

COMPUTER EDUCATION

CLASS- VI



Strictly as per KVS syllabus



सत्यं त्वं पूषन् जपावृणु
केन्द्रीय विद्यालय संगठन

Developed by : **KVS MOSCOW.**



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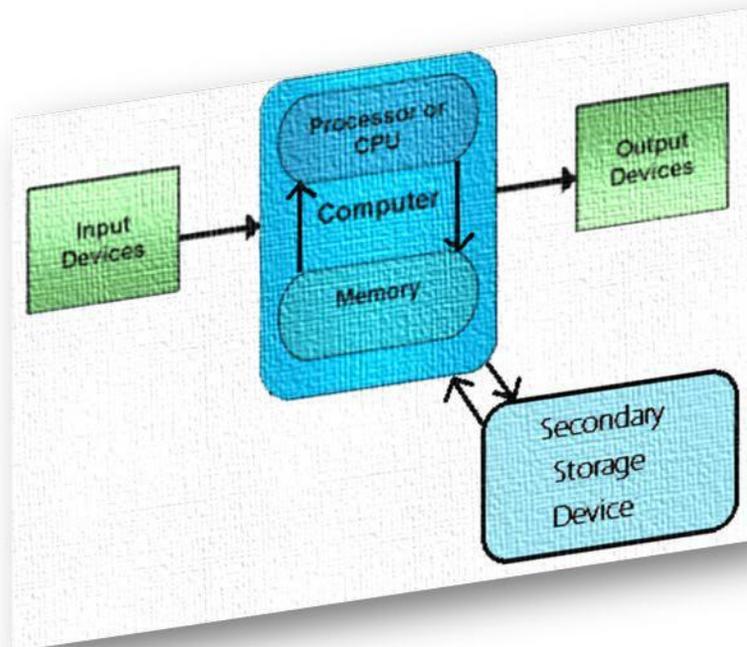


Chapter 1

Fundamental of Computer

Inside this chapter : Basic components of computer, Different I/O Devices, Computer Language, Software definition and its types, Computer Memory, Different types of Printers.

Basic components of Computer



Input Unit

The devices which are used to input the data and programs in the computer are known as "Input Devices". Input unit accepts instructions and data from the user and converts these instructions and data in computer acceptable format which are sent to computer system for processing.

Keyboard: Keyboard is most common input device. The data and instructions are input by typing on the keyboard. The message typed on the keyboard reaches the memory unit of a computer. It is connected to a computer via a cable. Apart from alphabet and numeral keys, it has other function keys for performing different functions.



Mouse: It is a pointing device. The mouse is rolled over the mouse pad, which in turn controls the movement of the cursor in the screen. You can click, double click or drag the mouse. Its sensor notifies the speed of its movements to the computer, which in turn moves the cursor/pointer on the screen.





Scanner: Scanners are used to enter information directly in to the computer memory. This device works like a Xerox machine. The scanner converts any type of printed or written information including photographs into digital pulses, which can be manipulated by the computer.



Track Ball: Track ball is similar to the upside- down design of the mouse. The user moves the ball directly, while the device itself remains stationary. The user spins the ball in various directions to effect the screen movements.



Light Pen: This is an input device which is used to draw lines or figures on a computer screen. It is touched to the CRT screen where it can detect raster on the screen as it passes.



Optical Character Reader (OCR): It is a device which detects alpha numeric characters printed or written on a paper. The text which is to be scanned is illuminated by a low frequency light source. The light is absorbed by the dark areas but reflected from the bright areas. The reflected light is received by the photocells.



Bar Code Reader: This device reads bar codes and converts them into electric pulses to be processed by a computer. A bar code is nothing but data coded in form of light and dark bars.



Voice Input Systems: It converts spoken words to machine language form. A microphone is used to convert human speech into electric signals. The signal pattern is then transmitted to a computer when it is compared to a dictionary of patterns that have been previously placed in a storage unit of computer. When a close match is found, the word is recognized.



Digital Camera: It converts graphics directly into digital form. An electronic chip in used in camera, when light falls, on the chip though the lens, it converts light waves into electrical waves.





Output Unit

Output Device produces the final results of computer into human understandable form. Output unit accepts the results produced by the computer which are in coded form and it converts these coded results to human readable form.

Monitor: The monitor looks like a television screen. It is also called Visual Display Unit (VDU) and it is used to display information from the computer. There are coloured as well as black and white monitors. The monitor displays text and graphics. Based on the technology used, monitor is classified into two types. They are Cathode Ray Tube (CRT) monitor and Liquid Crystal Display (LCD) monitor.



Printer: A printer is used for transferring data from the computer to the paper. There are colour printers as well as black and white printers. The different types of printers are Dot Matrix Printers, Inkjet Printer and Laser Printers.



Dot matrix Printer



Inkjet Printer



Laser Printer



Types of Printers

| Dot Matrix Printer | Inkjet Printer | Laser Printer |
|--|---------------------------------|---------------------------------|
| Prints characters in the form of dots. | Prints fully formed characters. | Prints fully formed characters. |
| Speed: 200-540 characters per second. | Speed: 4-8 pages per minute. | Speed: 4-20 pages per minute. |
| Not very expensive. | Moderately priced. | Expensive. |

Touch Screen: A touch screen is a display screen that is sensitive to human touch. It allows the user to interact with the computer by touching pictures or words displayed on the screen. Touch screens are used to display the output information on the screen as well as to give input by touching the words or pictures on the screen. Thus it is an input/output device. Touch screens are normally used when information has to be accessed with minimum effort.



Plotter: Plotter is very large in size and is used to produce graphical output on papers. It uses single or multi color pens to draw pictures as blue print, posters etc.



Storage Unit

The data and instructions that are entered into the computer system through input units have to be stored inside the computer before the actual processing starts. Similarly, the results produced by the computer after processing must also be kept somewhere inside the computer system before being passed on to the output units. The Storage Unit or the **primary / main storage** of a computer system is designed to do all these things. It provides space for storing data and instructions, intermediate results and for the final results.





Central Processing Unit (CPU)

The main unit inside the computer is the **CPU**. This unit is responsible for all events inside the computer. It consists of **Control Unit** and **Arithmetic and Logic unit**. The CPU is the brain of any computer system. In a human body, all major decisions are taken by the brain and the other parts of the

body function as directed by the brain. Similarly, in a computer system, all major calculations and comparisons are made inside the CPU and it activates and controls the operations of other units like Hard disk, Printer etc. of a computer system.



Arithmetic and Logic Unit (ALU): The arithmetic and logic unit (ALU) is the part where actual computations take place. It consists of circuits that perform arithmetic operations (e.g. addition, subtraction, multiplication, division over data received from memory and capable to compare numbers (less than, equal to, or greater than etc).

Control Unit: The control unit acts as a central nervous system for the components of the computer. It manages and coordinates the entire computer system. It obtains instructions from the program stored in main memory, interprets the instructions, and issues signals that cause other units of the system to execute them. the control unit directs and controls the activities of the internal and external devices.

Computer Language

A language is defined as the medium of expression of thoughts. All the human beings in this world communicate with each other by a language. Similarly, computer also needs some expression medium to communicate with others.

A computer follows the instructions given by the programmer to perform a specific job. To perform a particular task, programmer prepares a sequence of instructions, known as program. A program written for a computer is known as Software.

1)First Generation Languages -1GLs (Machine language):When the human being started programming, the computer the instruction were given to it in a language that it could easily understand is called as machine language. The binary language of 1 and 0 is known as Machine language. Any instruction in this language is given in the form of 1s and 0s.



2) Second Generation Languages- 2GLs (Assembly Language):The first language similar to English was developed in 1950 which was known as Assembly Language or Symbolic Programming Languages. An assembly language is a low-level programming language for microprocessors (CPU) and other programmable devices.

3) Third Generation Languages- (3GLs) (High Level Languages):The languages developed which were nearer to the English language in 1960 were known as High Level languages. The different high level languages are FORTRAN, COBOL, BASIC, PASCAL, PL-1 and many others.

4) Fourth Generation Languages- (4GLs) (Query languages):The 3GLs are procedural in nature means HOW the problem get programmed and the procedures require the knowledge of HOW the problem will be solved. 4GLs are non-procedural that focuses on WHAT of the problem is coded means 'WHAT is required'. The main aim of 4GLs is to be cut down on developed and maintenance time and making it easier for users. Example of 4GL is SQL (Structured Query Language).

5) Fifth Generation Language-(5GLs):The 5GLs are designed to make the computer "Smarter". The use of 5GLs language touches on expert systems, computerized collection of the knowledge of many human experts, artificial intelligence and independently smart computer systems. Examples of 5GL are Prolog, OPS5 and Mercury.

Graphical User Interface (GUI) based languages: These are the languages which use a Graphical User Interface to write, compile & execute the program with ease. Some of them are-

- ▶ Visual Basic
- ▶ Visual C++
- ▶ C# (Pronounced as C sharp)
- ▶ Visual Basic.NET
- ▶ Visual Basic 2005

Software

Computer software also called program is a set of instructions that directs a computer to perform specific tasks or operations. Computer software consists of computer programs and libraries.

System software: Software that directly operates the computer hardware to provide basic functionality needed by users and other software and to provide a platform for running application software. System software includes:

- ▶ **Operating system (OS):** Operating system manages resources of computer system like memory, CPU, hard disk, printer etc. also provides an interface between user and computer system & provides various services to other software.
- ▶ **Language Processor & Device drivers:** All the devices like mouse, keyboard, modem etc needs at least one corresponding device driver. A device driver is a program that controls a device. A language processor is a hardware device designed or used to perform tasks, such as processing program code to machine code. Language processors are found in languages such as Fortran and COBOL

Application software: Software that performs special functions or provides entertainment functions beyond the basic operation of the computer itself. There are many different types of application software.

- ▶ **General purpose:** Microsoft Word, Microsoft Excel, MS PowerPoint, Photoshop etc.
- ▶ **Customized:** Invoice Management System, Airline Reservation System etc.
- ▶ **Utilities:** Antivirus, Memory tester, Disk partitioning and Disk defragmenter etc.

Computer Memory:

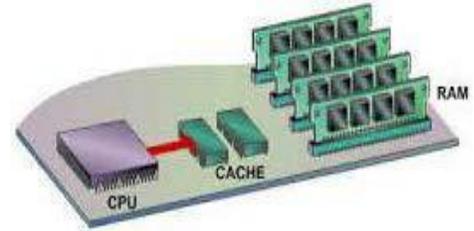
A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in computer where data is to be processed and instructions required for processing are stored.



Memory is primarily of three types

- ▶ Cache Memory
- ▶ Primary Memory or Main Memory
- ▶ Secondary Memory

Cache Memory: Cache memory is a very high speed semiconductor memory which can speed up CPU. It acts as a buffer between the CPU and main memory. It is used to hold those parts of data and program which are most frequently used by CPU. The parts of data and programs are transferred from disk to cache memory by operating system from where CPU can access them.



Advantages

The advantages of cache memory are as follows:

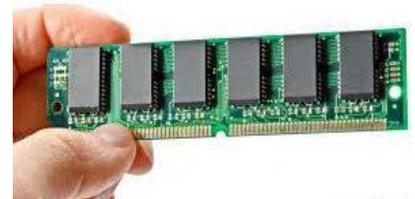
- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time.
- It stores data for temporary use.

Disadvantages

The disadvantages of cache memory are as follows:

- Cache memory has limited capacity.
- It is very expensive.

Primary Memory (Main Memory): Primary memory is also known as main memory. It holds only those data and instructions on which computer is currently working. It has limited capacity and data is lost when power is switched off. It is generally made up of semiconductor device.



Characteristics of Main Memory

- These are semiconductor memories
- It is known as main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- Faster than secondary memories.



- A computer cannot run without primary memory.

Primary memory can be divided into RAM (Random Access Memory) and ROM (Read Only Memory).



| RAM | ROM |
|---|---|
| Random Access Memory. | Read Only Memory. |
| It is Volatile or temporary memory. | It is Non Volatile or permanent memory |
| Data gets erased when power supply off. | Data stored permanently. |
| Faster memory. | Slow memory. |
| It is used in the normal operations of a computer after starting up and loading the operating system. | A ROM chip is used primarily in the start-up process of a computer. |

Secondary Memory

It is also known as external memory or non-volatile memory. It is slower than main memory. These are used for storing data or information permanently. For example: hard disk, CD-ROM, DVD etc.

Characteristic of Secondary memory

- These are magnetic and optical memories
- It is non-volatile memory which is used for storage of data in a computer.
- Data is permanently stored even if power is switched off.
- Computer may run without secondary memory.
- Slower than primary memories.





Printers

Printers are output devices which are used to prepare permanent output on paper.

Types of Printers

Printers can be divided into two main categories:

Impact Printers: It uses hammers or pins strike against a ribbon and paper to print the text. This mechanism is known as electro-mechanical mechanism. They are of two types.

- ▶ Character Printer
- ▶ Line Printer

Character Printer: It prints only one character at a time. It has relatively slower speed. e.g. Dot matrix printers.

Dot Matrix Printer: It prints characters as combination of dots. These have a matrix of pins on the print head of the printer which form the character. There is a carbon between the pins & the paper. The words get printed on

the paper when the pin strikes the carbon. There are generally 9 or 24 pins.

Line Printer The line printer is an impact computer printer that prints one entire line of text at a time. It is mostly associated with unit record equipment and the early days of digital computing, but the technology is still in use.

Non-Impact Printers: These printers use non-Impact technology such as ink-jet or laser technology. These printers provide better quality of output at higher speed. These printers are of two types:

Ink-Jet Printer: It prints characters by spraying patterns of ink on the paper from a nozzle or jet. It prints from nozzles having very fine holes, from which ink is pumped out to create various letters and shapes.





Laser Printer: It utilizes a laser beam to produce an image on a drum. The light of the laser alters the electrical charge on the drum wherever it hits. The drum is then rolled through a reservoir of toner, which is picked up by the charged portions of the drum. Finally, the toner is transferred to the paper through a combination of heat and pressure. They are much quieter than dot-matrix.



They are also relatively fast. The speed of laser printers ranges from about 4 to 20 pages of text per minute (ppm).





WORKSHEET

Identify the following peripherals as INPUT device or OUTPUT device.

1. Monitor _____
2. Keyboard _____
3. Scanner _____
4. Laser Printer _____
5. Mouse _____
6. Speakers _____
7. Digital Camera _____

Fill in the blank with the correct answer from the box. Some may be used more than once or not at all.

| | | | | |
|-------------|------|--------------|------------|--------------|
| CPU | BIOS | power supply | hard drive | network card |
| Motherboard | RAM | USB Port | ROM | video card |

1. I connect computers and allow them to talk to each other. _____
2. I wake up the computer and remind it what to do. _____
3. I am the brain of the computer. _____
4. Information is stored on my magnetic cylinders. _____
5. I hold all of the other circuit boards. _____
6. I handle the graphics that are displayed on the monitor. _____
7. I am the type of port used by flash drives _____

Fill in the blanks with the vocabulary words from the box. Use each word only once.

| | | | | | |
|-------------|------------------|----------|----------|---------------|-----------|
| information | flash drive | CD | primary | DVD | secondary |
| Windows | operating system | graphics | upgraded | user friendly | |

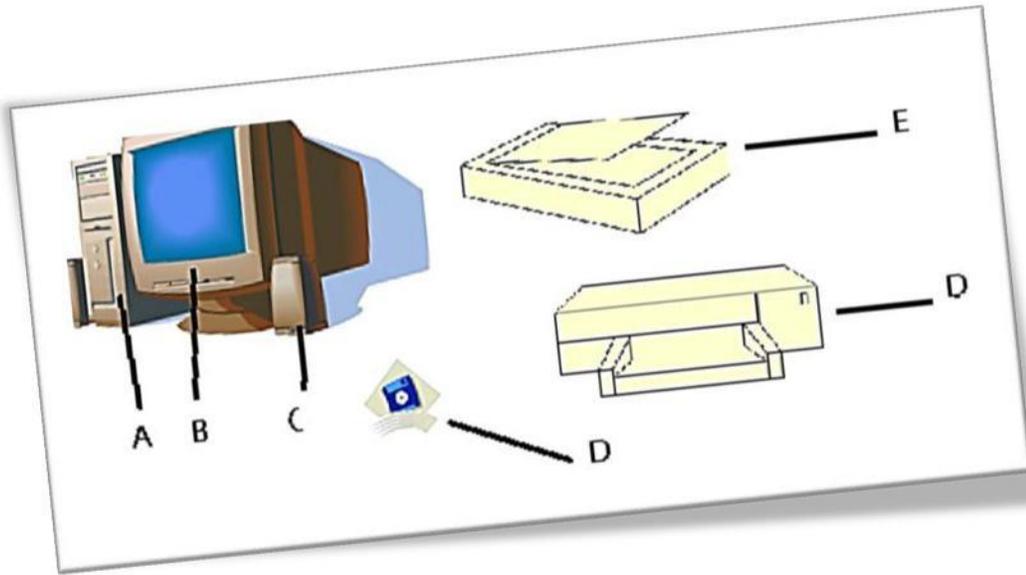
1. _____ memory is stored on chips located on the motherboard.
2. _____ memory is stored on the hard drive.
3. A _____ can hold information greater than a CD or DVD.
4. A _____ usually holds up to 650 to 700 MB.
5. A _____ holds even more information at least 7 GB.
6. The purpose of storage in a computer is to hold _____ or data.
7. A computer that is easy to operate is called _____
8. _____ is the most common operating system for PCs.



