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# INTRODUCTION TO COMPUTER

## 1. Definition of Computer

In a layman language, a computer is a fast calculating device that can perform arithmetic. Although the computer was originally invented mainly for doing high speed and accurate calculations, it is not just a calculating device. It gets the data through an input device, processes it as per the instructions given and information as output. We can define a computer follows.

"A computer is fast electronic device that processes the input data according to the instructions given by the programmer/user and provides the desired information as output".

| Term | Meaning |
|---|---|
| Data | A set of basic facts and entities which itself has no Meaning. |
| Information | Data which has some meaning or value. |
| Instruction | A statement given to computer to perform a task |
| Input | Data and Instructions given to computer |
| Process | Manipulation of data |
| output | Information obtained after processing of data |

## 2. Importance of Computer

Computer plays a vital role for processing of data in an organization. Computers help in processing volumes of data efficiently and accurately within short time.

A computer has the following characteristics, which makes it so important for an organization:

1. Fast: A computer is so fast that it can perform the given task (arithmetical of logical) in few seconds as compared to man who can spend many months for doing the same task. A computer can process millions of instruction per second.

2. Accurate: While doing calculations, a computer is more accurate than a man. Man can make mistakes in calculations but a computer does not, if it is provided with accurate instruction.

3. High Memory: A computer has much more memory of storage capacity than human beings. It can store millions of data and instructions, which can be retrieved and recalled even after number of years. This in not possible in cast of human brain.

4. Diligence: A computer does not surer from the human traits of tiredness and boredom. Man will be tired and bored while doing millions of calculations but computer, being a machine, does this jobs very efficiently and without any tiredness and boredom.

5. No Intelligence: A computer is a machine and obviously has no intelligence of its own. Each and every instruction must be given to the computer for doing a task. Man has intelligence and it is the man who invented computer and gives it all the instructions and logic to work. The main drawback of computer is that it cannot take decisions on its own.

# 3. Classification of Computer

The classification of computers is based on the following four criteria:

1. According to purpose
2. According to Technology Used
3. According to Size and Storage Capacity
4. According to Historical Advancement

## According To Purpose

According to the utilization of computer for different uses, computers are of the following two types;

### 1. general Purpose Computers

Computers that follow instructions for general requirements such as sale analysis, financial accounting, inventory and Management information etc. are called general computers. Almost all computers used in offices for commercial, educational and the applications are general-purpose computers.

### 2. Special Purpose Computers

Computers that are designed from scratch to perform special tasks like scientific applications and research, whether forecasting space applications, medical diagnostics, etc. are called special purpose computers.

## According To Technology Used

According to the technology used, computers are of the following three types;

### 1. Analog Computer

Analog computers are special purpose computer that represent and store data in continuously varying physical quantities such as current, voltage or frequency these computers are programmed for measuring physical quantities like pressure, temperature, speed etc. and to perform computations on these measurements. Analog computers are mainly used for scientific and engineering applications. Some of the examples of analog computers are given below:

(i) Thermometer: It is a simple analog computer used to measure temperature. In thermometer, the mercury moves up or down as the temperature varies.

(ii) Speedometer: Car's speedometer is another example of analog computer where the position of the needle on dial represents the speed of the car.

### 2. Digital Computer

Digital computers are mainly general-purpose computers that represent and store data in discrete quantities or numbers. In these computers, all processing is done in terms of numeric representation (Binary Digits) of data and information. Although the user enters data in decimal or character form, it is converted into binary digits (0's and 1's). Almost all the computers used nowadays are digital computers.

### 3. Hybrid Computers

Hybrid computers in corporate the technology of both analog and digital computers. These computers store and process analog signals, which have been converted, into discrete numbers using analog-to-digital converters. They can also convert the digital numbers into analog signals or physical properties using digital-to- analog converters. Hybrid computers are mainly used in artificial intelligence (robotics0 and computer aided manufacturing (e.g. process control).

## According To Size and Storage Capacity

According to the size and memory/storage capacity, computers are of the following four types:

I. Micro Computer: Micro Computers are the smallest category of computer consisting of a microprocessor and associated storage and input-output elements. They are designed to be used by one person at a time, meaning they are single user oriented ones.

II. Mini Computers: Mini computers are relatively fast but small and expensive Computers with some what limited input/output capabilities. Mini systems are designed to simultaneously handle the processing needs of multiple user. Mini Computer provides the facility of more stored capacity and communication link between users.

III. Mainframe Computers: Mainframe computers are large computer systems that have the capability to support many powerful peripheral devices.

IV. Super Computer: Computers system characterized by their very large size and very high processing speed. Generally used for complex scientific applications.

## 4. Input/Output Unit

We know that the computer is machine that processes the input data according to given set of instructions and gives the output. Before a computer does processing, it must be given data and instructions.

After processing, the output must be displayed or printed by the computer. The unit used for getting the data and instructions into the computer and displaying or printing output is known as an Input/Output (I/O unit). The Input Unit is used to enter data and instructions into a computer. There are many peripheral devices which are used as Input/Output unit for the computer. The most common form of input device is known as a terminal. A terminal has an electronic typewriter like device, called keyboard along with a display screen, called Visual Display Unit (VDU) or monitor. Keyboard is the main input device while the monitor cab be considered both as input as well as an output device. There are some other common input devices like mouse, punched card, tape, joystick, scanner, modem etc., Monitor, Printer and Plotter are the main peripheral devices used as output units for the computer.

## 5. Center Processing Unit (CPU)

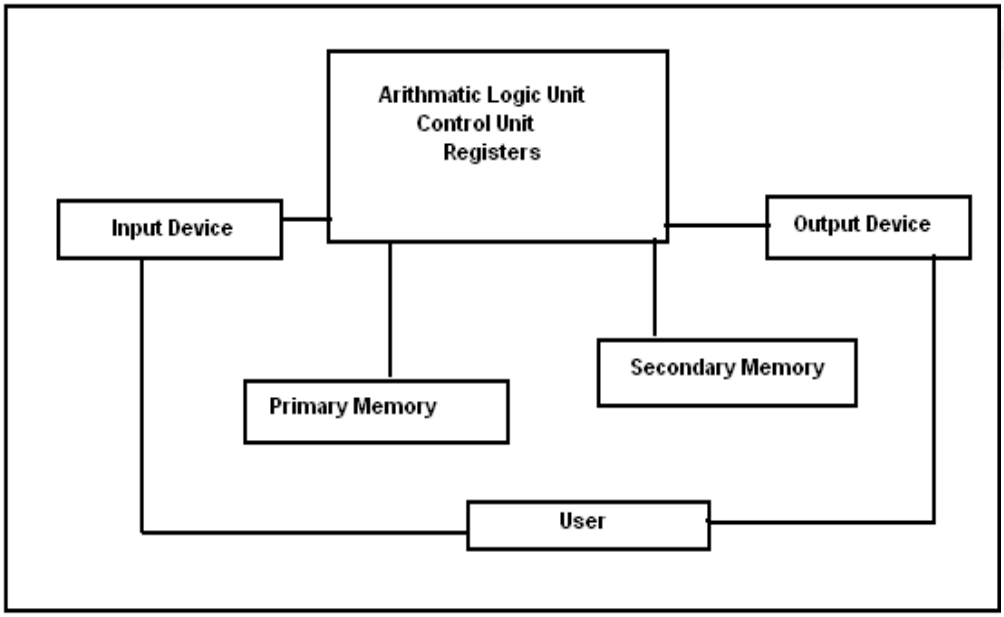


**Fig. 1.1- Functional diagram of a generalized architecture of a computer system** CPU is the main component or "brain" of computer, which perform all the Processing of input data. Its function is to fetch, examine and then execute the instructions stored in the main memory of a computer. In microcomputers. The CPU is built on a single chip or Integrated Circuit (1C) and is called as a Microprocessor. The CPU consists of the following distinct parts:

1. Arithmetic Logic Unit (ALU)
2. Control Unit (CU)
3. Register
4. Buses
5. Clock

## Arithmetic Logic Unit (ALU)

The arithmetic logic unit of CPU is responsible for all arithmetic operations like addition subtraction, multiplication and division as well as logical operations such as less than, equal to and grater than. Actually, all calculations and comparisons are performed in the arithmetic logic unit.

## Control Unit (CU)

The Control unit is responsible for controlling the transfer of data and instructions among other units of a computer. It is considered as the "Central Nervous System" of computer, as it manages and coordinates all the units of the computer. It obtains the instructions from the memory, interprets them and directs the operation of the computer. It also performs the physical data transfer between memory and the peripheral device.

## Registers

Registers are small high speed circuits (memory locations) which are used to store data, instructions and memory addresses (memory location numbers), when ALU performs arithmetic and logical operations. Registers can store one word of data (1 word =2 bytes & 1byte = 8 bits) unit it is overwritten by another word. Depending on the processor's capability, the number and type of registers very from one CPU to another. Registers can be divided into six categories viz. General Purpose Registers, Pointer Registers, Segment Registers, Index Registers, and Flag Register and Instruction Pointer Register, depending upon their functions.

## Buses

Data is stored as a unit of eight bits (BIT stands for Binary Digit i.e. 0 or 1) in a register. Each bit is transferred form one register to another by means of a separate wire. This

group of eight wires, which is used as a common way to transfer data between registers, is known as a bus. In general terms, bus is a connection between two components to transmit signal between them. Bus can be of three major types viz. Data Bus, Control Bus and Address Bus. The data bus is used to move data, address bus to move address or memory location and control bus to send control signals between various components of computer.

### Clock

Clock is another important component of CPU, which measures and allocations a fixed time slot for processing each and every micro-operation (smallest functional operation). In simple terms, CPU is allocated one or more clock cycles to complete a micro-operation. CPU executes the instructions in synchronization with the clock pulse. The clock-speed of CPU is measured in terms of Mega Hertz (MHz) or Millions of Cycles per second. The clock speed of CPU varies from one model to another in the range. 4.77 MHz (in 8088 processor) to 2266 MHz (in Pentium II). CPU speed is also specified in terms of Millions of Instructions Per Second (MIPS) or Million of Float-ing-Point Operations Per Second (MFLOPS).

## 6. History of Computers

Computer history starts with the development of a device called the abacus by the Chinese around 3000 BC. This was used for the systematic calculation of arithmetic operations. Although here were a number of improvements in calculating devices, no conceptual changes were made until the end of the 8th century. During the first decade or the 19th century, Jacquard invented an automated loom operated by a mechanism controlled by punched cards. During the same period charles Babbage developed his differential and analytical engines. This device had provisions for inputting data, storing information, performing arithmetic operations and printing out results. This provided a base for the modern computer.

**Fig 1.2 devices used in different generations of computer**

At the end of the nineteenth century, Herman Hollerith and James Powers designed a data processing machine for processing census information. Hollerith developed

codes for processing both alphabetical and numerical data. A significant machine built in the early 1940s was Mark which utilized electromagnetic relays. Later in the 1940s the first electronic machine known as ENIAC (Electronic Numerical Integrator and Calculator) was introduced.

During the period, 1946-52, John Von Neumann and his team developed a high-speed digital computer using vacuum tubes. This machine mainly served as a laboratory to test many or the notions of programming and coding used in modern computers.

## 7. Computer Generations

Unit 1950 the major contributions were from the Universities and Research Institutions. Almost all the later developments were due to the computer manufacturers.

From the early 1950s, computers started appearing in quick succession, each claiming an improvement over the other. They represented improvements in speed, memory (storage) systems, input and output devices and programming techniques. They also showed a continuous reduction in physical size and cost. The developments in material technology, particularly the semiconductor technology.

Computers developed after ENIAC have been classified into the following five generations:

First generation 1946-1955
Second generation 1956-1965
Third generational 1966-1975
Fourth generation 1999-1975
Fifth generation 1996-present

You may notice that, from 1946, each decade has contributed one generation of computers. The first generation computers are those in which vacuum tubes are used. Magnetic drives and magnetic core memories were developed during this period.

All the first generation computer possessed the following characteristics as compared to the later models:

1. Large in size.
2. Slow operating speeds.
3. Restricted computing capabilities.
4. short life span
5. Complex maintenance schedules

The Second Generation computers were marked by the use of solid-state device called the transistor in the place of vacuum tubes. All these machines 19. were much faster and

more reliable than their earlier counterparts. Further, they occupied less space, required less power and produced much less heat.

The research in the field of electronics led to the innovation of the integrated circuits, now popularly known as IC chips. The use of IC chips in the place of transistors gave birth to the third generation computers. They were still more compact, faster and less expensive, than the previous generation.

Continued efforts towards miniaturizations led to the development of large scale integration (LSI) technology. Intel Corporation introduced LSI chips called microprocessors for building computers. The latest child of the computer family that uses LSI chips has been names the fourth generation computer. The fourth generation computers are marked with an increased user-computer inter-action and speed.

Japan and many other countries are working on systems who are known as expert systems which will considerably improve the man-machine interaction. Such systems would integrate the advancements in both hardware and software technologies and would facilitate computer-aided problem-solving with the help of organized information in many specialized areas.

The generation of computers is termed as fifth generation computers. Although expert systems are expansive and time-consuming to build, they are likely to become more popular in the next few years.

# INTRODUCTION TO COMPUTER HARDWARE

## 1. Keyboard

The keyboard is the most important input device of the computer. The computer and its other peripherals are mostly used with the help of a keyboard only. All commands are given through the keyboard. The keyboard of computer is similar in may ways to keyboard of typewriter except that a computer's keyboard has many more keys, more capable and cad do several more functions. Keyboards are mainly of three types (on the basis of number of keys). 84, 87,101 keys keyboard.

**The standard IBM –** PC keyboard cab be divided into three general areas:

**(i) Typewriter area:** Having the standard set of alp0habet letters and number keys

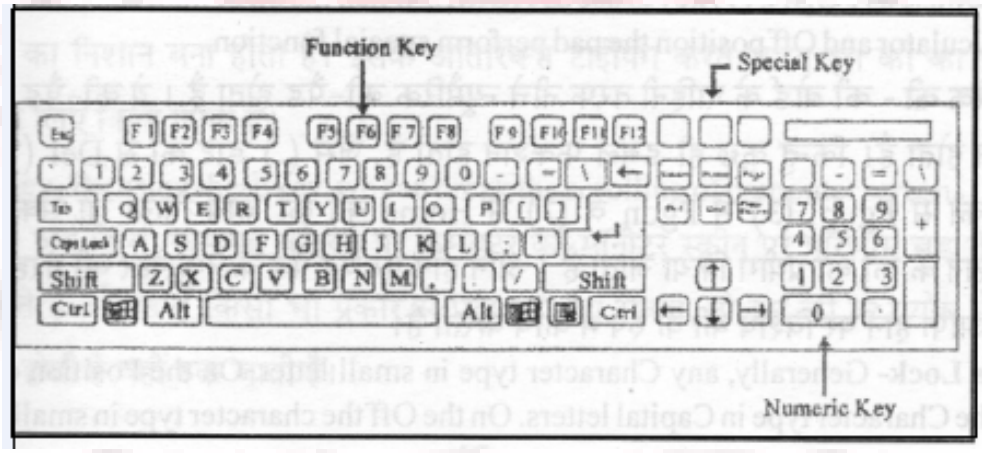



**Fig .1**

**(ii) Function Keys:** F1 through F10 or F12 which have different functions depending on the software.

**(iii) Numeric Keypad:** Having cursor control and number keys some keys on this pad has dual roles

**(iv) Cursor Control Key-** By these button we cab left, right, upper and down side. By using M line or one character to second character easily. Other four control key (HOME, END PGDN, PGUP). HOME key is use to transfer cursor on top. END key is use to

transfer the control on the end of page. PGUP key is use to transfer the control on top of the page PGDN is use to transfer the control on the next page.

**(v) Numeric Key-** In right side of keyboard numeric key pad. These Key pad like a calculator but some key use a double function for example (.) key use as Del. (1) key is use as END (9) key use as PGDN,(7) key is use as HOME. When the on of num Lock the key pad work as calculator and Off position the pad perform special function.

**(vi) Caps Lock-** Generally, any Character type in small letter. On the Position of Caps Lock on, the Character type in Capital letters. On the Off the character type in small letter.

**(vii) Shift key –** In every key board print two character on the key. One is upper side and second is lower side. By press the shift key, we type the upper letter of key. On the position of caps Lock all the character will type in small letter.

**(viii) Ctrl and Alt –** For perform special function use these key with the combination of other key. Use of these key are depend on different software. For example the CTRL key use with c for terminate any command in DOS. By pressing CTRL, ALT and DEL key we can restart of computer.

**(ix) Enter Key-** At the ending time of instruction, we use these key. In other side we use these key for changing the lime at the typing time.

**(x) Pauses Key –** By using these key, we can break the scrolling of computer screen.

**(xi) Tab Key –** By using of these key we can skip the cursor on decided point, by default setting these point on half inch position. We can change these as per our requirement. For paragraph, Column. Text and Table setting time use these Tab Key.

**(xii) Escap Key –** By using these key we prevent to execute rest of command

**(xiii) Prints Screen –** By using these key we cab print the information of the screen.

**(xiv) Delete Key –** By these key we erase the character. By using these key, the character erase on cursor position.

**(xv) Back Space Key –** By these key we can erase the character but the last character will erased not inside character.

## 2. Mouse

A mouse is basically a pointing device about the size of plam. It rolls on a small ball and has one or more buttons on the top. When the user roll the mouse across a flat surface, the screen "cursor" (a blinking underline) or mouse pointer moves in the I direction of the mouse movement.

## 3. Graphics Tablet (digitizer/digitizing Tab Let)

A mouse or a trackball is made for the pointing purpose i.e. to point at some object on the screen and to initiate some action, they can also be used for some simple drawing purpose. But, if you try to make your signature into "Paint-brush", "CorelDraw" or some other drawing package using a mouse or a trackball, you will find that, even after a lot of practice, you can not get the exact shape into the computer.

A different input device called "Graphi Tablet" (also called a Digitizer, or a Digitizing Tablet) an be used for doing fine drawing works and for image manipulation application.

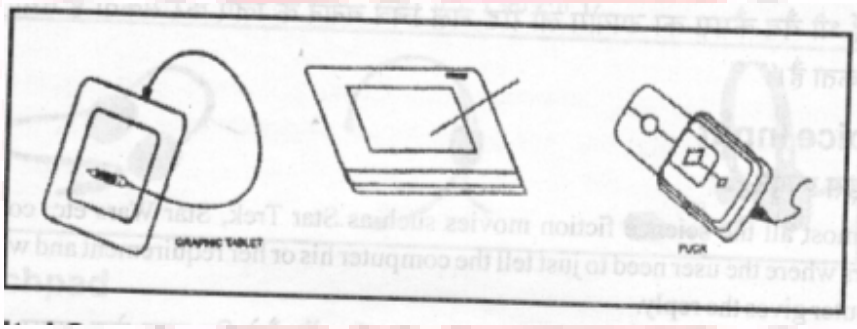


**Fig .2**

## 4. Digital Camera

Digital camera can be used to capture any image and to save them on storage device such as hard disk, CD-ROM, etc. these image can be posted on the web or printed on a colour ink-jet printer.

Some common digital cameras are

- Digital Still Camera
- Digital Video Camera
- Web Camera

## 5. Web Camera

A web camera is basically a low-end digital video camera with low resolution and fix focus lens. This camera is suited for webcasting, video messaging etc. application.

One can use the web camera to make low grade movies and capture still images.

## 6. Voice Input

Almost all the science fiction movies such as Star Trek, Star Wars etc. contain talk computers where the user need to just tell the computer his or her requirement and within second the computer gives the reply.

Intelligent conversations as shown in these movies with a computer is currently not possibility, but it is possible to have devises that cab understand and respond to simple words.

For example, one can highlight a sentence with the mouse and say the word " delete" so the computer delete the highlighted word from the text, or by issuing voice command, such as "copy" , "move" or "print" one should be able to copy, move or print selected file.

The whole process of listening to voice command and then dete3rmining what the speaker wants may seem easy for us humans, but for a computer it is a very complicated process.

