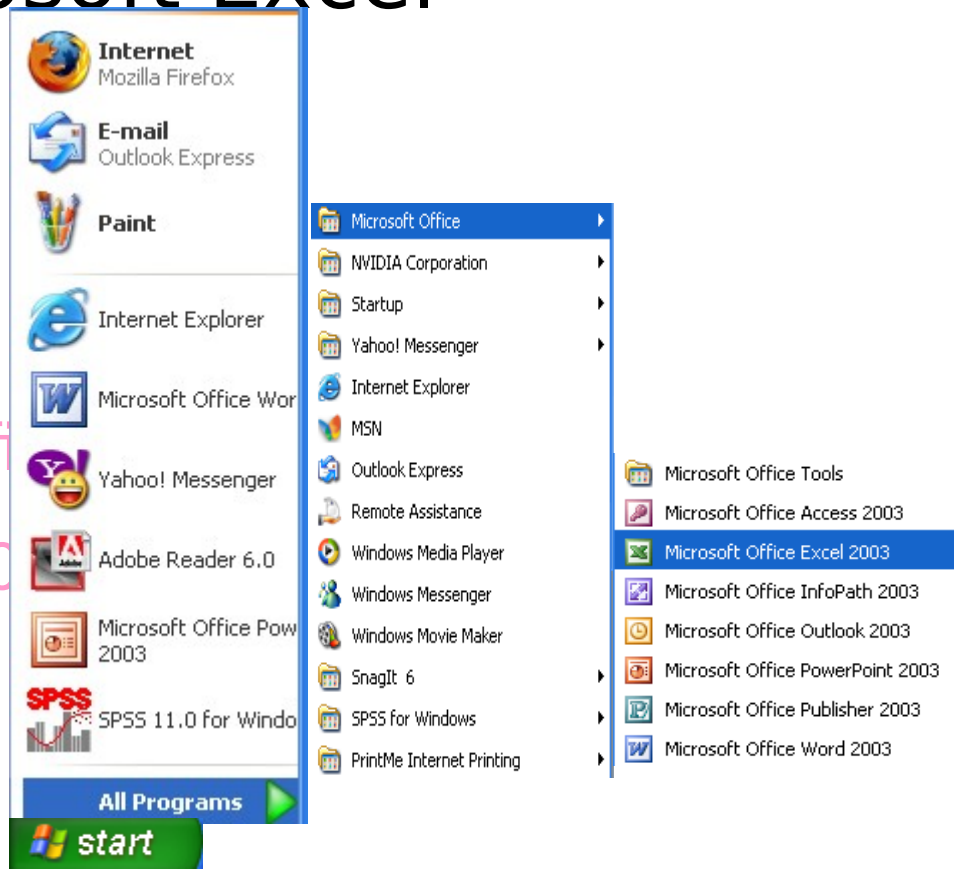
- Understand and appreciate the spreadsheet programs
- Understand the main features of Spreadsheet
- Know how to start and close Microsoft Excel
- Describe Microsoft Excel Terminologies
- Understand data types and associated entry techniques
- Understand and use Data editing and Manipulation features
- Understand how to format data and worksheets
- Understand how to create and modify charts
- Understanding and Using Formulas and functions
- Understand how to Print a worksheet

Getting Started with Excel

There are several ways which you can use to Start Microsoft Excel

1st Option

- Click Start Button
- Highlight All Programs
- Highlight Microsoft Offi
- Click Microsoft Excel 20



Getting Started with Excel

2nd Option

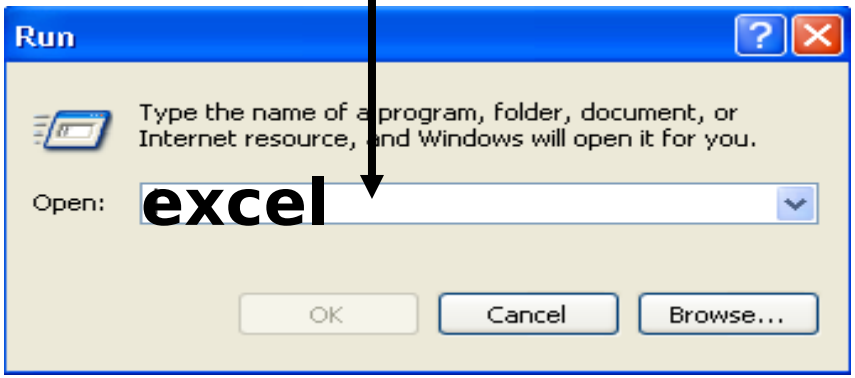
If there is a shortcut to Microsoft Excel on the Desktop

Double Click this Icon

Getting Started with Excel

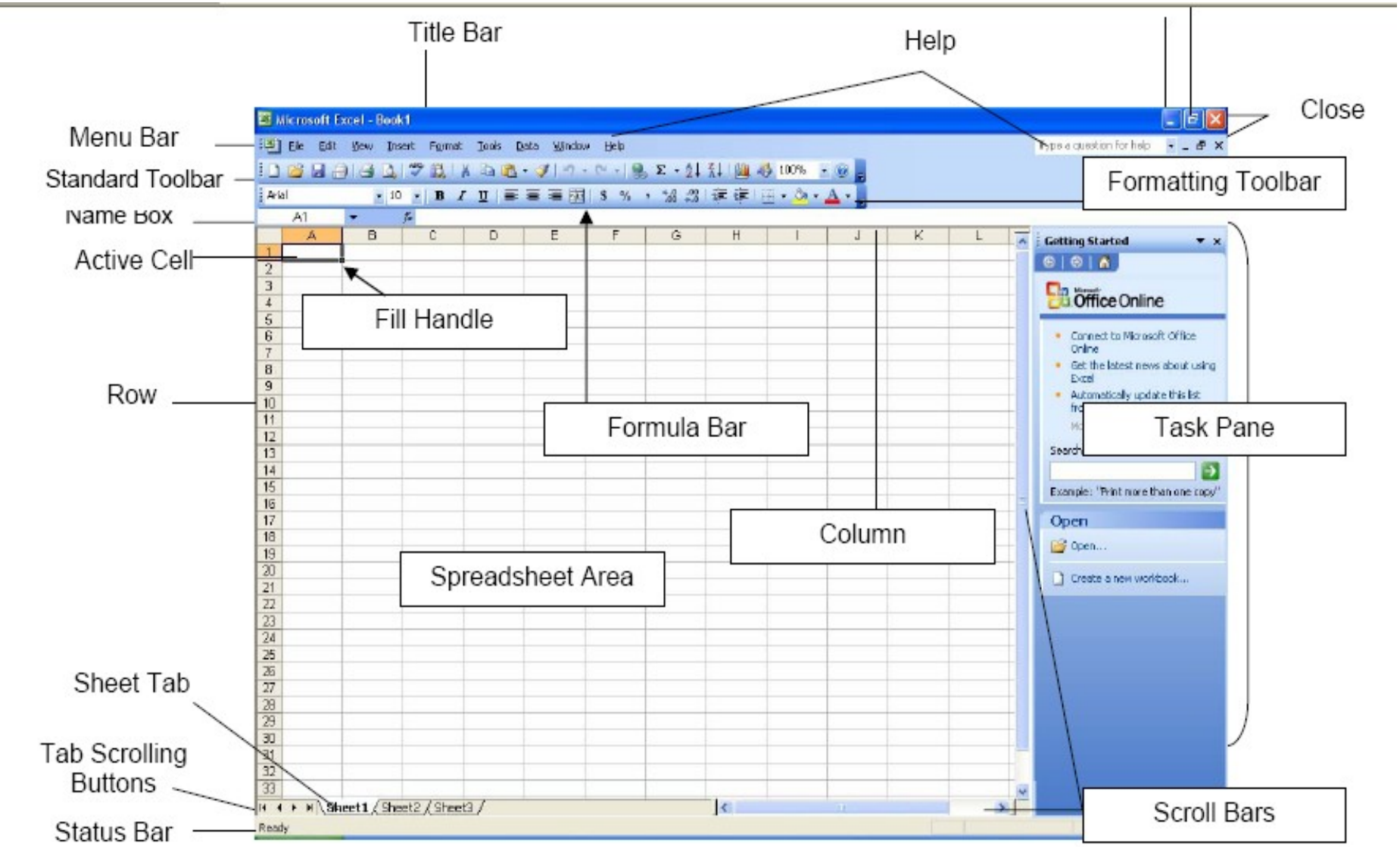
3rd Option

- Click Start Button
- Click Run Command,Run box will open
- Type excel in this box



- Click OK Button_

Microsoft Excel Screen



Spreadsheet Program

spreadsheet

A type of application program which manipulates numerical and string data in rows and columns of cells.

The value in a cell can be calculated from a formula which can involve other cells. A value is recalculated automatically whenever a value on which it depends changes. Different cells may be displayed with different formats.

Spreadsheet Program

Accounting field

	A	B
1		Cash Account
2	Debit	Credit
3		
4		
5		
6		
7		

Even we Statisticians we enjoy the capabilities of Microsoft Excel

Academics functions

	A	B	C
1	Examination Results		
2	Name	Score	
3			

3	Mean	78.25
4	Standard Error	7.899103325
5	Median	83.5
6	Mode	#N/A
7	Standard Deviation	15.79820665

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Microsoft Excel Terminologies

- **Workbook** - A file in a spreadsheet program.
- **Worksheet** - A smaller section of a workbook file designated by sheet tabs. Worksheets can have multiple pages. A worksheet has 65,536 Rows and 256 Columns.
  By default if you open a workbook for the first time it consist of only Worksheets
- But it is also possible to insert more worksheet

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Microsoft Excel Terminologies

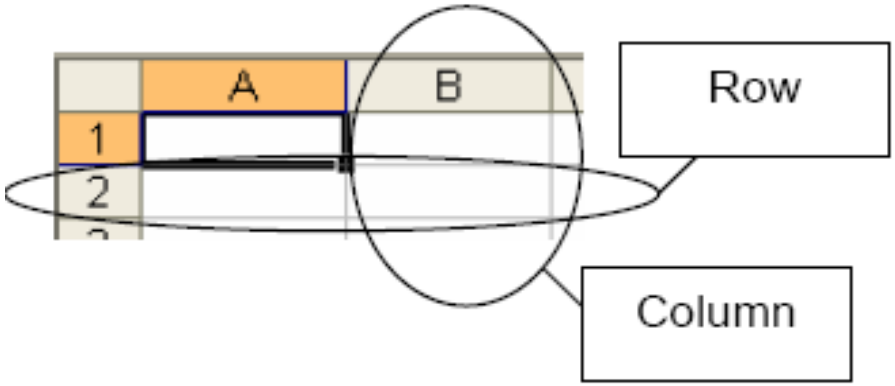
- **Row** The name assigned to each line/grouping of horizontal cells in a spreadsheet. Excel labels the rows with numbers.
- **Column**

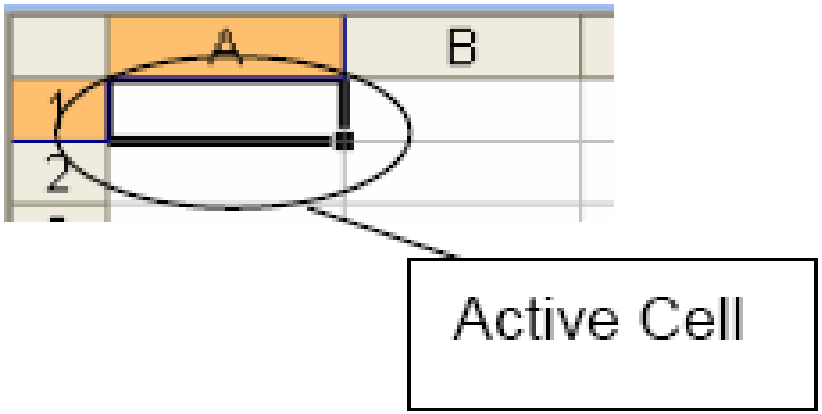
The name assigned to each line/grouping of vertical cells in a spreadsheet. Excel labels the columns with letters. There are 256 columns in an Excel worksheet.

Microsoft Excel Terminologies

- **Active Cell**

The active cell is the cell that is currently selected. The selected cell will have an outline surrounding the cell and in the lower right corner there will be a small box (fill handle). The active cell is where data will be inputted when a user is typing.





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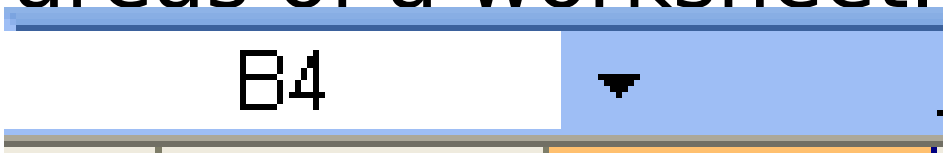
Microsoft Excel Terminologies

- **Name Box**

The name box shows the cell address for the active cell. As a user selects areas of the workbook the quantity of rows and columns will be displayed in the name box. A user may decide to name areas of the spreadsheet. The name box can be used to quickly name and then select areas of a worksheet.