9. Operating systems are constantly being _____ as technology advances.

10. A Graphical User Interface (GUI) uses _____ to help the user navigate within the computer system.

Label the parts of the Computer System correctly.





Spreadsheet (MS EXCEL)

Introduction

PRACTICAL TOPICS

1.create a file in excel

2.make a simple mark sheet on spreadsheet

3.Auto computations like sum, average, maximum, minimum etc.

4.Basic Concepts

- workbook,
- worksheet,
- Datatypes,
- Cell,
- Cell Address,
- Auto Sum,
- Formatting Data In tables,

5.Working with sheets

- Adding a worksheet
- , deleting a worksheet
- renaming, a worksheet
- moving a worksheets,

6.Rows and columns

- Inserting new row and column
- Hiding/Deleting row and column

7.Find and select data in given range.

8.Creating Forms

9.Creating Drop down list

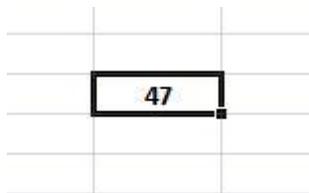
VARIOUS DATA TYPES

In Excel, data type means the type of values that a cell can hold. Three types of values can be entered in a cell. They are –

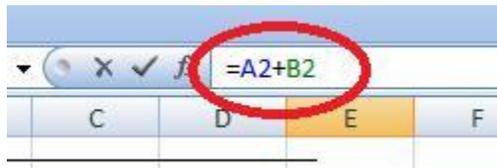
- 📁 Labels (text) – These are descriptive information and they usually include alphabet characters. E.g. name, months etc.



- 📄 Values (numbers) – These are generally numbers and dates.



- 📑 Formula – These are certain instructions for the Excel to perform calculations.

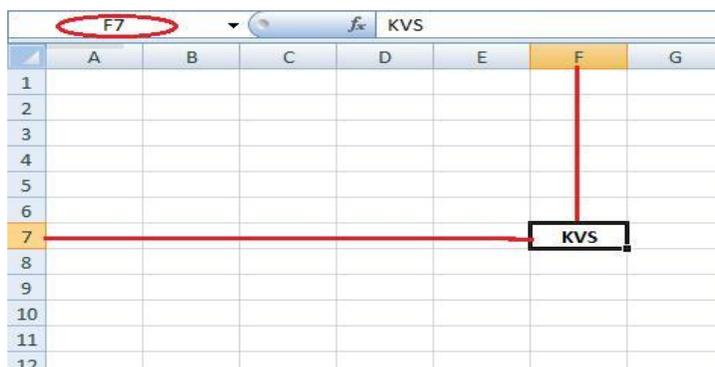


AUTO SUM



ABOUT THE CELL AND CELL ADDRESS

The individual units of a worksheet are known as the cell. In other words, an Excel worksheet is composed of cells. Each cell has an address.



In the above given image, the address of the cell with the text KVS is F7 where F is the column number and 7 is the row number. Various formulas and calculations are done on the basis of these cell addresses.

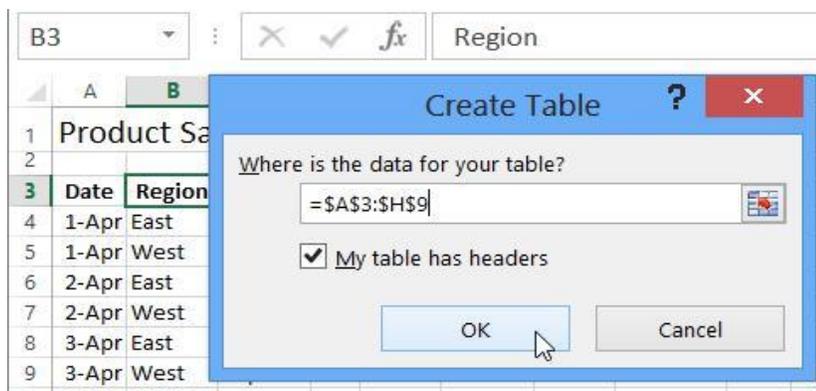
FORMATTING THE DATA IN THE TABLE

The Excel tables help us to view and organize data. And on the organized data we can apply many features like sorting and filtering.

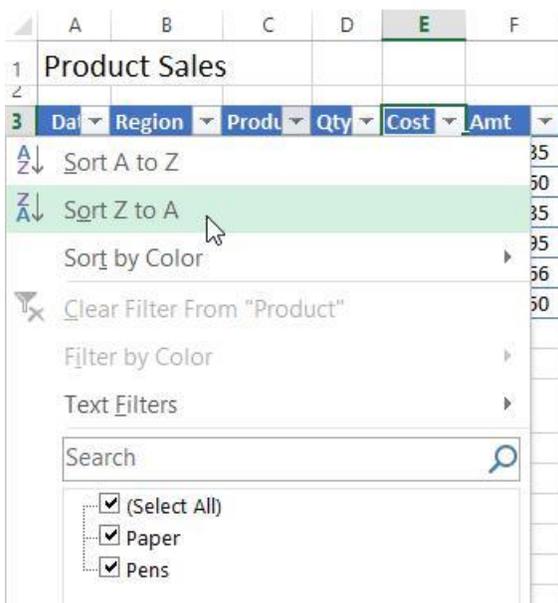


To insert a table in a worksheet, follow the given below steps:

-  Click on the Ribbon, click on the Insert tab.
-  In the Tables group, click the tables command. Give the data. Click on 'My table has headers'.
-  Click OK



The heading cells of the table has drop down arrows that can be used to sort or filter data.



When the table is created, it is given a default name. We can later change the name. The steps are as follows –



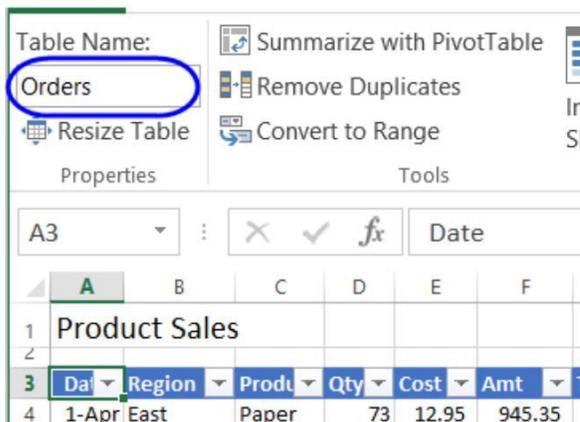
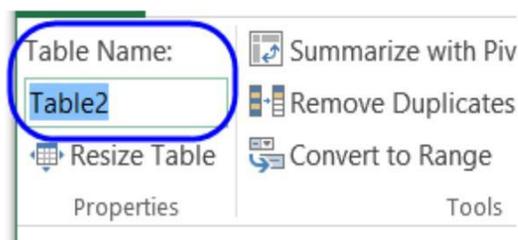
Select any cell in the table.



On the Ribbon, under the Table Tools tab, click the design tab.

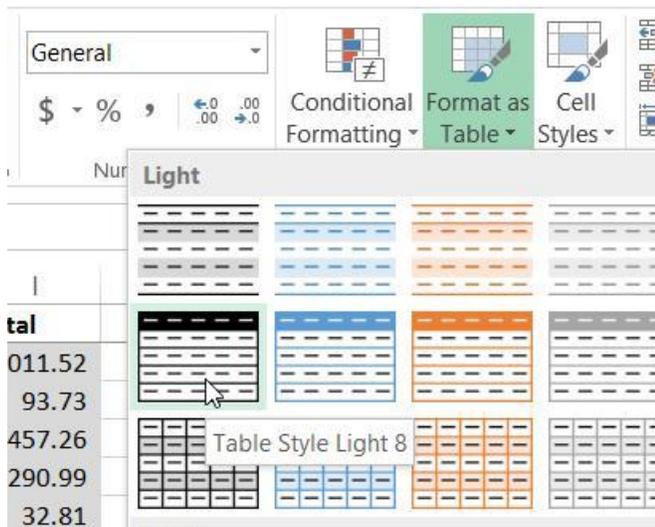


Click in the table Name Box and type the new name.



We can create a table with a specific style.

-  In the Styles group, click Format as table.
-  Click on the style that you want.



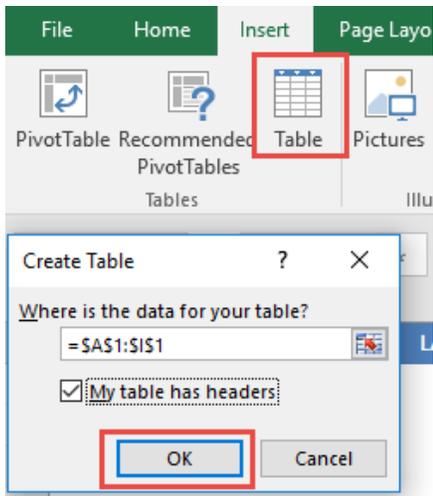
While selecting the table format always keep in mind its presentation and look. It is advisable to select the table format that suits your data best.

CREATING FORMS

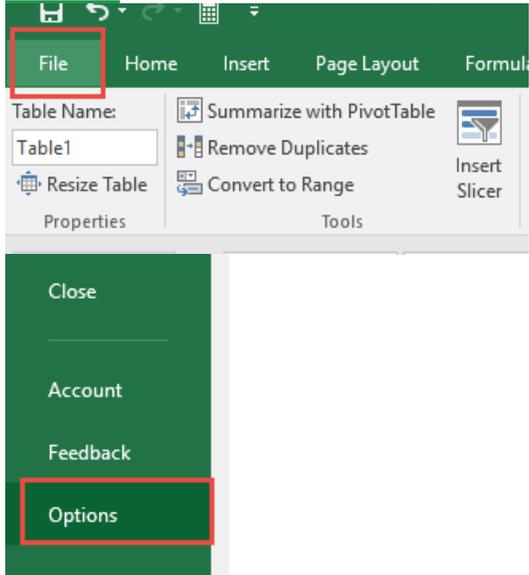
STEP 1: Convert your Column names into a Table, go to *Insert > Table*

| | E | F | G | H | I |
|---|------------|-----------|--------|----------|----------|
| 1 | FIRST NAME | LAST NAME | GENDER | BIRTHDAY | COMMENTS |
| 2 | | | | | |

Make sure **My table has headers** is also checked.

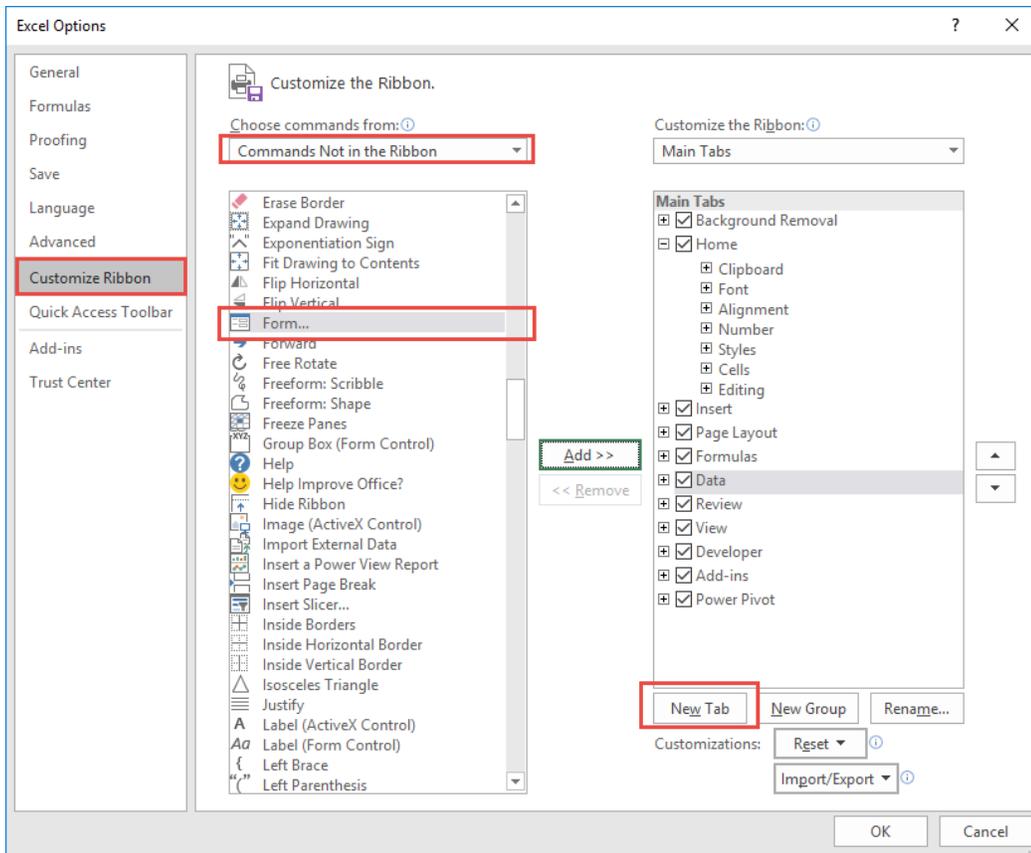


STEP 2: Let us add the **Form** Creation functionality. Go to *File > Options*

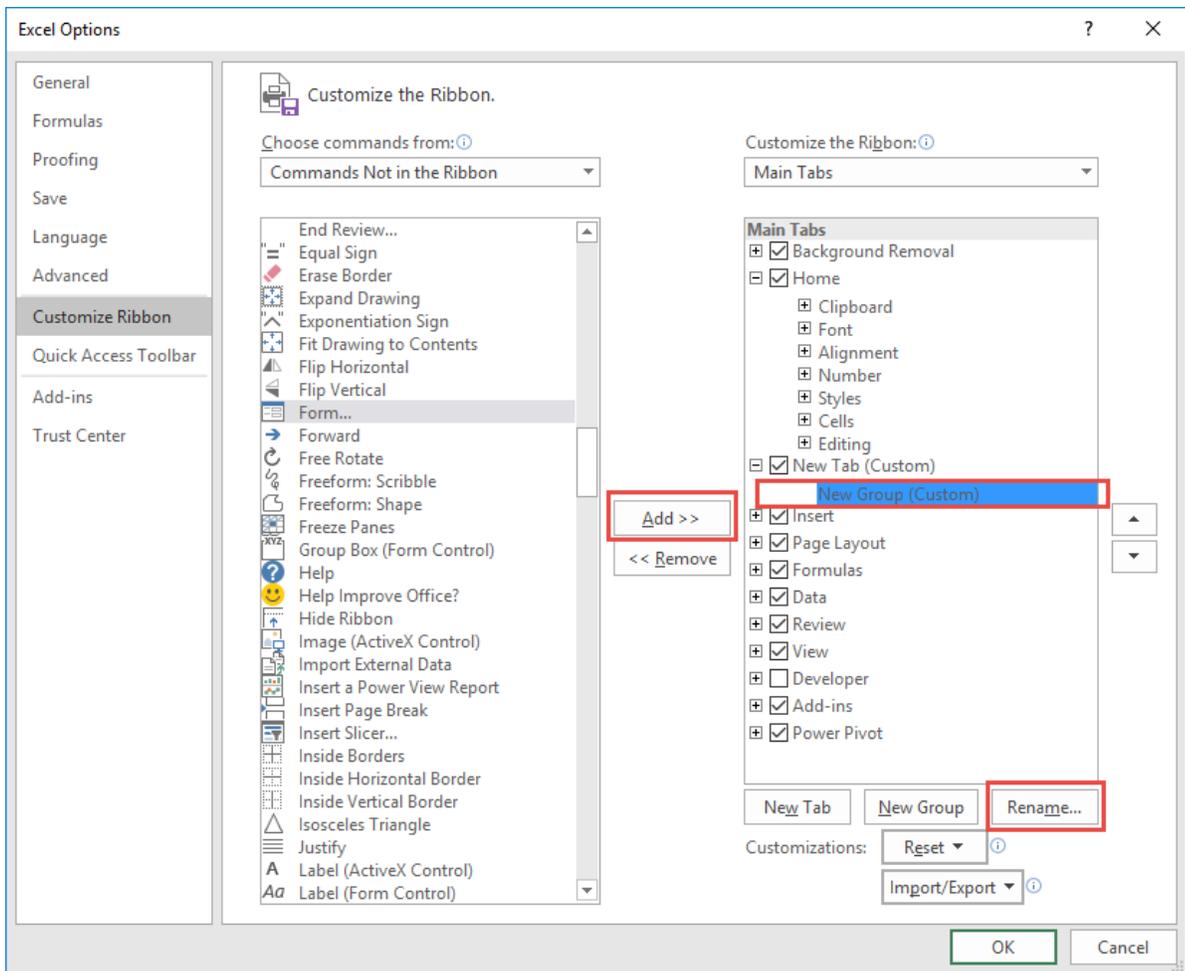


STEP 3: Go to *Customize Ribbon*.