Currently devices that take dictation, so that you cab say memos rather than type them on the keyboard are easily available. As the machine power increase and software improve this voice input technology will come in common use.

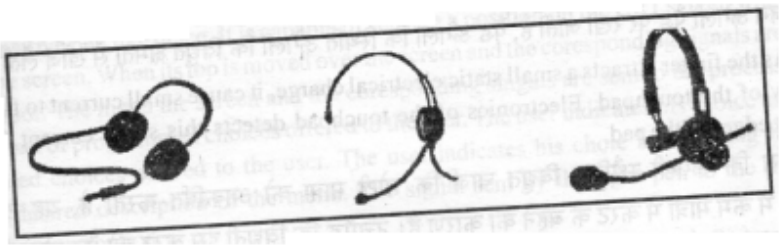


**Fig .3**

## 7. Touchpad

Touchpad are pointing device for the notebook computers. Initially trackball was used as pointing device with the notebook computers. After the introduction of touchpad, almost all notebook manufacturers have switched to touchpad as their choice for pointing device.

Touchpad is used by moving ones finger on the pad surface. The finger movement on the pad surface is converted into mouse pointer's movement on the monitor.

A touchpad is a printed circuit board (PCB), top of which holds a pattern of conductive sensor lines etched into place. A layer of myler covers this top of the board to protect it and to give the finger a place for smooth movement.

As the touchpad is completely sealed, it is safe from any environmental continuation such as dust, water etc.

When the finger is placed on the pad, the pad detects location of the finger by detecting the electrical capacitance of finger.

As the finger attracts a small static electrical charge, it cause small current to flow in the circuitry of the touchpad. Electronics of the touchpad detects this small current from two adjacent edges of the pad.

This makes the touchpad circuitry to be able to detect the position of the finger. By following the changes in the current, touchpad can detect the movement of the finger across the pad.

The touchpad is generally placed just below the spacebar on the keyboard. This allows a touch-typist to use his thumb to operate the touchpad without lifting his fingers from the home row.

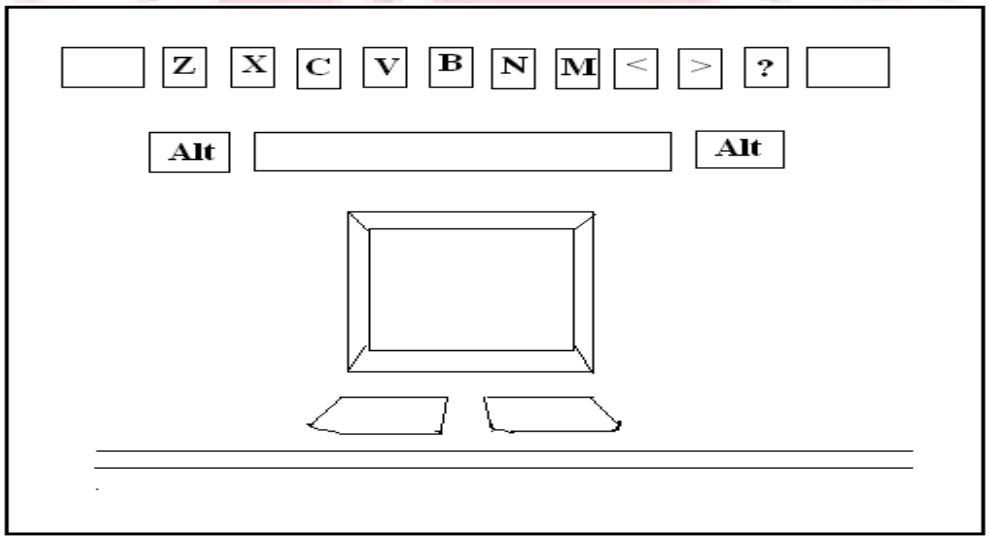



**Fig .4**

## 8. Light Pen

A light pen is appointing device. It is used to select a displayed menu option on the CRT. It is a photosensitive pen like deice. It is capable of sensing a position on the CRT screen when its tip touches the screen. When its top is moved over the screen and the corresponding signals are sent to the processor. The menu the screen and the corresponding singals are sent to the processor. The menu us a set of programmed choices offered to the user. The user indicates his choice by touching light pen against a desired description of the menu. The signal sent by the light pen to the processor identifies the menu option.

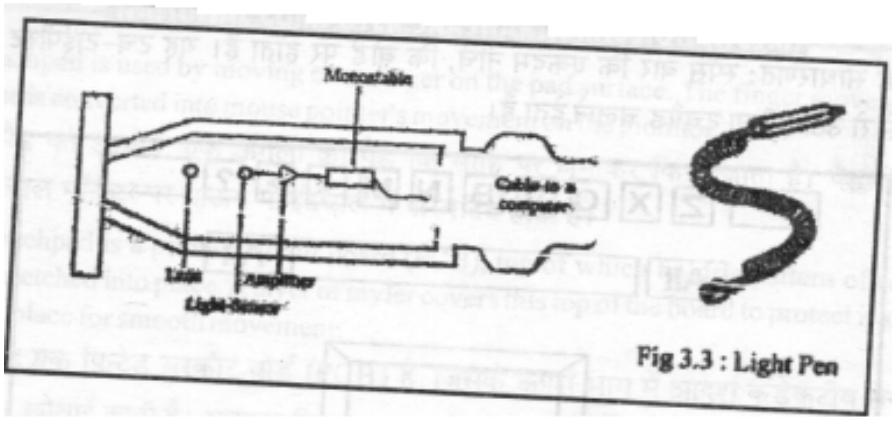



**Fig .5**

## 9. Joystick

The joystick is mostly used in children's games. It is an input device with me-chemical push button. Tt consists of a long handle with four switches arranged in four directions. (East, West, North, South). The switch is activated in that directions and the cursor which moves on the screen in the directions in which the Handle moved.

## 10. Track Ball

Trackball is another type of input device, which is used in lat-top computers. It is fixed on the board, cursor on the screen is moved in a direction according to the Trackball is moved. Trackball is a circular ball.

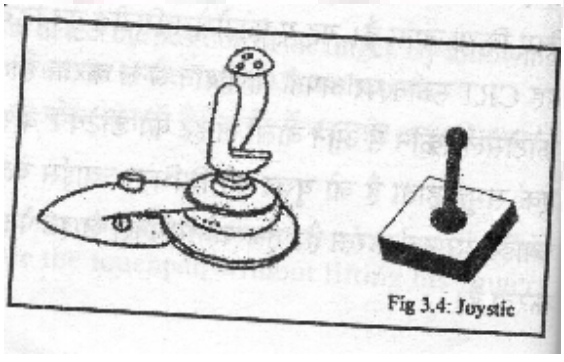



**Fig .6**

## 11. Monitor

(Monitors are by far the most popular output devices used today for producing soft-copy output. They display the 'generated output on a television like screen (see Figure). A monitor is usually associated with a keyboard and together they form a video display terminal (VDT). A VDT (often referred to as just terminal) is the most popular input/output (I/O) device used with today's computer). That is, it serves as both an input and an output device. The keyboard is used for input to the computer and the monitor is used to display the output from the computer.

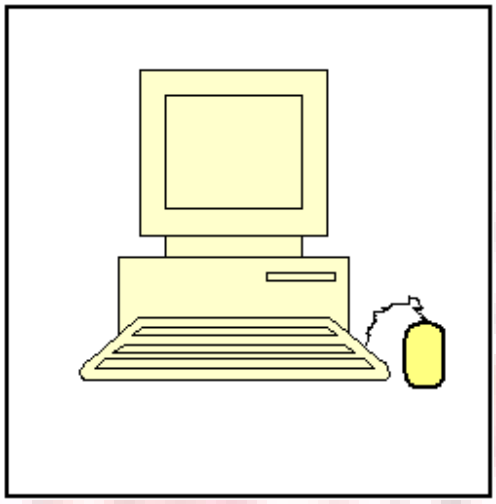
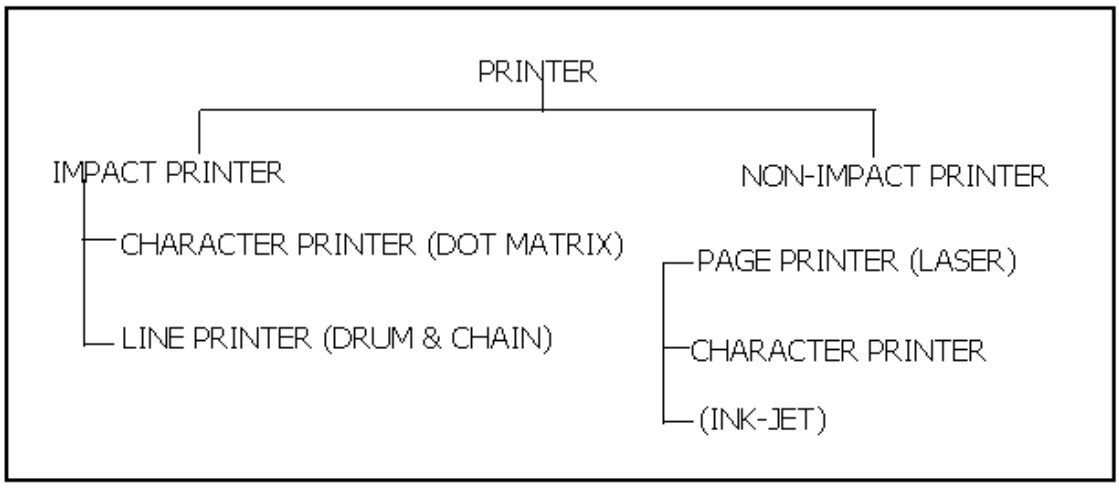


**Fig .7**

The two basic types of monitors used today are cathode-ray-tube (CRT) and flat-panel. The CRT monitors book much like a television and are used with non-portable computer systems. On the other hand, the flat-panel monitors are thinner and lighter and are commonly used with portable computer systems like notebook computers.

## 12. Printer



Printer is an output device. As per the technology we can classified in following two categories.

1. Impact Printer
2. Non-Impact Printer

### (i) Impact Printer

In this printer we used electro mechanism. Impact printer makes contact with the paper by processing ribbon against the paper with a hammer like mechanism.

### (ii) Non-Impact Printer

In this type printer we used non-electro mechanism. Printers that do not strike character against ribbon or papers when they print are non-impact printers.

As per the works of printers fall into following categories:

I. Character Printer
II. Line Printer
III. Page Printer

### I. Character Printer

Those printer prints one character at a time, the entire character is formed with a single impart

### II. Line Printer

These printer prints one line at a time, the entire line informed with a single impart.

### III. Page Printer

These Printer prints one page at a time the entire page is formatted with a single impart.

## 13. The Examples of Impact Printer

### (i) Letter Quality Printer

This is Character printer or serial printer. In figure the daisy wheel printer has print “Wheel” with a set of printer character, the wheel is spun until the appropriate spoke is lined up with the print hammer. The print hammer is then strike and the print character. Against the ribbon and paper.

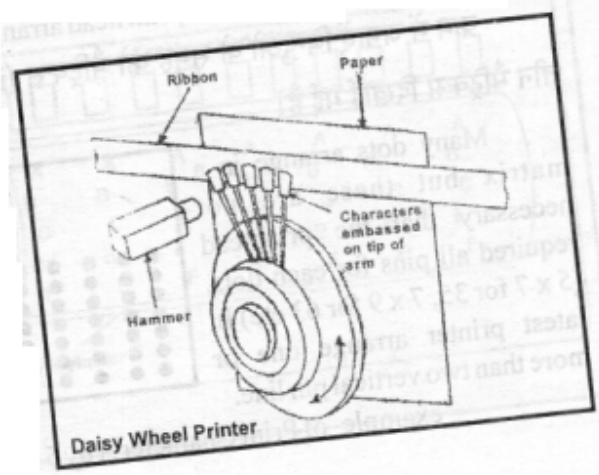



**Fig .8**

## (ii) Dot Metric Painter

These printer also called serial printers, and developed with two objectives is mined grater speed and more Flexibility. The images are formad by a print head that is composed of a series of little print hammers. These print hammer strike against the ribbon as the print mechanism moves across the entire print line in both directions. The print head of Dot-Matrix printer usually has 9 pins, 12 pins, 24 pins etc.

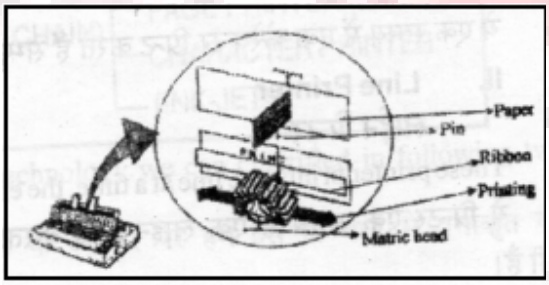



**Fig .9**

In Dot Matrix printer the printer head arrange in following group of dots is called matrix.

Many dots arrange in a matrix but these are not necessary that the printhead required all pins for each dots. (5x7 for 35, 7x9 for 63 etc) In latest printer arrange one or more than two vertical pin line.

Example- of Print Character A by 5x7 matrix.

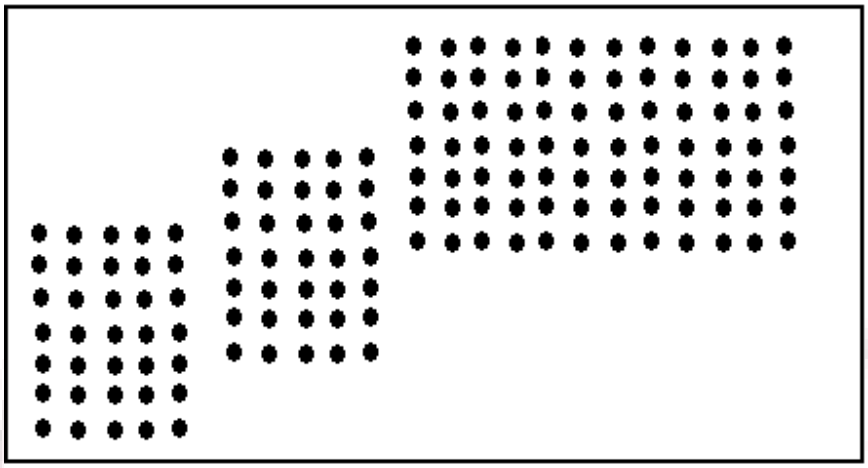


**Fig .10**

## (iii) Line Printer

These printer print a whole line of character practically at once. Band or belt printer and chain printer the example of line printer. Each of these printers has several copies of each printable character on a drum, a belt or a print chain revolves, the hammer activated as the appropriate characters pass in front of them.

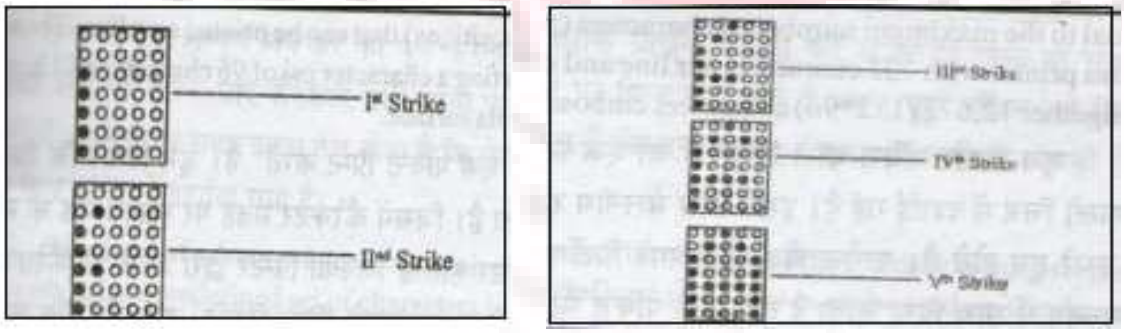



**Fig .11**

## (iv) Drum Printers

Drum printers are line printers that print one line at a time. The print mechanism of a drum printer is shown in Figure. It consists of a solid cylindrical drum with characters embossed (raised characters) on its surface in the form of circular bands. Each band consists of

all the printing characters supported by the printer in its character set and the total number of bands equal to the maximum number of characters (print positions) that can be printed on a line. Thus drum printer with 132 characters per line and supporting a character psi of 96 character will have altogether 12,672 (132*96) characters embossed on its surface.

In addition to the drum, the printer has a set of hammers mounted in front of the drum such a manner that an liked ribbon and paper cab be placed between the hammers is equal to the total number of bands on the drum, that is one hammer is located opposite to each band of the drum.

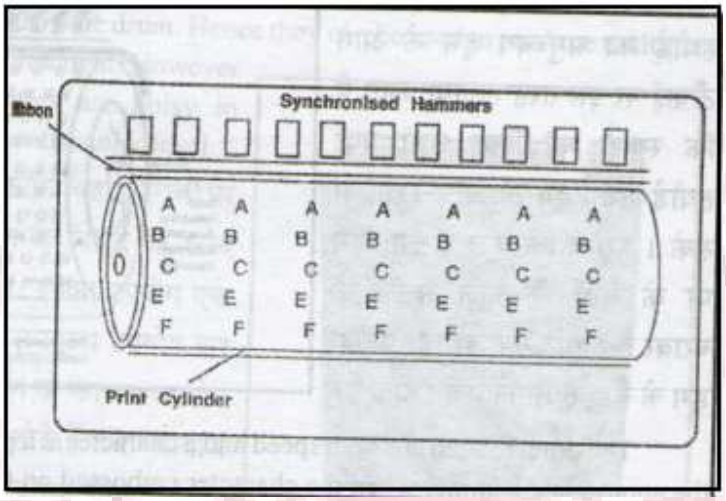



**Fig .12**

The drum rotated at a high speed and a character at a print position is printed by activating the appropriate hammer when the character embossed on the print position passes below it. thus the drum would have to complete one full revolution to print each line of output. This means that all characters on a line are not printed at exactly the same time, but the time required to print and entire line is so fast that it appears as if one line is printed at a time. A drum printer is shown in Figure.

The drum of a drum printer is expensive and cannot be changed often. Hence drum printers can only print a predefined set of characters in a per-defined style that is embossed on the drum. Due to this reason, drum printers do not have the ability to print any shape of characters, different sizes of print, and graphics such as charts and graphs.

Drum printers are impact printers because they print by hammering the paper and the inked ribbon against the characters embossed on the drum. Hence they can be used to produce multiple copies by using carbon paper or its equivalent. However due to impact printing, drum printers are noisy in operation and often use a cover to reduce the noise level.

Since drum printers use inked ribbon to produce printed output, they are usually monochrome. Typical speeds of drum printers are in the range of 300 to 2000 lines per minute.

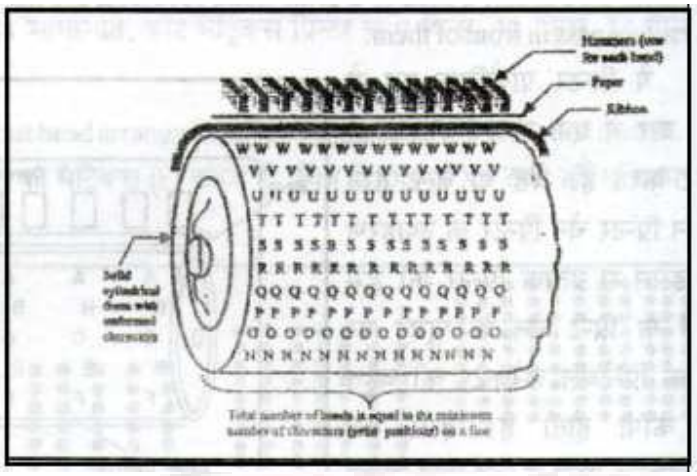



**Fig .13**

## (v) Chain/Band Printers

Chain/band printers are line printers that print one line at a time. The print mechanism of chain/band printer is shown in Figure. Ti consists of a metallic chain/band on which all the characters of the character set supported by the printer are embossed. Standard characters may have 48, 64 or 96 characters. In order on the enhance the printing speed, the characters in the character set are embossed several times on the chain/band. For example, the chain/band of 64 characters set printer may have 4 sets of 64 characters each embossed on it. In this case, the cahin/band will have altogether 256 964 xs4) characters embosses on it.