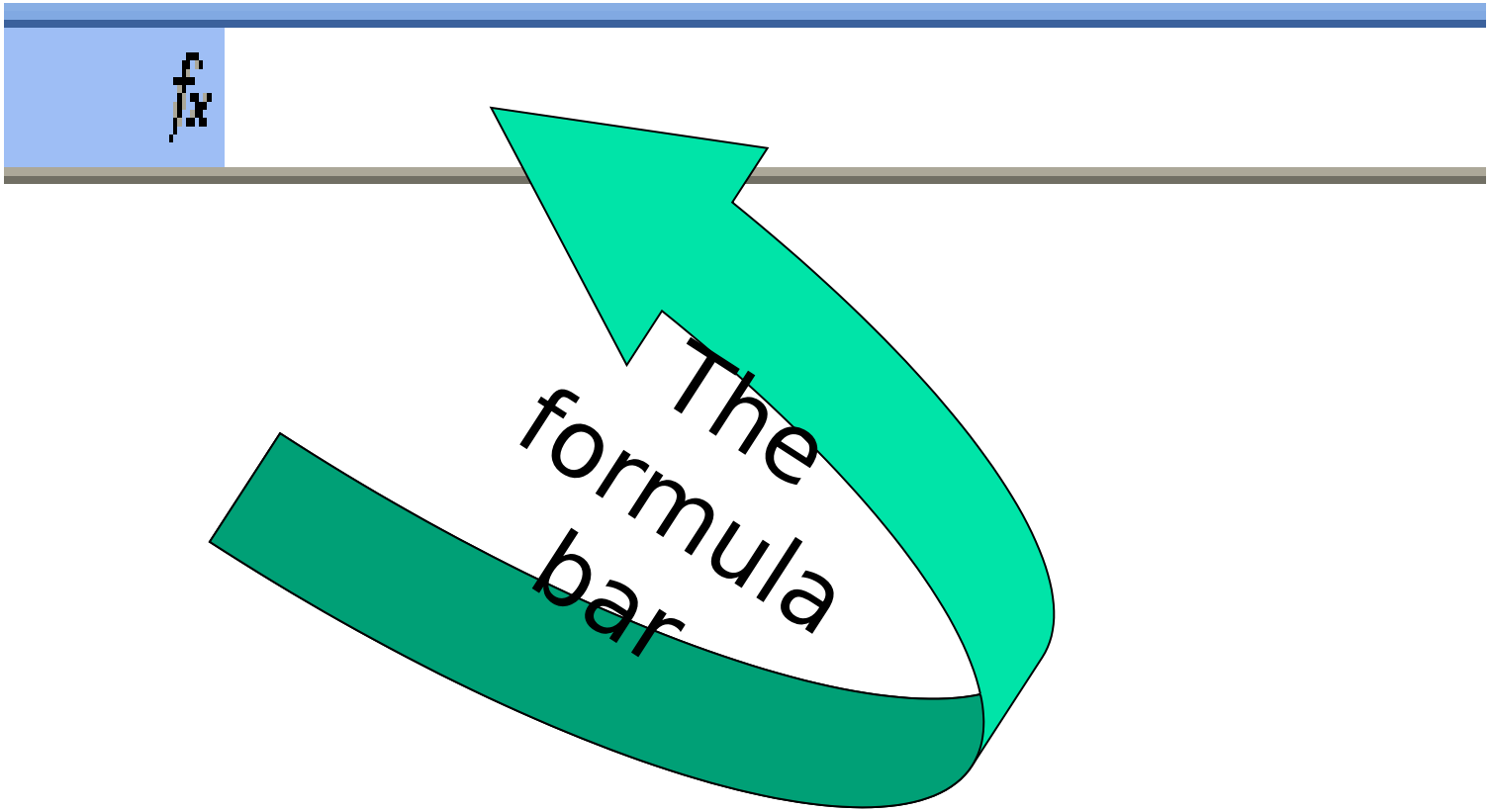
Microsoft Excel Terminologies

- **Formula Bar**

  The formula bar shows what is contained within the active cell. Sometimes you may not be able to see everything in the active cell; however the formula bar will display the entire contents of the cell.

  - Formulas are also displayed in the Formula Bar.
  - Formulas are mathematical equations used to compute something within the worksheet.
  - Formulas will display in the formula bar, while the answer to the formula will display in the cell.

Microsoft Excel Terminologies



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Microsoft Excel Terminologies

- **Sheet Tabs**

  Labels at the bottom of the workbook to designate the worksheets contained within the workbook. The sheet tabs look similar to file folder tabs. The worksheets can also be moved , renamed and deleted

Entering Data in a Worksheet

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Entering Data in a Worksheet

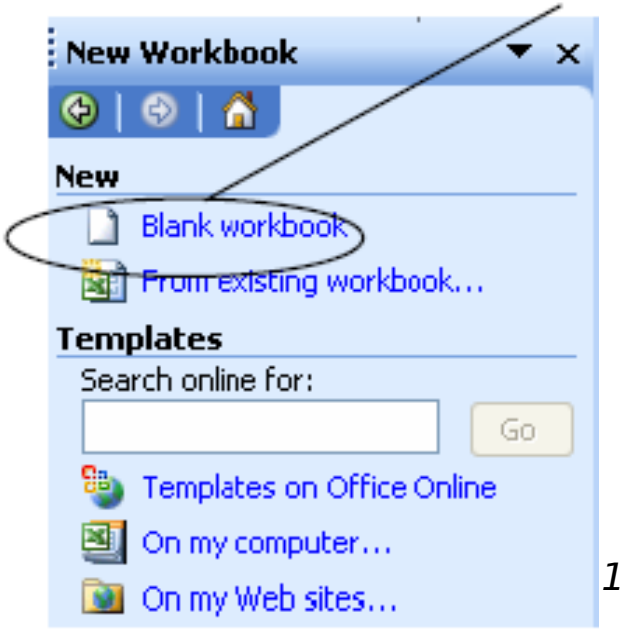
Before you start to enter data you need to create a new workbook.

Steps to Create a New Workbook

Click on the **File** menu and then select **New**.

Click on Blank Workbook t
blank workbook.
OR

- Click on the **New butt**
on the **Standard toolb**



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 equal

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Entering Data in a worksheet

- Steps to enter data

1. Select a cell in which you want to enter data.
2. Type a data in cell
3. Press Enter key OR Return key

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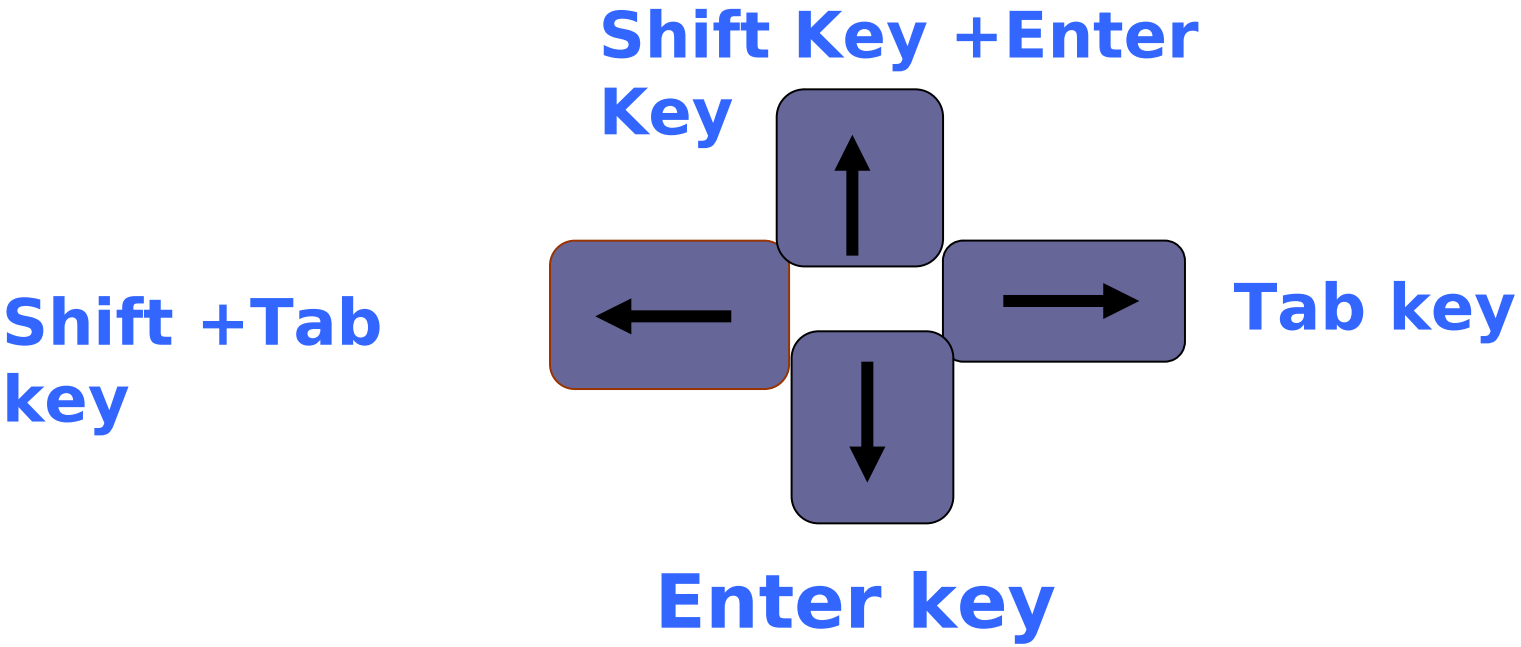
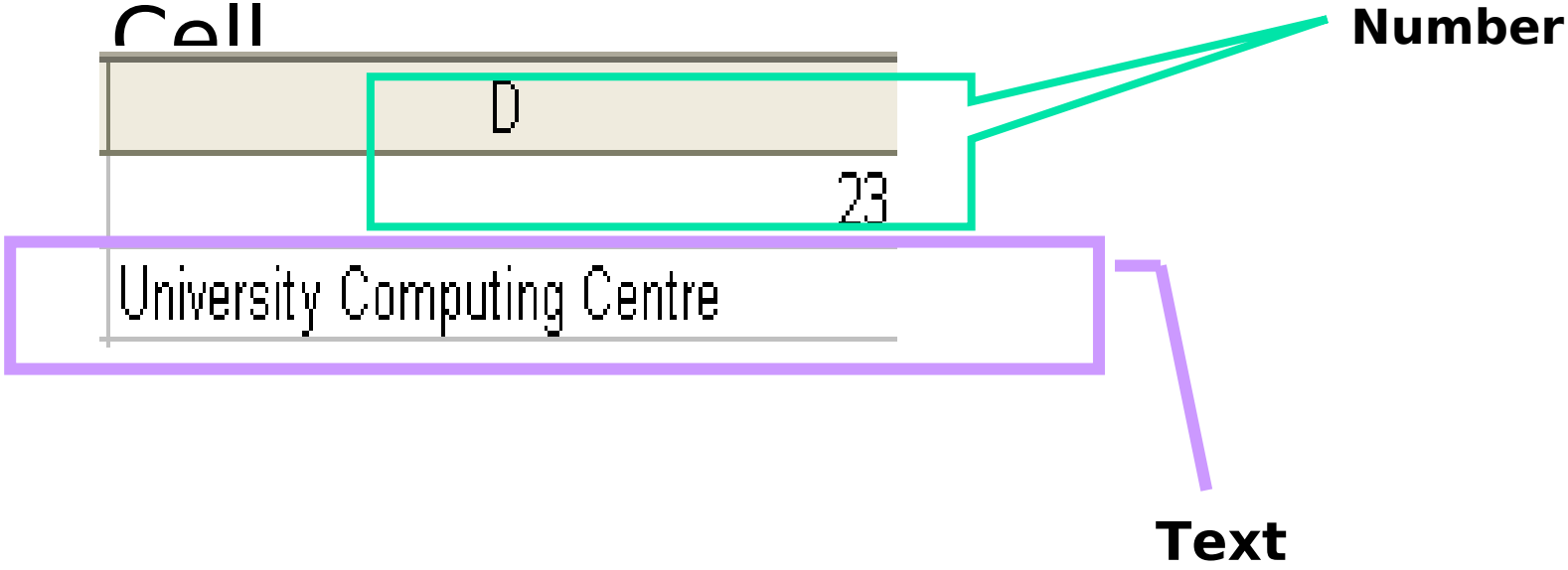
Entering Data in a worksheet

- Once you have entered data in a cell use the following keys to move from one cell to another cell.



Entering Data in a worksheet

- You can notice something when you enter data in a cell Automatically numbers are aligned to the Right Side of the cell and Text to the Left of the Cell



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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

Saving a Workbook

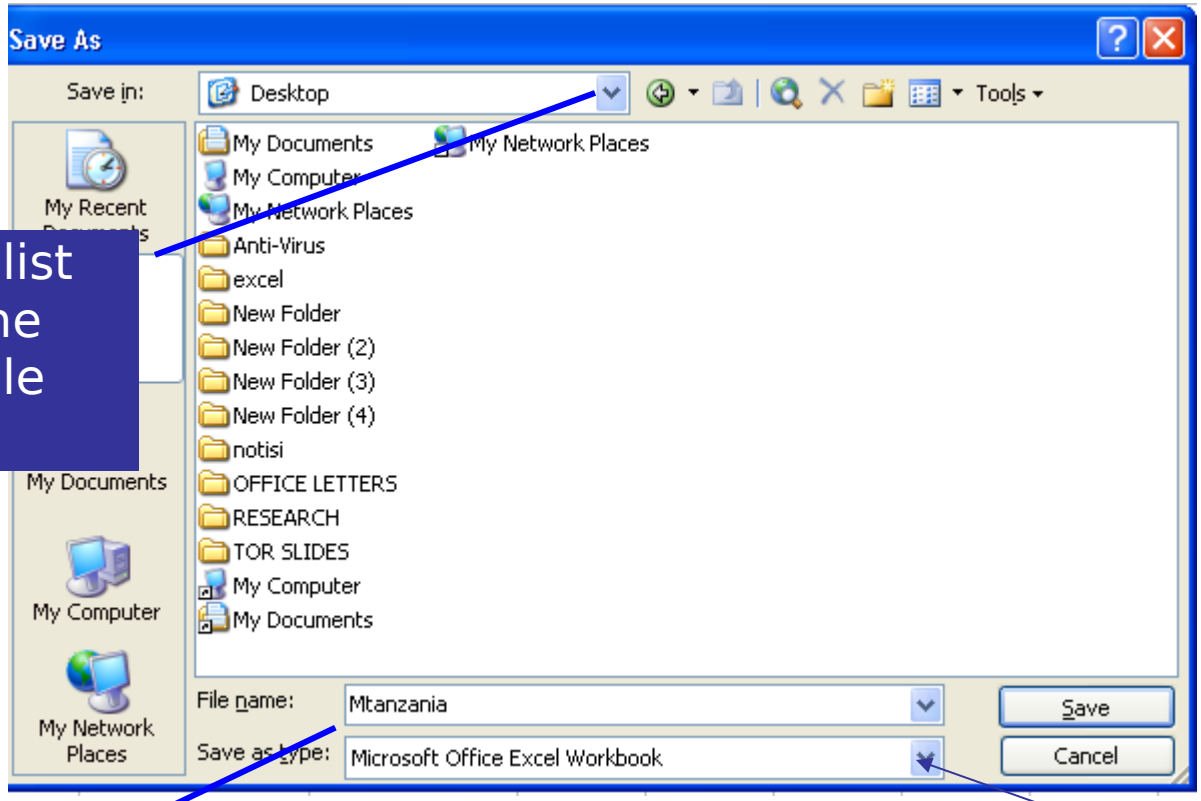
- After entering data then you need to save it ,and whatever you do either you modify or change ,make sure you save the changes .and have trend of saving your work every 5 to 10 minutes depending on your typing speed. There are two options which you can use to save

Save and Save As

Saving a workbook

- Click File Menu
- Select Save from the drop down list
- Save dialog box will open
- Select a location where you to save
- Type a file name in the Filename Text Box
- Select a format under which you want to save from the Save as Type List box
- Click Save Button.