Select **Commands Not in the Ribbon** and **Form**. This is the functionality we need.
Click **New Tab**.



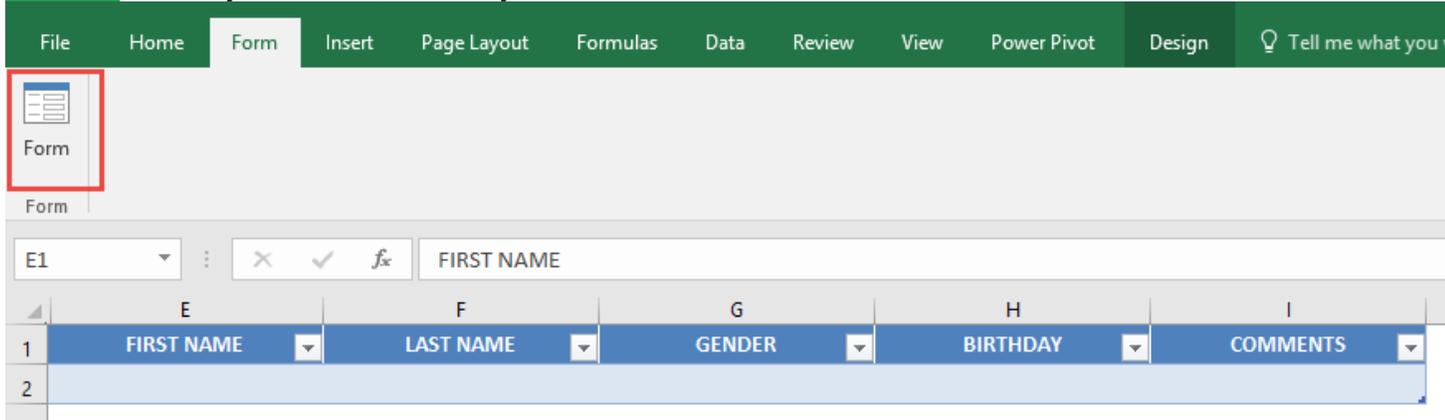
STEP 4: Under the **New Tab**, select **New Group** and click **Add**. This will add **Forms** to a New Tab in our Ribbon.



Notice that there is also a **Rename** button, you can use it to rename the **New Tab** and **New Group** into something more descriptive, like *Form*:

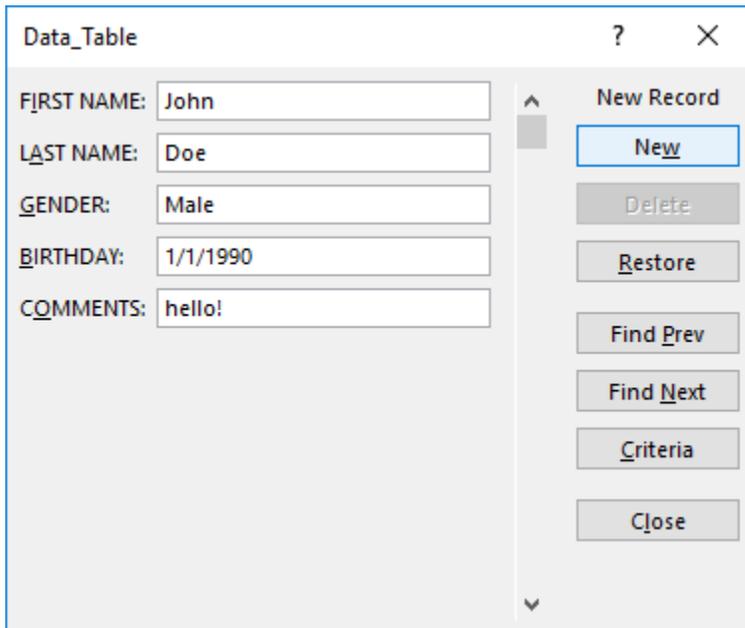


STEP 5: Select your Table, and on your new **Form** tab, select **Form**.



STEP 6: A new Form dialogue box will pop up!
Input your data into each section.

Click **New** to save it. Repeat this process for all the records you want to add.
Press **Close** to get out of this screen and see the data in your Excel Table.



The screenshot shows a dialog box titled "Data_Table" with a question mark and a close button. On the left, there are five input fields: "FIRST NAME:" with "John", "LAST NAME:" with "Doe", "GENDER:" with "Male", "BIRTHDAY:" with "1/1/1990", and "COMMENTS:" with "hello!". On the right, there is a "New Record" section with a blue "New" button, and several grey buttons: "Delete", "Restore", "Find Prev", "Find Next", "Criteria", and "Close".

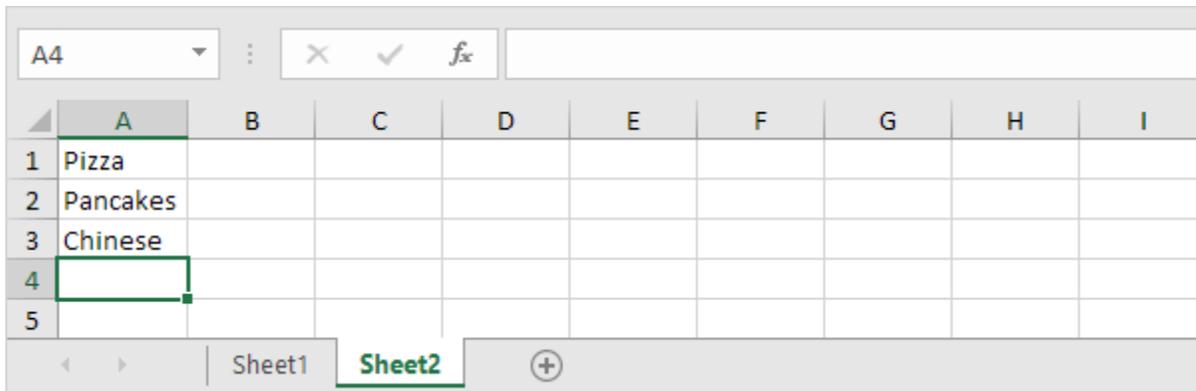
You can now use this new form to continually input data into your Excel Table!

| | E | F | G | H | I |
|---|------------|-----------|--------|----------|----------|
| 1 | FIRST NAME | LAST NAME | GENDER | BIRTHDAY | COMMENTS |
| 2 | John | Doe | Male | 1/1/1990 | hello! |

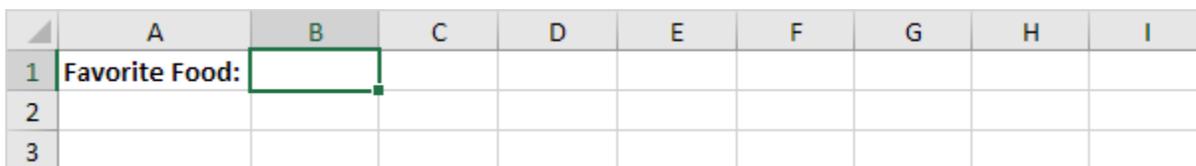
Create a Drop-down List

To create a drop-down list in Excel, execute the following steps.

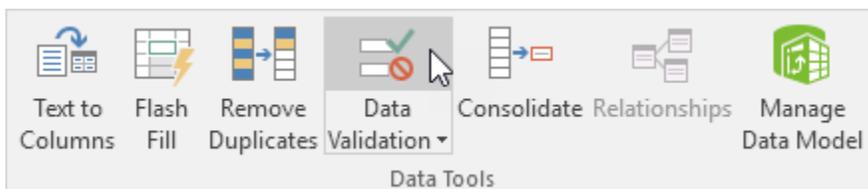
1. On the second sheet, type the items you want to appear in the drop-down list.



2. On the first sheet, select cell B1.



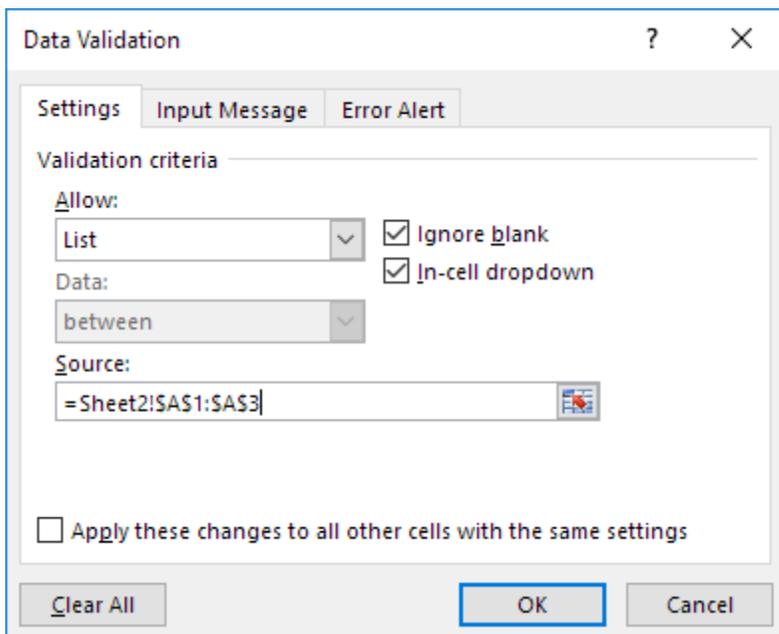
3. On the Data tab, in the Data Tools group, click Data Validation.



The 'Data Validation' dialog box appears.

4. In the Allow box, click List.

5. Click in the Source box and select the range A1:A3 on Sheet2.



6. Click OK.

Result:

| | A | B | C | D | E | F | G | H | I |
|---|----------------|----------|---|---|---|---|---|---|---|
| 1 | Favorite Food: | | | | | | | | |
| 2 | | Pizza | | | | | | | |
| 3 | | Pancakes | | | | | | | |
| 4 | | Chinese | | | | | | | |

Note: if you don't want users to access the items on Sheet2, you can hide Sheet2. To achieve this, right click on the sheet tab of Sheet2 and click on Hide.

STEPS(another example)

SHEET 1

1. Open **Sheet1**.
2. Type **apple** into cell **A1**.
3. Type **mango** into cell **A2**.
4. Type **banana** into cell **A3**.
5. Type **grapes** into cell **A4**.
6. Select **A1–A4**
7. Select the **Name Box** above **Column A**
8. Type **Fruits** in the Name Box.
9. Press **Enter**

SHEET 2

1. Open Sheet2 and type **Fruit Type:** into cell **D1**.
2. Select **E1** from **Sheet2**Select **Data**.
3. Select **Data Validation -> Data Validation**
4. Select the **Settings** tab.
5. Select **List**
6. Type **=Fruits** in the Source text box.
7. Select **OK**



Chapter 3

Spreadsheet (MS EXCEL)

Inside this chapter : Table creating in MS Excel and implementation various Charts, Cell reference in MS Excel, Sorting of data in MS Excel, Filtering data in MS Excel, Conditional Formatting, Workbook and worksheet, Protection of workbook and worksheet.

Microsoft Excel is a powerful spread sheet application that is perfect for maintaining long lists of data, budgets, sales figures and other data. In this chapter you will learn some important and interesting features of Excel like Table, Cell reference, inbuilt functions, sorting of data etc. Let's discuss these features one by one.

Creating a bar or column chart

To learn how to create a Column and Bar chart in Excel, let's use a simple example of marks secured by some students in Science and Maths that we want to show in a chart format. Note that a column chart is one that presents your data in vertical columns. A bar chart is very similar in terms of the options you have, but presents your data in horizontal bars. The steps below take you through creating a column chart but you can also follow them if you need to create a bar chart.

Preparing chart data

The table below shows the data we want to chart. It is important that your data be presented correctly in order to create a good looking chart.

| | A | B | C | D |
|----|---|-----------------|---------|------|
| 1 | | | | |
| 2 | | | | |
| 3 | | Marks Statement | | |
| 4 | | | | |
| 5 | | Name | Science | Math |
| 6 | | Jyoti | 85 | 81 |
| 7 | | Raju | 84 | 89 |
| 8 | | Kamal | 54 | 62 |
| 9 | | Ganesh | 56 | 62 |
| 10 | | Deeksha | 86 | 87 |
| 11 | | Prity | 57 | 66 |
| 12 | | Shyam | 48 | 55 |
| 13 | | Shubham | 85 | 87 |

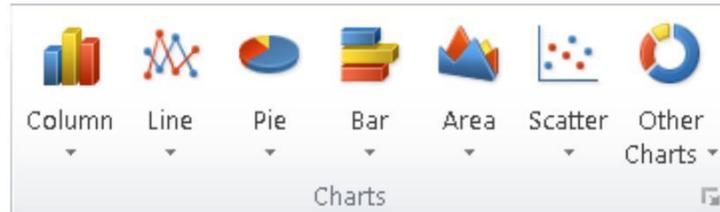
Creating your column chart

Once your data has been prepared correctly, you are ready to create your chart. This is a quick process, but it does involve a number of steps:

- First select your data, making sure that you include all of the data that is to be included in the chart.

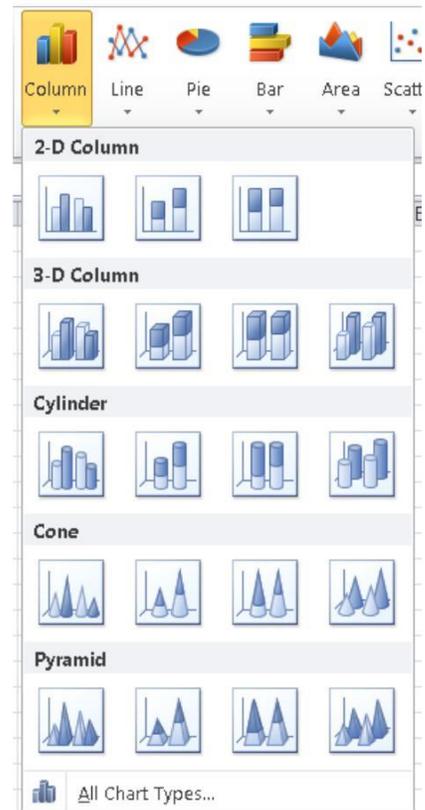
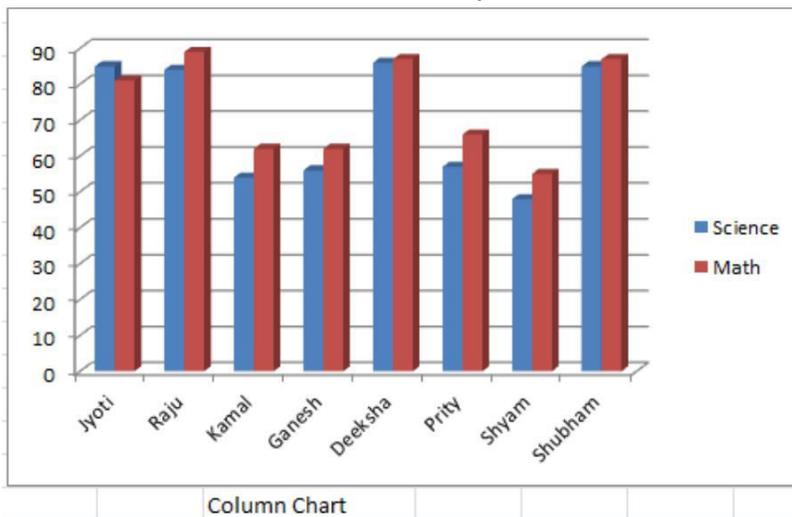


- In our example above, that means selecting the range of cells from B5:D13.
- It's important to remember to include the row headings if you want to use those values as axis labels on your finished chart.
- Next, click Insert in the menu. The ribbon will change, and will include a number of chart options(as shown below)

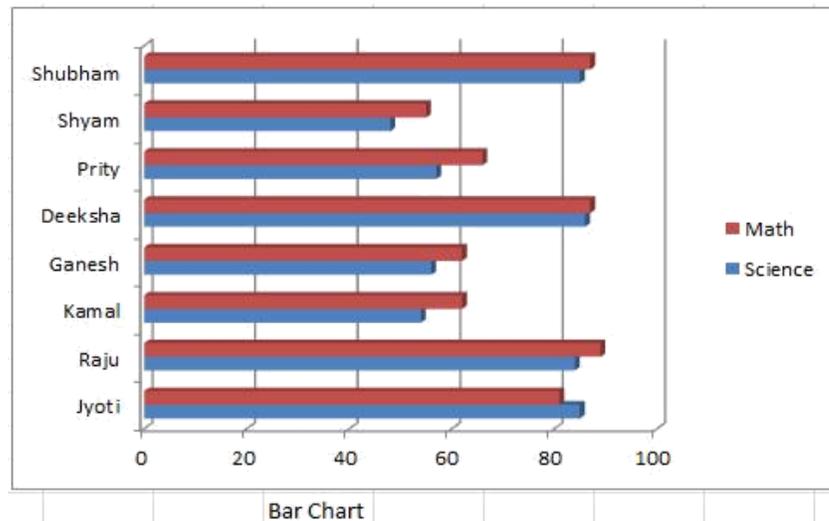


- In our case we are creating a Column chart and Bar chart, so click the Column button first. The following options will then be displayed. As you can see, there are many options available. Select 3D Clustered Column Chart. We can change it to one of the other chart types later if we decide that this one doesn't suit our requirements.