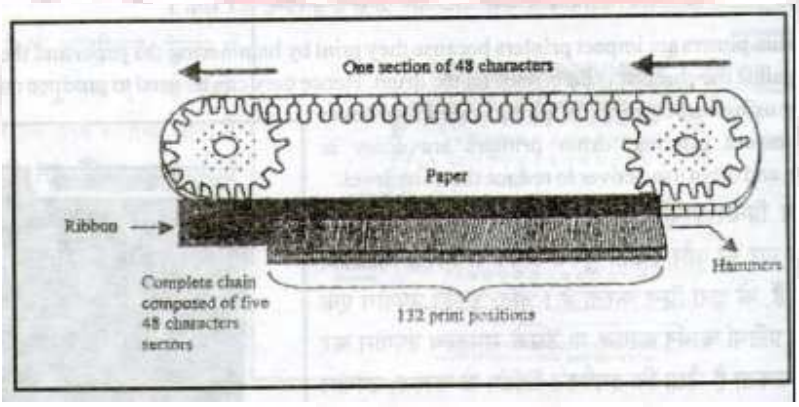



**Fig .14**

In addition to the chain/band, the printer has asset of hammers mounted in front of the chain/band in such a manner that an inked ribbon and paper cab be placed between the hammer and the chain/band. The total number of hammers is equal to the total number of print positions. So if there are 132 print positions, then the printer will have 132 hammers.

**Fig .15**

The chain/band rotates at a high speed and a character at a print position is printed by activating the appropriate hammer when the character embossed on the chain/band passes below it. Since the character set is repeated several times on the chain/band, it is not necessary to wait for the chain/band to make a complete revolution to position the desired character in the correct print positions.

Unlike the drum of a drum printer, the chain/band of a chain/band printer can be easily changed. This allows the use of different font (styles of characters) and different scripts (languages) to be used with the same printer. However, just like drum printers, chain/band printers can only per-defined sets of characters that are embossed on the chain/band used with the printer. Due to this reason, chain/band printers do not have the ability to print any shape of characters, different sizes of print, and graphics such as charts and graphs.

## 14. The Examples of Non-impact Printer

The Ink-jet printer and the laser printer is the main categories of Non-impact printer.

### (i) Ink –Jet Printer

The Ink-jet printer steram of ink chops towards the paper. The desired symbols formed by the electro static attraction to leave only those that are needed. These are not needed are capture in a and filtered that next time. These process recirculated through the drop generating mechanism.

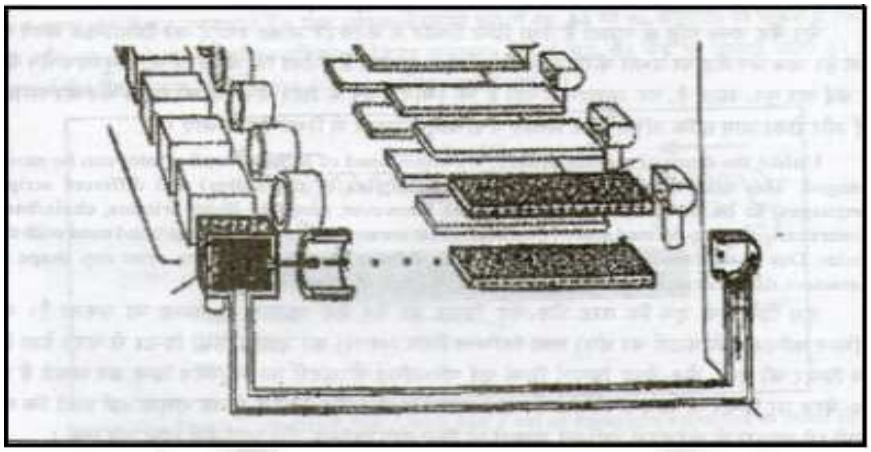


**Fig .16**

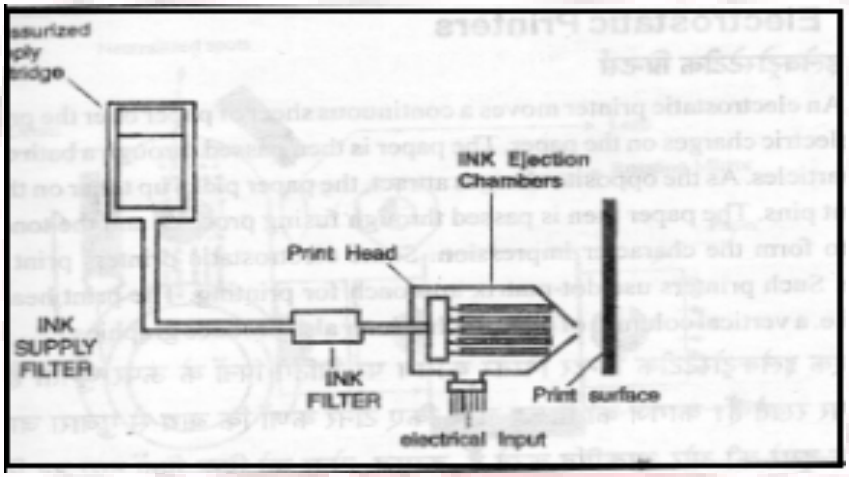



**Fig .17**

## (ii) Thermal Printer

In the following thermal printer print the page by using

1- Heat Sensitive Paper
2- Heat Sensitive Ribbon

In heat sensetive paper. Print head (arrange in matrix form0 charge the dots. The spot on the paper is heated and spot turns (By the burning the dots position).

In heat sensetive ribbon, heating the spot of ribbon. The ribbon dot sprays the impression on the paper.

## (iii) Electrostatic Printers

An electrostatic printer moves a continuous sheet of paper over the printing pins which put small electric charges on the paper. The paper is then passed through a bath of oppositely charged toner particles. As the opposite charges attract, the paper picks up toner on the spots sensitized by the print pins. The paper then is passed through fusing process, and the toner is melted onto tbfl paper to form the character impression. Some electrostatic printers print upto 5000 lines per minute. Such printers use dot-matrix approach for printing. The print head contains vertical array (i.e. a vertical column) of pins. Such printer also produces graphics.

## (iv) Laser Printer

The technology of this printer is much less mechanism then impact printing. A microprocessor control a laser beam is directed across the surface of a light sensitive drum through a rotating mirror and lense. Then image fired in the drum of a pattern of tiny dots. The image is print to the paper by the special Toner (contaning Powder, ink and an adhesive). The papers come out the use of heat and pressure. The is then recharged for its next print image.

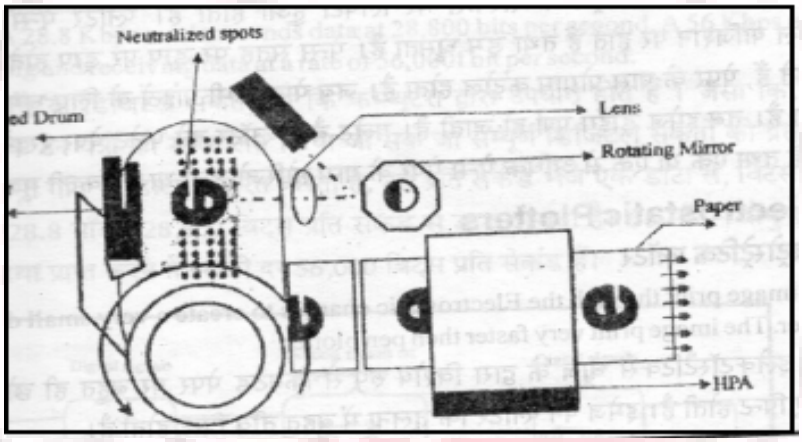



**Fig .18**

## (v) Plotters

A platter is one output drum is specialized designed to produce high quality graphics in a Varity of columns there are two basic types of platters.

(i) Those that use pen (drum and flat bed plotter0
(ii) Those that do not use pen (Electrostatic plotters)

## (vi) Drum & Flat Bed Plotter

In a drum plotter, the paper mounted on the surface of a drum. The plotters pens are horizontally positioned on the target area and the drum revolved. The pens are dropped to the surface and move left and right program control across the paper when the paper has rotted to the pins is from the surface when the image drawing is complete. In the flatbed plotters are

designed for placed flat paper and use one or more pens move horizontally and vertically across the paper.

### (vii) Electrostatic Plotters

The image print through the Electrostatic charges to create a very small dots on specially treated paper. The image print very faster then pen plotter.

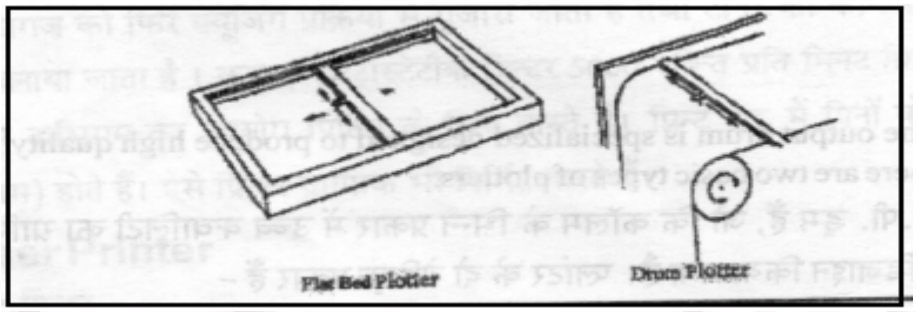



**Fig .19**

## 15. Modem

Modem, device that enables computers, facsimile machines, and other equipment to communicate with each other across telephone lines or over cable television network cables, In the strictest sense, a modem is a device that converts between analog signals, such as sound waves, and digital signals, which are used by computers. However, the term has also come to include devices that permit the transmission of entirely digital signals.

Modems transit data at different speeds, measured by the number of bits of data they send per second 9bps.) A 28.8 Kbps modem sends data at 28,800 bits per second. A 56 Kbps modem is twice as fast, sending and receiving data at a rate of 56,000f bit per second.

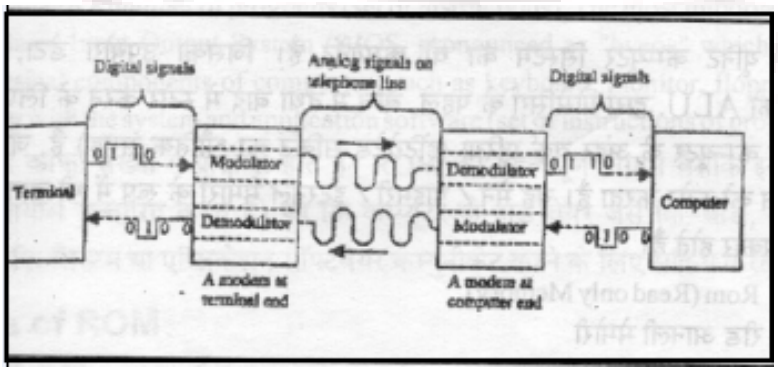
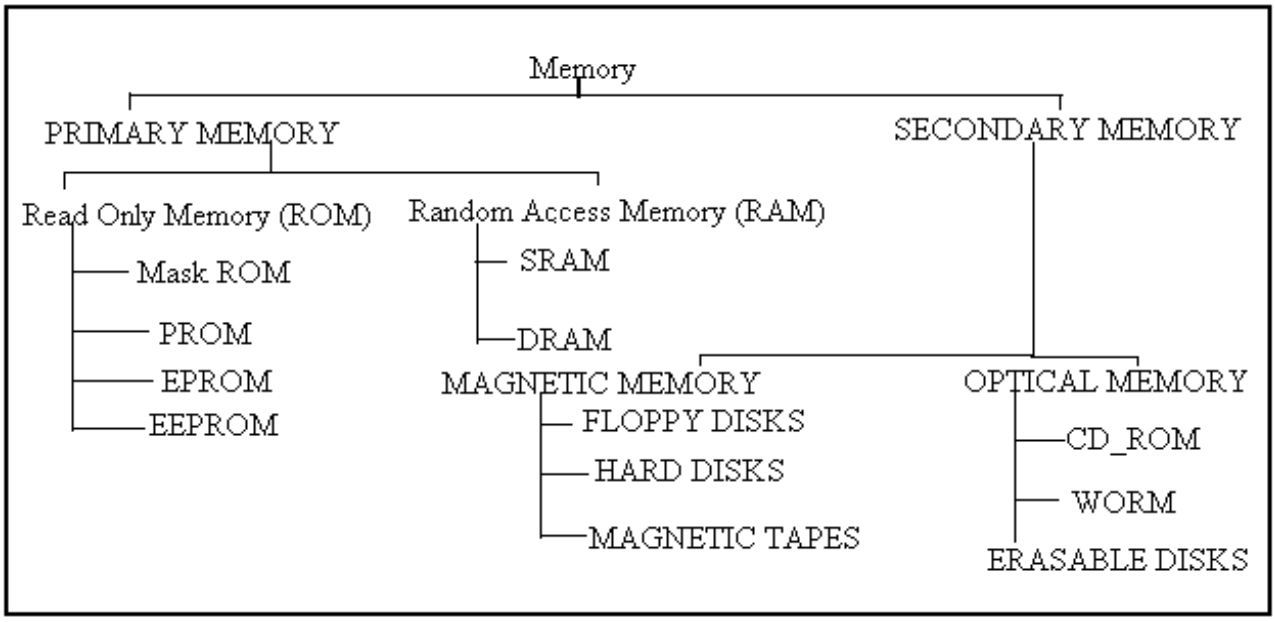



**Fig .20**

## 16. Memory Unit




**1- Primary Memory**
**2- Secondary Memory**

## 17. Cache Memory

Memory Unit is that component of a computer system, which is used store the data instructions and information before, during and after the processil by ALU. It is actually a work area (physically a collection of integrated circuit) withing the computer, where the CPU stress the data instructions. It is also known as a Main/Primary/ Internal Memory. It is of the following three types:-

(a) Rom (Read only Memory)
(b) Random Access Memory
(c) Complementary Metal Oxide Semiconductor Memory (CMOS)

## 18. ROM (Read only Memory)

READ ONLY Memory is and essential component of the memory unit. We know that the computer, being machine, itself has no intelligence or memory and requires instructions, which are given by man. Whenever the computer is switched on, it searches for the required instructions. The memory, which has these essential instructions, is known as Read Only Memory (ROM). The memory capacity of Rom varies from 64 KB to, 256 B (I Kilobyte =1024 bytes) depending on the model of computer.

ROM contains a number of programs (set of instructions). The most important program of ROM is the Basic Input Output System (BIOS, Pronounced as “byeos” which activates the hardware (physical components of computer) such as keyboard, monitor, floppy disk etc. in communicating with the system and application software (Set of instructions of programs).

# 19. Types of ROM

## 1- MASK ROM:

There are many type of ROM chip. In this type of ROM, the information is stored at the time of its manufacturing. So, it cannot be altered or erased later on.

## 2- PROM:

Pronounced Prom, an acronym for promable Read-only Memory. A PROM, is a memory chip on which data can be written only once a program has been written onto a PROM, it remains there forever. Unlike RAM, PROMs retain their contents when the computer is turned off.

The different as between a PROM and ROM (read-only memory) is that a prom is manufactured as blank memory, whereas a ROM is programmed during the manufacturing process. To write data onto a PROM chip, you need a special device called a PROM programmer or PROM burner. The process of programming a PROM is sometimes called burning the PROM.

## 3- EPROM:

EPROM is the acronym for Erasable programmable Read-Only Memory, and pronouncedee- Prom, EPROM is a special type of memory that retains its contents until it is expos-ed to ultraviolet light. The ultraviolet light clears its contents, making it possible to reprogram the memory. To write to and erase an EPROM, you need a special device called a PROM programmer or PROM burner.

## 4- EEPROM:

Electrically Erasable Programmable Read-only Memory or EEPROM is Prom, that cab be erased by exposing it to an electrical charge, like other types of PROM, EEPROM retains its contents even when the is turned off. Also like other types of ROM, EEPROM is not as fast as RAM. EEPROM issimilar to flash memory (sometimes called flash EEPROM). The Principal difference is that EEPROM requires data to be written or erased once byte at a time whereas flash memory allows data to be written or erased in blocks this flash memory faster.

# 20. RAM (Random Access Memory)

Random access Memory is another important component of the Memory unit. It is used to store data and instructions during the selection of programs, Contrary to ROM; RAM is temporary and is erased when the computer is switched off. RAM is a read/write type of memory, and thus can be read and written by the user/Programmer, this memory is known as random access memory. The memory capacity of RAM varies from 640 KB to several megabytes (1 Megabyte = 1024 KB) with different models of PC.

## 21. There are two types of RAM

1. Static Ram 2. Dynamic RAM

1. **Static Ram –** is one that cab store datas long as power is supplied to chip. These memories have the property that their contents are retained as long as power in kept on seconds, minutes, hours even days.

2. **Dynamic Ram –** Dynamic RAM are memory device in which the stored data will not remain permanently stored, even with power applied, unless the data are periodically written into memory.

   The dynamic memory Cell of Drams retain data for only a limited time typically 10 name second after which the data are lost
   1. High storage capacity.
   2. Less power requirements.
   3. Less expensive
   4. Data can not be Stored permanently.

### 3. Complentary Metal Oxide Semiconductor Memory (CMOS):

CMOS memory is used to store the system configuration, data, time and other important data. When the computer is switched on BIOS matches the information of CMOS with the peripheral devices and display error in case of mismatching

## 22. Secondary Memory (External Storage Devices)

The purpose of external storage is to retain data and programs for future use. For example a program may be required at regular intervals. It suet information is stored in an external storage media, then one can retrieve it as and when necessary, thus avoiding repeated typing. Any number of files containing information is stored on external media. Since they are permanent (they are not erased when the equipment is turned off) one can store a long a long file on external currently in use. The popular external storage media use with computers are:

1. Floppy Disks
2. Hard Disks

3. Magnetic Tapes
4. Optical Disks

## 22.1 Floppy Disks

The most common storage medium used on small today is a floppy disks. It is a flexible plastic disk coated with magnetic and looks like a phonograph record. Information can be recorded or read by inserting it into a disk drive connected to the computer. The disks are permanently encased in stiff paper jackets for protection and easy handling. An opening is provided in the jacket to facilitate reading and writing of information.

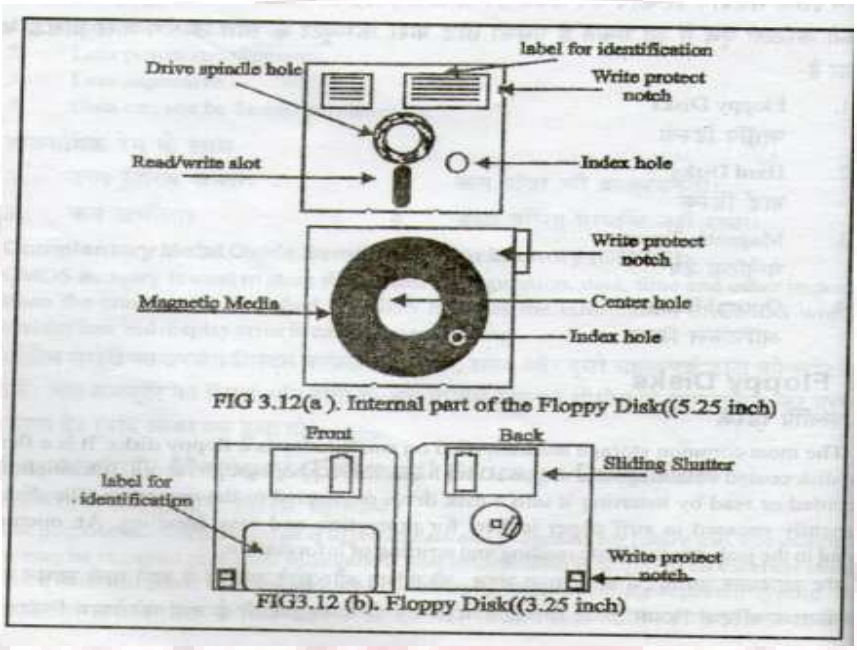



**Fig .21**

Floppy disks are available in two standard sizes. One is 8 inch size and the other 51/4 inch, which is frequently referred to as the minifloppy. An 8-inch floppy holds much more information than a 51/4-inchminifloppy. The actual volume of information depends not only on size but also on the density with which information can be recorded. The 52/4-inch floppy has become a standard one in industry. Recently, 31/2- inch floppy 51/4-disks have been announced for use in portable computers.