Saving a Workbook



Use the Save In list box to specify the folder/disk the file will be saved in

Type the new file name

Select a file format you want to save

Microsoft E

Closing a Workbook

- Click File Menu
- Click Close from the drop down list

OR

Quitting Microsoft Excel

Click File Menu

Select Exit from the drop down menu

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Editing data in a worksheet

- Data in a worksheet can be edited using a formula bar or by editing it directly in the cell.
- Editing Directly in the cell
  - Double click the cell with data you want to edit.
  - Position the insertion by using arrow keys on the keyboard
  - Use Delete key OR Backspace to erase the characters you don't want
  - Type other characters
  - Press Enter key

Editing data in a worksheet

The Text in the cell was supposed to be Chuo Kikuu cha Dar ,So move the Insertion point as seen above

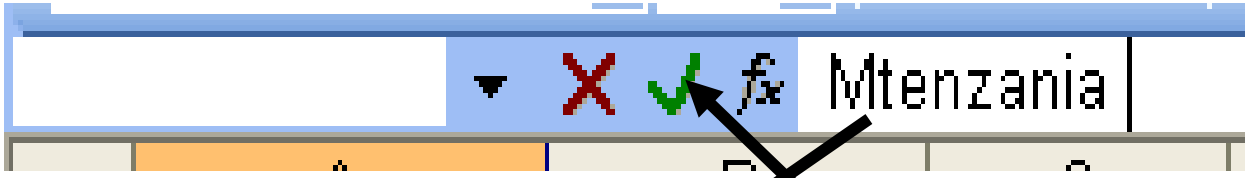
and delete the Character "a" and

type Character "u"

Editing data in a worksheet

- Using a Formula bar to Edit
  - Select a cell with data you want to edit
  - Click on the Formula bar
  - Use arrow keys to move the insertion close to where you want to edit
  - Use Delete key and Backspace to erase characters which you don’t want.
  - Insert other character(s) if there is a need.
  - Click a green Tick

Editing data in a worksheet



Move the insertion point so that it will be between letter "t" and "e" then press delete key to delete "e" then type letter "a" and the word will be Mtanzania

Click this button to Accept changes after editing

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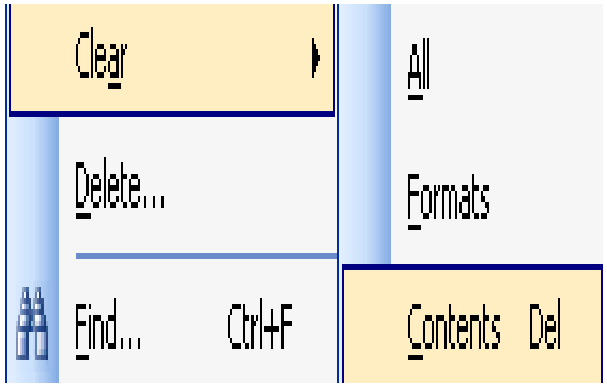
Deleting a data in a worksheet

- Select a data you want to delete
- Press delete key on the keyboard

OR

- Select a cell with a data you wish to delete
- Click Edit Menu
- Select Clear
- Click Contents



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Hands on Practice

- Editing a data in a worksheet

	A	B	C	D
1	Country	President	City	
2	Tanzania	Kikweete	Dar es Salaam	
3	Konya	Kibaki	Neirobi	
4	Melawi	Muluzi	Blantyre	
5				

In the above sheet there are some words especially those with a shaded cell have spelling mistakes so edit those which are not correct

Kikweete to be Kikwete, Konya to be Kenya

Neirobi to be Nairobi, Melawi to be Malawi

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Working with Worksheets

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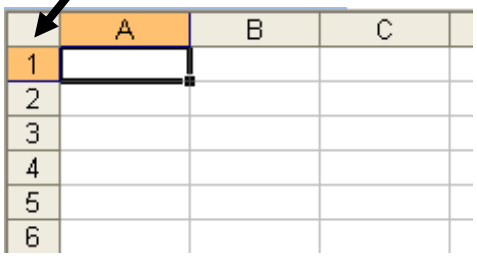
Selecting Cells

Number of Cells	How to Select
A single cell	*Single click it*
More than one cell adjacent	*Click a first cell you wish to select ,then hold down **SHIFT** key then click the last cell you want to select.*
More than one cell non-adjacent	*Hold Down **CTRL** key then continue to click the cells you wish to select*
Entire column	*Click the column heading*

Selecting Cells

Number of Cells	How to Select
Entire Row	*Click a row heading*
Entire Worksheet	*Click a blank cell before the Column and row heading*



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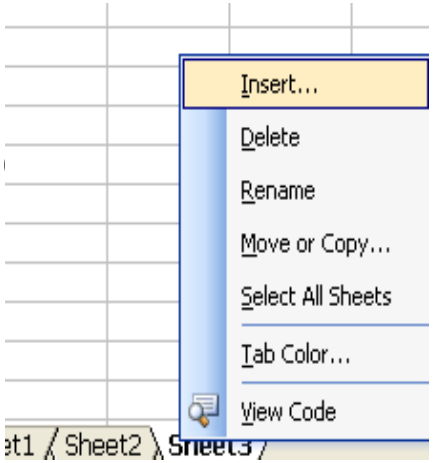
Inserting a Worksheet

- Click Insert Menu
- Click Worksheet

OR

- Point a sheet tab
- Right Click it ,a pop-menu app
- Select Insert……
- A box will appear



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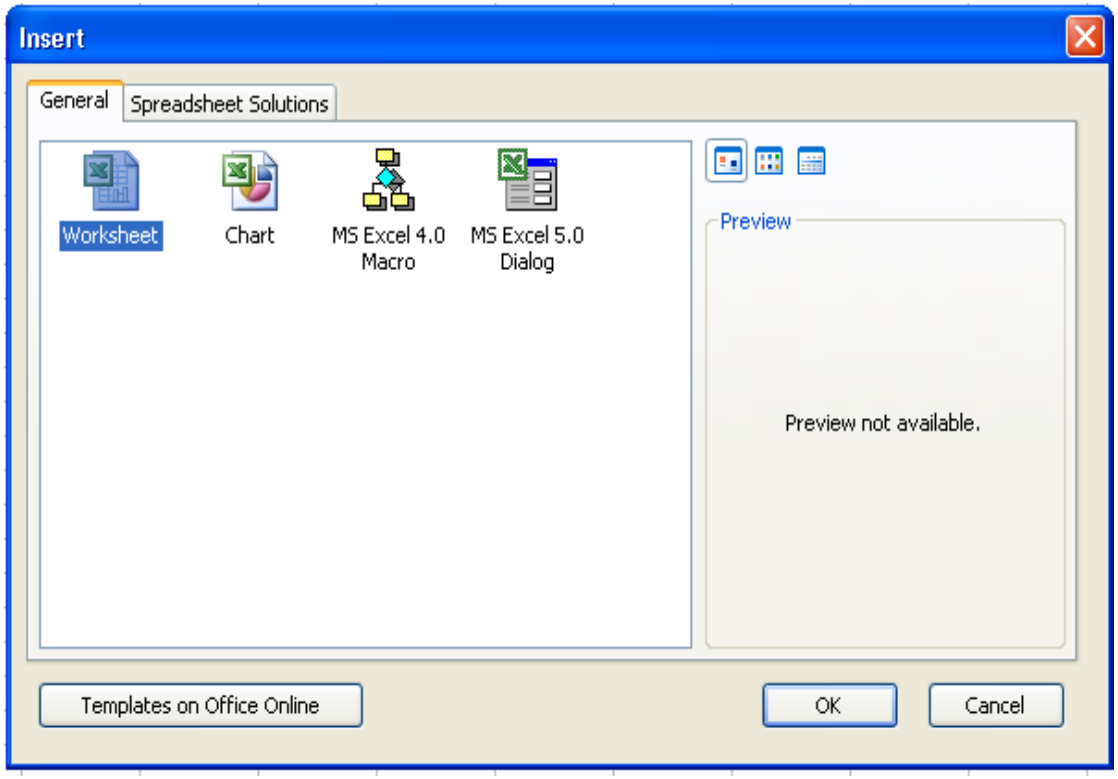
Inserting a Worksheet

- Select General Tab
- Highlight Blank Sheet
- Click OK Button



Inserting Column & Rows

- Select a cell close to where you want to insert a new Column.
- Click Insert Menu
- Click Column(Note that the column will be inserted on the left of the selected cell or column)
  OR
- Select a cell close to where you want to insert a new Row.
- Click Insert menu
- Click Rows (Note that the row will be inserted on the top of the selected cell or row)

Copying Cells

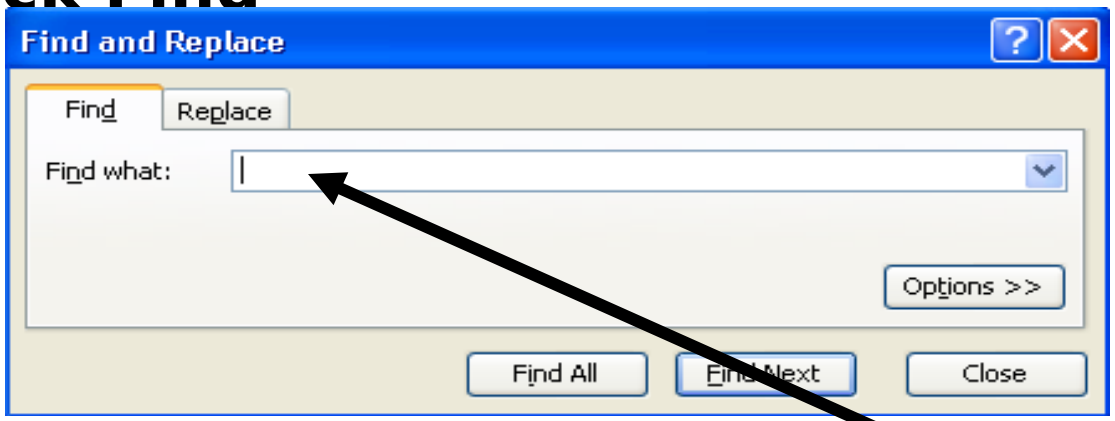
- Select cells you wish to copy
- Click Edit Menu
- Click Copy (or Click a copy Icon on the standard toolbar
- Click a cell where you want to paste
- Click Edit menu
- Click Paste (or click a Paste icon on the Standard toolba

Moving Cells

- Select cells you wish to move
- Click Edit Menu
- Click Cut (or Click a Cut Icon on the standard toolbar
- Click a cell where you want to paste
- Click Edit menu
- Click Paste (or click a Paste icon on the Standard toolbar

Finding and Replacing Text

- **Position an insertion point where you want to insert.**
- **Click Edit Menu**
- **Click Find**



Type a text you wish to find here

- **Click Find All/Find Next**

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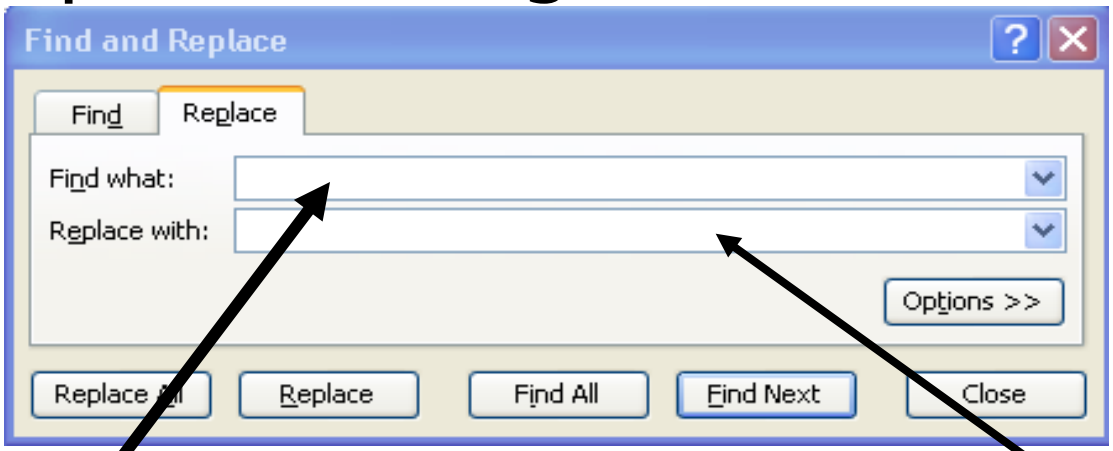
Finding and Replacing Text