Once you select a chart type, Excel will automatically create the chart and insert it onto your worksheet.



Now again select the data (cells from B5:D13) and this time select 3D Clustered Column Chart in Bar chart option and your Bar chart will be ready.



- Note the following points about this chart:
 - Excel has automatically put labels on an angle to fit neatly into the space available.
 - The legend to the right of the chart contains the column heading from our spreadsheet. You can change them by editing the headings in our data table.
 - Excel has chosen these colours based on a default theme. You can change the theme if you need to, and the colours will change automatically. You can also override the colours manually if you need to.
 - There is no title on the chart by default. You can add one manually, or choose a chart layout that includes one.

Absolute and Relative references in excel formula

You can use three types of cell references in Excel formulas: *relative*, *absolute*, and *mixed*. Using the correct type of cell reference in formulas ensures that they work as expected when you copy them to another location in the worksheet. Formulas and functions are at their most useful when using references, so you need to understand them.

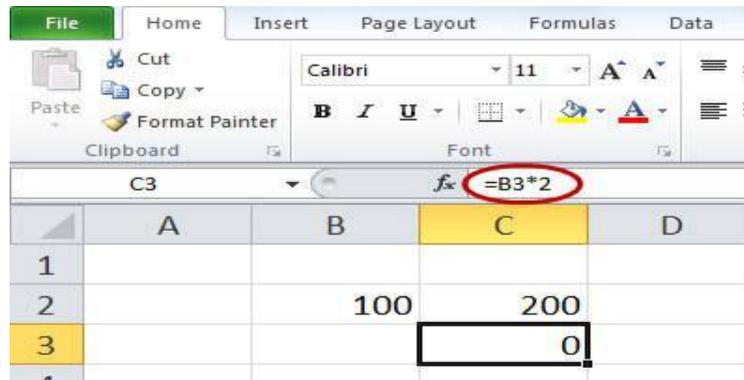
Relative reference: Excel is *dynamic* when it comes to cell addresses. If you have a cell with a formula that references a different cell's address and you copy the formula from the first cell to another cell, Excel updates the cell reference inside the formula. Try an example:

1. In cell B2, enter 100.
2. In cell C2, enter `=B2*2`.
3. Press Enter. And you will see that Cell C2 returns the value 200.
4. Now Select cell C2.
5. Press Ctrl+C or click the Copy button on the Home tab.
6. Click cell C3.



- Press Ctrl+V or click the Paste button on the Home tab.
- If you see a moving marquee around cell C2, press the Esc key.

Cell C3 should be the active cell, but if it is not, just click it once on C3. Look at the Formula bar. The contents of cell C3 are =B3*2, and not the =B2*2 that you copied.



What happened? Excel assumed that if a formula in cell C2 references the cell B2 one cell to the left then the same formula put into cell C3 is supposed to reference cell B3 also one cell to the left. Relative references adjust when you copy a formula.

By default, Excel uses relative reference. Let's see another example. See the formula in cell D2 below. Cell D2 references (points to) cell B2 and cell C2. Both references are relative.

| Product | Quantity | Price | Amount |
|---------|----------|-------|--------|
| bread | 2 | 1.5 | =B2*C2 |
| butter | 1 | 1.2 | |
| cheese | 3 | 2 | |
| ham | 3 | 1.8 | |

- Select cell D2, click on the lower right corner of cell D2 and drag it down to cell D5.

| | A | B | C | D |
|---|---------|----------|-------|--------|
| 1 | Product | Quantity | Price | Amount |
| 2 | bread | 2 | 1.5 | 3 |
| 3 | butter | 1 | 1.2 | 1.2 |
| 4 | cheese | 3 | 2 | 6 |
| 5 | ham | 3 | 1.8 | =B5*C5 |
| 6 | | | | |

Cell D3 references cell B3 and cell C3. Cell D4 references cell B4 and cell C4. Cell D5 references cell B5 and cell C5. In other words: each cell references its two neighbours on the left.

Absolute cell reference: Sometimes you don't want relative addressing but rather *absolute* addressing: making a cell reference fixed to an absolute cell address so that it doesn't change



when the formula is copied. In an absolute cell reference, a dollar sign (\$) precedes both the column letter and the row number. See the following example

1. To create an absolute reference to cell H3, place a \$ symbol in front of the column letter and row number of cell H3 (\$H\$3) in the formula of cell E3.

| | A | B | C | D | E | F | G | H |
|---|---|-------------|------------|---|---------------|--------------|---|-----------------|
| 1 | | | | | | | | |
| 2 | | Length (cm) | Width (cm) | | Length (inch) | Width (inch) | | Conversion rate |
| 3 | | 1 | 10 | | =B3*\$H\$3 | | | 0.3937008 |
| 4 | | 5 | 10 | | | | | |
| 5 | | 4 | 8 | | | | | |
| 6 | | 2 | 10 | | | | | |

2. Now we can quickly drag this formula to the other cells.

| | A | B | C | D | E | F | G | H |
|---|---|-------------|------------|---|---------------|--------------|---|-----------------|
| 1 | | | | | | | | |
| 2 | | Length (cm) | Width (cm) | | Length (inch) | Width (inch) | | Conversion rate |
| 3 | | 1 | 10 | | 0.3937008 | 3.937008 | | 0.3937008 |
| 4 | | 5 | 10 | | 1.968504 | 3.937008 | | |
| 5 | | 4 | 8 | | 1.5748032 | 3.1496064 | | |
| 6 | | 2 | 10 | | 0.7874016 | | | |

The reference to cell H3 is fixed (when we drag the formula down and across). As a result, the correct lengths and widths in inches are calculated.

Mixed reference: You can also have a *mixed* reference in which the column is absolute and the row is relative or vice versa. To create a mixed reference, you use the dollar sign in front of just the column letter or row number. Here are some examples:

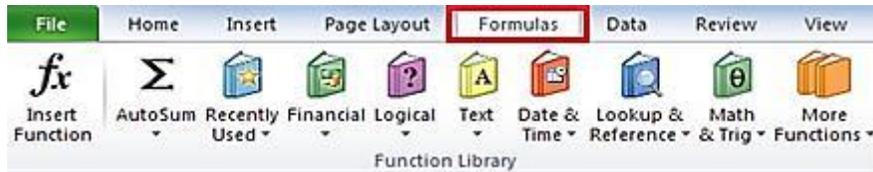
Cell Reference Types

| Reference Type | Formula | After copying the Formula |
|----------------|---------|---|
| Relative | =A1 | Both the column letter A and the row number 1 can change. |
| Absolute | =\$A\$1 | The column letter A and the row number 1 does not change. |
| Mixed | =\$A1 | The column letter A does not change. The row number 1 can change. |
| Mixed | =A\$1 | The column letter A can change. The row number 1 does not change. |



Built in functions

MS Excel has many built in functions which we can use in our formula. To see all the functions by category choose Formulas Tab » Insert Function. Then Insert function Dialog appears from which we can choose function.



Some important functions of excel by categories

- **Text Functions**

- **LOWER** : Converts all characters in a supplied text string to lower case
- **UPPER** : Converts all characters in a supplied text string to upper case
- **CONCATENATE** : Joins together two or more text strings
- **LEFT** : Returns a specified number of characters from the start of a supplied text string
- **RIGHT** : Returns a specified number of characters from the end of a supplied text string

- **Date & Time**

- **TIME** : Returns a time, from a user-supplied hour, minute and second
- **NOW** : Returns the current date & time
- **TODAY** : Returns today's date

- **Statistical**

- **SUM** : Returns the sum of a supplied list of numbers
- **MAX** : Returns the largest value from a list of supplied numbers
- **MIN** : Returns the smallest value from a list of supplied numbers
- **COUNTIF** : Returns the number of cells (of a supplied range), that satisfy a given criteria

- **Logical**

- **AND** : Tests a number of user-defined conditions and returns TRUE if ALL of the conditions evaluate to TRUE, or FALSE otherwise
- **OR** : Tests a number of user-defined conditions and returns TRUE if ANY of the conditions evaluate to TRUE, or FALSE otherwise



- **NOT** : Returns a logical value that is the opposite of a user supplied logical value or expression i.e. returns FALSE if the supplied argument is TRUE and returns TRUE if the supplied argument is FALSE)

- **Mathematical**

- **SQRT** : Returns the positive square root of a given number
- **POWER**: Returns the power of a number raised to second number.

How to insert a function in excel

Every function has the same structure. For example, SUM(A1:A4). The name of this function is SUM. The part between the brackets (arguments) means we give Excel the range A1:A4 as input. This function adds the values in cells A1, A2, A3 and A4. It's not easy to remember which function and which arguments to use for each task. Fortunately, the Insert Function feature in Excel helps you with this.

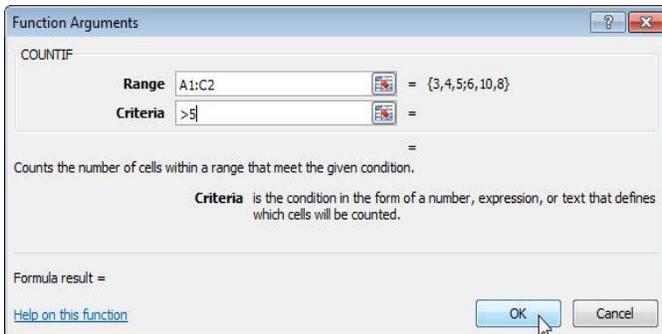
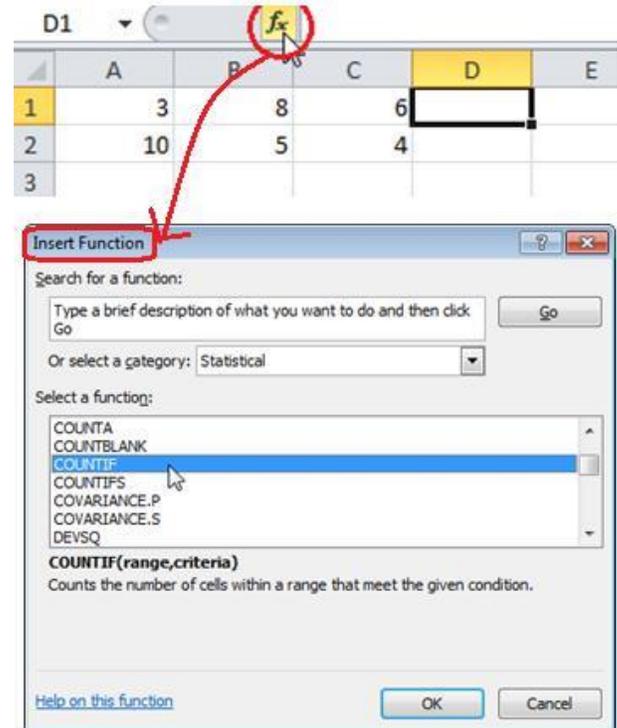
To insert a function, execute the following steps.

4. Select a cell.
5. Click the Insert Function button.

5. Search for a function or select a function from a category. For example, choose COUNTIF from the Statistical category.

6. Click OK.

The 'Function Arguments' dialog box appears.



6. Click in the Range box and select the range A1:C2.
7. Click in the Criteria box and type >5.
8. Click OK.

Result. Excel counts the number of cells that are higher than 5.

| | A | B | C | D | E |
|---|----|---|---|---|---|
| 1 | 3 | 8 | 6 | 3 | |
| 2 | 10 | 5 | 4 | | |
| 3 | | | | | |



Sorting in Excel

Sorting is a common task that allows you to change or customize the order of your spreadsheet data. For example, you could organize your class student's birthday list will make you easier to find what you are looking for. Custom sorting takes it a step further, giving you the ability to sort multiple levels—such as Name first, then birthdate etc.

To sort in alphabetical order:

3. Select a cell in the column you want to sort by. In this example, we'll sort by Name.
4. Select the Data tab, then locate the Sort and Filter group.
5. Click the ascending command  to Sort A to Z or the descending command  to Sort Z to A.

| | A | B | C | D |
|----|---|-----------------|---------|------|
| 1 | | | | |
| 2 | | | | |
| 3 | | Marks Statement | | |
| 4 | | | | |
| 5 | | Name | Science | Math |
| 6 | | Jyoti | 85 | 81 |
| 7 | | Raju | 84 | 89 |
| 8 | | Kamal | 54 | 62 |
| 9 | | Ganesh | 56 | 62 |
| 10 | | Deeksha | 86 | 87 |
| 11 | | Prity | 57 | 66 |
| 12 | | Shyam | 48 | 55 |
| 13 | | Shubham | 85 | 87 |

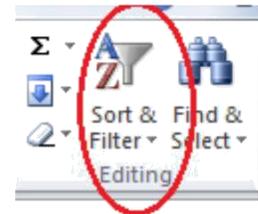
Sort Z to A
Sort the selection so that the highest values are at the top of the column.
Press F1 for more help.

4. The data in the spreadsheet will be organized alphabetically. (as shown below)

| | A | B | C | D |
|----|---|-----------------|---------|------|
| 2 | | | | |
| 3 | | Marks Statement | | |
| 4 | | | | |
| 5 | | Name | Science | Math |
| 6 | | Deeksha | 86 | 87 |
| 7 | | Ganesh | 56 | 62 |
| 8 | | Jyoti | 85 | 81 |
| 9 | | Kamal | 54 | 62 |
| 10 | | Prity | 57 | 66 |
| 11 | | Raju | 84 | 89 |
| 12 | | Shubham | 85 | 87 |
| 13 | | Shyam | 48 | 55 |



Sorting options can also be found on the Home tab, condensed into the Sort & Filter command.



To sort in numerical order:

1. Select a cell in the column you want to sort by. (In our example C6)

| | A | B | C | D |
|----|---|-----------------|---------|------|
| 2 | | | | |
| 3 | | Marks Statement | | |
| 4 | | | | |
| 5 | | Name | Science | Math |
| 6 | | Jyoti | 85 | 81 |
| 7 | | Raju | 84 | 89 |
| 8 | | Kamal | 54 | 62 |
| 9 | | Ganesh | 56 | 62 |
| 10 | | Deeksha | 86 | 87 |
| 11 | | Prity | 57 | 66 |
| 12 | | Shyam | 48 | 55 |
| 13 | | Shubham | 85 | 87 |

2. From the Data tab, click the ascending command to Sort Smallest to Largest or the descending command to Sort Largest to Smallest.
3. The data in the spreadsheet will be organized numerically.

| | A | B | C | D |
|----|---|-----------------|---------|------|
| 2 | | | | |
| 3 | | Marks Statement | | |
| 4 | | | | |
| 5 | | Name | Science | Math |
| 6 | | Deeksha | 86 | 87 |
| 7 | | Jyoti | 85 | 81 |
| 8 | | Shubham | 85 | 87 |
| 9 | | Raju | 84 | 89 |
| 10 | | Prity | 57 | 66 |
| 11 | | Ganesh | 56 | 62 |
| 12 | | Kamal | 54 | 62 |
| 13 | | Shyam | 48 | 55 |

Filters in Excel

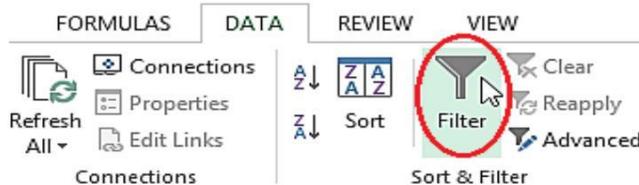
If your worksheet contains a lot of content, it can be difficult to find information quickly. Filters can be used to narrow down the data in your worksheet, allowing you to view only the information you need.

Filtering data: In the following example, I am applying a filter to an equipment log worksheet to display only the laptops and projectors that are available for checkout.

1. In order for filtering to work correctly, your worksheet should include a header row, which is used to identify the name of each column. In our example, our worksheet is organized into different columns identified by the header cells in row 1: ID#, Type, Equipment Detail, and so on.



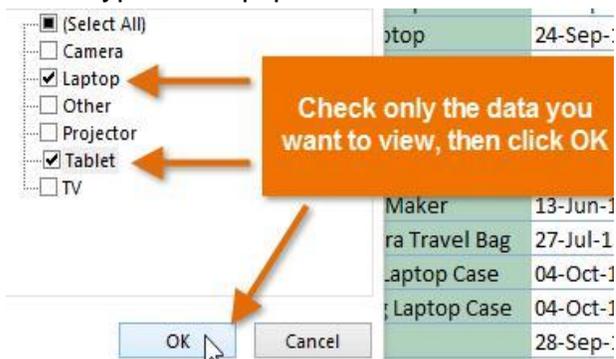
2. Select the Data tab, and then click the Filter command.