The disk jacket haf four openings:

1- Drive spindle hole (hub)
2- Data access area
3- Write protected notch and
4- Index hole

To store and retrieve data form a diskette you must place it into a disk drive.

## (i) Drive spindle hole (hub)

The hub of the diskette is the round opening in the center. When the diskette is placed into the disk drive, the hub fits over a mount or spindle in the drive the disk drive gate move a lever over the drive and clamps the diskette over the spindle of the drive mechanism.

## (iii) Data Access Area

When data is stored or retrieved the diskette spin inside its jacket and the read write lead are clamped on the surface in the data access area of the disk most disk drives are equipped with two read write heads. So that the top and bottom surfaces of the diskette can be accessed simultaneously the read/write heads are moved back and forth over the data access area is small increments to retrieve or record data as needed.

## (iv) Write protected notch and

Just inside the disk drive unit a small mechanism check to determine of the disk's write/protect notch is covered. If the notch is covered with tape a switch form being able of touch. The surface of the diskette. Which means no data can be recorded. This is security means covering the write/protect notch prevents accidental erasure or over writing of data.

## (v) Index hole

The index hole the jacket is positioned over a photoelectric sensing mechanisms diskette spin in the jacket. The hole in the diskette passes. The index hole in the jacket is sense and activates a timing switch. The timing activity critical because. This is how the mechanisms determine which portion of the diskette is over of under the read/write heads. The diskette spins at a fixed speed of about 300 revolutions per minute (PRM).

## (V) Storage Organization of Floppy Disk.

Data is recorded on disks in circular bands referred to as tracks. The read/write heads are designed to move in smaller increments across the data access of the disk to find the appropriate tracks. As the precision of positioning. The read/write head increases width of the tracks become thinner. As the precision of positioning. The two most common track densities in use today are 48 tracks per inch (tpi) and 96 tpi. The recording surface of a 5-1/4 inch disk is straightly les than 1 inch therefore the usable per inch are 40 or 80 in most case.

## (vi) Sectors

Typically a disk is divided up into eight or nine sectors are equal wedge shaped areas used for storage the point at which a sector intersects a track is used to reference the data

location. The track number indicates where to position. The read/write he3dad and the sector number indicate when to activate the read/write heads as the disk spins. Disks and drives are identifies are as being either hard sectored or soft sectored.

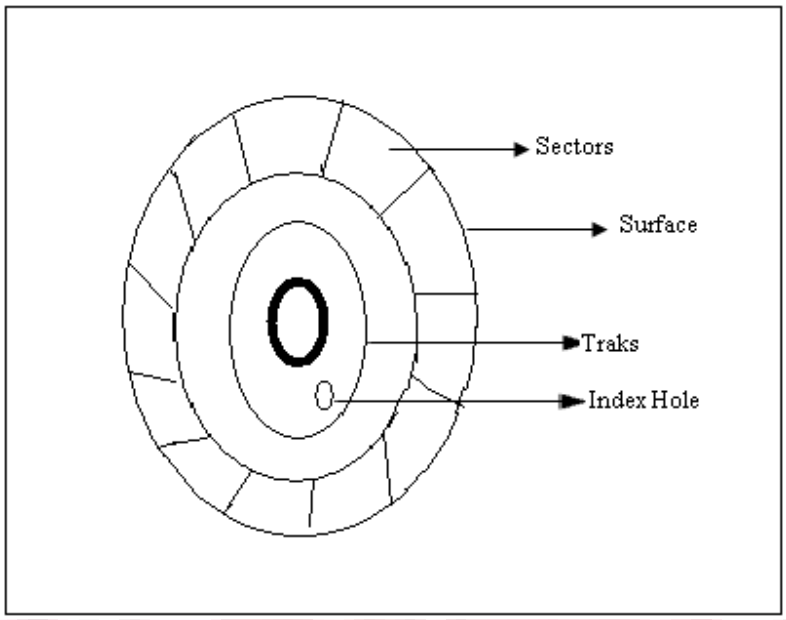



**Fig .22**

## (a) Hard Sectored Disk

Hard sectored disks always have the same number and size of sectors. The presence of the hare sectored marks allows data to be retrieved from the disk with less effort then from of double- sided, double density soft sectored disk. Hard sectored disks have been used most often with dedicated computer system that Handel the manipulation and production of text.

## (b) Soft Sectored Disk

Today most microcomputer systems use soft sectored disk. Soft sectored disk are marked magnetically by the user's computer system during a process called formatting or initializing which determines the size and number of sectors on the disk.

1. Single Side (160 KB/180 KB)
2. Double Sided (320 KB/360 KB)
3. High Capacity (1.2 MB)

## 22.2 Hard Disks

Another magnetic media suitable for storing large volumes of information is the hard disk, popularly known as the Winchester disk. A hard disk pack consists of two or mare magnetic plates fixed to a spindle, one below the other with a set of read/ write heads, as shown in fig. the disk pack permanently sealed inside a casing to p0rotect it from dust and other contaminations, thus increasing its operational reliability and data integrity.

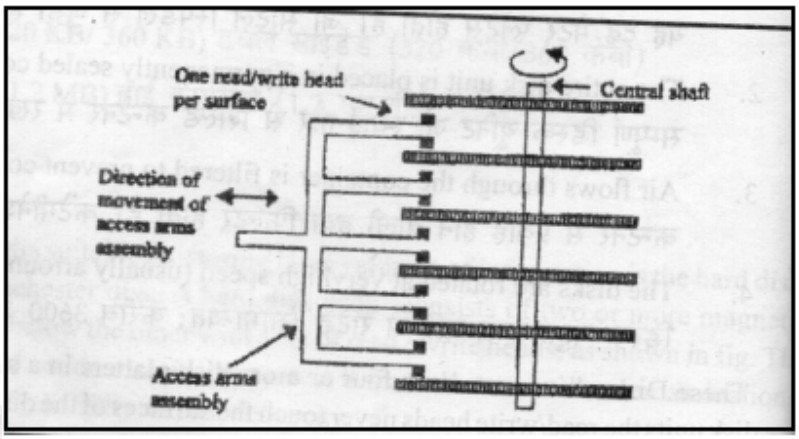



**Fig .23**

In some hard disk system data is stored in the same way as it is an diskette (floppy). Hard Disk have the following characteristics are:

1. They are rigid metal platters connected to a central spidle.
2. The entire disk unit is placed in a permanently sealed containers.
3. Air flows through the container is filtered to prevent contamination and
4. the disks are rotated at very high speed (usually around 3600PRM)

These Disks drives can have four or more disk platters in a sealed unit. In most of disk these disk units the read/write heads never touch the surfaces of the disks.

A set of disk drives are connected to disk controller. The disk controller accepts commands from the computer and position the read/write head of specified disk for reading and writing. In order to recorder write in a disk pack. The computer must specify the drive no., cylinder no., and surface no. And sector no., should be specified because controller. Normally controls more than one drivers.

## A. Access Mechanism

Data are recorded on the Tracks of a spinning disk surface and read from the surface by on of more heads. As shown in Figure, the read/write heads are mounted on an access arms assembly. Most disk drives have a single read/write head for each disk surface. But some

faster disk systems use multiple heads on each access arm to services number of adjacent tracks simultaneously.

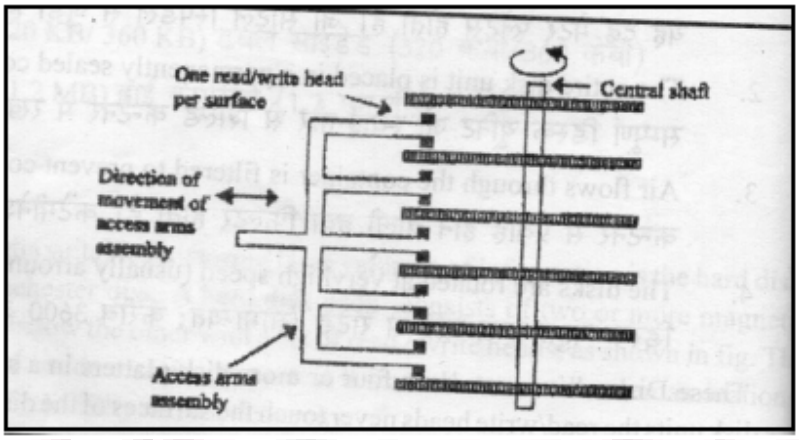



**Fig .24**

The access arms assembly cab be moved in and out in the direction shown in the figure so that the read/write heads can be moved horizontally across the surfaces of the disks. In this manner, the read/write heads can be positioned ottj any track on which data are to be recorded or from which data are to be read, inj case of a disk pack, each usable surface has its own read/write head and all the, heads move together. Hence information strode on the repacks, which constitute a] cylindrical shape through the disk pack, is accessed simultaneously. Recall the cylindrical storage arrangement of information in a disk pack.

## B. Seek Time

As soon as a read/write command is received by the disk unit, the read/write heads are first positioned on the specified track (cylinder) number by moving the access aims assembly in the proper direction. The time required to position the read/write head over the desired track is called the seek time.

## C. Latency

Once the heads are positioned on the desired track, the head on the specified surface is activated, Since the disk is continually rotating, this head should wait for the desired date (specified sector) to come under it. This rotation waiting time, i.e., the time required to spin the desired sector under the head is called the latency.

## D. Transfer Rale

Transfer rate refers to the fate at which data are read from or written to the disk, once… the read/write head is positioned over the desired sector, the data are read/written at a

speed determined by the rotational speed of the disk. If the rotational speed of a disk is 3600 rpm, the disk as 125 sectors/track and 52 bytes/sector, then in one full revolution of the disk, the amount of data transferred will be 125x512 = 64,000 bytes = 64 k bytes (approximately). Hence the transfer rate of the disk system will be 64,000 x 3600/60 bytes/ second = 38,40,000 bytes/second = 3.8

Megabytes/second (approximately). Notice that the transfer tare of a disk system depends on the density of the stored data and the rotational speed of the disk.

## 22.3 Magnetic Tapes

Relatively in inexpensive storage media known and magnetic types are sometimes used a back-up media. A standard 2,400 feet tape cab store about 40 million characters and can be read at a speed of 1,60,000 characters per second. Remember that tape, a like music cassette, is a sequential device and therefore one has to read all previous records to reach a particular one. Fig. shows a tape unit in operation

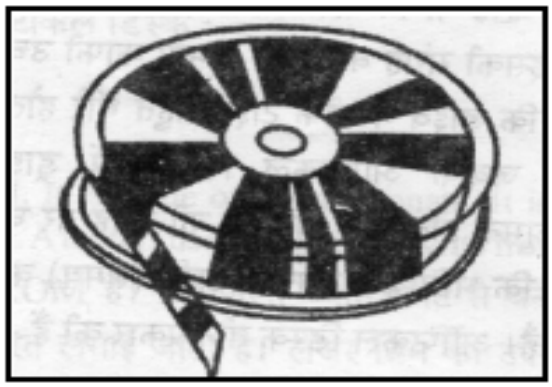


**Fig .25**

However, some computers support cassette tapes which are smaller and chapter but shower. The storage capacity of a cassette is around 2,50,000 characters

## 22.4 Optical Disks

Information is written to or read form a optical disk by laser beam. An optical disk has very high storing capacity, for example, A 5. 25 inch optical disk stores 550 MB. Only one surface on an optical disk is used to store data. An optical disk is relatively inexpensive and has a long life of at least 20 years. Its device are inherently simple and inexpensive. As the read/write head does not touch the disk surface, (here is no disk wear and no problem of head crash0 elaborate error checking codes can he used as there is no problem of space because the disks have very high storage capacity. The greatest drawback of optical disk system is its slow average seek time in the drive. In case of a b disk the read/write head is a tiny magnet wherease3 in optical system the drive ha’ to move on sizable optical assembly across the disk surface this

increases the seek time. In future it is expected that the access time will he reduced using fibreoptic system. There are three types of optical disks.

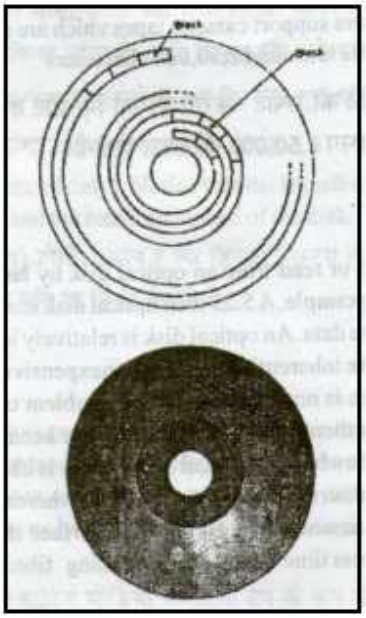


**Fig .26**

(i) CD-ROM- compact disk read only memory.
(ii) WORM – Write once and many.
(iii) Erasable Optical Disk.

## 1. CD-ROM

It is a optical ROM. It is made of polycarbonate. It is coated with a hightly reflective material usually aluminum. A laser is used to read and write from and in CD-ROM.

CD-ROMs use long spiral tracks to store data serially, as shown in Figa. The track is divided into blocks of the same size as shown in the figure. ACD-^ROM disk rotates at a variable speed so that the pils are read by the laser at a constant linear speed. The speed of the disk is adjusted in such a manner that the track passes under the read/write heads of a constant linear vdocity.

The advantage of CD-ROM are its high storing capacity, mass copy of information stored, removable from the computer etc. its main disadvantage is longi access time as compared to that of a magnetic hard disk as much as half a second, I cannot be updated because it is a read only memory. It is suitable for storing information which are not be changed. Disks can be used for archival storage.

## 2. WORM

It is Write-Once-Read-Many (WORM) type optical disk memory. The users can write data on WORM and read the written data as many time as desired. To reduce the access time the disk is rotated at a constant speed/ its pils are concentric circles, “Each track is divided into a number of sectors. It is Mutable for data and files which are not to be changed. The user cab save permanent data, information in and files for maintaining and files maintaining records. IBM has developed 200 MB WORM for us PS/2 system.

### 3. Erasable Optical Disk

It is read/white optical disk memory. Information can be written to and read from the disk. The disk contents cab be erased and new data can be rewritten. So it cab serve as a secondary memory of computer. It rotates at a constant speed. Its tracks are concentric circles. Each track is divided into number of sectors.

(i) Very high storage capacity. A 5.25 inch optical disk can store about 600 MB of data.

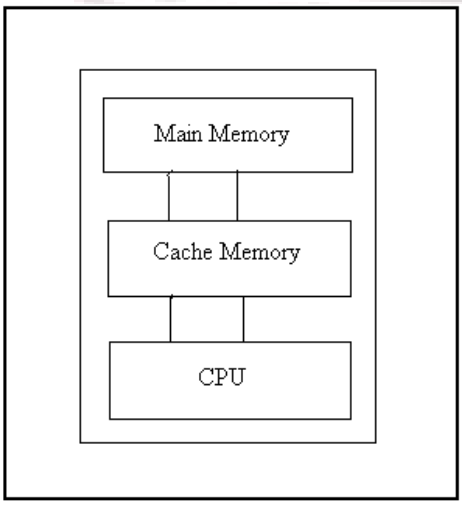
(ii) An optical disk can be removed from the drive.

(iii) It has long life.

(iv) It is more reliable

## 23. Cache Memory

The speed of CPU is extremely high compared to the access time of primary memory. Therefore the working of CPU decreases due to the slow speed of primary memory. To decrease the mismatch in operating speed a small memory chip is attached between CPU and primary (Main Memory) whose access time is very nearest to the processing speed of CPU. It is called cache Memory.



## 24. Physical Memory Organization

The memory modules are available in the following packing

DIP (Dual Inline Package) DIP

SIPP (Single in-line pin Package) SIPP

SIMM (Single in –line Memory Modules) SIMM

DLMM (Dual In- line Memory Modules) DIMM

## (I) DIP (Dual Inline Package

DIP or Dual Inline Package was used to be the most common packing) for the memory chips, it resembles a small flat, rectangle box with metal legs on both sides.

## (II) SIPP (Single in-line Pin Package) SIPP

SIPP OR single Inline Pin Package contains pins at the bottom to connect them into the memory socket on the motherboard.

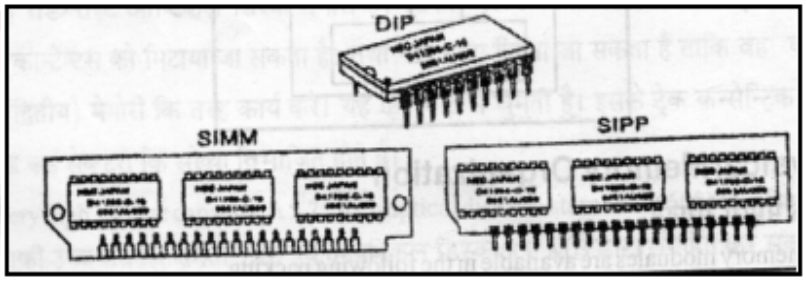



**Fig .27**

## (III) SIMM (Single Inline Memory Module) SIMM

SIMM or Single Inline Memory Module is a number of memory chips soldered onto small expansion board. The edge connector of this expansion board is plugged into a speed SIMM sockets on the motherboard.

## (IV) DIMM (Dual Inline Memory Module)

Even 72-pin SIMMs fall short when it comes to Pentium and Pentium PCs. With their 64-bit data buses, these chips would require two 72 pin SIMMs per bank, just as 486 machines required foui 30pin SIMMs.

## (V) RIMM (Ramous Inline Memory Module)

When Intel Introduced Pentium 4 microprocessor, they wanted a very fast memory for it and there choice was RDRAM or Rambus DRAM memory.

Instead of using SIMM of DIMM, RDRAM comes in special 184-pin RIMM. i.e., Rambus Inline Memory Module.

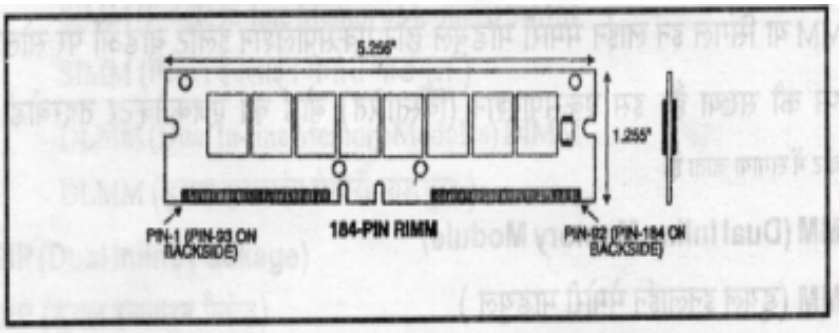



**Fig .29**

## (VI) DDR DIMM

A much cheaper Double Data Rate (DDR) SDRAM provides speed almost equal to the RDRAM. DDR SDRAM doubles the rate at which SDRAM process data.