- Click Replace tab in the Find and Replace dialog box



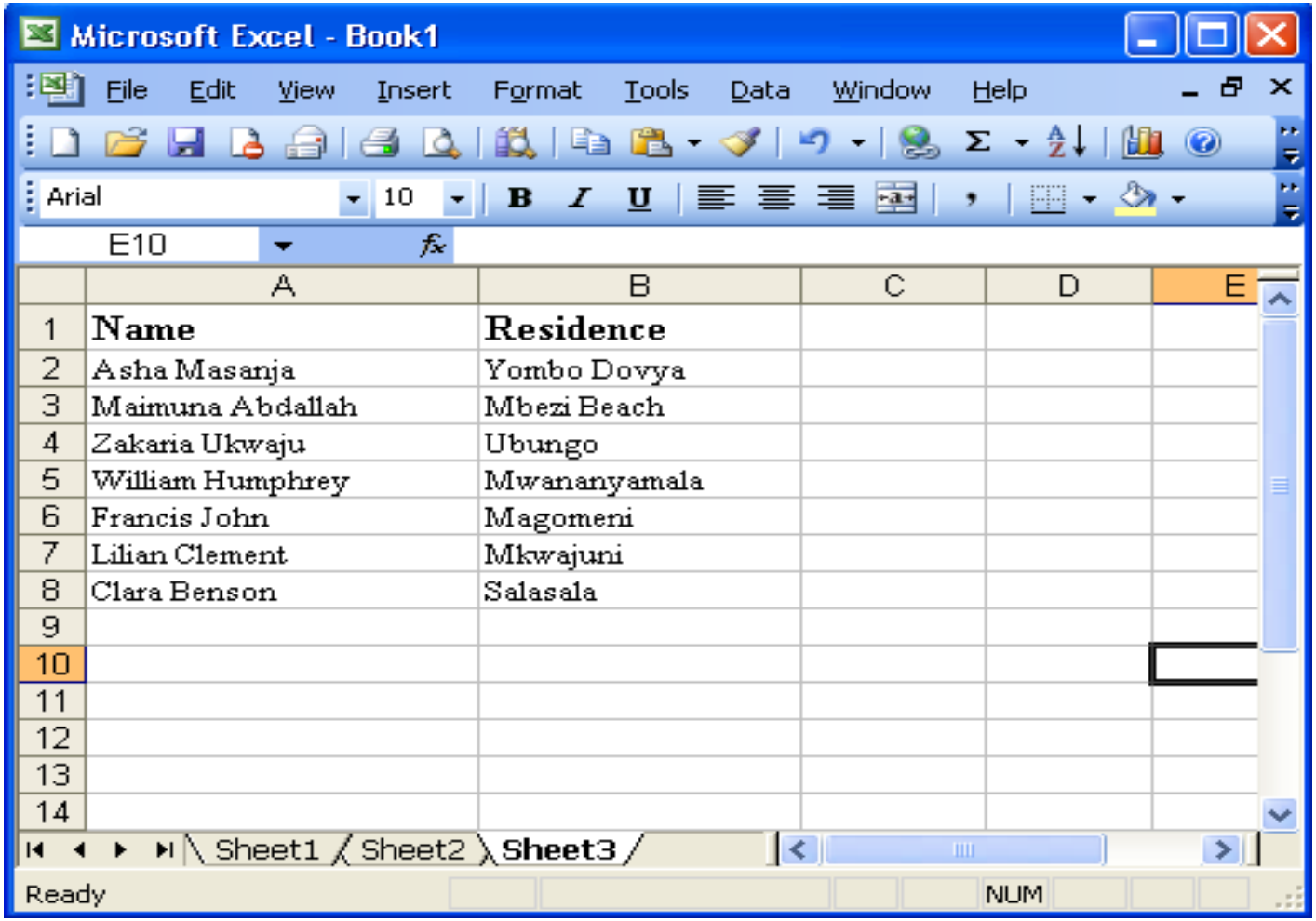
Type a text you wish to find

Type a text to replace with

- Click Replace All /Replace button

Hands on Practice

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



	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					

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*

Formatting

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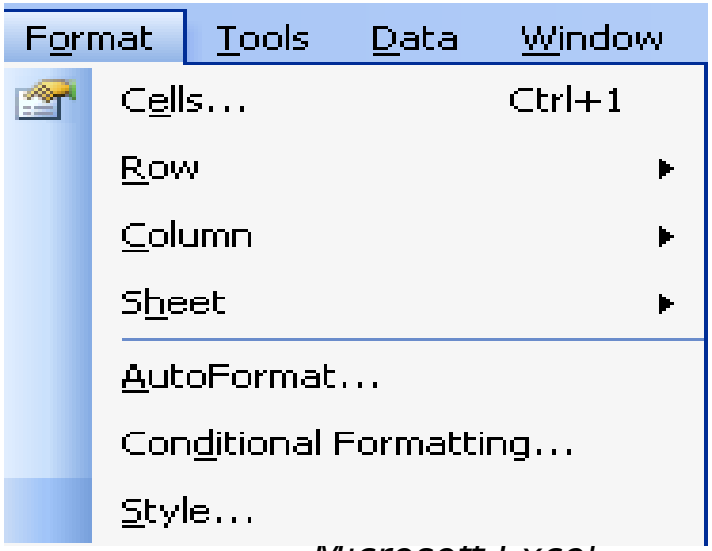
Formatting Cells

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

or

Format menu



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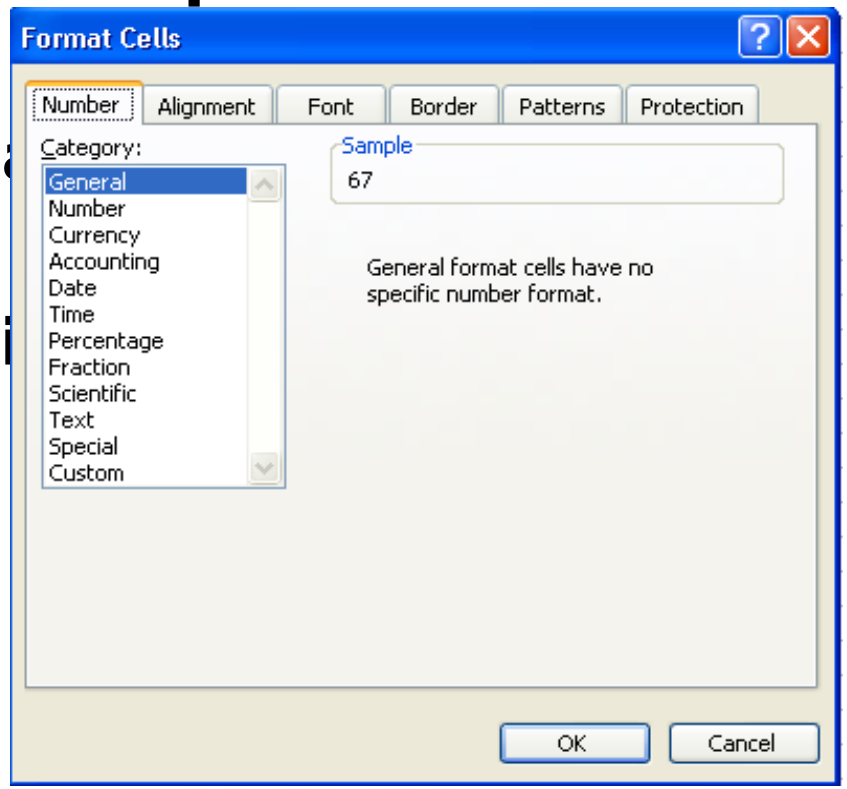
Formatting Text

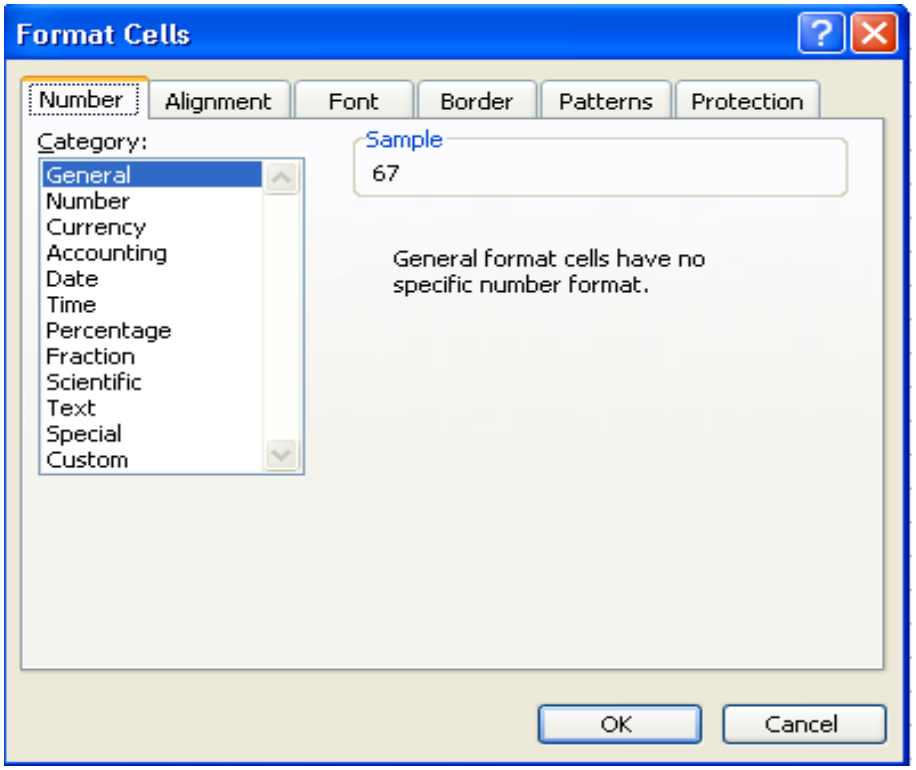
- Select a cell (s) you wish to format
- Click a command buttons on the formatting toolbar in order to change the Font size, Color, align text and font style.

Number Formatting

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



Number Formatting

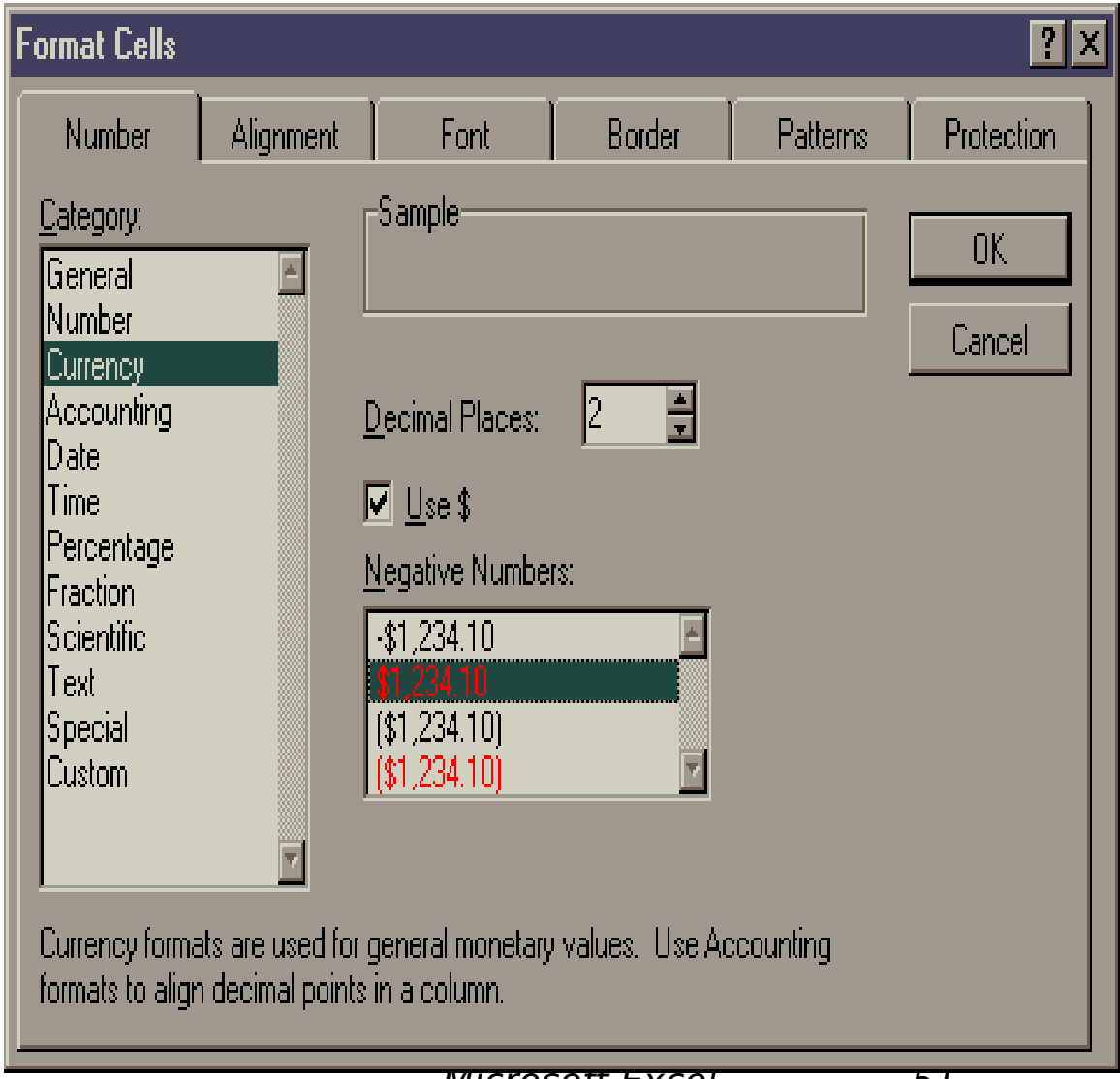


Formatting Cells

- 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 2

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

	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 2

- 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.