3. A drop-down arrow will appear in the header cell for each column.
4. Click the drop-down arrow for the column you want to filter. In our example, we will filter column B to view only certain types of equipment.

| | A | B | C | D | E | F |
|---|------|--------|------------------------------|-------------|------------|----------------|
| 1 | ID # | Type | Equipment Detail | Checked Out | Checked In | Checked Out By |
| 2 | 3000 | Camera | Saris Lumina Digital Camera | 12-May-13 | 15-May-13 | Shannon Nguyen |
| 3 | 3005 | Camera | Canon Z-60 Digital Camera | 27-Jul-13 | 06-Aug-13 | Sela Shepard |
| 4 | 3070 | Camera | Omega PixL Digital Camcorder | 06-Oct-13 | | Min Seung |

5. The Filter menu will appear.
6. Uncheck the box next to Select All to quickly deselect all data.
7. Check the boxes next to the data you want to filter, and then click OK. In this example, we will check Laptop and Tablet to view only those types of equipment.

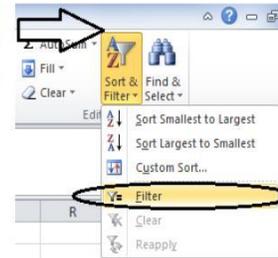




- The data will be filtered, temporarily hiding any content that doesn't match the criteria. In our example, only laptops and tablets are visible.

| | A | B | C | D | E |
|----|------|--------|--------------------------|-------------|------------|
| 1 | ID # | Type | Equipment Detail | Checked Out | Checked In |
| 5 | 1021 | Laptop | 15" EDI SmartPad L200-3 | 15-Sep-13 | 01-Oct-13 |
| 6 | 1022 | Laptop | 15" EDI SmartPad L200-3 | 14-Aug-13 | 16-Aug-13 |
| 7 | 1023 | Laptop | 15" EDI SmartPad L200-3 | 08-Aug-13 | 15-Aug-13 |
| 8 | 1025 | Laptop | 15" EDI SmartPad L200-4X | 26-Sep-13 | 04-Oct-13 |
| 9 | 1031 | Laptop | 17" Saris X-10 Laptop | 04-Oct-13 | |
| 10 | 1032 | Laptop | 17" Saris X-10 Laptop | 19-Sep-13 | |
| 11 | 1033 | Laptop | 17" Saris X-10 Laptop | 24-Sep-13 | 26-Sep-13 |

Filtering options can also be accessed from the **Sort & Filter** command on the **Home** tab.



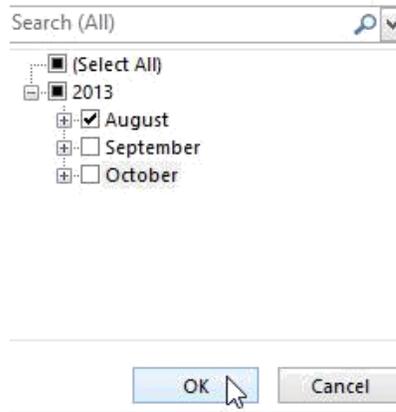
Applying multiple filters:

Filters are cumulative, which means you can apply multiple filters to help narrow down your results. In this example, we've already filtered our worksheet to show laptops and projectors, and we'd like to narrow it down further to only show laptops and projectors that were checked out in August.

- Click the drop-down arrow for the column you want to filter. In this example, we will add a filter to column D to view information by date.

| | A | B | C | D | E | F |
|----|------|--------|--------------------------|-------------|------------|-----------------|
| 1 | ID # | Type | Equipment Detail | Checked Out | Checked In | Checked Out By |
| 5 | 1021 | Laptop | 15" EDI SmartPad L200-3 | 15-Sep-13 | 01-Oct-13 | Sofie Ragnar |
| 6 | 1022 | Laptop | 15" EDI SmartPad L200-3 | 14-Aug-13 | 15-Aug-13 | Hank Sorenson |
| 7 | 1023 | Laptop | 15" EDI SmartPad L200-3 | 08-Aug-13 | | Jennifer Weiss |
| 8 | 1025 | Laptop | 15" EDI SmartPad L200-4X | 26-Sep-13 | 04-Oct-13 | Min Seung |
| 9 | 1031 | Laptop | 17" Saris X-10 Laptop | 04-Oct-13 | | Nick Ortiz |
| 10 | 1032 | Laptop | 17" Saris X-10 Laptop | 19-Sep-13 | | Stanley Geyer |
| 11 | 1033 | Laptop | 17" Saris X-10 Laptop | 24-Sep-13 | 26-Sep-13 | George D'Agosta |
| 12 | 1034 | Laptop | 17" Saris X-10 Laptop | 25-Aug-13 | 27-Aug-13 | Jay Peralta |
| 26 | 1011 | Tablet | Saris SlimTab Pro | 04-Aug-13 | | Jay Peralta |
| 27 | 1012 | Tablet | Saris SlimTab Pro | 29-Sep-13 | | August Zorn |

- The Filter menu will appear.
- Check or uncheck the boxes depending on the data you want to filter, and then click OK. In our example, we'll uncheck everything except for August.



4. The new filter will be applied. In our example, the worksheet is now filtered to show only laptops and tablets that were checked out in August.

| | A | B | C | D | E | F |
|----|------|--------|-------------------------|-------------|------------|----------------|
| 1 | ID # | Type | Equipment Detail | Checked Out | Checked In | Checked Out By |
| 6 | 1022 | Laptop | 15" EDI SmartPad L200-3 | 14-Aug-13 | 16-Aug-13 | Hank Sorenson |
| 7 | 1023 | Laptop | 15" EDI SmartPad L200-3 | 08-Aug-13 | 15-Aug-13 | Jennifer Weiss |
| 12 | 1034 | Laptop | 17" Saris X-10 Laptop | 25-Aug-13 | 27-Aug-13 | Jay Peralta |
| 26 | 1011 | Tablet | Saris SlimTab Pro | 04-Aug-13 | | Jay Peralta |
| 31 | | | | | | |

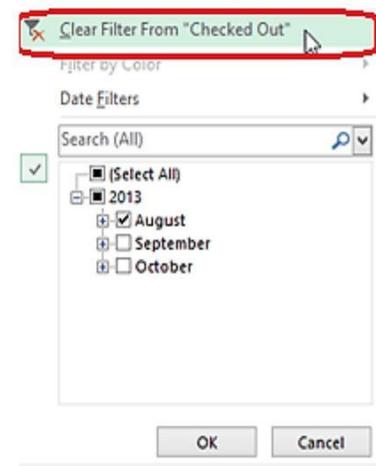
How to clear a filter:

After applying a filter, you may want to remove or clear it from your worksheet so you'll be able to filter content in different ways.

1. Click the drop-down arrow for the filter you want to clear. In our example, we'll clear the filter in column D.

| | A | B | C | D | E | F |
|----|------|--------|-------------------------|-------------|------------|----------------|
| 1 | ID # | Type | Equipment Detail | Checked Out | Checked In | Checked Out By |
| 6 | 1022 | Laptop | 15" EDI SmartPad L200-3 | 14-Aug-13 | 16-Aug-13 | Hank Sorenson |
| 7 | 1023 | Laptop | 15" EDI SmartPad L200-3 | 08-Aug-13 | 15-Aug-13 | Jennifer Weiss |
| 12 | 1034 | Laptop | 17" Saris X-10 Laptop | 25-Aug-13 | 27-Aug-13 | Jay Peralta |
| 26 | 1011 | Tablet | Saris SlimTab Pro | 04-Aug-13 | | Jay Peralta |
| 31 | | | | | | |
| 32 | | | | | | |

2. The Filter menu will appear.
3. Choose Clear Filter from [COLUMN NAME] from the Filter menu. In our example, we'll select Clear Filter from "Checked Out".
4. The filter will be cleared from the column. The previously hidden data will be displayed.



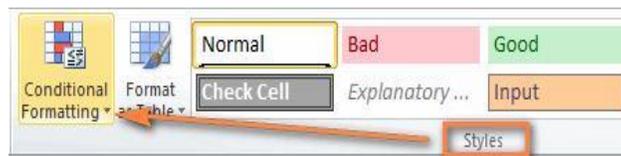


Conditional formatting in Excel

Excel conditional formatting is a really powerful feature which helps you highlight the most important information in your spreadsheets and identify variances of cells' values with a quick glance. Conditional formatting in Excel is very straightforward and easy to use. So now let's discuss it with an example.

For a start, let's see where you can find the conditional formatting feature in MS Excel 2010. See Home tab -> Styles group.

Conditional formatting in Excel



1. In your Excel spreadsheet, select the cells you want to format.

For this example, I've created a small table listing the Marks obtained by the students out of 40. What we want is to highlight the cells (C5:C22) which have less than 13 marks.

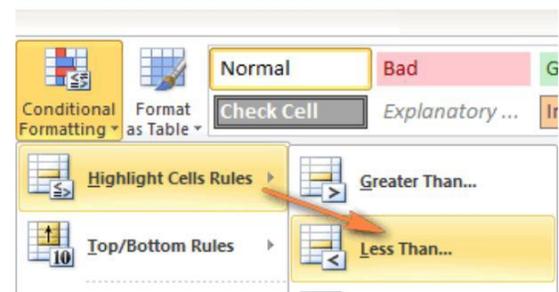
2. Select the cells C5:C22

3. Now, Go to the Home tab > Styles group and click Conditional Formatting. You will see a number of different formatting rules, including data bars, color scales and icon sets.

4. Since we need to apply conditional formatting only to the numbers less than 13, we choose Highlight Cells Rules > Less

| | A | B | C |
|----|----|-------------------|---------|
| 3 | | | UT-1 |
| 4 | SN | NAME | TH (40) |
| 5 | 1 | Abhijit Das | 14 |
| 6 | 2 | Abhinash Borah | 14 |
| 7 | 3 | Andrew Rabha | 10 |
| 8 | 4 | Ankita Rajkhowa | 21 |
| 9 | 5 | Archita Devi | 32 |
| 10 | 6 | Bhaskar Gyan | 21 |
| 11 | 7 | Bhaskar J Baruah | 9 |
| 12 | 8 | Harsh Mishra | 25 |
| 13 | 9 | K Vishal Kashyap | 10 |
| 14 | 10 | Karuna Brahma | 20 |
| 15 | 11 | Kaushik Das | 24 |
| 16 | 12 | Md Injamul Haque | 32 |
| 17 | 13 | Pallab Kr Barah | 31 |
| 18 | 14 | Pranjit Deka | 16 |
| 19 | 15 | Rahul Das | 10 |
| 20 | 16 | Reshmi Saha | 26 |
| 21 | 17 | Santosh Kr Roy | 30 |
| 22 | 18 | Theertha Satheesh | 24 |
| 23 | | | |

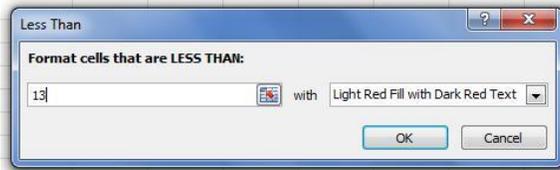
- Format values greater than, less than or equal to.
- Highlight text containing specified words or characters.
- Highlight duplicates.
- Format specific dates.





5. Enter the value in box in the right-hand part of the window under "Format cells that are LESS THAN", in our case we type 13.

| | A | B | C | AB | AC | AD | AE | AF | AG | AH | AI |
|----|----|-------------------|------------|----|----|----|----|----|----|----|----|
| 3 | | | UT-1 | | | | | | | | |
| 4 | SN | NAME | TH (40) | | | | | | | | |
| 5 | 1 | Abhijit Das | 14 | | | | | | | | |
| 6 | 2 | Abhinash Borah | 14 | | | | | | | | |
| 7 | 3 | Andrew Rabha | 10 | | | | | | | | |
| 8 | 4 | Ankita Rajkhowa | 21 | | | | | | | | |
| 9 | 5 | Archita Devi | 32 | | | | | | | | |
| 10 | 6 | Bhaskar Gyan | 21 | | | | | | | | |
| 11 | 7 | Bhaskar J Baruah | 9 | | | | | | | | |
| 12 | 8 | Harsh Mishra | 25 | | | | | | | | |
| 13 | 9 | K Vishal Kashyap | 10 | | | | | | | | |
| 14 | 10 | Karuna Brahma | 20 | | | | | | | | |
| 15 | 11 | Kaushik Das | 24 | | | | | | | | |
| 16 | 12 | Md Injamul Haque | 32 | | | | | | | | |
| 17 | 13 | Pallab Kr Barah | 31 | | | | | | | | |
| 18 | 14 | Pranjit Deka | 16 | | | | | | | | |
| 19 | 15 | Rahul Das | 10 | | | | | | | | |
| 20 | 16 | Reshmi Saha | 26 | | | | | | | | |
| 21 | 17 | Santosh Kr Roy | 30 | | | | | | | | |
| 22 | 18 | Theertha Satheesh | 24 | | | | | | | | |
| 23 | | | | | | | | | | | |



As soon as you have entered the value, Microsoft Excel will highlight the cells in the selected range that meet your condition.

Worksheet

A worksheet is a collection of cells where you keep and manipulate the data. By default, each Excel workbook contains three worksheets. An Excel worksheet is a single spreadsheet that contains cells organized by rows and columns. A worksheet begins with row number 1 and column A. In Excel 2010, the maximum size of a worksheet is 1,048,576 rows by 16,384 columns.

Select a Worksheet

When you open Excel, Excel automatically selects Sheet1 for you. The name of the worksheet appears on its sheet tab at the bottom of the document window.

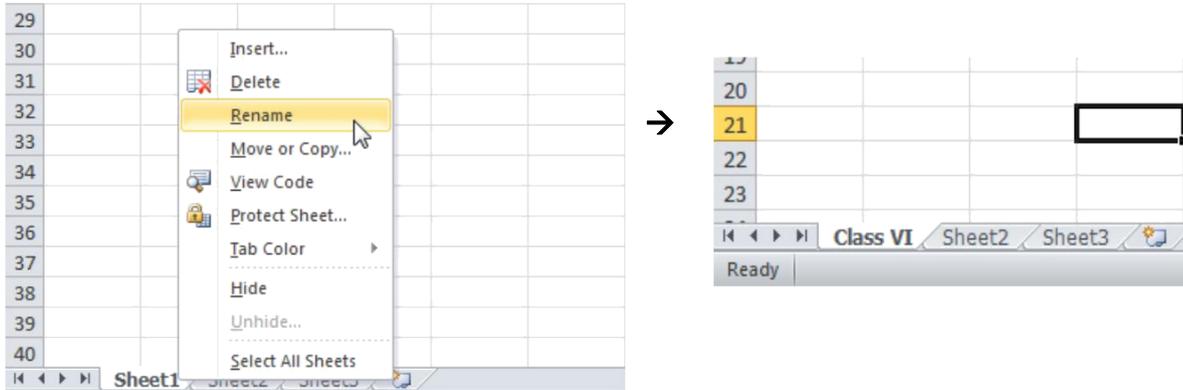


To select one of the other two worksheets, simply click on the sheet tab of Sheet2 or Sheet3.

Rename a Worksheet

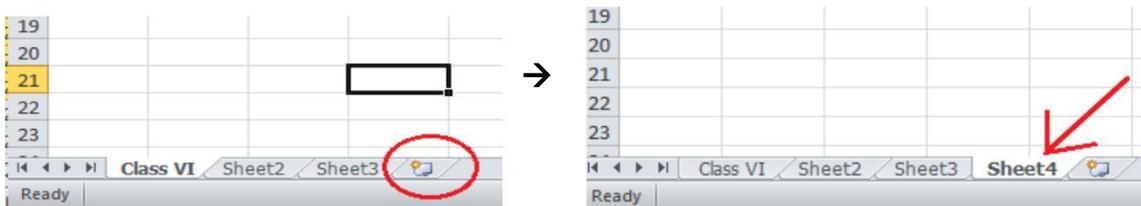
By default, the worksheets are named Sheet1, Sheet2 and Sheet3. To give a worksheet a more specific name, execute the following steps.

1. Right click on the sheet tab of Sheet1.
2. Choose Rename.
3. For example, type Class VI.



Insert a Worksheet

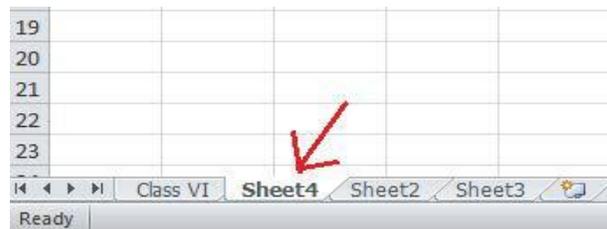
You can insert as many worksheets as you want. To quickly insert a new worksheet, click the Insert Worksheet tab at the bottom of the document window.



Move a Worksheet

To move a worksheet, click on the sheet tab of the worksheet you want to move and drag it into the new position.