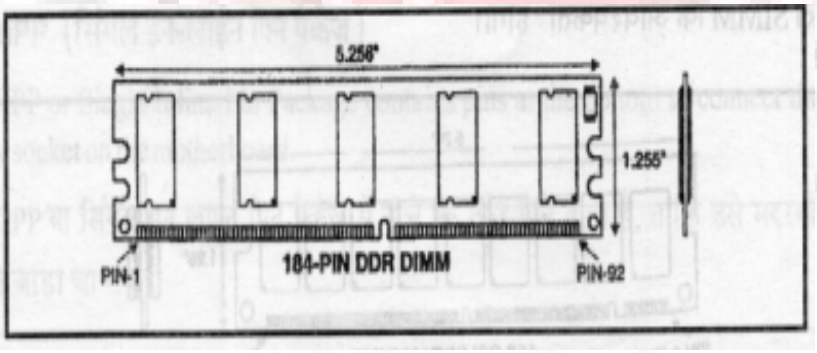



**Fig .30**

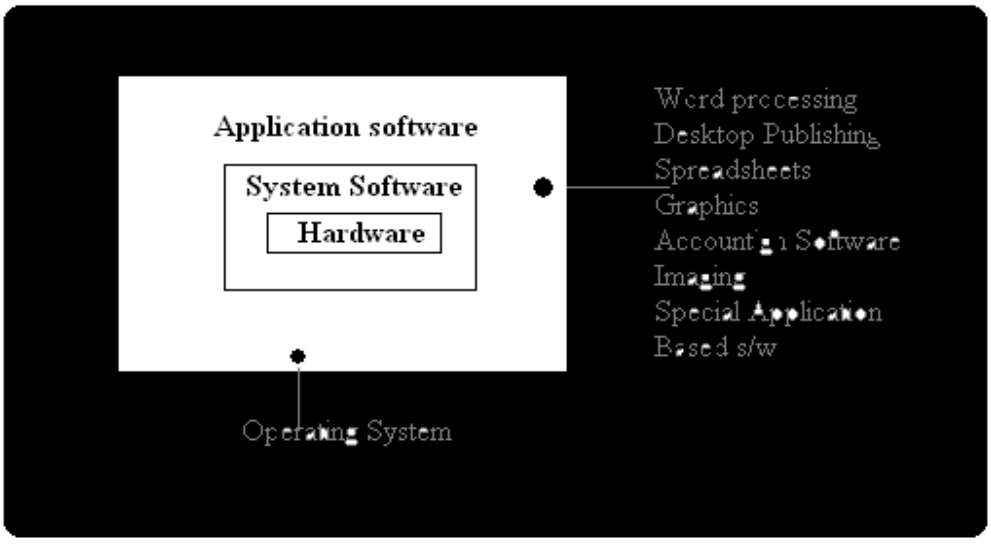
3

# INTRODUCTION TO COMPUTER SOFTWARE

## 1. SOFTWARE

Computer consists of four basic element hardware, software, firmware and human ware. The hardware of computer system alone is little different to any other complex piece of electronic machinery. The hardware would not work without programs (set of instruction). The software directs and guides the operation of each device including CPU. The set of programs which control the activities of computer system or which may be processed on computer to do some useful work, are called software. As car needs fuel to run. Similarly computer hardware needs software to do anything. Software may be put on disk, cassette, and magnetic tape of Semi-Conductor memory.

So we can say that software is a set of programs documents procedure and routines associated with the operation of computer system. In other words, software means a collection of programs whose objective is to enhance the capabilities of the hardware.




## 2. Classification of software

Software cab be classified into two broad categories: System software and application software. System software performs computer- related tasks such as managing input and output devices; application software performs people- related tasks, such as human resources and marketing.

(I) System software
(II) Application software

## SOFTWARE

SYSTEM SOFTWARE APPLICATION SOFTWARE

SYSTEM CONTROL S/W
SYSTEM SUPPORT S/W
SYSTEM DEVELOPMENT S/W
GENERAL PURPOSE S/W SPECIAL APPLICATION BASED S/W

### System Software

System software performs the basic functions necessary to start and operate a computer. It controls and monitors the various activates and resources of a computer and makes it easier and more efficient to use the computer. System software is classified into three categories.

1. System control software (Programs that manage system resources and functions)
2. System support software (Programs that support the execution of various application)
3. System development software (programs those system developers in designing and developing information systems).

(I) System Control Software: System control includes programs that monitor, control, coordinate and manage the resources and functions of a computer system. The most important system software is the operating system and DBMS.

(II) System Support Software: System support software is software that support or facilitates the smooth and efficient operation of a computer. There are four major categories of systems support software: Utility programs, language translators, database management systems and performance statistics software.

(III) System Development Software: System development Software helps system developers design and build better system. An example is computer-aided software engineering or CASE a collection of programs that assist developers in developing information system.

### Application Software

Application software cab be divided into two categories: general purpose software and application dedicated software. Application software is designed to perform people-related tasks such as payroll, inventory and sales analysis. There are two type of application software: general-purpose (designed for general application, such as payroll and so on) and special Application Based Software.

1. **General Purpose Software:** General purpose software is used to perform common business applications such as word-processing graphics, payroll [and accounting].

2. **Special Application Based Software:** The second type of applications software is special application –Based software which includes specialized, application designed for every specific purpose. Such a program cannot easily be modified and adopted for other application because it is designed to perform a specific task. (Educational related application. Medical related application and Scientific application)

## 3. Hardware

Physical component of computer is called Hardware. Examples Monitor, Key-Board, Mouse, Printer etc.

## 4. Firmware

A programs by which perform the predefined instruction in machine memory called firmware. Example ROM, PROM, EPROM etc. ROM, PROM, EPROM

## 5. Humnware

The Human beings which is used the computer called human ware:

## 6. Computer Languages

The functioning of computer is controlled by a set of instruction (called a computer program). These instructions are written to tell the computer.

What operation to perform?

Where to locate data?

How to present results?

When to make certain decisions? And so on.

Communication between tow parties whether they are machines or human being always needs a common language or terminology. The language used in the communication computer instructions in known as the programming language into this language. The computer has its own language and any communication with the computer must be in its language translated into this language.

A language is a system of communication. We communicate to one ano l our ideas and emotions by means of language. Similarly, a computer language ij a mean of communication which is used to communicate between language machine (Computer). Using some computer language a programmer cab still computer what he wants to do. Computer languages divide in three parts;

1. Machine languages (low level languages)
2. Assembly (or symbolic) language and
3. High level languages
4. Machine Language

## 6.1 Machine Language

Computer are made of two-state electronic components which vu,, understand only pulse and no-pulse (or '1' and '0') conditions. Therefore, all instructions and data should be written using binary codes 1 and 0.The binary code is called the machine code or machine language.

Computer do not understand English, Hindi or Tamil. They respond only to machine language. Added to this, computers are not identical in design. Therefore, each computer has its own machine language. (However, the script, 1and 0, is the same for all computers.) This poses two problems for the user.

First, it is a traumatic experience to understand and remember the various combinations of 1's and 0's representing number our data and instructions. Also (writing error – free instructions is a slow process.

Secondly, since every machine has its own machine language, the user cannot communicate with other computer (if he does not know its language). Imagine a Tamilian making his first trip to Delhi. He would face enormous obstacles as soon as he moved out for shopping. A language brief would prevent him from communication.

## 6.2 Assembly Language

An assembly language uses numeric codes rather than numeric codes (as used in machine language). For example, ADD or A is used as a symbolic operation code to represe4nmt addition and SUB or S is used for subtraction, Memory locations containing data are given names such as TOTAL, MARKS, TIME, MONTH etc.

As the computer understands only machine-code instructions, a program written in assembly language must be translated into machine language before the program is executed. This translation is done by a computer program referred to as an assembler.

The assembly language is again a machine- oriented language and hence the program has to be different for different machines. The programmer should remember machine

characteristics when he prepares a program. Writing a program in assembly language is still a show and tedious task.

These languages consist of a set of wards and symbols and one can writ program using these in conjunction wit certain rules like 'English' language. These languages are oriented toward the problem to be solved or procedures for solution rather than mere computer instructions. These are more user-centered than the machine-centered languages. They are better known as high level languages.

The most important characteristic of a high level language is that it is machine independent and a program written a high level language can be run on commuters of different makes with little or no modification. The programs are to be translated into equivalent machine machine- code instructions before actual implementations.

A program written in a high level language is known as the source program and can be run on different machines using different translations. The translated program is called the object program. The major disadvantage of high level language is that they extra time for conversion and thus they are less efficient compared to the machine-code languages. Figure (4.1) shows the system of implementing the three levels of languages.

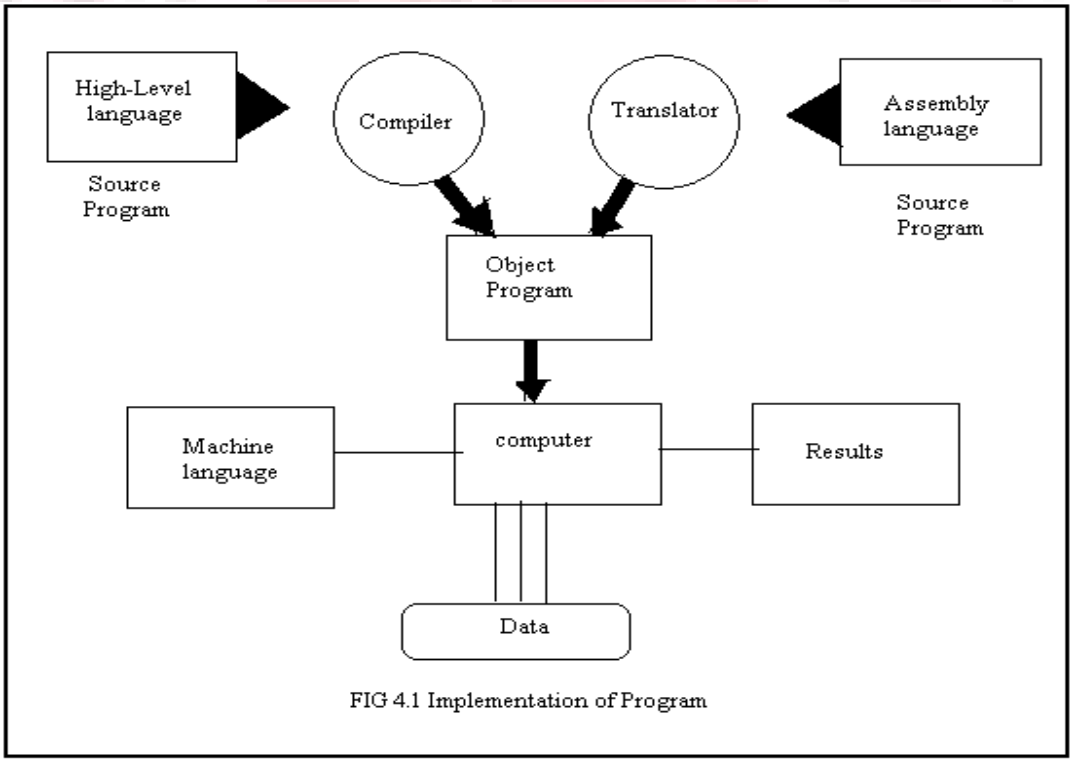



FIG 4.1 Implementation of Program

## Advantage of High Level Language

High Level Language offers many advantages over assembly and machine language.

1. High level language are easier to learn, as they use familiar English like terms and follow arithmetic rules.
2. They are easier to write, correct and modify. The users need not to know the computer architecture.
3. These languages are procedural and problem oriented.
4. The programs are portable i.e. they are not machine dependent.
5. Programs are simple and readable and much easier of maintenance compared to low level languages.

## 1. ADA :

A high-level programming language developed in the late 1970's and early 1980's for the UNITED State Defense Department .Ada was designed to be a general-purpose language for everything from business application to rocket guidance systems. One of its principal features is that is that it supports real- time applications.

## 2. BASIC:

Basic was first invented by professors J.G.Kemeny and T£. Kurtz of Dartmouth College. New Hampshire. U.S.A. as a language for beginners and was implemented in 1964. Since then. Basic has undergone many modifications and improvements and, now, many versions of Basic are available. Recently and attempt has been made to standardize BASIC for universal acceptance. Although BASIC stands for Beginner's All-purpose Symbolic Instruction Code, it is an extr4ememly powerful and useful language.

**SUMMARY OF COMMON HIGH LEVEL LANGUAGE**

| Year | Language | Name Version | Developed by Derived from | Application | Latest |
|---|---|---|---|---|---|
| 1957 | FORTRAN | Formula<br><br>Translation | IBM | Science<br>TRAN 77<br>Engineering | FOR |
| 1958 | ALGOL<br>ALOGL 68<br>Engineering | Algorithmic | International Language | Science Group | |
| 1959 | LISP | List Processing Intelligence | MIT, USA | Artifical | LISP 1.6 |
| 1960 | APL | A Programming Language | IBM | Science Engineering | APLSV |
| 1961 | COBOL | Common Business Oriented Language | Defense Dept. (USA) | Business | Cobol 85 |
| 1964 | BASIC | Beginner All | Dartmouth | Engineering | |

| | | | | | |
|---|---|---|---|---|---|
| | | Standard Basic Purpose Symbolic Instruction Code | college | Science Business Education | |
| 1965 | PL/1 | Programming Language Standard | IBM | General | ANSI PL/1 |
| 1970 | Pascal | Blaise Pascal Institute of Technology | Federal | General Pascal | Standard |
| 1972 | PROLOG<br><br>PROLOG | Programming In Logic | Switzerland's University of Marseille | Artificial Intelligence | Standard |
| 1973 | C | Earlier Language Called B | Bell Laboratory | General | ANSI C |
| 1975 | Ada | Augusta Ada Byron | U.S. Defense | General | Ada |
| 1983 | C++ | C | Bajaarne Strostrup | OOP's | VC ++ |
| 1995 | Java | Oak | Sun Microsystem | Internet | Java 1.4 |

The Basic language was designed to be conversational right from the start. This can put the programmer or user into direct communication with the computer, usually through a teletype terminal. In this interactive mode, the user cab enter is program statements directly into the computer memory and errors in the statements will be immediately displayed. Thus, the user can correct his mistakes immediately.

While running the program, the programmer cab ask for the results at intermediate points and check for the correctness of his program logic without having to wait for the computer to reach the end of the program.

## 3. FROTRAN:

It is an abbreviation for Formula Translation. It was introduced by IBM in 1957. It is a very useful language or scientific and engineering computations as it contains many functions for complex mathematical operations. It is a compact programming language. Huge libraries of engineerical operations. It is compact programming language. Huge libraries of engineering and scientific programs written in FORTRAN are available to users. In 1977 the American National Standards Institute (ANSI) published a standard for FORTRAN called Fortran 77.50that all manufacturers could use the same form of the language. The latest version is known as FORTRAN 90.

## 4. APL:

It is an abbreviation for A programming Language. It has been developed by IBM. It is a very powerful language. It permits users to define in structions. It contains a large larger system. It can perform complex arithmetic logic operations with a single command.

## 5. C. Language:

A high-level programming language developed by **Dennis Ritchie and Brian Kemighan** at Bell Labs in the mid 197Although original designed as a systems programming language. C has proved to be a powerful and flexible language that can be used for a variety of application From business programs to engineering. C is a particularly popular language for personal computer programmers because it is relatively small- it requires less memory than other languages.

The first major program written in C was Unix operating system and or many years C was considered to be inextricably linked with UNIX. Now, however, C is a important language independent of UNIX.

## 6. C++

A high-level programming language developed by Bjame Stroustrup at Bell Labs. C++ adds object-oriented features to its predecessor. C. C++ is one of the most popular programming language for graphical application, such as those that run in Windows and Macintosh environments.

## 7. Prolog:

It is suitable language for developing programs nvolvit complex logical operations. It is used primarily for Artifical intelligence applicatic. It was developed in France. The Japanese have chosen this language as a stand language for their fifth generation computer project. It is quite suitable handing large databases and for producing rules-based on mathematical logic.

## 8. LISP:

It stands for LIST Processing. This language was developed IJ McCarthy in the early 1970s. It is suitable for non-number operations involving logic operations. It is used extensively in artificial intelligence and parttem recognition. ^is also used in game playing, theorem proving etc. it is capable for searching, handing and sorting long string or lists of text.

## 9. SNOBOL:

It stands for Sting Oriented Symbolic Language. This language was developed by a group led by Griswold in the mid 1960s. It can manipulate string of characters and hence it is used in text processing. It is capable of performing various types of operations on stings of characters such as combining stings, splitting strings matching strings, etc.

## 10. LOGO:

It was developed by Seymour Paper and his colleagues at MIT in the late 1960s. It has also been popularized as a first educational language that children can use to achieve intellectual growth and problem-solving skills. LOGO has graphics capability. Children can easily use it to make drawings. They can draw colors and animate images. It runs on PCS. It is used to compose music, manipulate text. Manage data, etc.

### 11. APT:

It stands for Automatically Programmed Tooling. It is used in manufacturing applications to control machine tools.

### 12. **JAVA**:

A high-level programming language developed by Sun Microsystems. Java was originally called OAK, and was designed for handheld devices and setup boxes. Oak was unsuccessful so in 1995 sun changed the name to Java and modified the language in take advantage of the burdening Would Wide Web.

Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java source code files) files with a Java extension) are compiled into a format called byte cod (files with i.e." extension), which can than be executed by a Java interpreter. Compiled Java code; run on most computers because Java interpreters and runtime environments, know... & Java virtual Machines (VMs), exist for most operating systems, including UNIX, DVJ Macintosh OS, and Windows. Byte code can also be converted directly into machine language instructions by a just-in time complier (JIT)

## 7. Language Processor

As we known that computer and understand only machine language or the low level language, which is written in 0's and 1's Computer cannot understand. The assembly program and the high-level language program directly. So in Order to run assembly language program, we need translators, which convert these programs into machine codes. Program written in assembly language or High level language are called the source program is called the object program.

### 1. Assembler

Assembler is translator program that translates an assembly language program into machine language program. The assembler is a system program, which is supplied by the computer manufacture. It is written by the system programmers.

### 2. compilers

a compiler is also a translating program that translates the instructions of a high level language into machine language. A compiler can translate only those source programs, which have been written in the language for which the computer is meant. For example- a COBOL program can be translated, only using COBOL compiler.

### 3. Interpreter

an interpreter is another type of translating high-level language into machine code. The difference between compiler and Interpreters in that the complier converts whole high-level language programs into machine language at a time. But interpreters takes one statement of high level language and translates in into a machine code, which immediately exacted.

### 4. Linker and Loader

Machine code (object program) is created by assembly or complier. Languages processors need to be loaded at appropriate place in the memory for execution. The loader is a system program by which perform desired function of loading and links is also another type of system program that perform the task of linking separately compiled function together into one program. Linker is an executable program.

## 8. Program Execution Modes

The execution of a program can be done in one of the following modes depending upon the computer system available and task.

1. Batch mode
2. On-line mode
3. Time-Sharing mode

### 8.1 Batch mode

in this mode, programs are presented to the system in batches. The system executes them one alter another. All the data required for a particular program are gathered and supplier together with the program. Some applications, such as payrolls, are processed in this mode.

### 8.2 On-line mode

in this mode, computer executes the program instructions as and when the data is entered into the system. This requires two things.

(i) The program that is used to process the data should reside in the internal emory continuously, and
(ii) The computer system should be on-line

This mode of operation is suitable for applications, such as inventory control, air line reservations, banking system, etc, where the transactions are to be processed as soon as they occur.

### 8.3 Time Sharing Mode

The time-sharing mode refers to the use of a single computer system by many user in turn. In this mode of operation, each user has one (or more) A input/output device (called terminal) connected to the computer. The most common terminal device is the visual display unit (VDU). The user can enter his program and data at his own terminal and get the processed results either at his terminal or on a printer that is connected to the computer. Although many users share the computer, a user feels that the computer is attending to him all the time.