Creating Charts

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The Chart Wizard(1)-chart Type

- Select or click within the data
- Click on the Chart Wizard icon
- Chart Wizard box will appear, which will guide you through the chart creation process

Chart wizard dialog box

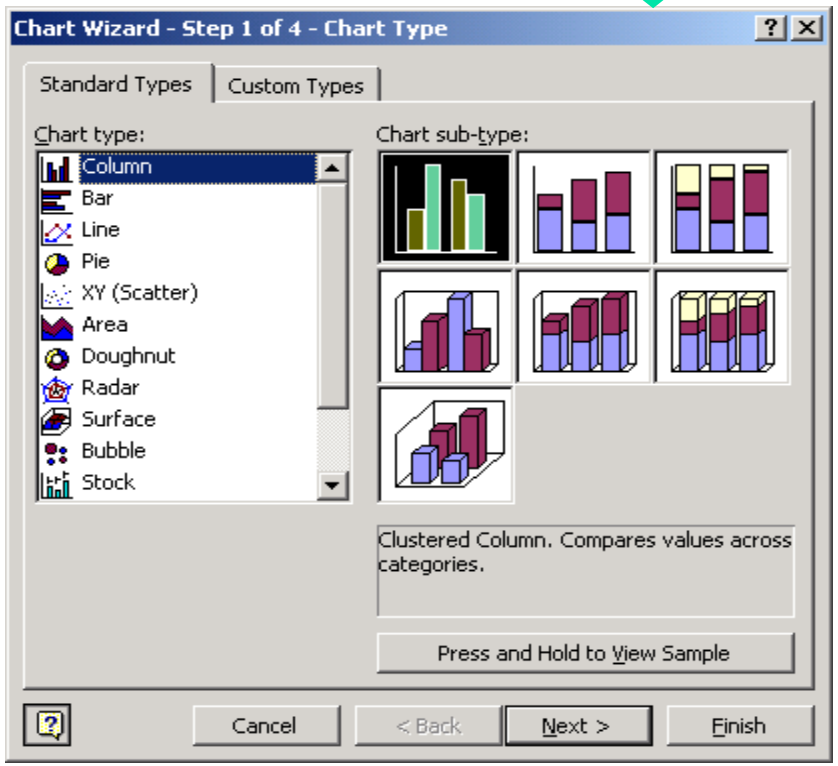
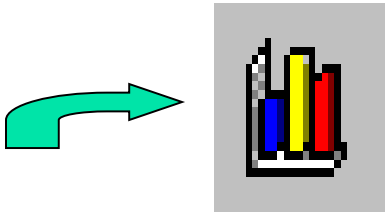


Chart wizard icon



The Chart Wizard (2) – Data Source

- Allows you to define the data that will be used to create the chart

Chart Wizard (3) – Chart Options

- Allows you to define the options you wish to include e.g.
  - Titles - Axes
  - Gridlines - Legend
  - Data Labels - Data Table

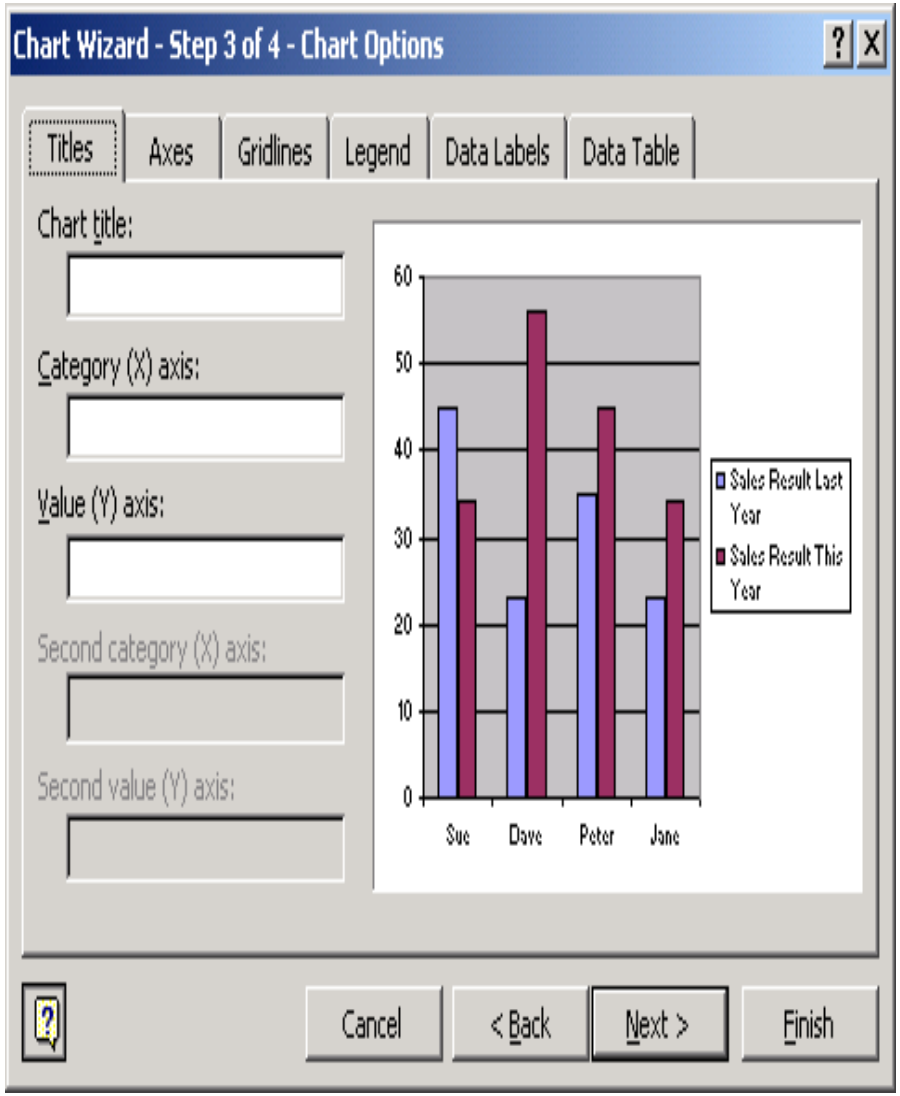
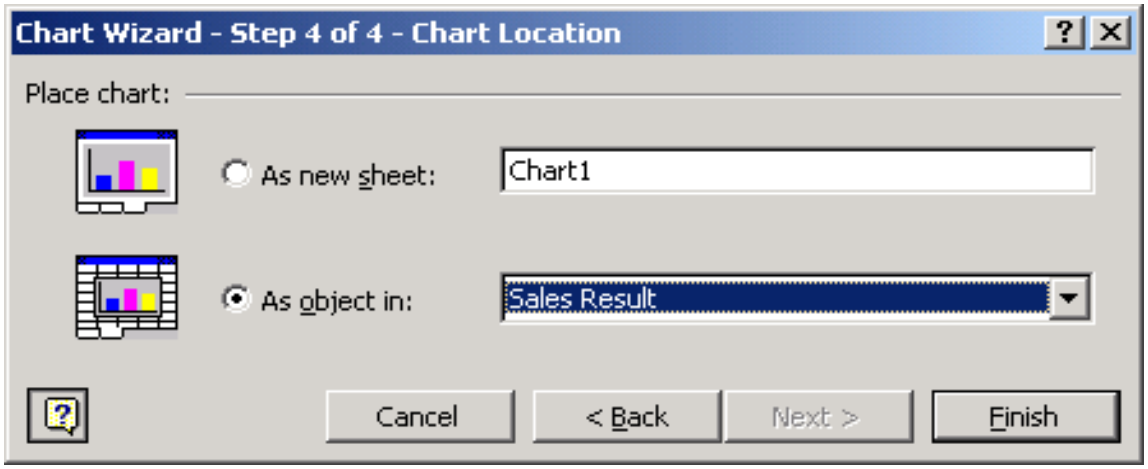
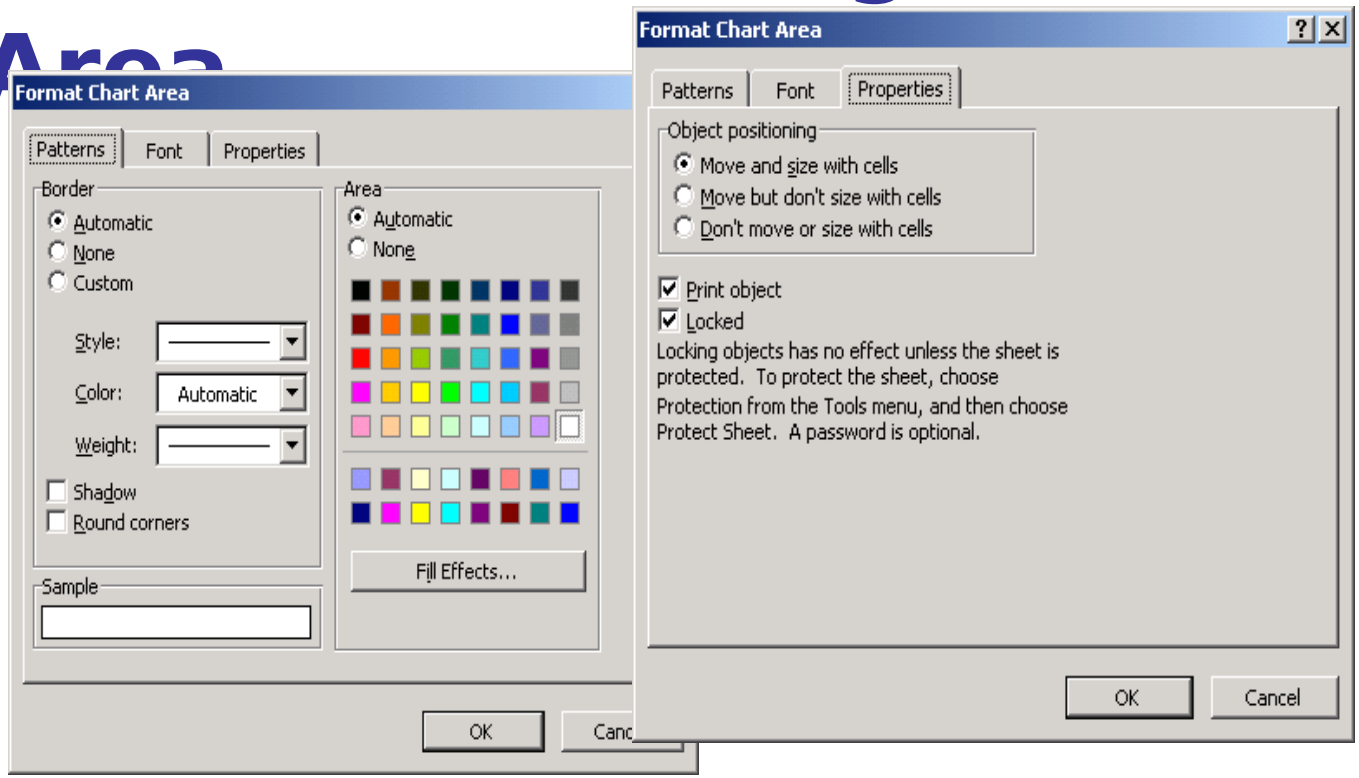


Chart Wizard (4) – Chart Location



- Allows you to choose where to insert the chart e.g As an Object in the current worksheet or As a new worksheet which will be added automatically into the current workbook

Chart Formatting – Chart Area



- Double click on the chart area to display the relevant dialog boxes
  - The chart area is the “empty” chart background