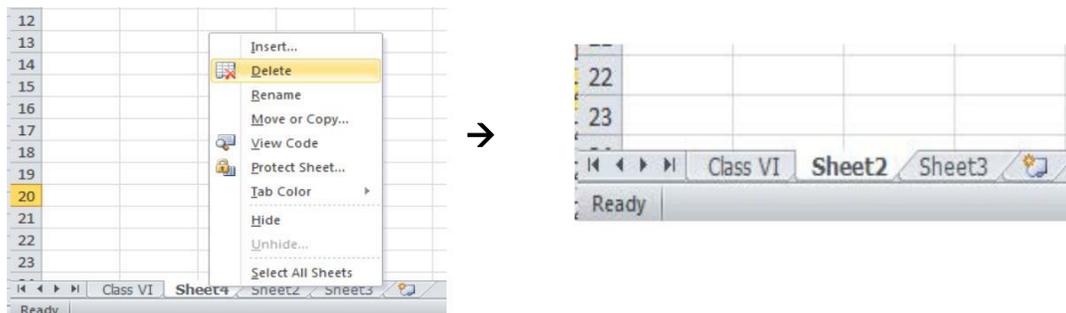
1. For example, click on the sheet tab of Sheet4 and drag it before Sheet2.



Delete a Worksheet

To delete a worksheet, right click on a sheet tab and choose Delete.

For example, delete Sheet4.





Copy a Worksheet

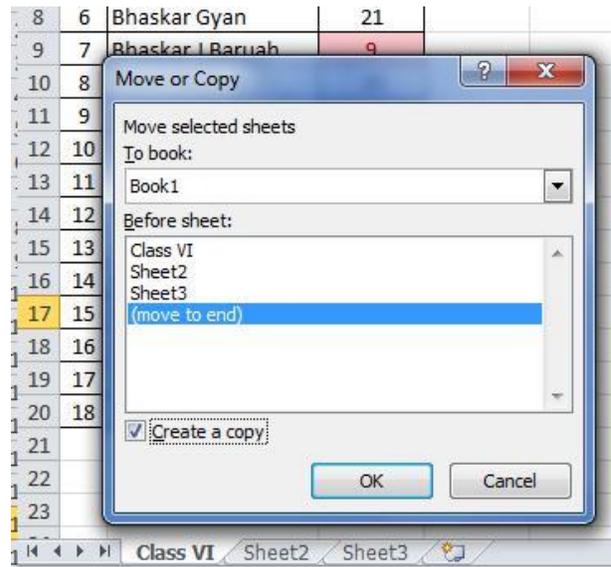
Imagine, you have Class VI ready and want to create the exact same sheet for Class VI Games, but with different data. You can recreate the worksheet, but this is time-consuming. It's a lot easier to copy the entire worksheet and only change the numbers.

1. Right click on the sheet tab of Class VI.
2. Choose Move or Copy...

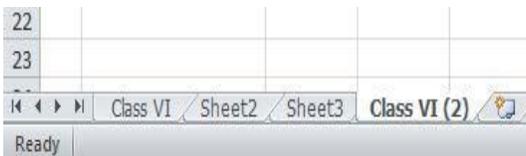
The 'Move or Copy' dialog box appears.

| | A | B | C |
|----|----|------------------|---------|
| 1 | | | FA1 |
| 2 | SN | NAME | TH (40) |
| 3 | 1 | Abhijit Das | 14 |
| 4 | 2 | Abhinash Borah | 14 |
| 5 | 3 | Andrew Rabha | 10 |
| 6 | 4 | Ankita Rajkhowa | 21 |
| 7 | 5 | Archita Devi | 32 |
| 8 | 6 | Bhaskar Gyan | 21 |
| 9 | 7 | Bhaskar J Baruah | 9 |
| 10 | 8 | Harsh Mishra | 25 |
| 11 | 9 | K Vishal Kashyap | 10 |
| 12 | 10 | Karuna Brahma | 20 |
| 13 | 11 | Kaushik D | |
| 14 | 12 | Md Injam | |
| 15 | 13 | Pallab Kr | |
| 16 | 14 | Pranjit D | |
| 17 | 15 | Rahul Da | |
| 18 | 16 | Reshmi S | |
| 19 | 17 | Santosh | |
| 20 | 18 | Theertha | |
| 21 | | | |
| 22 | | | |
| 23 | | | |

3. Select (move to end) and check Create a copy.



4. Click OK.



Now Rename this sheet as Class VI Games





Workbook

Excel 2010 includes a Protect Workbook command that prevents others from making changes to the layout of the worksheets in a workbook. You can assign a password when you protect an Excel workbook so that only those who know the password can unprotect the workbook and change the structure or layout of the worksheets. Now, let's see protections one by one with example.

How to protect an excel workbook

This example teaches you how to protect the workbook structure and windows in Excel.

Protecting Structure

If you protect the workbook structure, users cannot insert, delete, rename, move, copy, hide or unhide worksheets anymore.

1. Open a workbook.
2. On the Review tab, click Protect Workbook.

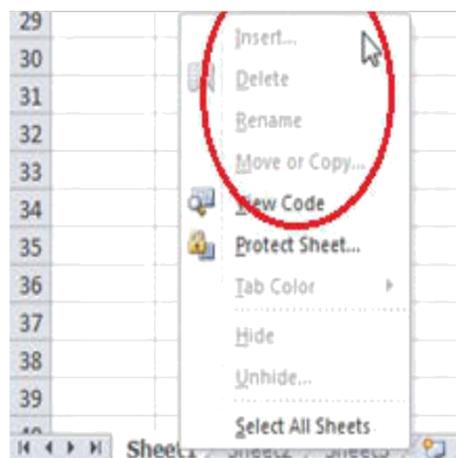


3. Check Structure, enter a password and click OK.



4. Re-enter the password and click on OK.

Users cannot insert, delete, rename, move, copy, hide or unhide worksheets anymore.

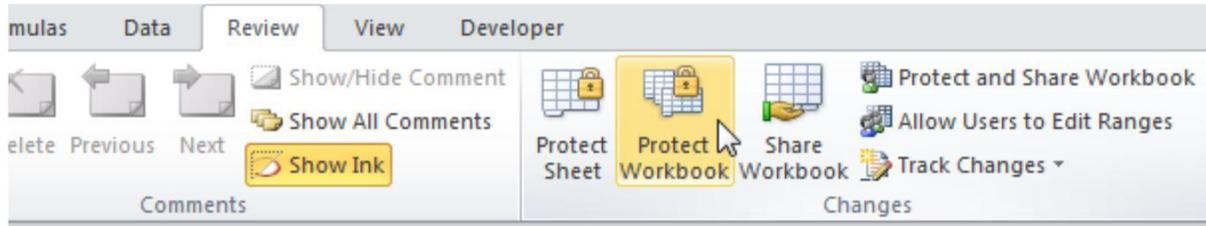




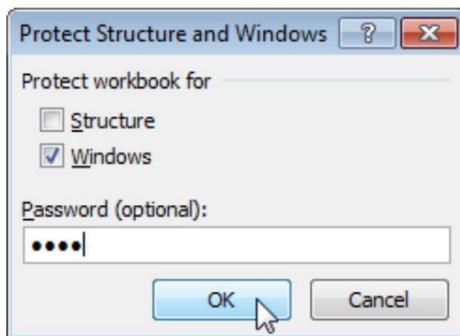
Protecting windows

If you protect the workbook windows, users cannot move, change the size and close windows anymore.

1. Open a workbook.
2. On the Review tab, click Protect Workbook.



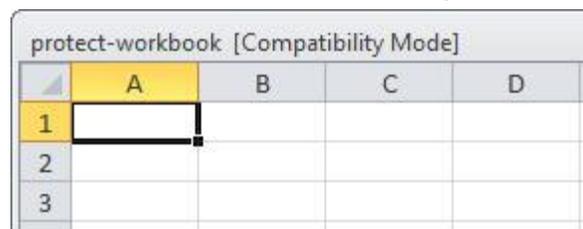
3. Check Windows enter a password and click OK.



4. Re-enter the password and click on OK.



You cannot move, change the size and close windows anymore.



To unprotect the workbook, click Protect Workbook and enter the password.

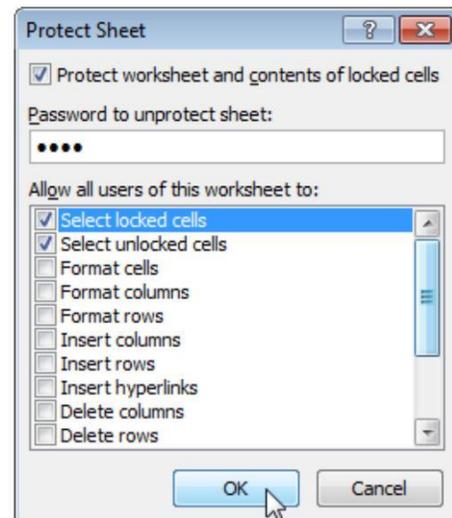
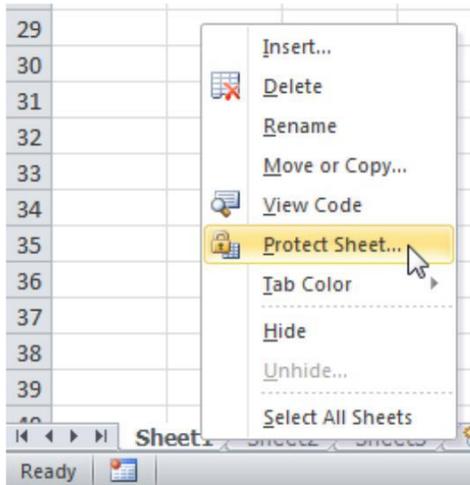


Protect Sheet

Sometimes you may want to protect a worksheet to help prevent it from being changed.

Follow these steps to protect the worksheet.

1. Right click a worksheet tab.
2. Click Protect Sheet.



3. Enter a password.
4. Check the actions you allow the users of your worksheet to perform.
5. Click OK.
6. Confirm the password and click OK.



Your worksheet is protected now. To unprotect a worksheet, right click on the worksheet tab and click Unprotect Sheet.



WORKSHEET



Fill in the blank with correct option

Bar chart, Worksheet, \$, Autosum, formula bar, Sorting, =, Logical operator, now, three

1.Tests a number of user-defined conditions.
2. Workbook is a collection of
3. You can sum a large range of data by simply selecting a tool button called
4. is method of arranging the data in ascending or descending order.
5. can be created in Excel easily.
6. function displays current date and time in MS Excel.
7. In the formula,symbol specifies the fixed columns or rows.
8. Excel displays the current cell address in the
9. By default, a workbook have worksheets
10. Formulas in Excel start with.....

Lab Assignment / Project

1. In Microsoft Excel , Mr. Shubham putting the sum of 3 cells in a 4th cell. If the sum is greater than 10, he would like the sum to be the color red. If the sum is less than 10, I would like the sum to be the color blue. Is this possible? If yes, How to achieve it?
2. You have an Excel spreadsheet and you would like to filter more than types of criteria from a single column. How can filter a single column based on one or more criteria?
3. You are trying to put some data in alphabetical order. There are 4 columns and over 2,000+ rows of information. I need to sort the data by column B in alphabetical order. How do you do this?



Chapter 4

Advance features of MS PowerPoint

Inside this chapter : Inserting different objects (i.e. images, Word Arts, audio & video etc.), Transitions in slide, Custom Animation with text.

PowerPoint is a presentation software program of the Microsoft Office package. PowerPoint uses a graphical approach to presentations in the form of slide shows that accompany the oral delivery of the topic. This program is widely used in business and classrooms and is an effective tool when used for training purposes. It provides “*Power to your Point*”. PowerPoint is one of the simplest computer programs to learn.

PowerPoint presentations can be made into photo albums, complete with music or narrations, to distribute on CDs or DVDs. All in all, PowerPoint is a "one-stop-shop" to create successful presentations for the business world, the classroom or just for your own personal use.

In this chapter we will discuss some advance features of PowerPoint.

Inserting different objects in PowerPoint

slide 1. Inserting a picture

There are two ways to insert a picture on your slide in PowerPoint:

Using Content placeholder

1. Launch PowerPoint. Most of the time, PowerPoint already has a new slide, change the layout of this slide to Title and Content by selecting the Home tab | Layout | Title and Content option. These results in the slide layout you see in the Picture.

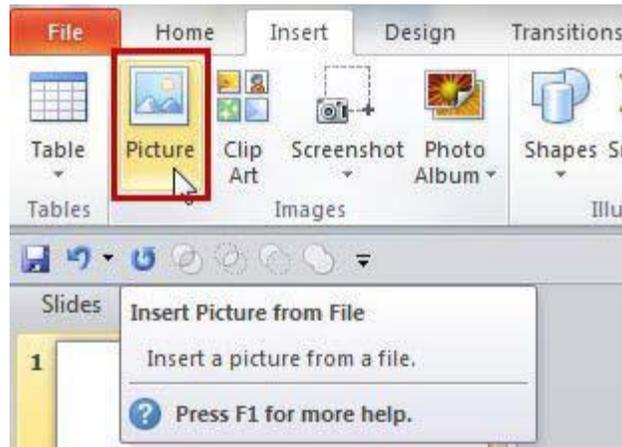
Click on the Insert Picture from File button in the Content placeholder, as highlighted in red.





Using Insert picture tool

If you want to add a picture on an existing slide that has no Content placeholder, you can select the Insert tab of the Ribbon, and click the Picture button.



Either way, you will open the Insert Picture dialog box. Navigate to the folder where your pictures are located, you will see the icons or thumbnails of the pictures as shown in following picture. Select the picture you need, and click on the Insert button highlighted in red.



As soon as you click the Insert button, you will see the selected picture placed on the PowerPoint slide.



Now, the picture can be edited by resizing, moving, rotating, etc.



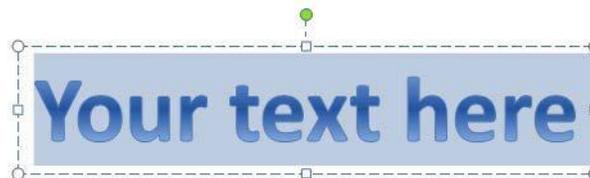
2. Inserting Word Art

WordArt offers additional effects like outline text, fill, gradient, 3D effects and shadows etc. If you want to, you can add WordArt using the WordArt command on the Insert tab in the Text group.

1. On the Insert tab, in the Text group, click WordArt. The WordArt Styles gallery opens.



2. Click on the style you want to insert, and a text box appears with the text “Your text here”, with the WordArt style you selected applied to it.



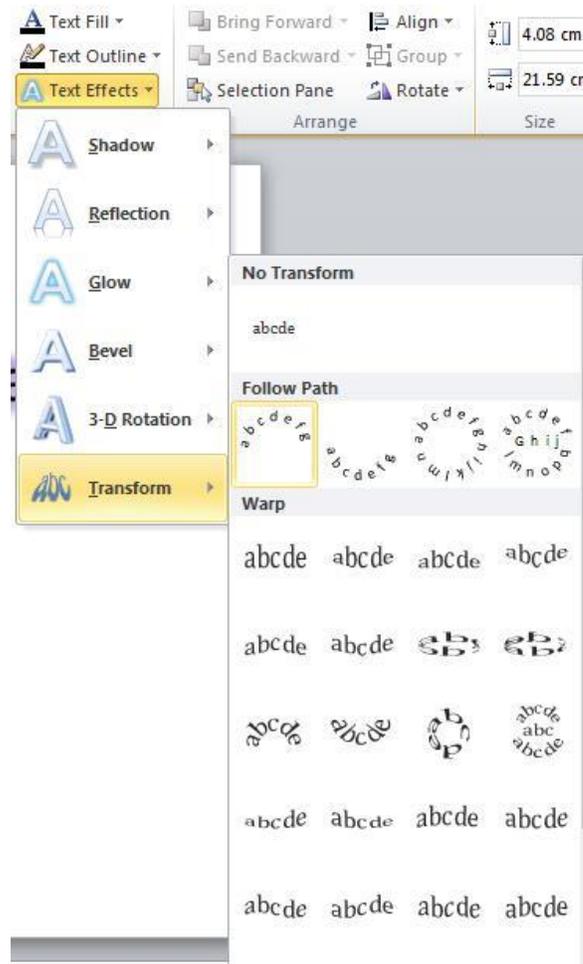
3. Edit the text to whatever you want it to be.

At this point, you'll see a Drawing Tools Format context tab. Here you'll find the WordArt Styles group.





This contains the Preset styles gallery, and drop downs for controlling the *Text Fill*, *Text Outline*, and (most fun) *Text Effects*.



As you can see, there are a lot of possibilities to explore.

Kendriya Vidyalaya Sangathan

Adding Slide Transitions

Transitions between slides cover much more than some movement between one slide and the next. Slide transitions in PowerPoint many option including timings and sounds.

In either the *Slide Sorter* or *Normal* view, select the slide or slides which you want to apply the transition to. Now, lets do it practically.

1. From the menu ribbon, select the *Transitions* tab.





2. The most commonly used animations will appear in the center. To preview more transition options, click the down arrow.



3. Select a transition from the list. Clicking it will apply the transition to the slide. You can also select *Apply to All* to apply the same transition to all your slides.
4. In the *Duration* option, enter the speed at which you want the transition to play.



5. In the *Sound* field, use the drop-down menu to select a sound to play during a slide transition, if desired.



6. Indicate how you want the slide transition to occur by selecting an option under the *Advance Slide* heading. Select *On mouse Click* if you want the transition to take place when you click the left mouse button.

Select *Automatically After* if you want the transition to occur after a specified time. Use the up and down arrow keys in the blank box to specify the number of seconds which should pass before the transition takes place.