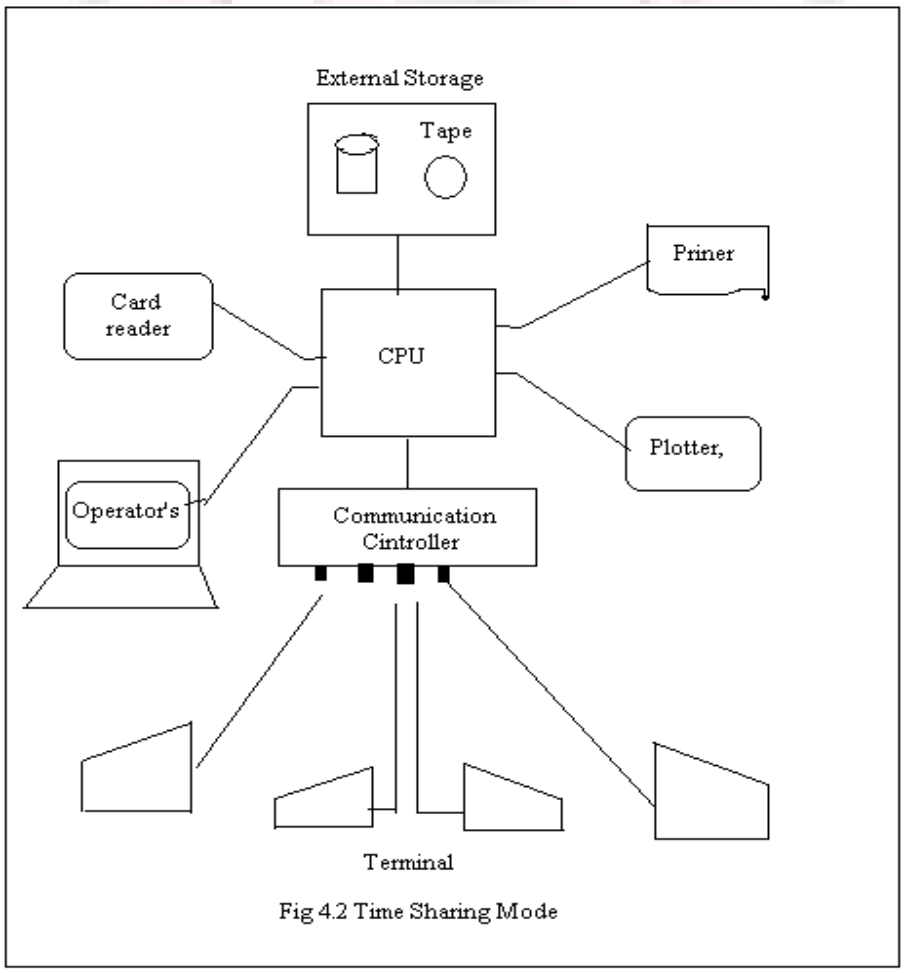



Fig 4.2 Time Sharing Mode

## 9. Operating System

The software that manages the resources of a computer system am schedules its operation is called the operating system. The operating system act as an interface between the hardware and the user programs and facilities the execution of the programs.

The principal functions of operating system include:

(1) To control and coordinates of peripheral devices such as printers, display screen and disk device

(2) To monitor the use of the machine's resources.

(3) To help the application programs execute its instructions.

(4) To help the user develop programs.

(5) To deal with any faults that may occur in the computer and inform the operator.

The operating system is usually available with hardware manufactures and is rarely developed in-house owing to its technical complexity. Small computers are built from a wide variety of micro- processor chips and use different operating systems. Hence, an operating system runs on one computer may not run on the other.

The most popular operating system for an 8-bit microprocessor is CP/M (Control Program for Microprocessors). It enjoys immense popularity and is offered by many manufactures. It has, therefore, stimulated the development of an abundance of software packages that are CP/M compatible.

Recently, with the introduction of 16/32-bit processors, operating systems such as MS-DOS, UNIX and CP/M-86 are becoming popular. The operating system limits the variety and nature of devices which can be attached to the computer and kind of software which can be supported.

## 10. Application of O.S

O.S. is a master program for all programs O.S. It has following functions.

### (I) Process Management

A process is the unit of work in a system. Such a system consists of a collection of process, some of which are o.s. process (those that execute system code) and the rest of which are user process (those. That executes user code). All these process can potentially execute concurrently by multiplexing the CPU among them. The O.S. is responsible for the following activities in connection with process management.

(i) Creating and deleting both user and system process.
(ii) Suspending and resuming process.
(iii) Providing mechanism for process synchronization.
(iv) Providing mechanism for process communication.

(v) Providing mechanism for deadlock handling main.

## (II) Memory Management

Main memory is a repository of quickly accessible data shared by the and I/O devices. The O.S. is responsible for the following activities in connect with Memory Management.

(i) Keeping track of which parts of memory are currently being used and by whom.
(ii) Deciding which processes are to be loaded into memory when memory space becomes available.
(iii) Allocating and deallocating memory space as needed.

## (III) File Management

A File is a collection of related information defined by its creator commonly fill represent program 9both source and object forms) and data.

The O.S. is responsible for the following activates in connection with file management.

(i) Creating and deleting files.
(ii) Creating and deleting directories.
(iii) Supporting primitives for manipulating file, and directories.
(iv) Mapping files onto secondary storage.
(v) Backing up files on stable (Nonvolatile) storage media.

## (IV) I/O System Management

One of the purpose of an operating system is to hide the peculiarities of specific h/w devices from the user. For Example: in UNIX. The peculiarities of I/O devices are hidden from the bulk of the O.S.

## (V) Secondary Strong Management

Main memory to small to accommodate all data and programs, and because the data that it holds when power is lost the computer system must provide secondary storage to back up main memory. The O.S. is responsible for the following activities in connection with disk management.

(i) Free space management
(ii) Storage allocation.
(iii) Disk scheduling

### (VI) Protection

O.S. also provide security to data protection involves ensuring that all access to system resources is controlled. Security of the system from outsiders is also important such security starts with each user having to authenticate him self or herself to the system usually by means of a password. To be allowed access to the resources.

### (VII) Communication

O.S. provide the facility of communication in which one process need to exchange information with another process there are tow ways for such communication : first take place between processing execution o same Computer systems, the second take place between network.

### (VIII) Error Detection

The O.S. system constantly needs to be aware of possible error. Errors may occur in the CPU and memory H/w such as power failure or memory error). In I/O devices or in the user program.

### (IX) Resource Allocation

when there are multiple user or multiple jobs running at the same time resources must be allocation to each of them. Many different types of resources are managed by the O.S. some such as CPU cycles, main memory, and file storage may have special allocation code. Where as others such as I/O devices may have much more general request and release code.

## 11. Types of O.S.O.S

The type of Operating System.

1. Batch O.S.
2. Multiprogramming
3. Network O.S.
4. distributed O.S.

### (I) Batch O.S

A Batch Operating System work as per their name. all Execution performs in batch mode. The process of job execution is called spooling (Simultaneous Peripheral Operation On Line). In spooling, the system accepts jobs and places them in a queue to wait execution. All jobs are placed in a queue on a disk unit. The Batch job may be executed on a serial basis as per the priority decided by the operating system.

## (II) Multiprogramming O.S.

Multiprogramming Operating System called concurrent processing O.S. it is the capability of CPU to execute to are more programs concurrently. This two or more programs are stored concurrently in primary storage and CPU moves. From one program to another and execute them partially in turn.

Multiprogramming O.S. compared to batch O.S. are fairly sophisticated. This operating system is sophisticated as compare to batch operating system Multiprogramming has a significant potential for improving system throughput and resource utilization with very minor differences.

Different forms of multiprogramming O.S. are :

1 Multi Tasking O.S.
2 Multi Processor O.S.
3 Multi- User O.S.

## (1) Multi Tasking O.S

It is allows running one of the many programs stored in main memory using the CPU without in any way. The disturbing the individual programs. Since the human response as user of computer is much slower than the speed of computer. This O.S. in CPU give the feeding that it is running many program on same time.

It is thus to allow a user to run more than one program concurrently MS Windows (any version) and IBM's OS/2 are such system. Example of a function while editing a document in the foreground a printing job can be given in the background. The status of each program can be seen on the screen by partitioning it into a number of windows. The progress of program can be viewed in the window of each.

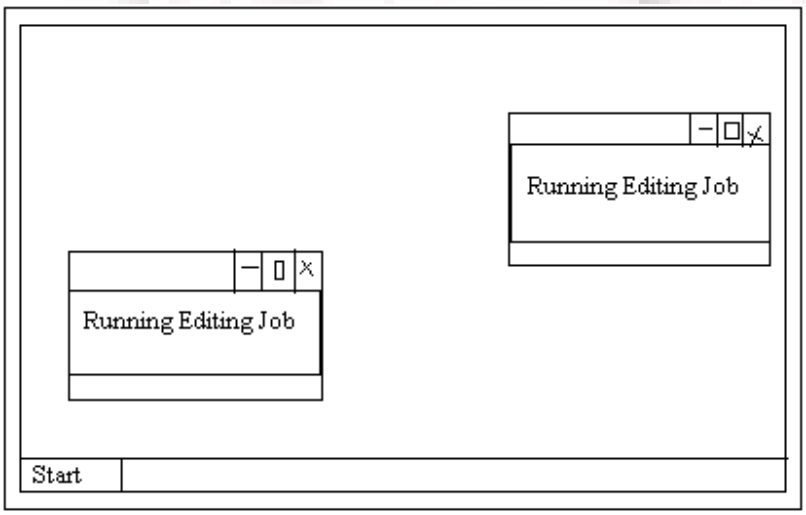


**Fig. Multi Tasking**

## (2) Multi Processor O.S.

In a multiprocessor o.s many processor are controlled by one o.s. The multiprocessing capabilities are used in highly sophisticated and advanced computer system where there are more than one CPU to execute totally exclusive Process at the same time. This is not same as normal multiprogramming where one CPU is shared by several programs. It give more improve through put.

Example – Multiprocessor operation can be found in some advanced PC's and in real time system.

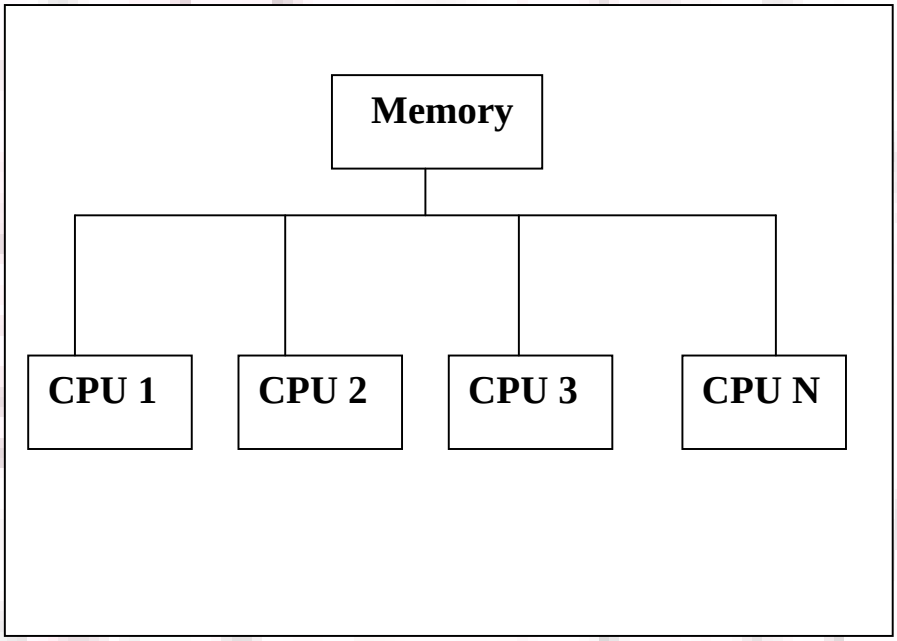



**Fig. A Multiprocessing System**

## (3) Multi-User System

It is allow many users to work on the same computer at the same time using different terminals. Although frequently referred as multiprogramming, multiu.v. systems do not imply multiprogramming or multi tasking. Multi-user o.s. minimizes the idle time of a computer terminal available to him. He can inti ate a program from his terminal and interact with it during its execution. 'He has complex access to computer's resources.

The Operating system of the computer assigns each user a portion of primary memory and divides the computers time among the different users. The Computer does a small

amount of job for one user, and then does a small amount of job for the next user and so forth. Since the computer operates so quickly, each user feels that the system is working for him alone.

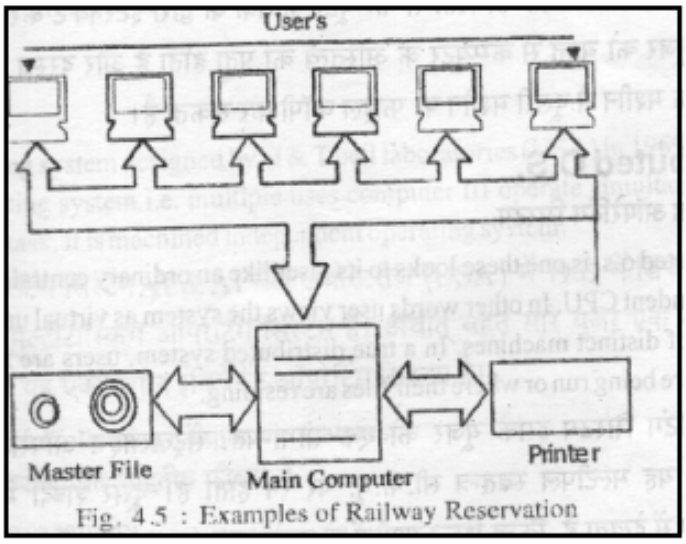


Fig. 4.5 : Examples of Railway Reservation

**Fig. A Multiprocessing System**

Examples: UNIX is a multi-user, multi programmed; time-shared o.s. in individual users o UNIX can execute several processes at the same time. A dedicated transition processing system such as railway reservation system like dedicated system that supports hundred of terminal under control of single program is an example of multi-user Operating System

### (III) Network O.S.

A Network o.s. is a collection of S/W and associated protocols that allow a set of autonomous computer. Which are interconnected by computer network to be used together in a convenient and cost effective manner? In network o.s. the users are aware of existence of multiple computers and can long in to remote machines and cop files from. One machine to another machine.

### (IV) Distributed O.S.

A distributed o.s. is one these looks to its. User like an ordinary centralized o.s. but runs on multiple independent C.P.U In other words user views the system as virtual unprocessed. But not as a collection of distinct machines. In a true distributed system, users are not aware of where their programs are being run or where their files are residing.

## 12. Example of Operating System

### (i) MVS (OS/360)

OS/360 was mainly designee for mainframe computers by IBM in 1966 and as a family of computers and spanning the complete range from small business machines to large scientific computers and spanning the complete range from small business machines to large scientific machines only one set of s/w would be needed for these system which all used. The same operating system. This arrangement was supposed to reduce the maintenance. Problems for IBM and to allow users to move program and application freely form one IBM system to another. Unfortunately, OS/360 tried to be all things for all people. As a result it did none of its tasks. Especially well.

## (ii) Unix

Unix operating system designed by at & T bell laboratories (USA) in 1969. It is multi-user, multitasking-operating system i.e. multiple uses computer III operates simultaneously and they may have different task. It is machined independent operating system.

**The Unix has as following uniqueness features:**

Multitasking capability.

Multi-user capability.

Portability.

Unix Programs.

Library of application S/W

**Unix has following main components**

1. Kernel 2. Shell 3. Tools and application

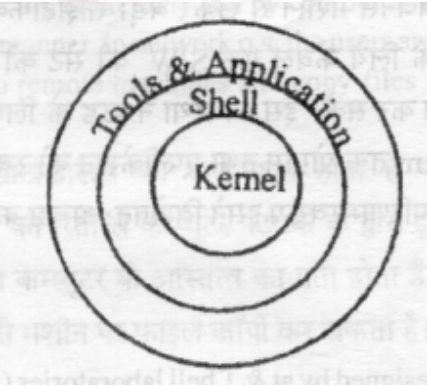



**Fig. Unix Operating System**

1. The Kernel, which schedules task and manages storage.

2. The Shell, which connects and interprets user's commands, call programs from multi-user and executes them.

3. the tools and application that offer additional functionality to the operating system.

## (iii) Linux

Linux is a marden free operating system based on Unix standard. It has been designed to run efficiently and reliably on common PC H/W. it also run on a variety of other platforms. It provides programming interface and larger interface compatible with standard Unix system. And can run large number protection between processes and running multiple processes according to a time sharing scheduler.

**Components of Linux system are as follows –**

1. Kernel

2. System Libraries.

3. System Utilities.

## (iv) Kernel

The Kernel is responsible for maintaining all the imp0ortant abstraction of the operating system, including such things as virtual memory and process.

## (v) System Libraries

The System libraries define a standard set of functions through which applications can interact with the Kernel, and that implement much of the operating system functionality that does not need the full privileges of kernel coed.

## (vi) System Utilities

The System utilities are program that perform individual, specialized management tasks. Some system utilities may be invoked just once to initialize and configure some aspect of the system others known as demons in UNIX terminology may run permanently, handling such tasks as responding to incoming network connection accepting logon requests from terminals or updating log files.

## (vii) Windows 98

Windows 98 is a truly easy graphical interface that makes. It dramatically simpler to use Your PC. You can install modems, CDROM, Drives and other peripherals. It is a multitasking operating system i.e. you can open multiple. S/W at time. It ca run your current ms-dos. Based program in a more stable environment it is also offer enhance multimedia more powerful mobile features and integr4ated and seamless networking.

## (viii) Mach O.S.

The Mach operating system traces its ancestry to. The accent operating system developed at Carnegie Mellon university CMU in 1981 mach's communication system and philosophy an driven from accent but many other significant portion of the system (for example the virtual memory system, task and thread management) were developed from scratch mach o.s id graphic oriented mouse oriented user interface made personal computing much friendlier and or more convenient

The mach operating system was designed with the following three critical goals in mind:

1. Emulate 4.3 bsd Unix so that the executable files from can run correcting under mach.

2. Be a modem operating system. That support many memory models and parallel and distributed computing.

3. Have a kernel that is simpler and easier to modify than 4.3 BSD.

## (ix) MS-DOS(Microsoft Disk Operating System)

MS-DOS (Microsoft Disk Operating System) Developed by the Microsoft computer using by 8086/8088 INTEL processor for personal computer.

DOS provide the method to store information, application/system Program and coordinate the computer system. DOS instruct to computer how to read data which is store in your disk. It is also locate the information on disk or memory and control the other devices.

The previous version of DOS much simple. Slowly-slowly the new version become complex. These DOS is 16-bit operating system. It doesn't support multiuser or multitasking.

## (x) Windows NT/2000

Microsoft designed windows 2000 to be an extensible, portable operating system windows 2000 supports multiple operating environment and symmetric. Multiprocessing. Enable windows 2000 to support a wide variety of application environment for instance windows 2000 can run pro0gram complied for ms-dos win 16 windows 95. It provides virtual

memory interpreted cashing and preempting scheduling windows 2000 supports a security model stronger then those of previous Microsoft operating system and includes inter unitizations features. Windows 2000 run on wide variety of computers, so user can choose and upgrade H/W to match, their budgets and performance requirement, without needing to alter the application that they run.

# COMPUTER EDUCATION & TRAINING

The world of information is expending its India, which needs expert professionals to run over the industry. Computer Technology has created a whole new word of career opportunities for the young, experienced and qualified persons. Today millions of arts, science & commerce graduates are unemployed in our country because they lack computer & professional knowledge.

## 1. Career on the computer

Since the industry or any organization needs people who are qualified and experienced in distinct skills of computers. Today the computer industry is one the largest and the most successful industry in the word. So in companies and organization. Jobs are available that use hardware and s/w products. If any youngster wants to make career in the computer field there are many governments and private institute running long term and short term computer courses for h/w and s/w in minimum charges. The youngster can get education from institutes an can get job in companies.

## 2. Business & industry

Today computer is essential part as a e-commerce of our business. It is difficult to imagine how business could operate without computer. Our economy depends on information and it is based on the availability of data. E-commerce strategies allow business to leverage electronic alliances to speed the delivery of products and services the market companies set up electronic linkage to work more closely with their suppliers and save millions of dollars in inventory and distribution costs.

## 3. Education & Training

The computer is being increasing used as resources in teaching and learning at all levels of education. Instruction material can be prepared and stored within the computer system in the from of program. Which are carefully structured to teach specific lessons. A programme can be used by many students, thus freeing the teacher to time on the development of personal skills.

The computer programs can be designed to teach for particular skills and knowledge and them to direct the student to the next learning phase depending on the individuals results. This may mean one step forward and several steps back to repeat previous lesson. The managed system also records all results and provides up-date information for the teacher on each student’s progress.