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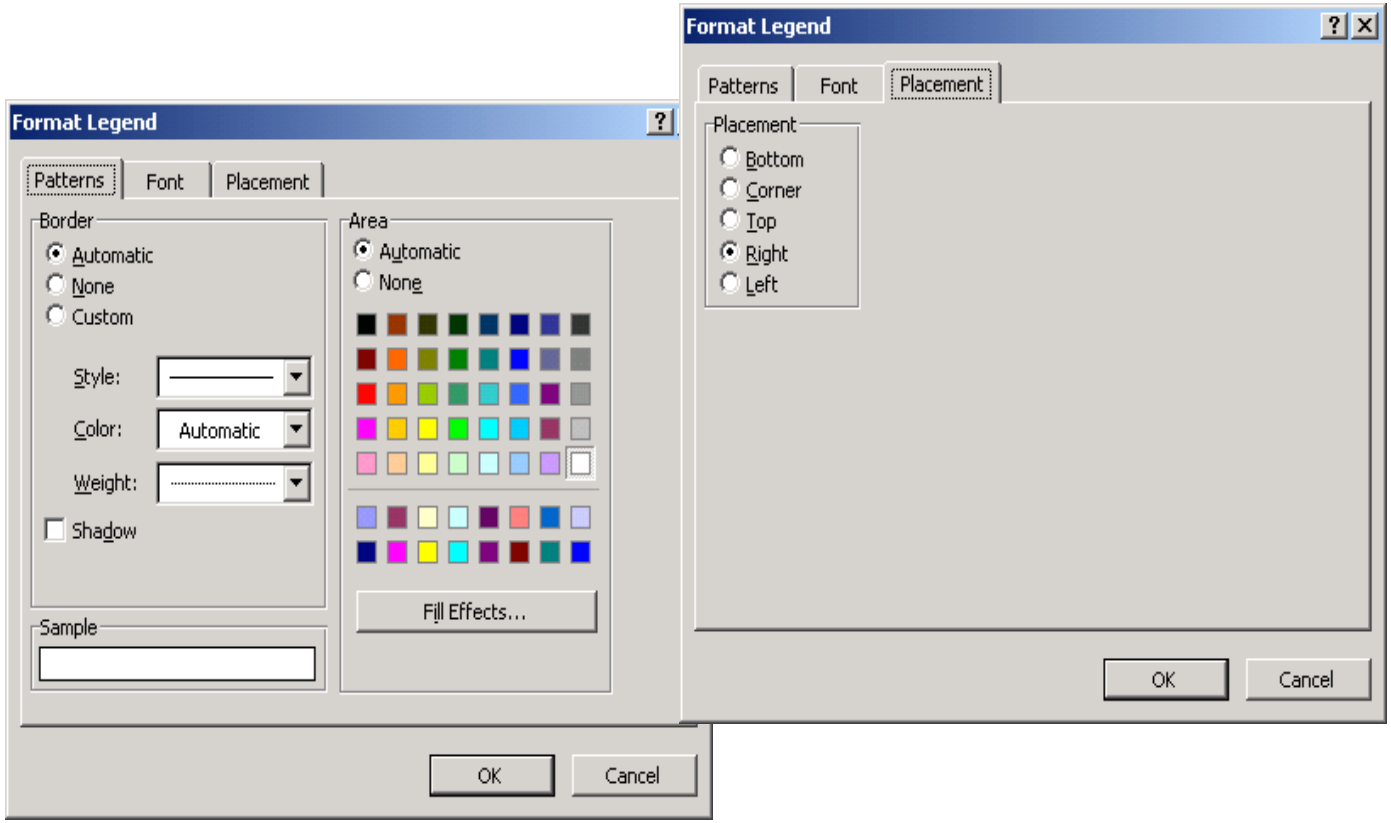
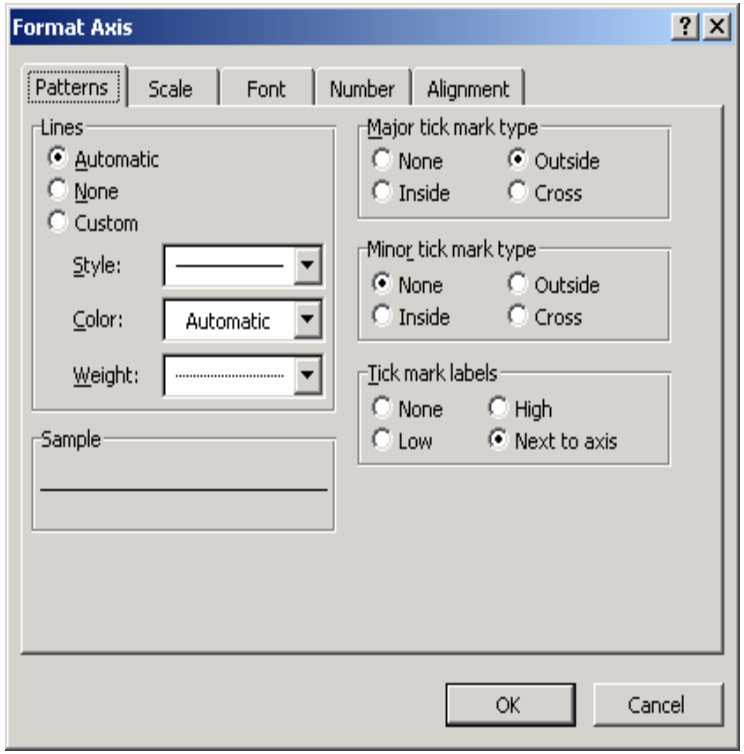
Chart Formatting - Legends



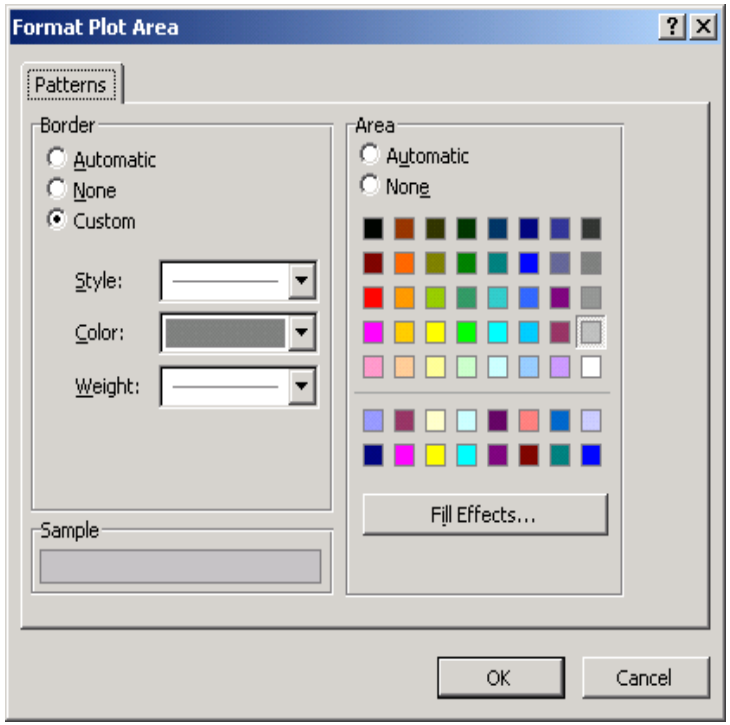
- Double click on the Legend to display the relevant dialog boxes

Chart formatting - Axis



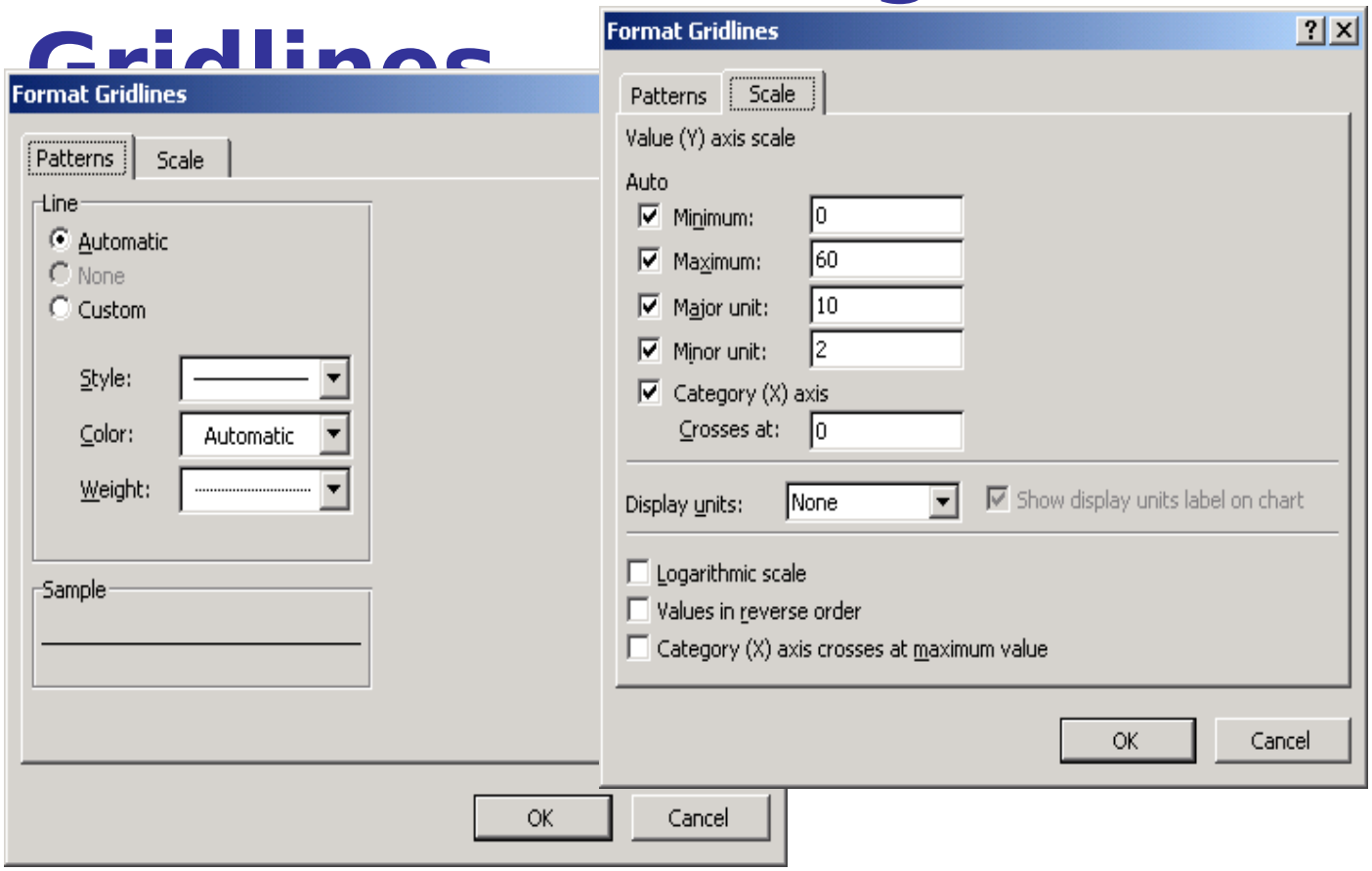
- Double click on an Axis to display the relevant dialog box

Chart Formatting – The Plot Area



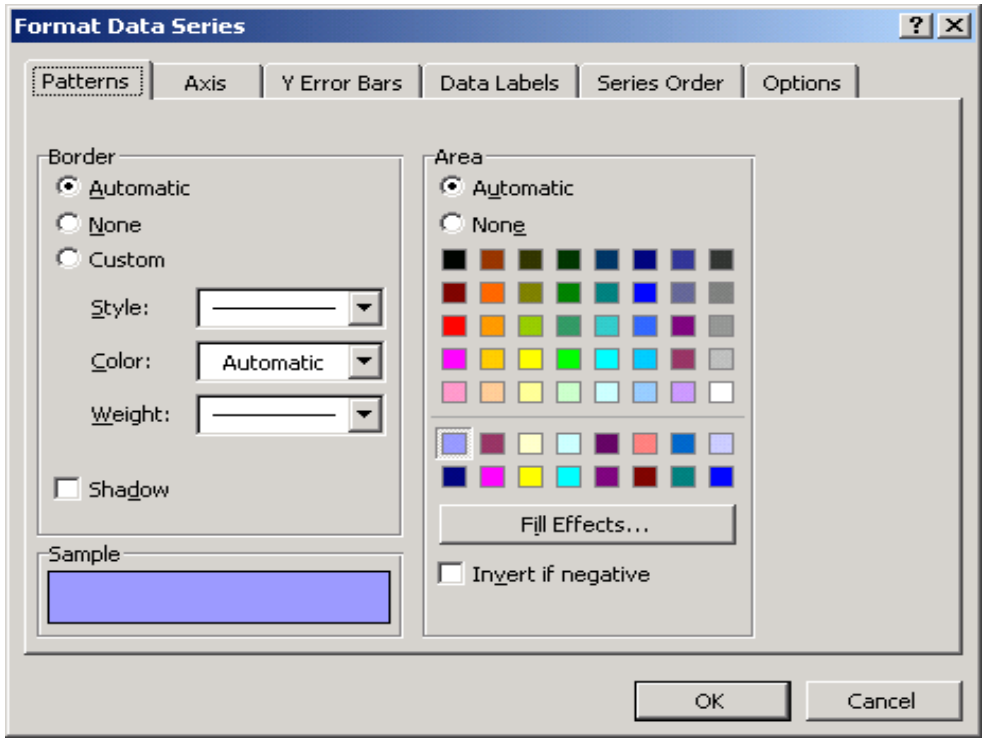
- Double click on the Plot area to display the relevant dialog box
  - The plot area is the “empty “ area of the actual graph

Chart Formatting - Gridlines



- Double click on a gridline to display the relevant dialog box

Chart Formatting – The Data Series



- Double click on a data series to display the relevant dialog box

Creating Chart

- **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

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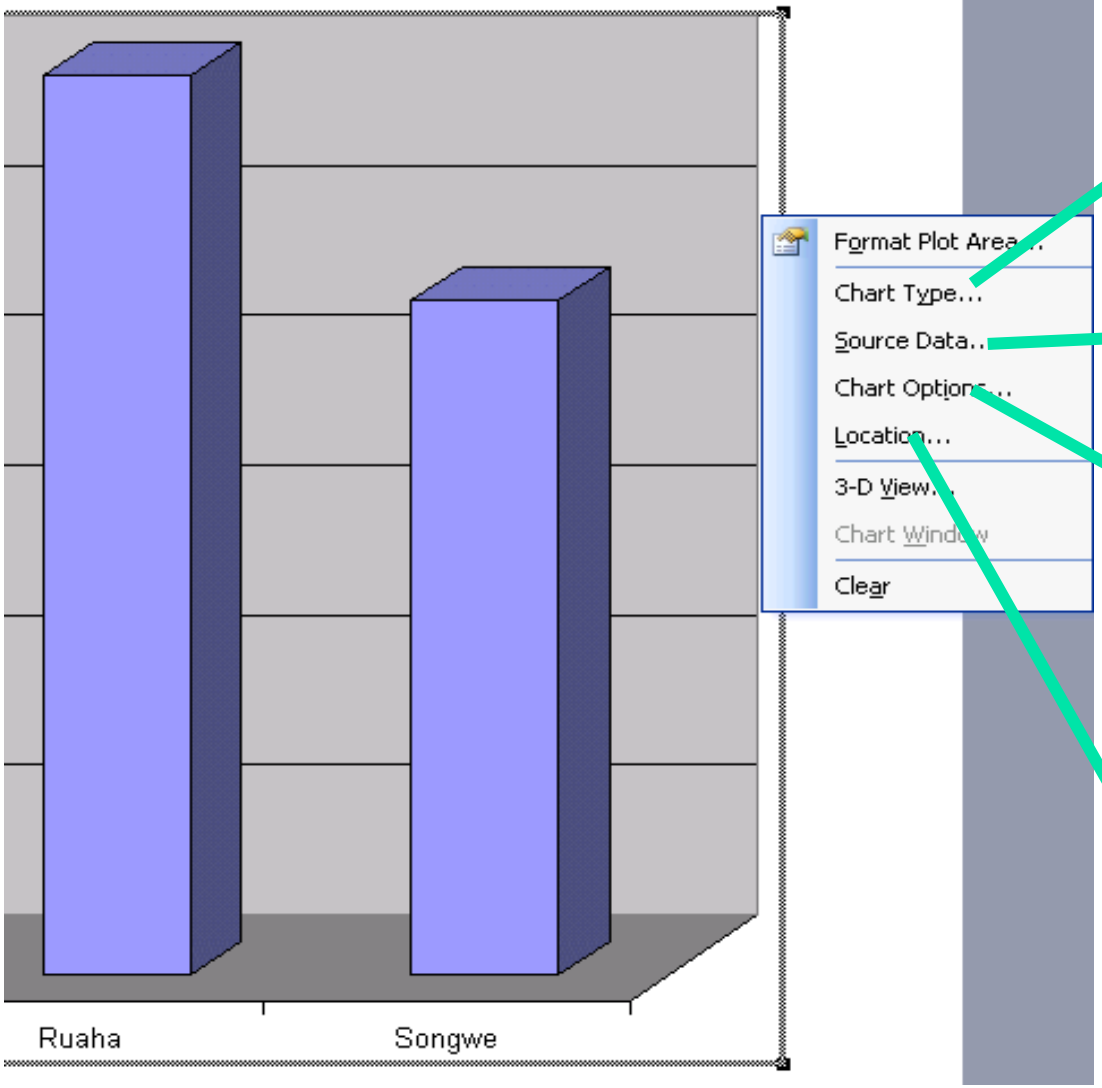
Chart Editing