Animation with Text

In PowerPoint you can animate text and objects such as clip art, shapes, and pictures. Animation or movement on the slide can be used to draw the audience's attention to specific content or to make the slide easier to read.



Types of animations

There are many different animation effects you can choose from, and they are organized into four types:

- **Entrance:** These control how the object enters the slide. For example, with the Bounce animation, the object will drop onto the slide and then bounce several times.



- **Emphasis:** These animations occur while the object is on the slide and are often triggered by a mouse click. For example, you can set an object to Spin when you click the mouse.



- **Exit:** These control how the object exits the slide. For example, with the Fade animation, the object will simply fade away.



- **Motion Paths:** These are similar to Emphasis effects, except the object moves within the slide along a predetermined path, like a circle.



How to apply animation to Text

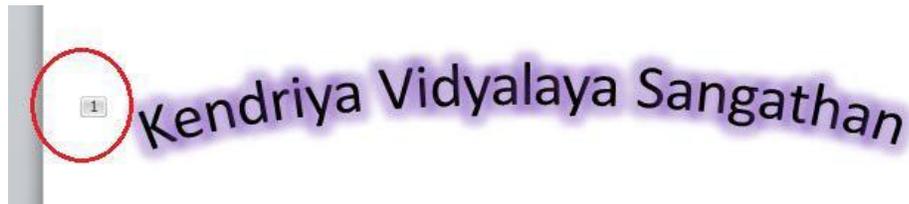
1. Select the text.
2. Click the Animations tab.
3. In the Animation group, click the **More** drop-down arrow to view the available animations.



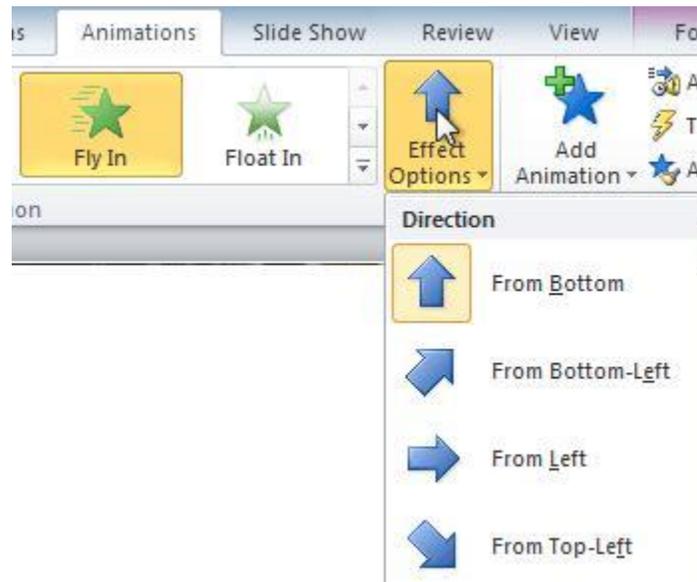
4. Select the desired animation effect.



5. The text will now have a small number next to it to show that it has an animation. Also, in the Slide pane, the slide will now have a star symbol next to it.



Some effects will have options you can change. For example, with the Fly In effect, you can control which direction the object comes from. These options can be accessed from the Effect Options command in the Animation group.



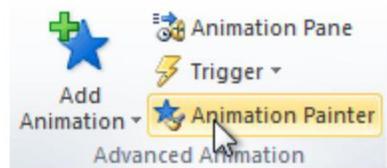
You can apply more than one animation effects for a text



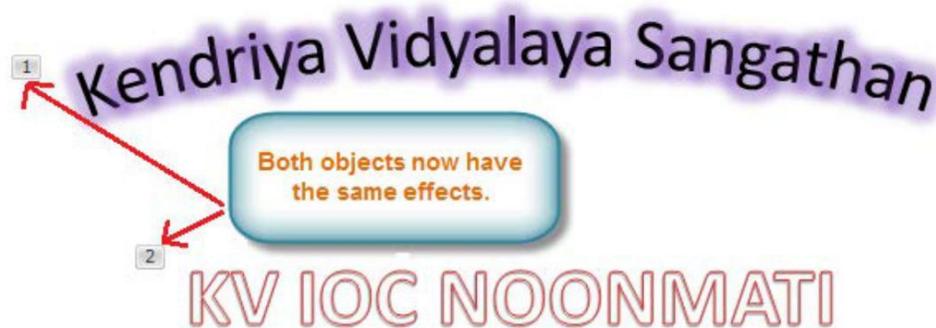
Animation Painter:

Sometimes you may want to apply the same effects to more than one object. You can do this by copying the effects from one object to another using the Animation Painter.

1. Click the object that has the effects you want to copy.
2. From the Animations tab, click the Animation Painter command.



3. Click the object you want to copy the effects to. The effects will be applied to the object.

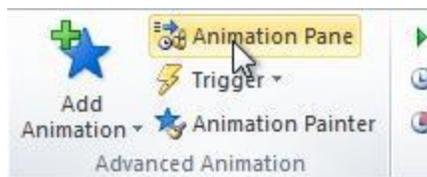


Animation pane

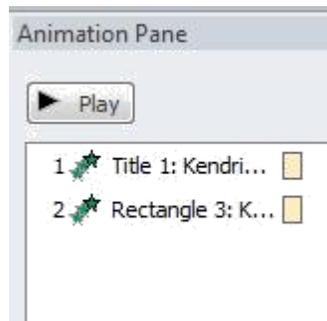
The Animation pane allows you to view and manage all of the effects that are on the current slide. You can modify and reorder effects directly from the Animation pane, which is especially useful when you have several effects.

To open the Animation pane:

1. From the Animations tab, click the Animation Pane command.

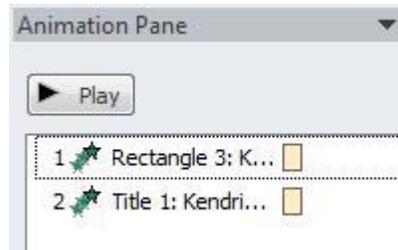


2. The Animation pane will open on the right side of the window. It will show all of the effects for the current slide in the order they will appear.



To reorder effects from the Animation pane:

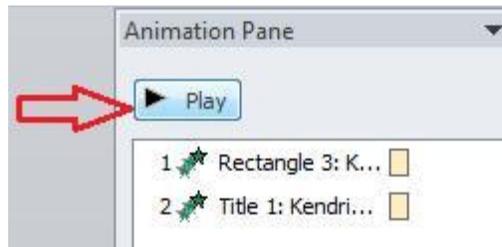
1. On the Animation pane, click and drag an effect up or down.



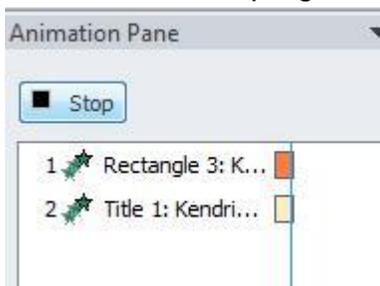
2. The effects will reorder.

To preview effects from the Animation pane:

1. From the Animation pane, click the Play button.



2. The effects for the current slide will play. On the right side of the Animation pane, you will be able to see a timeline that shows the progress through each effect.



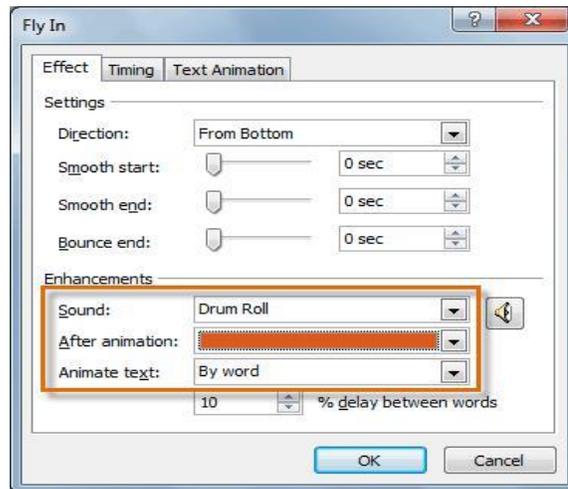
The Effect options dialog box

From the Animation pane, you can access the Effect Options dialog box, which contains more advanced options you can use to fine tune your animations.



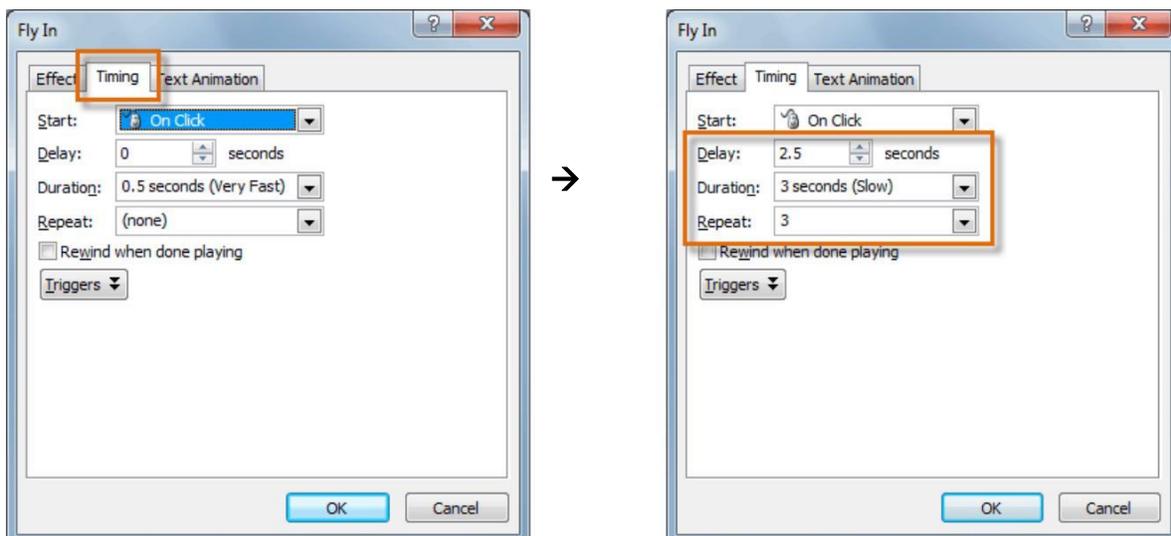
To open the Effect Options dialog box:

1. From the Animation pane, select an effect. A drop-down arrow will appear next to the effect.
2. Click the drop-down arrow, and select Effect Options. The Effect Options dialog box will appear.
3. From here, you can add various enhancements to the effect:
 - **Sound:** This adds a sound effect to the animation.
 - **After animation:** This changes the color after the animation is over.
 - **Animate text:** If you are animating text, you can choose to animate it all at once, one word at a time, or one letter at a time.



To change the effect timing:

1. From the Effect Options dialog box, select the Timing tab.
2. From here, you can add a delay before the effect starts, change the duration of the effect, and control whether the effect repeats.





WORKSHEET

Fill in the blanks with correct option

Animation Painter, Auto clipart, Slide transition, drag, F5

- 1.....is the term used when you press and hold the left mouse key and move the mouse around the slide.
2. The entry effect as one slide replaces another in a show is called.....
3.is a feature that automatically places clipart in your presentation.
4.key can be used to view Slide show.
5. We can copy the effects from one object to another using.....

Lab Assignment / Project

1. Create a PowerPoint presentation on Input and Output devices of Computer System.
2. Create a PowerPoint presentation with animation on Types of Printers.



HTML

Inside this chapter : Introduction to HTML, Uses of HTML, HTML Tags, HEAD, TITLE, BODY, Empty and Container Tags.

What is HTML?

HTML is a computer language invented to allow website creation. The websites can then be viewed by anyone else connected to the Internet. It is relatively easy to learn, with the basics being accessible to most people in one sitting and quite powerful in what it allows you to create. HTML is used to build the websites or web based applications.

HTML stands for Hyper Text Markup Language.

- **HyperText** is the method by which you move around on the web by clicking on special text called hyperlinks which bring you to the next page.
- **Markup** is what HTML tags do to the text inside them. They mark it as a certain type of text for example *italicized* text.

How does it work?

HTML consists of a series of short codes typed into a text-file called as tags. The text is then saved as html file, and viewed through a browser like Internet Explorer. This browser reads the file and translates the text into a visible form, hopefully rendering the page as the author had intended.

Some of the most popular HTML editors, such as FrontPage or Dreamweaver will let you create pages more or less as you write documents in Word or whatever text editor you are using.

Essential HTML Tags

There are four sets of HTML tags that form the basic structure needed for every HTML file:

- `<html></html>`
- `<head></head>`
- `<title></title>`
- `<body></body>`



`<html> </html>`

This basically defines the document as web page. It also identifies the beginning and end of the HTML document. All other tags must fall between the html tags.

`<head> </head>`

The header contains information about the document that will not appear on the actual page, such as the title of the document, the author etc.

`<title> </title>`

The title tag defines the title that will appear in the title bar of your web browser. The title must appear between the head tags.

`<body> </body>`

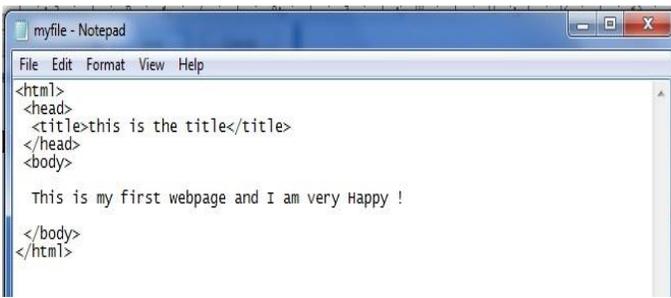
The body tags contain all the information and other visible content on the page. All your images, links and plain text must go between the `<body>` and `</body>` tags.

You may also be interested in the basic tags for adding content and headings.

Example:

Below is a basic html document. Notice that everything falls between the html tags, the title appears within the head of the document, and that the body comes after the head.

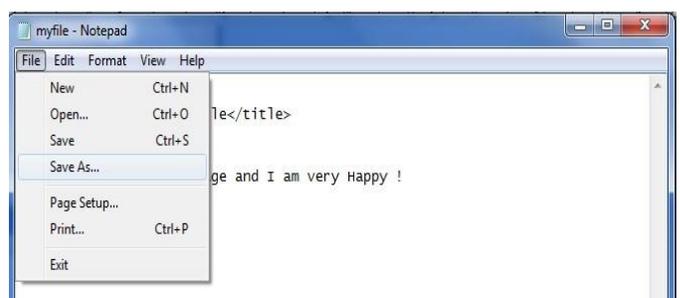
1. Open Notepad.
2. Type the HTML program as given below.
3. Click file->Save as



```
File Edit Format View Help
<html>
<head>
<title>this is the title</title>
</head>
<body>

This is my first webpage and I am very Happy !

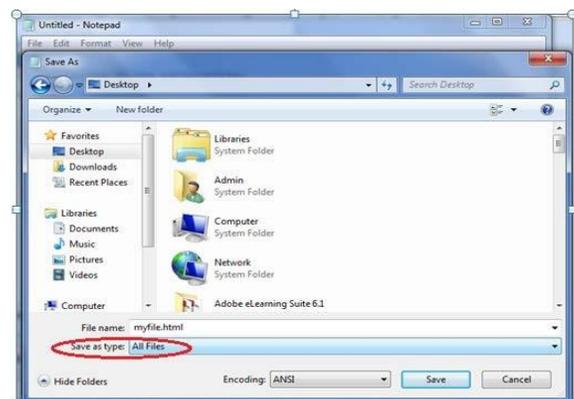
</body>
</html>
```

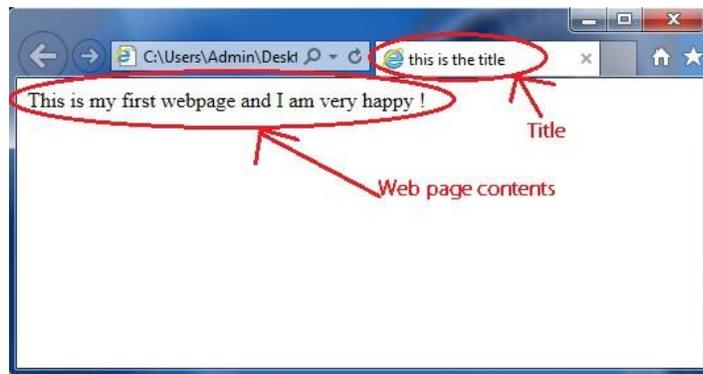


4. Select Desktop, type the file name as myfile.html and select All files in Save as type box and Click on save.

Your HTML file will be save to desktop

5. Double click on the file(as shown below) and your webpage is ready for display.





Empty tag and Container tag

A container tag has two ends (an opening and a closing) whereas an empty tag doesn't.

The paragraph tag is an example of a container tag:

```
<p>Our paragraph text here.</p>
```

The image tag is a good example of an empty tag.

```

```

See how the initial paragraph tag (<p>) has a corresponding end tag? The text in between is "contained" by the tag.

The majority of tags are "container" tags. They have an opening and a closing tag.

However, a few tags are "self-contained" or "empty" tags in that they have an opening tags but not a closing one.

They common ones are:

-
 = break
- = image
- <meta> = metadata within an HTML document.