The advent of multimedia which results from integration on synergy of several types of information such as graphics, animation, photograph, music speech video on single computer has a profound impact on computer education. It is able to simulate a classroom

environment in a natural way on a computer screen. A large number of tutoring package is being developed in this environment to help student learn new topics without any help from teachers.

Many driving training institute giving driving training in simulate environment

# COMPUTER VIRUSES

## 1. Introduction

Virus is defined as a program inserted into another. It gets activated by its host program. It replicates itself and spreads to others through floppy transfer. A virus infected data or program every time the user runs the infected program and the virus takes advantages and replicates itself.

Two type of viruses have been identified. They are' parasitic' and 'boot' virus.

### I. Parasitic virus

Parasitic virus attaches itself to other programs and is activate when the host program is executed. It tries to get attached to more programs so that chances' of getting activated is more. It spreads to other computers when the affected' programs are copied. Jerusalem and Data crime are considered as parasitic viruses.

### II. Boot virus

Boot virus is designed to enter the boot sector of a floppy disc. It works by replacing the first sector on the disc with part of itself. It hides the rest of itself elsewhere on the disc, with a copy of the first sector. The virus is loaded by the built-in program when the machine is machine is switched on. The virus loads, installs, hides the rest of itself and then loads the original. On a hard disc, virus can occupy DOS boot-sector or master boot sector. :

## 2. Some Known Viruses

### I. C-Brain

Amjad and Basit, two Pakistani brothers, developed this software in January 1986 to discourage people from buying, illegal software at throwaway prices. This was the most famous virus ever found and has a record of damaging few millions of personal computers this is designed to stayin the boot sector of the disc or near zero sector. The virus enters the machine memory once the PC is booted with the infected floppy.

### II. Macmag

This virus attacked Apple Macintosh computers only. Not much damage is reported because of this virus. This was not noticed on any IBM or compatible PCs. It displayed a message of peace on the monitor and killed itself. More-data is not available on this virus.

## III. Scores

This virus also was found only on Apple Macintosh computers. This virus was first found in March 1987. it affected mainly two programs within Electronic Data System Corp. Not much data is available on this virus also.

## IV. Cascade

Cascade virus attacked IBM PCs and compatibles. The letters on the screen could be seen dropping vertically down to the bottom of screen after the virus picked them of in alphabetical order. This is a sort of parasitic virus. It attaches itself to other programs and gets activated when the host program is executed it gets copied to other PCs when the programs are copied.

## V. Jerusalem

Found in 1987 at Hebrew University, Jerusalem, this virus was designed to activate only on Friday, January 13 and delete at the files executed on that day. This infects COM and EXE files. This is similar to Cascade virus in that it is parasitic in nature. This virus attaches itself to COM and EXE files to damage the data.

## VI. Data crime or Columbus or October the 13th virus

Data crime virus is similar to Jerusalem and was programmed to attack on October 13, 1989. Track zero of computer hard disc is destroyed and the contents of discs are rendered unreadable. This virus enters COM and EXE files and damages the hard disc. And antidote called ‘V Checker’ was developed by the American Computer Society. Fortunately the virus was located in March 1989 itself and the damage reported after October 13 was minimal. The Royal National institute for the Blind, UK was the worst hit and much data was reported to be lost.

## VII.Patch Exe

It is similar to Patch COM virus but affects only EXE files. This attacks both COM and EXE files.

## VIII. PC Stoned or Marijuana

This virus was found in Bangalore during October 1989. It resides in the boot sector of infected floppy. When the PC is booted through the infected floppy, the virus enters the

hard disc and some sectors allocation tables (FAT) are damaged. Whenever the PC is booted from the hard disc as usual the virus copies itself on to boot sector of the floppy diskette in drive A and spreads to other PCs. This virus will not enter the hard disc unless it is booted through the infected floppy disc.

### IX. Bomb

This is also known as 'Logic Bomb' and Time Bomb". An event triggered routine in a program that causes program to crash is defined as a ^bomb'. Generally, 'bomb' is a Software inserted in a program by a person working in company. Any frustrated programme can create a program to delete all the company files if he gets an indication that I may be sacked or transferred else where

### X. Bell Labs Virus

A compiler program which translates a programmer's instructions into numbers that a computer can read had been altered so that it embedded a hidden "trapdoor" each time it created a new version of the operating system. The trapdoor altered the systems so that, in addition to normal users' password, it would recognize a secret password known only to one person. The instructions never showed up the program listing – they were undetectable through normal means. The Virus never escaped Bell Labs.

## 3. Worms

Worm is a self-propagating program that works its through a system, often causing damage. It does not require a host program to activate it. Someone has to insert a worm directly into network of interconnected computers where messages can be sent from one to anther and data files and programs exchanged. An example is a local area network where each computer has its own files, programs operating systems and hard discs.

### (i) Xerox PARC Worm

In 1980, John Shock at the Xerox Palo Alto Research Centre (PARC) devised a worm wriggled through large computer systems, looking for machines that were not being used and harnessing them to help a large problem. The worm could take over an entire system.

### (ii) Existential Worm

A worm whose sole purpose is to stay alive. It runs no substantive application program. The Co Monster Worm at MIT was one such. It might display a screen message such as: "I' m a worm, kill me if you can!"

### (iii) Alarm Clock Worm

A worm that reaches out through the network to an outgoing terminal me equipped with mode, and places wake-up calls to a list of users.

### (iv) Gladiator Worms

Bill Buckley and James Mouser developed Core Wars, where the object is to write a worm program that can replicate itself faster than another worm program can eat it. The one alive at the end wins. Some of the win programs have a chromosome consisting of only four lines of code. Longer genes can't execute as fast as short ones, so I tend to get weeded out.

## 4. Worm Watcher

A special program which automatically takes steps to limit the size of a worm, or shut it down if it grows beyond a certain limit. The worm watcher also maintains a running log recording changes in the state of individed segments. This information can be used to analyze what might have gone wrong with a worm.

## 5. Antidotes

It is generally observed that most of the viruses attach themselves mainly to either COM or EXE files or Instruction are given to all users not to copy-in or copy-out COM and EXE files. All the original COM and EXE files it be kept on a write-protected floppy as back-up, whenever these files are required to be copied, they should be copied from this write-protected floppy.

A program called "Antidote" is available to check the infected COM and EXE files. This program checks only viruses and cannot locate boot virus. Hence it is required to run both the programs for- a complete checkup.

Precaution must be taken by all users at a site, not just be a handful of users. One person's carelessness can enough to infect an entire environment. None of these precautions guarantees safety from viruses, but increased awareness will make a site less likely to suffer.

When product-tampering problems threatened consumers at the retail level in Australia. Drug manufactures there redesigned their packaging to make it easier to detect tampered products. Manufacturers could not guarantee that no one would tamper with the product just that it would easier to detect tampering.

In a similar manner, the software industry should be expected to toughen its packaging an to incorporate methods into software products that will help identify but not prevent tampering while these techniques will not identify every possible virus assault, they could add an extra level of protection.

For example, a checksum-oriented technique could be incorporated into each software company's application. At stat-up, or periodically during a program's execution the application could compare the consistency of the disk image of the company's program with some known value to determine if the image had unexpectedly been modified. It an image was discovered to be inconsistent, an error/ warring message could be printed to alert the user.

Although the odds of being infected by a computer virus are small, the effects are enormous. Common-sense procedures and precautions, combined with some logical programming techniques, can help secure a site from this type of threat.

## 6. Some Hints

1. Never allow floppy discs brought from outside your company to be used directly on PC without checking the floppy for virus presence. This includes service engineers and their floppy discs for maintenance.

2. Keep all original EXE and COM files in a write-protected floppy.

3. If COM and EXE files are required to be copied anywhere, copy only from write-protected original floppy.

4. In case the system is 'hanging' (or floating), the reason could be virus. Check for virus.

5. Avoid playing computer games on a computer where important data is stored as it is generally noticed that virus spreads faster though game floppies.

6. Check sector information as a routine by modifying AUTOEXEC. BAT and using virus check programs.

7. If virus if found on a PC, isolate it, identify and remove the virus. Only then should the PC be put in to use again.

Finally, the virus deletes the directory information, there by destroying any link between the computer and the data on the disk. At this stage, there is almost no chance of retrieving the data in its original form.

6

# WINDOWS

## 1. INTRODUCTION TO WINDOWS

Windows is software tools which help to do our work easily. It is easy to learn. Windows is a link between Dos and us, which provides us the faculty to do all the work of DOS without exercising in DOS. Windows is also known as graphical user interface (GUI).

Windows is made by Microsoft Company. That is why it is called Ms- win-down windows control ass the work of computer simply and effectively. To do any work in previously popular operating system Dos, the commands of Dos had be written, they had to be kept in mind but windows has make it easier, whatever work is performed.

Windows is an operating system for PC's. Windows 95 is one of the most popular versions of it. Which is manufactured by Microsoft Company of America in 1985? it is a single user multitasking operating system. It can do business and personal job both in very efficient way. Windows 98 is another version of windows. In this section we will discuss about windows-XP.

Actually windows are the result of research work on GUL (Graphical User Interface). Xerox Corporation did this research work after 1980. the first computer, which was developed by this corporation, is Xerox Star, but GUI was popular when Apple computers made Macintosh computer.

The developments of Windows in different years are as follows.

| S. No. | Name of Version | Year | Main Features |
|---|---|---|---|
| 1. | Windows 1.0 | 1985 | GUI based Windows |
| 2. | Windows 1. | 1987 | Overlapping Windows |
| 3. | Windows 2.10 | 1987 | Virtual Machine |
| 4. | Windows 3.0 | 1990 | Program manager/file Manager |
| 5. | Windows 3.1 | 1992 | Multimedia and Networking |
| 6. | Windows 3.11 | 1993 | 32 Bit Networking |
| 7. | Windows 95 | 1995 | 32 Bit Operating System |
| 8. | Windows 98 | 1998 | Internet Facility |
| 9. | Windows Millennium | 2000 | Multimedia and Networking |
| 10. | Windows XP | 2001 | Multimedia and Networking |

## Features

**Following are features of Windows-XP**

1) Developed Interface.
2) Long File Name.
3) Windows Explorer.
4) Games and Multimedia facility.
5) Similarity with the previous program.
6) Easy Postal Service.
7) 32-bit Multitasking.
8) Plug and hardware similarity.
9) Network Facility.

## 2. STARTING OF WINDOWS-XP

1. Switch on your Computer
2. After loading the system file, computer load the Windows- XP operating System


**Fig. 1**

## BASIC OF WINDOWS-XP

I. ICON
II. DESKTOP
III. TASKBAR

### I. ICON

Icons are small graphical images that can represent you computer's Programs, files, folders and amongst other things. Folder and shortcut is type of ICON. The Folder is a work as directory and shortcut work to execute the program. To activate an icon you double click (two click in quick work succession) on it with the left mouse button, this will activate the icon and either start a program or open a file/folder. The icons on your desktop can be renamed by right clicking on them and selecting rename, similarly they can be deleted by right clicking on and selecting delete. You can easily create your own icons for your favorite programs, folders, etc.

## 3. CREATE A DESKTOP SHORTCUT

Desktop shortcuts allow to accessing a program quickly and easily by simply double clicking on the icon the desktop, creating them for programs.

First of all you have to find the programs you want to create the shortcut. On the start menu (for the benefit of this example we are going to create a shortcut for internet Explorer), to do this click on the start button, hover the mouse pointer over programs and then navigate to the program you want (in his example internet Ex-plorer),


**Fig. 2**

**Right Click** on the program and hold down the mouse button, drag the mouse over to the desktop (as shown above) and then left go of mouse button. Next you will get shortcut on desktop.


**Fig. 3**

Other method to create shortcut on desktop

Right-click on the desktop. The contest menu will appear.

1. Click on New submenu will appear.

2. Click on Shortcut. The Create Shortcut menu appears.

3. Type in the location and name of the item to which you want to create a shortcut.

4. Click on Next. A dialog box will appear

5. Accept the default name or type in a new name. Click on Finish.

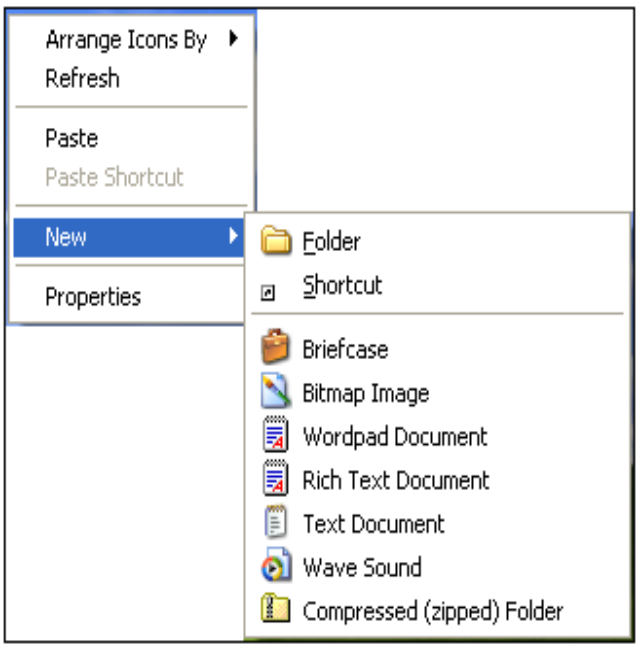



**Fig. 4**

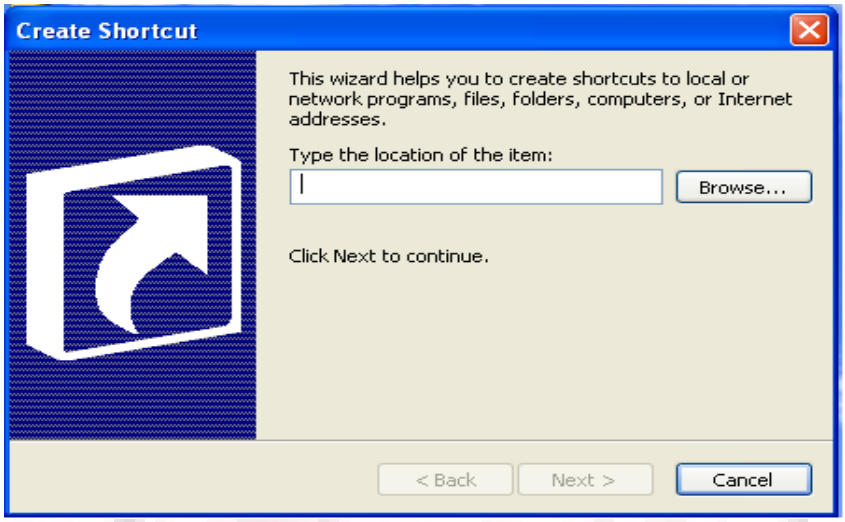

Create Shortcut
This wizard helps you to create shortcuts to local or network programs, files, folders, computers, or Internet addresses.
Type the location of the item:
Browse...
Click Next to continue.
< Back
Next >
Cancel

**Fig. 5**


Browse For Folder
Select the target of the shortcut below:
Local Disk (D:)
Local Disk (E:)
Local Disk (F:)
Shared Documents
Shared Music
My Playlists
Sample Music
Beethoven's Symphony No. 9
New Stories (Highway Blues)
Make New Folder
OK
Cancel

**Fig. 6**

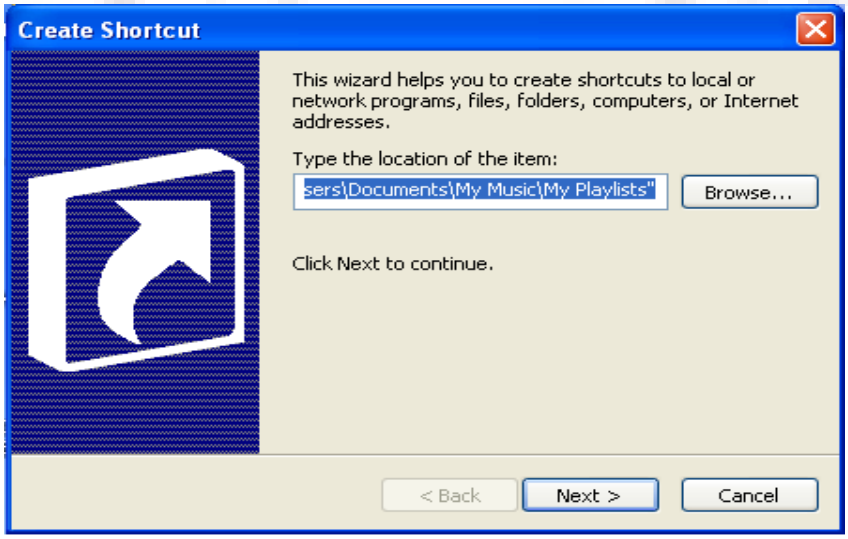

Create Shortcut
This wizard helps you to create shortcuts to local or network programs, files, folders, computers, or Internet addresses.
Type the location of the item:
sers\Documents\My Music\My Playlists"
Browse...
Click Next to continue.
< Back
Next >
Cancel

**Fig. 7**

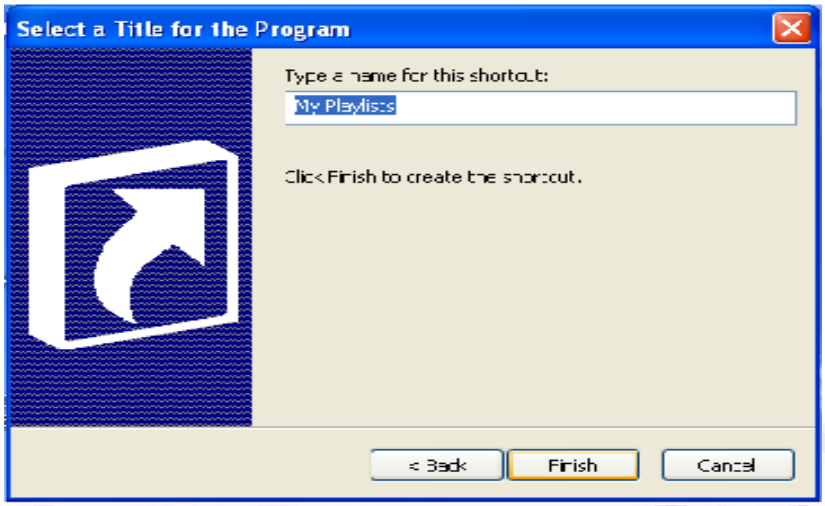



**Fig. 8**


**Fig. 9**

## 4. CREATE A DESKTOP FOLDER

Right-click on the desktop. The context menu will appear.

I. Click on folder icon of program will appear.
II. Accept the default name or type in a new name

### 1) Desktop

The vertical screen of windows XP is called Desktop.

When we switch on CPU power, then booting process of computer is started. After completing of booting process the loading of windows is started. At the end screen will be appear, called Desktop. There are many objects on the Desktop. Only useful objects are appearing on the Desktop. There are many objects are: My Computer Recycle Bin, My network places, task Bare Start Menu, Files and Folders, shortcuts. These objects are shows on the Desktop with the help of small pictures. The name of that objects is given below the picture it is called icon of object. If necessary, then other objects can be put on the Desktop.