- To edit a chart like to change the chart type, chart options or simply to access the 4 steps of chart wizard in order to modify the chart. Point within the chart plot area
- Right click ,a pop-up menu appears
- Select an option you want in order to access one of the Four steps of the Chart Wizard
- A Chart wizard step box will appear
- Apply changes you want then click Ok Button

Chart Editing



1st Chart Wizard Step

2nd Chart Wizard Step

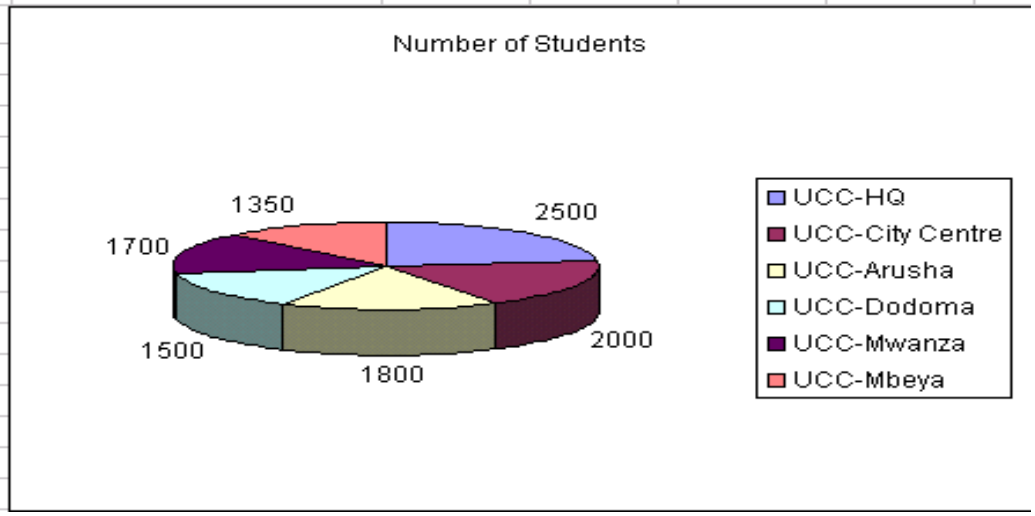
3rd Chart Wizard Step

4th Chart Wizard Step

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				



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

Formula & Functions

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About Formula

- As good as Excel is, it cannot guess or read your mind. You must know which math operation(s) you need to

Arithmetic Operators :

Addition	**+ (plus)**
Subtraction	**- (minus)**
Multiplication	*** (asterisk)**
Division	**/ (forward slash)**

Creating a formula

- Steps to create a formula

  When you have decided **where** you want the result of the math operation, and you have **clicked** on that cell …

Start by entering “=“

Enter the formula

Press Enter key to continue

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Creating a formula

- **Addition**

  Select a cell where

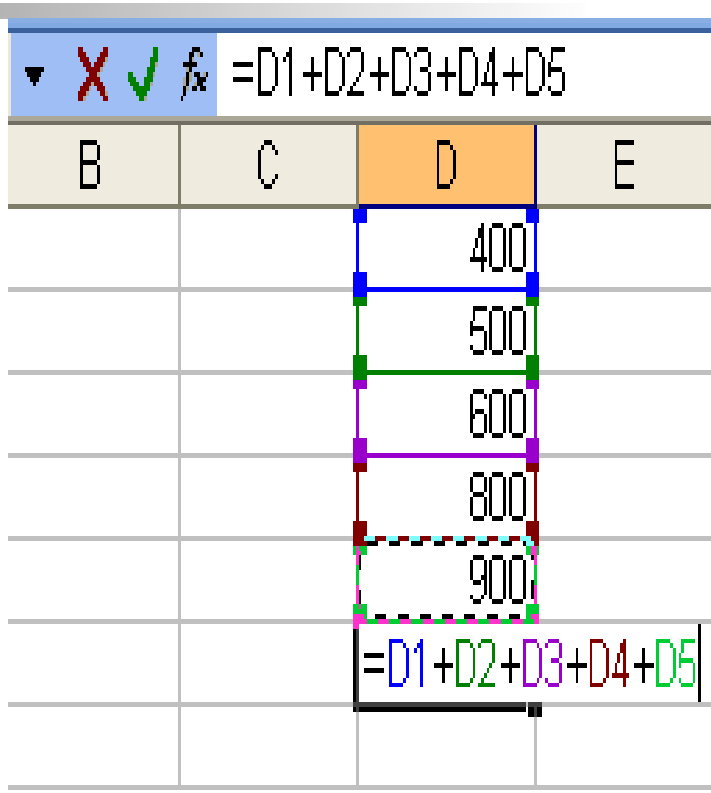
  to create a formula

  Start with equal sign

  type the cell addresses

  what you want to add

  Press the enter key



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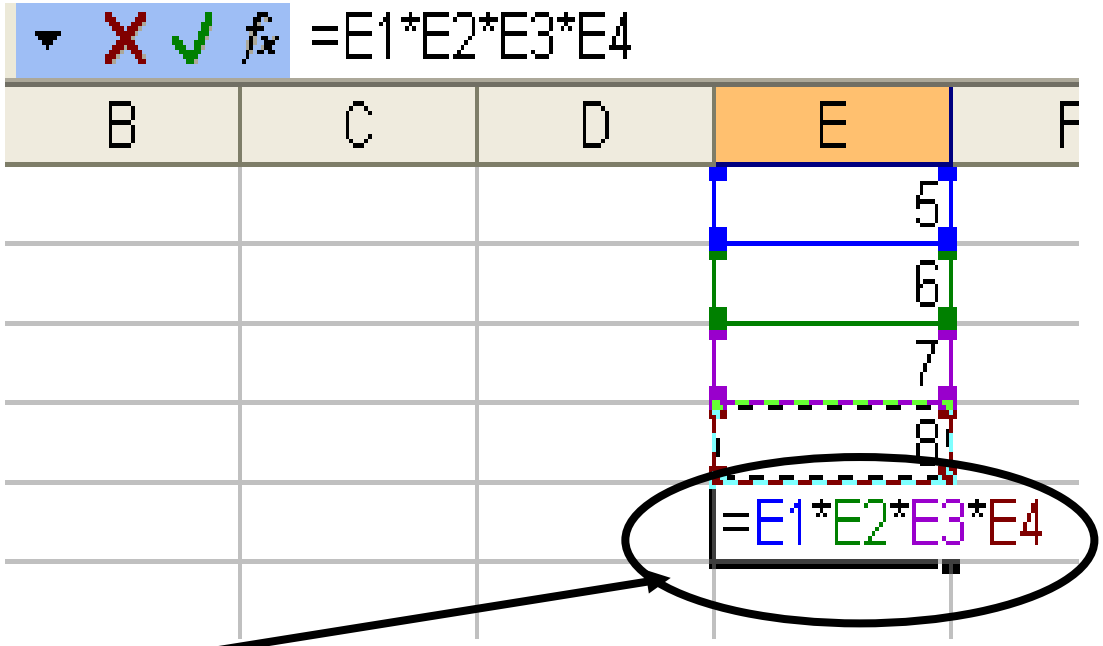
Creating a formula

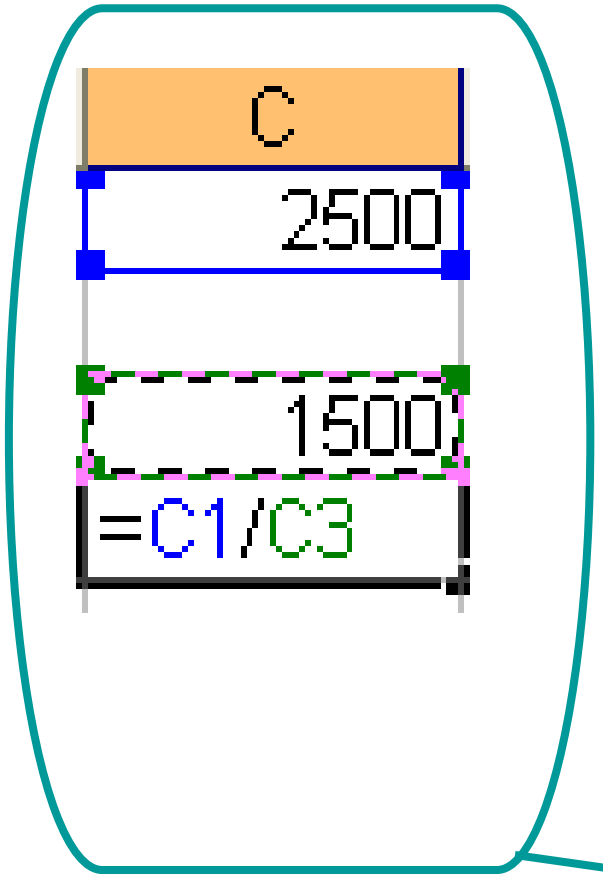
- **Multiplication**

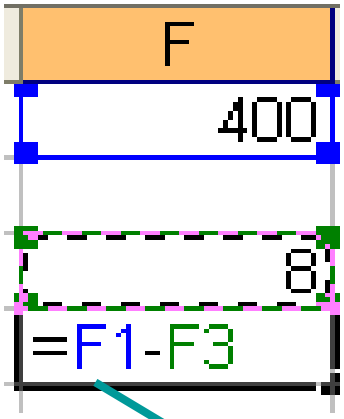


Type this formula and press Enter key to get the Product

Creating Formula

- **Division and Subtraction**





Type this formula

Type this in order to divide numbers

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Functions

- Instead of using long formulas is better to use Functions

=A1+A2+A3+A4+A5+A6+A7

=sum(A1:A7)

Function name

=sum(1st Cell address:Last Cell address)

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Using IF Function

- IF function is used for logical testing ,the structure for the IF function looks as below

=IF(Logical test." value if true”,”value if

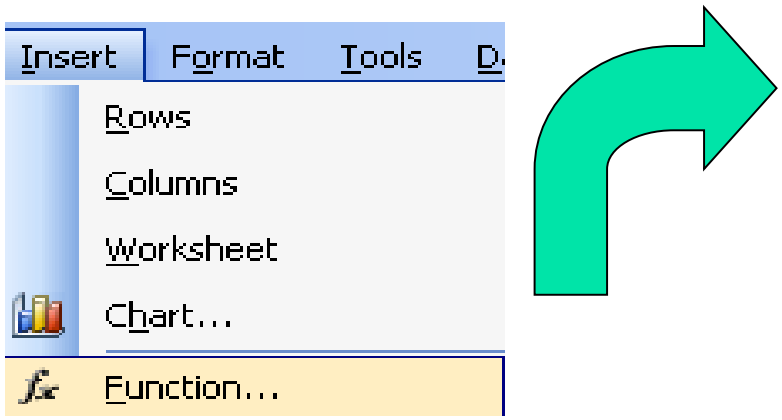
SUM =if(A2>50,"PASS","FAIL")

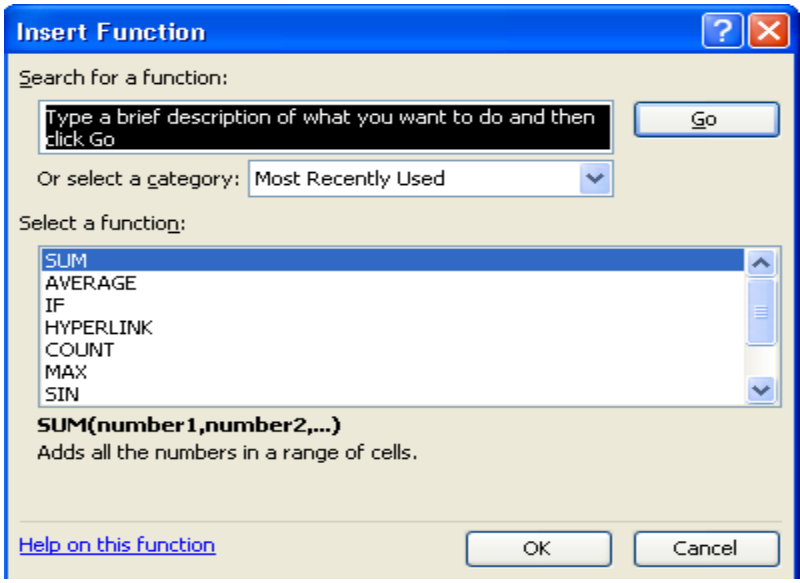
	A	B	C	D	E
1	Score	Remark			
2	90	=if(A2>50,"PASS","FAIL")			
3	89				
4	78				
5					

Functions

- The above examples have used only two condition that if score is greater than 50 the remark is ***Pass*** otherwise is ***Fail***

Other functions can be





Functions

- There are functions like

Multiplication

=Product(1st cell address :Last cell address)

Average

=Average(1st cell address: Last cell address)

Maximum

=Max(1st cell address: last cell address)

Minimum

=Min(1st cell address: last cell address)

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Creating formula

- Copying a formula

Click on the cell that has the formula you want to copy (E2

E2 | fx =SUM(B2:D2)

	A	B	C	D	E	F
1		April	May	June	Total	
2	Temeke	400	600	800	1800	
3	Ilala	250	300	500		
4	Kinondoni	120	680	900		
5						

That cell will be selected

small square in the lower, right corner(Fill handle)

Creating formula

- There will also be a small square in the lower, right corner (as shown on the diagram on the previous slide)
- If you hover the mouse pointer over that cell, it will show up as a white plus ( ) sign.
- As you hover over the small square, the pointer will turn into a black plus (+)

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Creating formula

- Once the plus sign turns black (+), click and drag the cell down one cell.
- Once you release the “clicker” the formula will be in cell “E3”.
- The software makes adjustments in the formula so that it operates on the correct cells.