WORKSHEET

Fill in the blanks with correct option

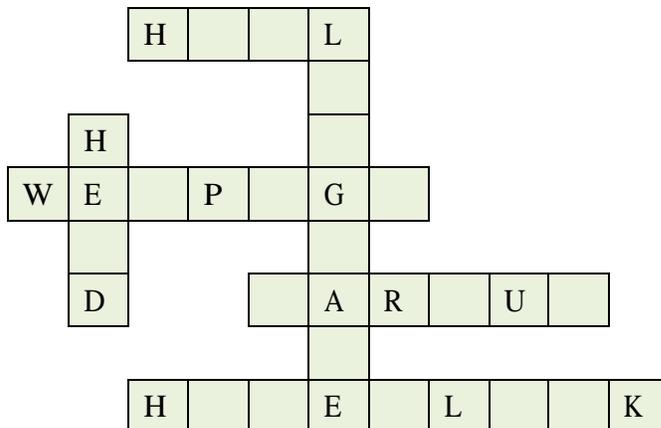
, <HTML>, header, .html, container, tag, title, body, empty , web programming

1. Extension of a HTML file is.....
2. Predefined command in HTML is known as.....
3. HTML is alanguage.
4. All HTML programs must have.....tag the beginning of program.
5. Thecontains information about the document that will not appear on the actual page.
6. The tag must appear between the head tags.
7. Thetags contain all the information and other visible content on the page.
8. Atag has an opening and a closing end.
9. A.....tag doesn't have a closing end.
- 10.....is an example empty tag.

Lab Assignment / Project

1. Create a HTML page that contains your name, class, father's name, mother's name etc. Save this HTML file to Desktop and test the result.

Solve the crosswords using the words from the lesson





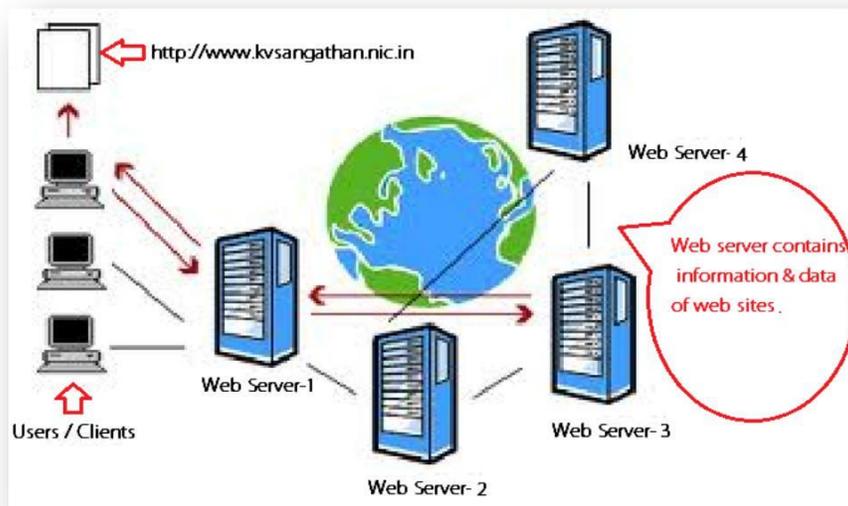
Internet & Networks

Inside this chapter : Overview of Internet, Intranet, Different types of websites, Web Browsers, Opening of web pages and Web sites, Use of search engine, Creation of an Email and using it, Advantages and Disadvantages of Social Media sites, Networking and Networks.

Internet is a collection of computers connected by network cables or through satellite links. Internet is a network of networks. It is also known as Super Network. There are millions of computing devices that are connected to this network either permanently or for a short duration. These devices run network applications that communicate through copper or fiber optic cables, radio or satellite transmission.

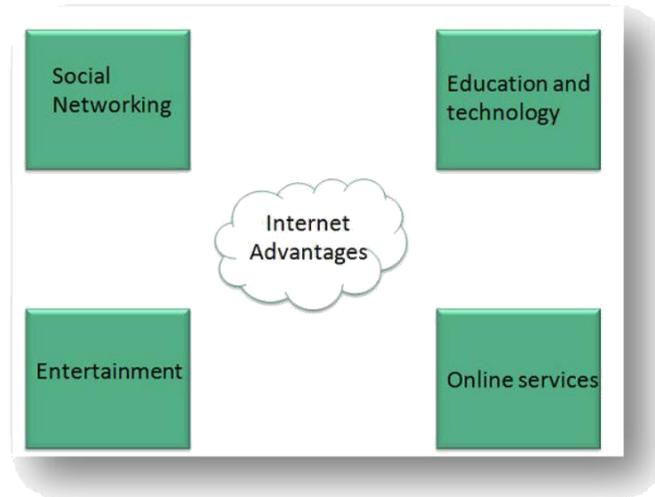


The Internet connectivity is provided by Internet Service Providers (ISP) like BSNL, Airtel, Reliance, Aircel Vodafone etc.



Advantages

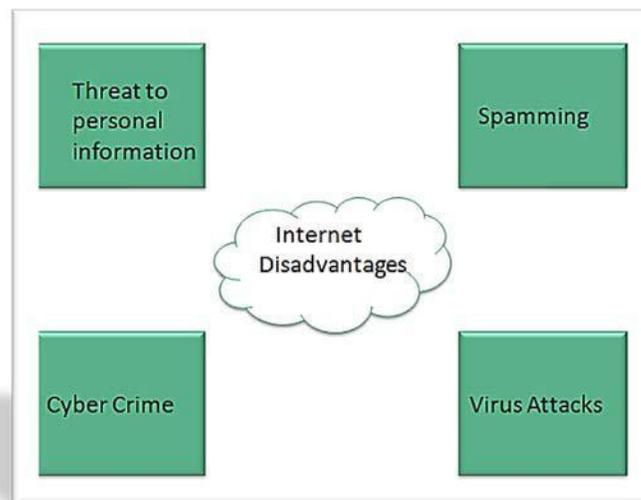
Internet covers almost every aspect of life. Here, we will discuss some of the advantages of Internet.



- ▶ Internet allows you to communicate with the people sitting at remote locations using website and applications like Facebook, Twitter, Yahoo, Google+, Flickr, Orkut etc.
- ▶ You can find any kind of information on any topic over the internet such as Technology, Health & Science, Social Studies, Geographical Information, Information Technology, Products etc.
- ▶ It also provides entertainment through various modes like online television, online games, songs, videos, social networking apps.
- ▶ Internet also allows us to use many services like Internet banking, matrimonial services, online shopping, online ticket booking, online bill payment, data sharing, e-mail etc.

Disadvantages

However, Internet has proved to be a powerful source of information in almost every field, yet there exists many disadvantages discussed below:





- ▶ There are always chances to lose personal information such as name, address, credit card number. Therefore, one should be very careful while sharing such information.
- ▶ Spamming corresponds to the unwanted e-mails in bulk. These e-mails serve no purpose and lead to block of entire system.
- ▶ Virus can easily be spread to the computers connected to internet.
- ▶ There are many pornographic sites that can be found, which indirectly affects your healthy and mental life.

Intranet: An intranet is a private network accessible only to an organization's staff. Intranet is system in which multiple PCs are connected to each other. PCs in intranet are not available to the world outside the intranet. Usually each company or organization has their own Intranet network and members of that company can access the computers in their intranet.



Similarities in Internet and Intranet

- ▶ Intranet uses the internet protocols such as TCP/IP and FTP.
- ▶ Intranet sites are accessible via web browser in similar way as websites in internet. But only members of Intranet network can access intranet hosted sites.
- ▶ In Intranet, own instant messengers can be used as similar to yahoo messenger/ Gtalk over the internet.

Differences in Internet and Intranet

- ▶ Internet is general to PCs all over the world whereas Intranet is specific to few PCs.
- ▶ Internet has wider access and provides a better access to websites to large population whereas Intranet is restricted.
- ▶ Internet is not as safe as Intranet as Intranet can be safely privatized as per the need.



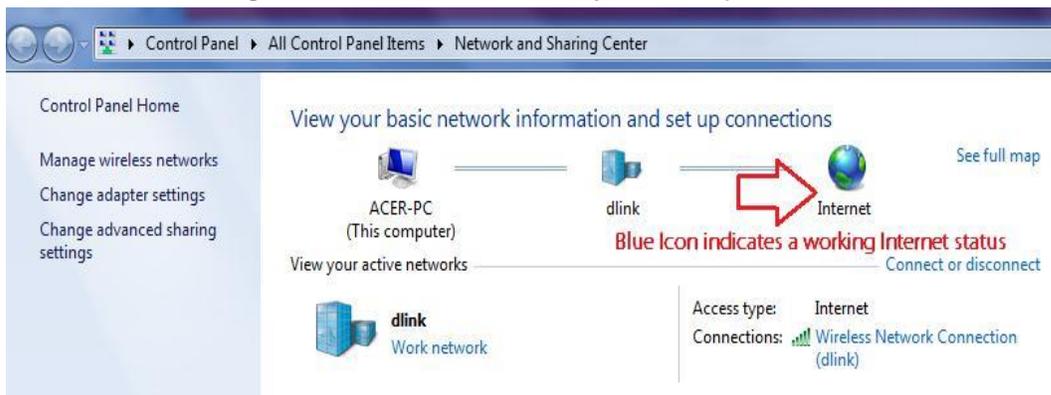
Types of websites: There are various types of website available in Internet. Here we will discuss some basic types.

| Website Type | Definition | Example |
|------------------------|---|---|
| Personal Websites | Used for sharing personal information. | http://www.sachintendulkar.in |
| Photo Sharing Websites | Used for sharing photographs. | https://www.flickr.com |
| Blogs | A Website for sharing information, ideas and views. | http://www.narendramodi.in |
| Informational Websites | Provides information on various topics. | https://www.wikipedia.org |
| Directory Websites | A Source to access all Websites at all levels and from all sectors. | https://goidirectory.nic.in |
| E-commerce Websites | Business Websites | https://www.irctc.co.in |

Web browser: A browser is a software application used to locate, retrieve and display content of Web pages, images, video and other files. The browser contacts the Web server and requests information and Web server sends the information back to the Web browser which displays the results on the computer. Example of Web browser are Mozilla firefox, Internet explorer, Google chrome ,epic etc.



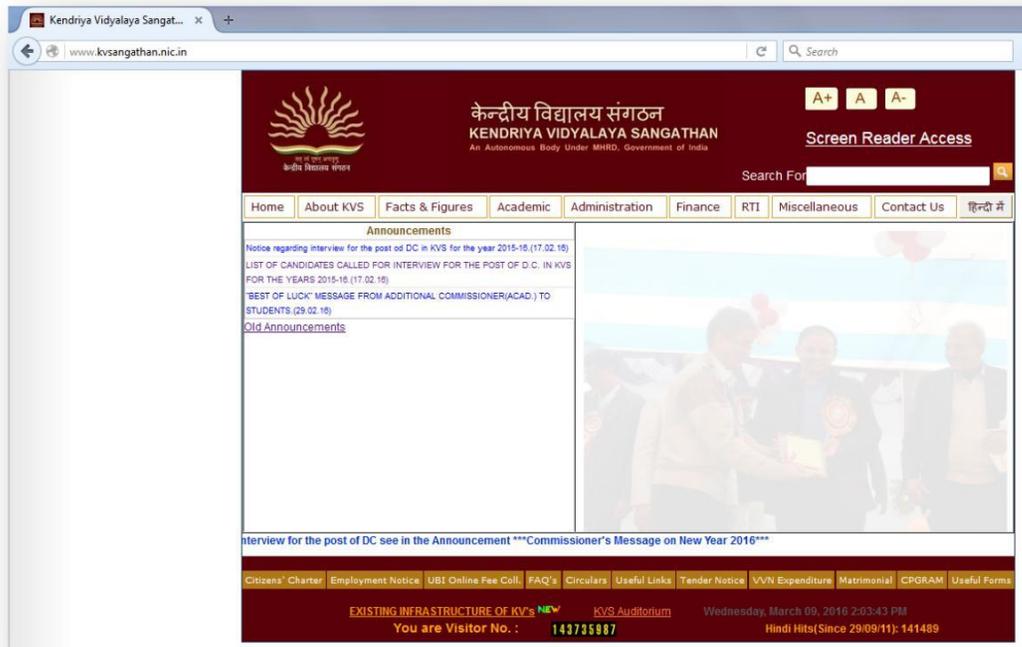
Opening of Webpages and websites: Opening a website is very easy process. First of all you must have a working internet connection on your computer.



Search a browser which installed in your computer like Mozilla firefox, Internet explorer, Google chrome ,Epic, opera etc. double click on the icon of browser and type



the name of website in address bar which you want to open. E.g
www.kvsangathan.nic.in (See below).



Use of Search Engine: Search engines are websites that search the internet for you and give you a list of search results. Search engines can search for more than just written information. Depending on the search engine you're using, you might also be able to search for other online content like images, video content, books and news, as well as products and services. You do not always have to know a website's address in order to use the Internet. It is important to know how to search for information. One of the best methods to search is to use a search engine. You can use a search engine to help you find what you're looking for. You can also search for online maps and directions to help plan your travel from one place to another.

Example: Google, Infoseek, Excite, Lycos, AltaVista etc.





Email (Electronic Mail): Email is like sending a letter,, you can send the email and it get to the other person's email account within seconds. If you have an email address, you can email anyone else who has an email address, including government agencies and lots of different kinds of businesses.

You can create one or more email addresses. When you create a new email account, you'll have to pick email addresses that haven't already been chosen by someone else. Let's see how you can create an Email account.

In the following example I am creating a new email account in rediff.com but you can your create email account through any website

which offers free email creation like Google, yahoo, Hotmail etc.

1. Open website www.rediffmail.com and click on
2. Now, click on Create a new account
3. Type username ,check the availability of this Email ID and type password and other mandatory information for your email account(See below)
4. Finally, click on Create my account.
5. Your email account creation is over.

The screenshot shows the 'Create a Rediffmail account' form. Red arrows point to the following fields: 'Full Name' (containing 'Rajendra'), 'Choose a Rediffmail ID' (containing 'rshakyawal'), 'Password' and 'Retype password' (both containing masked characters), 'Alternate Email Address' (empty), 'Mobile No.' (containing '+91'), 'Date of Birth' (Day, Month, Year dropdowns), 'Gender' (Male selected), 'Country' (India), 'City' (Select dropdown), and the 'Create my account >>' button. A CAPTCHA image is also visible with the text '7DLQ' below it.

Now, you can send or receive emails with this ID. For writing new email, use Write Mail or Compose option and to check the Incoming Email list, see the option Inbox.

Social media sites: A social media site is a platform to build social networks and social relations among people who share similar interests, activities, backgrounds or real-life connections. Social media sites are web-based services that allow individuals to create a public profile, create a list of users with whom to share connections, and view and cross the connections within the system. Social media sites incorporate mobile connectivity, photo & video sharing and blogging. Some popular social media sites are Facebook, twitter, LinkedIn, Google Plus+, Instagram and Flickr.

Advantages of Social Media sites:



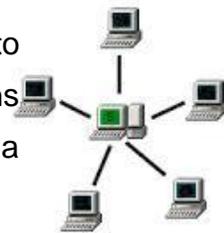
1. Social networking provides medium for self-expression.
2. Social media sites helps people stay in touch that might not do it otherwise.
3. Social media sites are used to help advertise goods and services.
4. Social media sites provide platform for job searches.

Disadvantages of Social Media sites:

1. Social media sites takes time away from other activities and can take over from real time interaction.
2. Social media sites extend the gap between people who have access to computer technology and those that don't.
3. Social media sites can be used to promote organized crime.
4. When social media sites are used excessively or in the wrong way, it could have serious detrimental outcomes on both mental and even physical health of individuals.

Networking and Networks:

Computer Network: A computer network allows computers to exchange data, Information and share resources. The connections between computers (nodes) are established using either cable media or wireless media.



Types of Network

There are many types of computer networks, including the following:

- ▶ **Local-Area Network (LAN):** The computers are connected in a building or office.
- ▶ **Wide-Area Network (WAN):** The computers are connected by telephone lines or radio waves across country or continent.
- ▶ **Metropolitan-Area Network (MAN):** A network designed for a town or city.
- ▶ **Personal Area Network (PAN):** A network contained within a user's home that connects a person's digital devices.

WORKSHEET

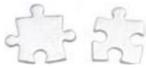
Fill in the blanks with correct option.

WAN, inbox, ISP, social media, directory, MAN, super, LAN, blog, search engine

1. Internet is also known as.....network.



2. Network within a building is known as
3. Internet is atype of network.
4. Internet connectivity is provided by.....
5.website used for sharing information, ideas and views.
- 6.....website is a Source to access all Websites at all levels and from all sectors.
7. Google is a popular.....
8. Incoming email list can be viewed through
9. Facebook is a.....site.
10. A network which designed for a town or city is known as



Match left side terminology with the correct option from right side.

- | | |
|------------|-------------------------------|
| 1. Twitter | a. Browser. |
| 2. PAN | b. Internet Service Provider. |
| 3. BSNL | c. Social media website. |
| 4. Firefox | d. Private network at home. |