Hand on Practice

- Copy the data below and Create the formula to find VAT of 20% on cell C2
- Create the formula to calculate the new price including the VAT on cell D2

	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		

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**"

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Printing a worksheet

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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

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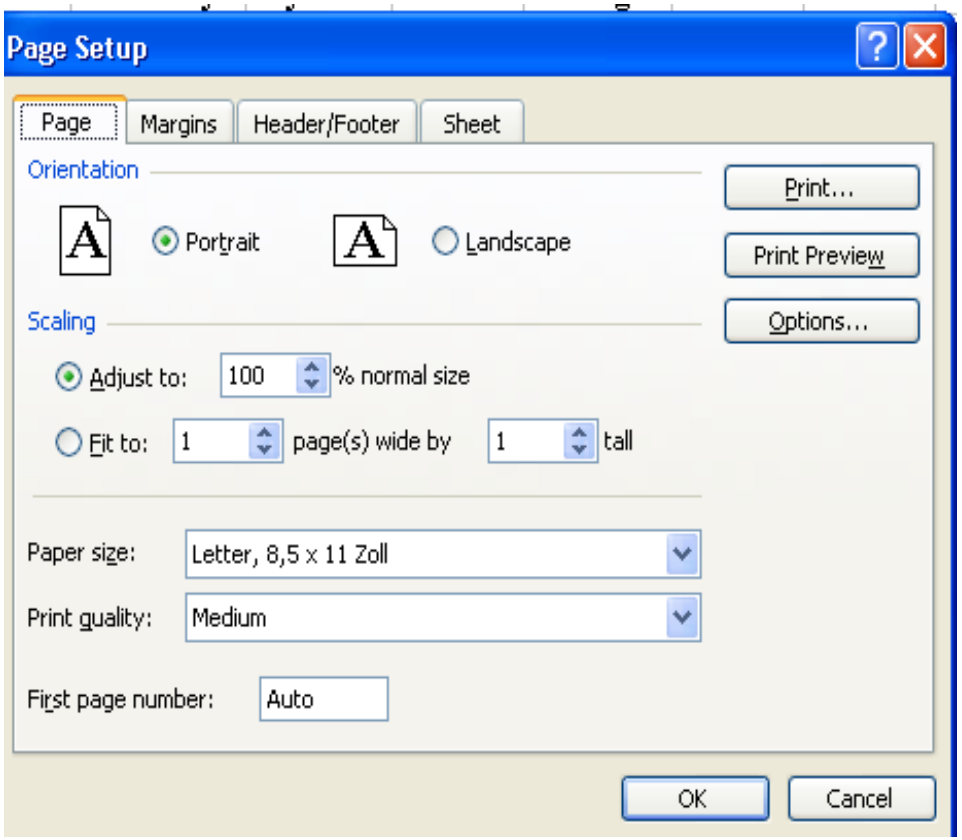
Printing a worksheet



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

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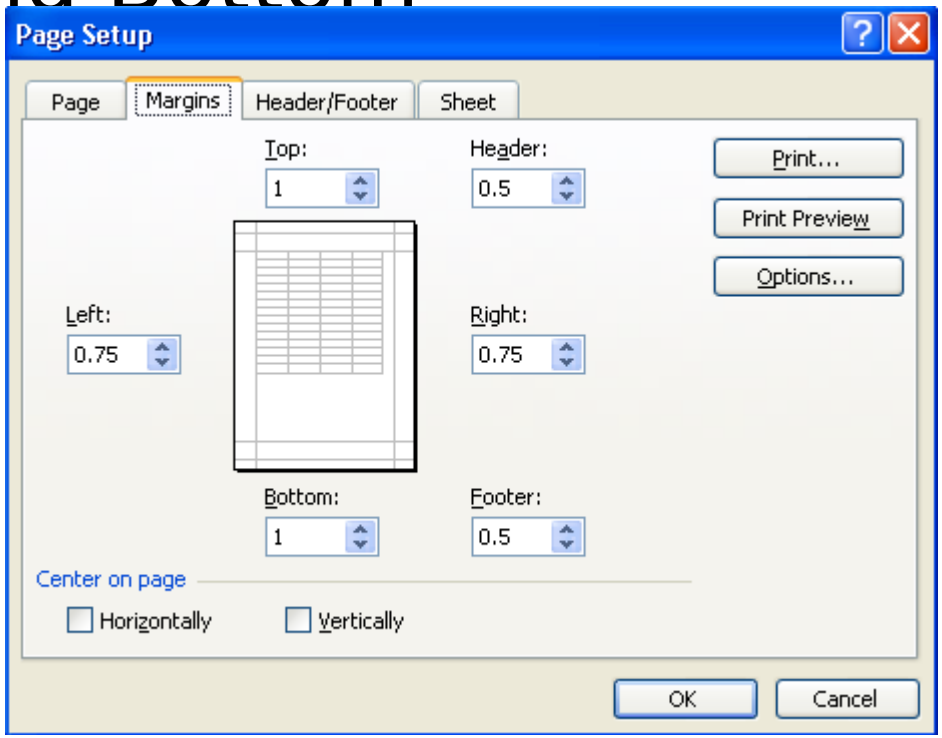
Printing a worksheet

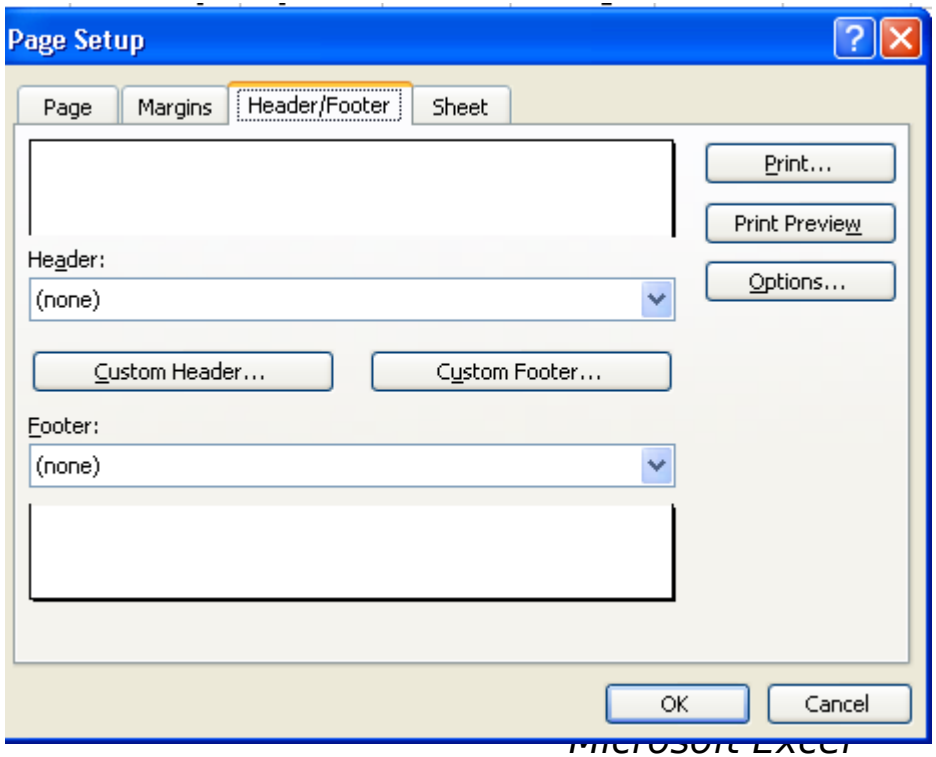
Use this Margin tab for setting the margins

Of left,right,top and Bottom



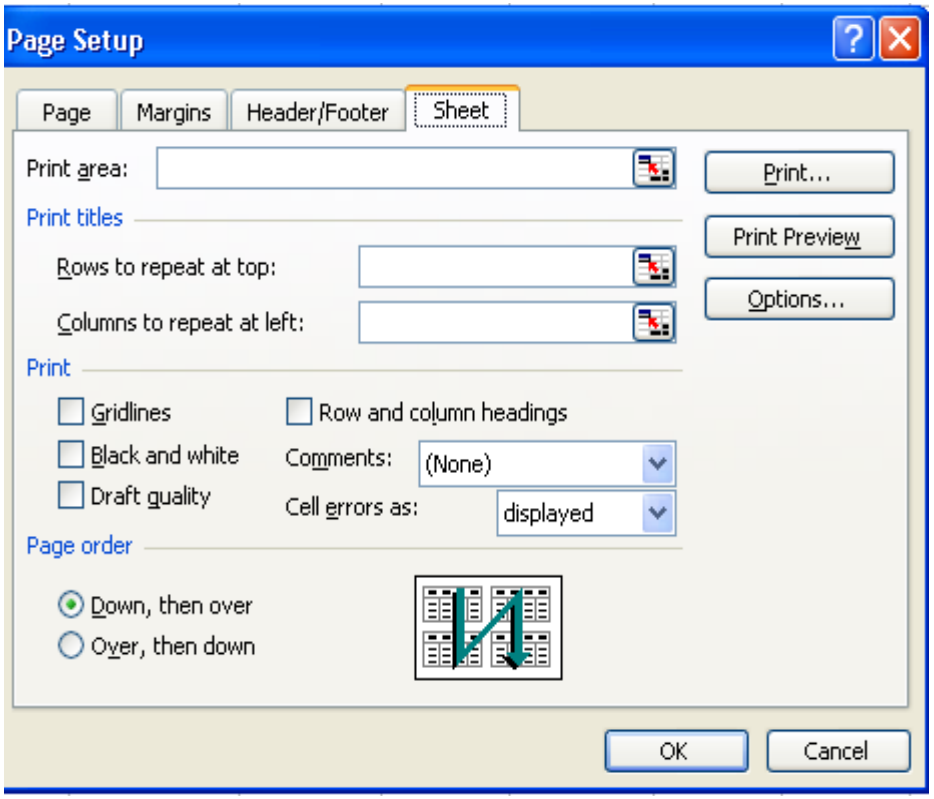
Printing a worksheet

- 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 corresponding Check Boxes



Printing a worksheet

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

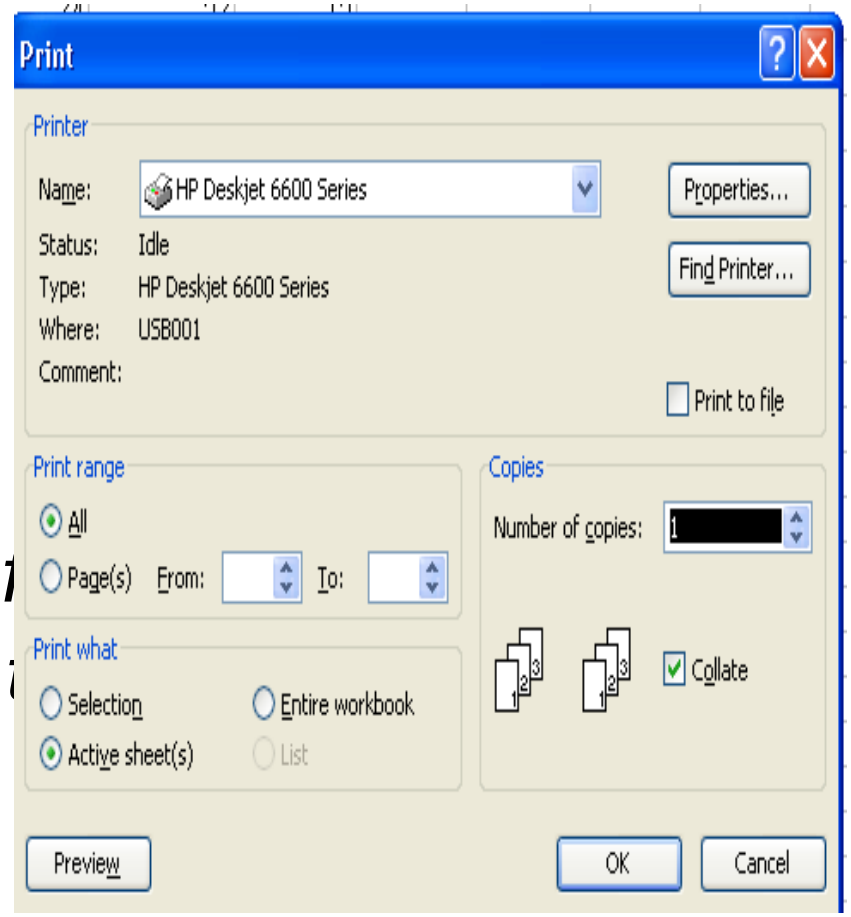
Click File menu

Click Print

Select a printer

Select/Type number of copies you want to print

Click Print Button



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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