## 5. SOME PERMANENT ICON OF THE DESKTOP

1. My Computer
2. My Document
3. Internet Explorer
4. My Network Places
5. Recycle Bin

### My Computer

This is standard icon and is very useful, it gives you access to your computer's disk drives as well as your printer setting and the Windows XP control Panel. The Computer icon provides access to the resources on your computer

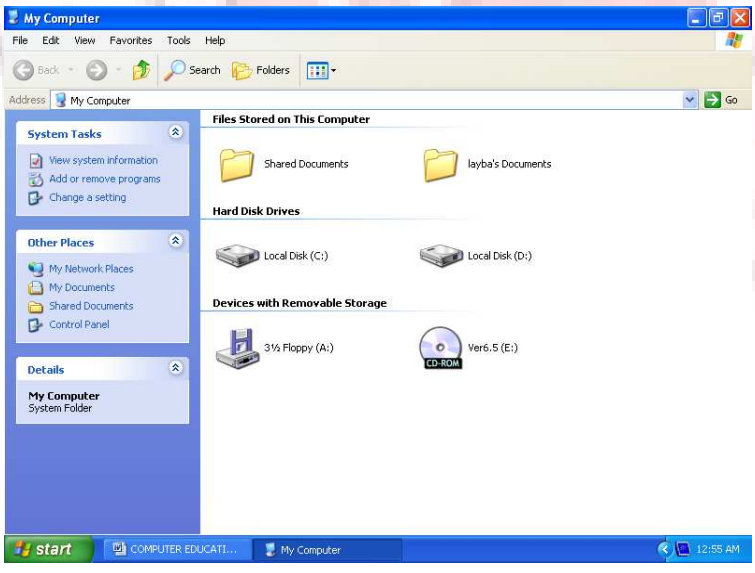



**Fig. 10**

## BASIC COMPUTER OF MY COMPUTER

1. FLOPPY DISK
2. C DRIVE
3. CD- ROM DRIVE
4. CONTROL PANEL
5. PRINTERS

- **FLOPPY DISK:** This icon display that the floppy disk installed
- **C DRIVE:** This icon display partition of Hard disk
- **CD-ROM DRIVE:** This icon display of CD-ROM if installed
- **CONTROL PANEL:** By this icon we can change setting o computer.

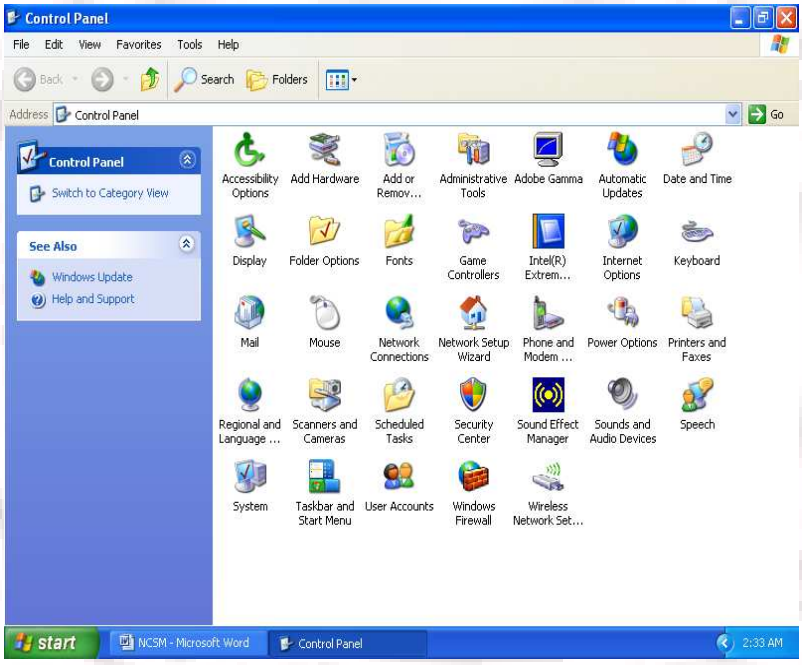



**Fig. 11**

## My Documents

The My Documents icon links to a standard folder which Windows XP uses to store your documents, by default Windows XP will save any documents you create in this folder.

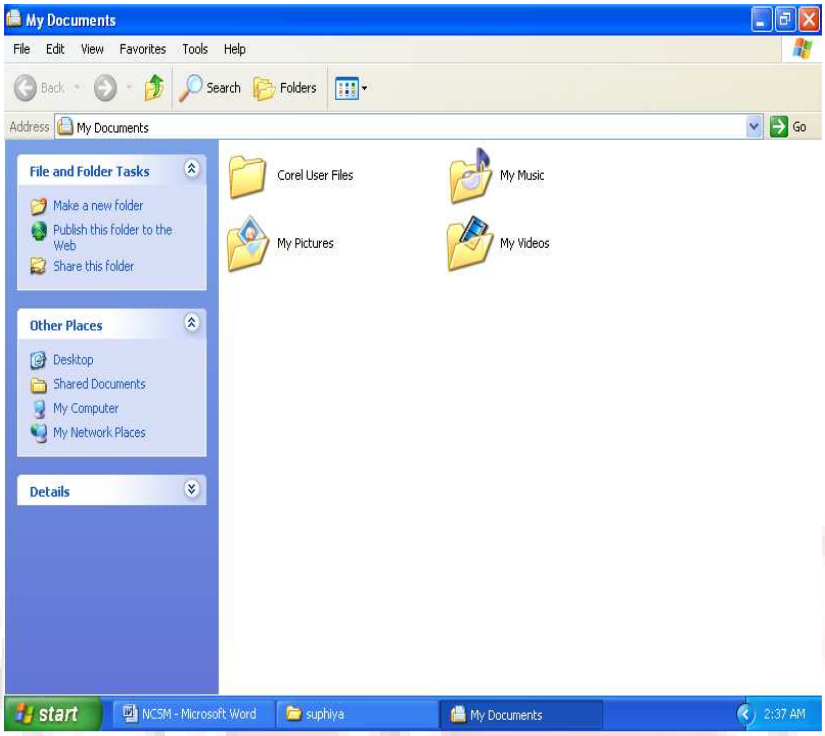



**Fig. 12**

## Internet Explorer

The Internet Explorer icon launches the internet Explorer browser. This icon is a shortcut to Microsoft's Internet Explorer program, Internet Explorer is used to view web pages on the internet.

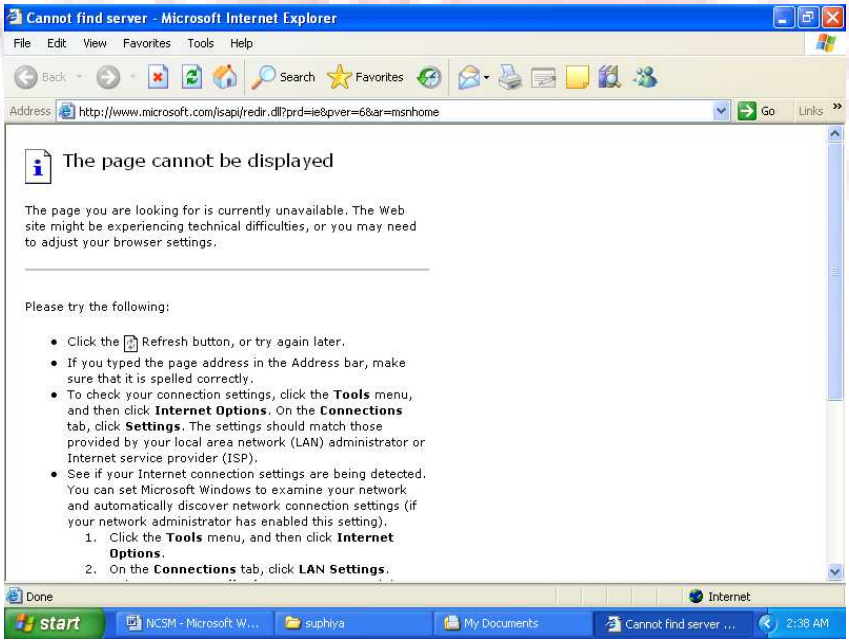



**Fig. 13**

## My Network Places

The My Network Places Icon points to a folder that contains links to any other computers that are in your workgroup (If you are working on network, my Network places display all of the computer on the network).

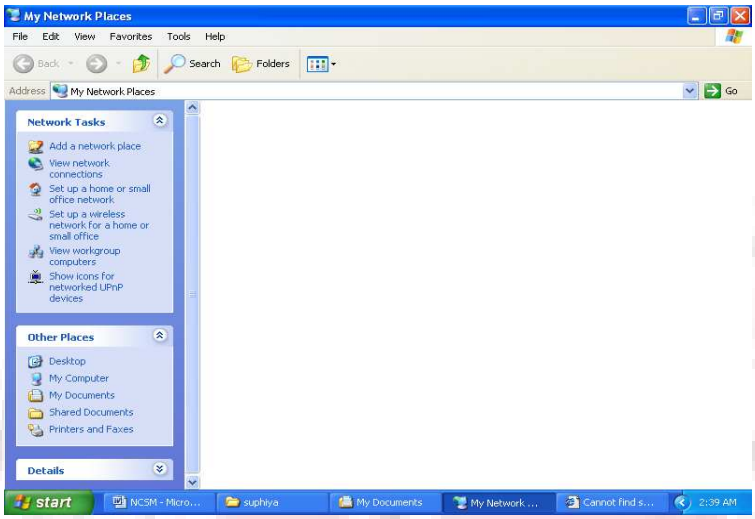



**Fig. 14**

## Recycle Bin

When you delete a file, Window XP will lace the file into the recycle bin instead of deleting it altogether, the allows you to restore the in case you deleted it by mistake. For example say you deleted a file by accident you could click on by mistake. Bin icon to see its contents, and then restore the file back to where you deleted it form by right clicking on it and then selecting restore. Some files are to big to be stored in the recycle bin, Windows XP gives Warning if you delete a file form recycle bin that cannot be restored.

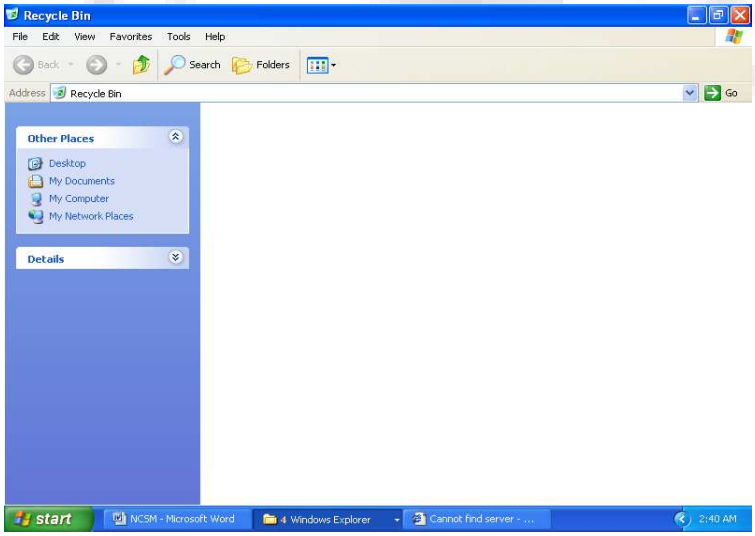


**Fig. 15**

# 6. THE TASKBAR OVERVIEW

Task Bar: The bottom strip of Desktop is called Taskbar. "Start" menu and other buttons are available, on the Taskbar such as show Desktop, Launch Internet Explorer Browser, Launch Outlook Explorer, Anti Virus, Sound Effect, Volume, Clock etc. when we Start any Program or open any Windows, a button related to that Windows will be appear on the Taskbar. We can reach immediately on all started programs with the help of Taskbar.

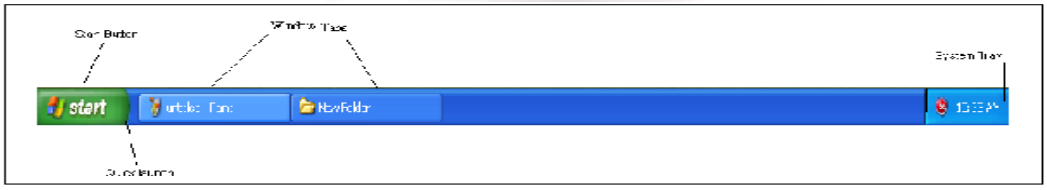



**Fig. 16**

The Task Bar has following option are:

(i) **Start Button:** This button is used to open start menu.

(ii) **Quick Launch Bar:** You can add icons to this area and it provides quick access to programs or documents even when the desktop is not visible.

(iii) **Windows Tabs:** These are used to switch between any open programs. Documents, etc. In our example we have two windows open (word and excel). To change form one windows to another simply click on the corresponding windows tab clicking a second time on the same tab will minimize the window.

(iv) **System Tray:** The system tray displays icons for programs that are loaded into memory. (For Example – The volume control, Date and Time icon).

# 7. THE START BUTTON

The start button is a very important part of windows XP clicking it open what is called the start menu; this is used to access your programs. See the figure give below.


**Fig. 17**

**Turn off computer:**

It you select the Turn off option form the start menu you will be presented with a dialogue box similar to that shown in Figure below is a summary of what each option with achieve:


**Fig. 18**

(A**) Stand by:** This will put the PC into stand by mode (if available), basically it will power down components like the monitor and hard drive to preserve energy.

(B) **Turn off:** Turn off the PC always use this option to turn off your PC.

(C**) Restart:** This will restart the Computer.

(D) **Restart in MS-DOS Mode:** This will cause the PC to restart in the Ms-DOS Environment

## The Search Menu:

If you click over your mouse over the search option you will see a submenu similar to that in Figure below is a description of each option.

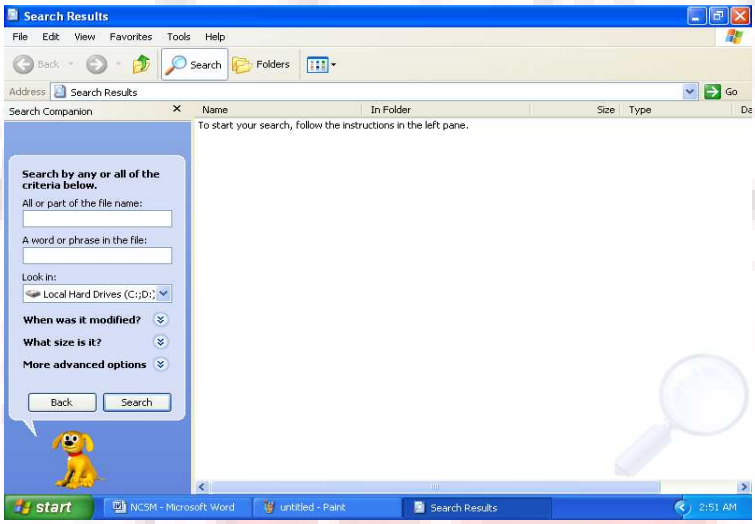



**Fig. 19**

## The Setting Menu

The use of setting menu for the setting of the CONTROL PANEL, PRINTER & FAXES, TASKBAR AND START MENU NETWORK CONNECTIONS.

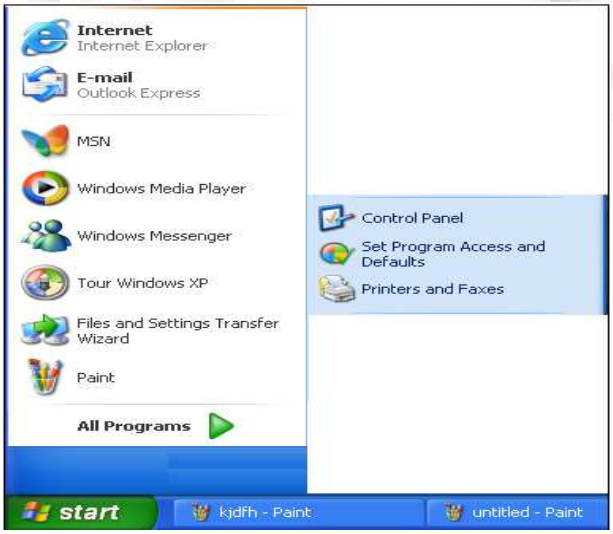


**Fig. 20**

**Control Panel:** The control panel is used to configure Windows XP.

**Printers & Faxes:** Used to add and configure printers & faxes.

**Taskbar & Start Menu:** Here you customize your taskbar & start menu.

**Network Connection:** Used to add and configure network connections

## 8. THE PROGRAMS MENU

The programs menu show the contain which you install or load the software in your computer. Which is display following type. In which you can click by mouse and open that software.


**Fig. 21**

## 9. DISPLAY PROPERTIES

By using these option we can change the display monitor setting

The following option of display properties are:

1. **Themes:** We can change the look of windows and also color can be change.


**Fig. 22**

2. **Desktop:** It is used t set the background of desktop & web content.


**Fig. 23**

3. **Screen Saver:** Screen Saver option used for setting of screen. (when the work is stop for few timings then these screen will be. Appear)

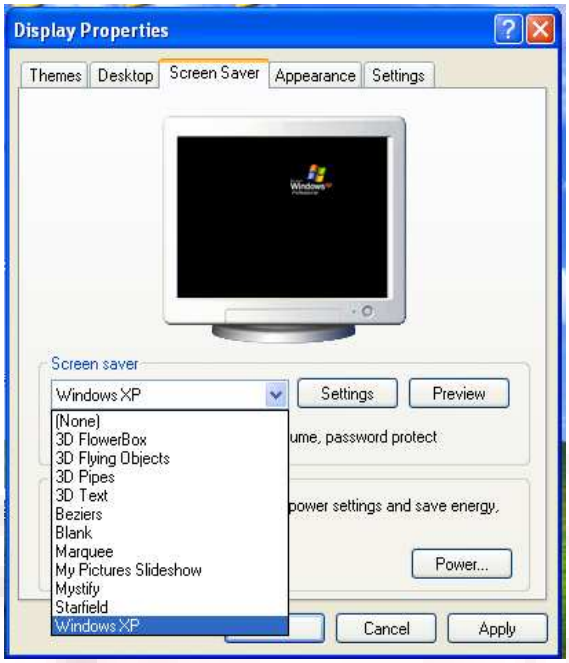



**Fig. 24**

4. **Appearance:** We can customize our screen color.

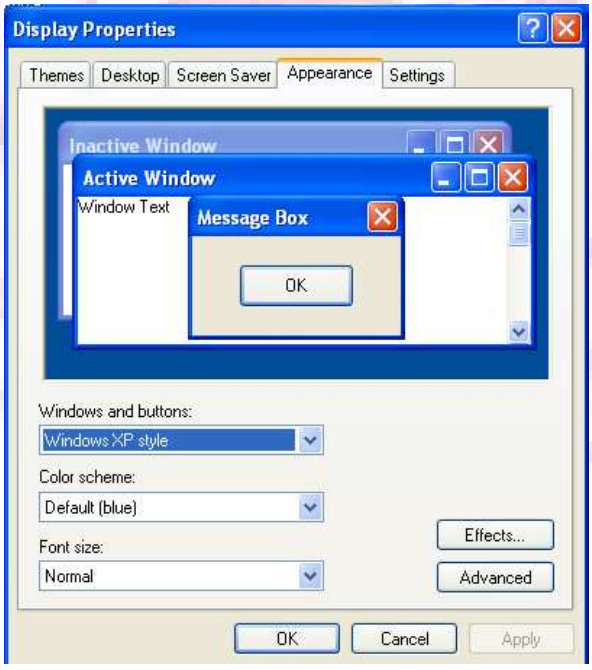



**Fig. 25**

5. **Setting:** By using these we set the technical setting that may need to used to properly configure our display card setting.

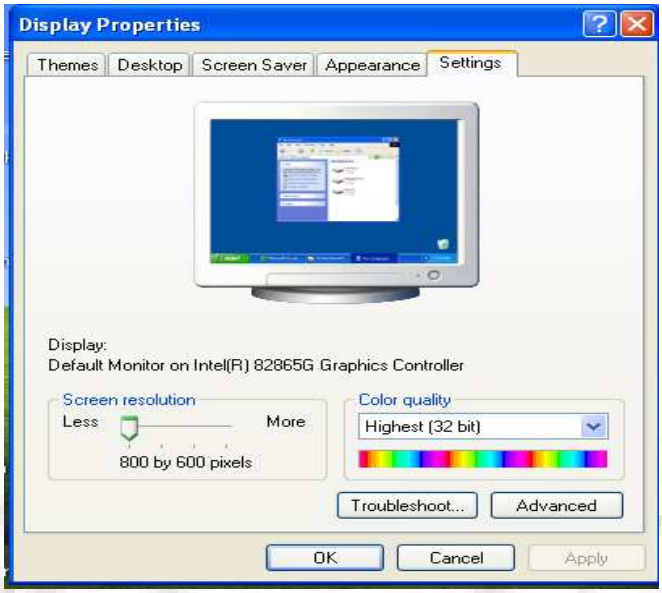



**Fig. 26**

# 10. ACCESSORIES OPTION

## 1. NOTEAD

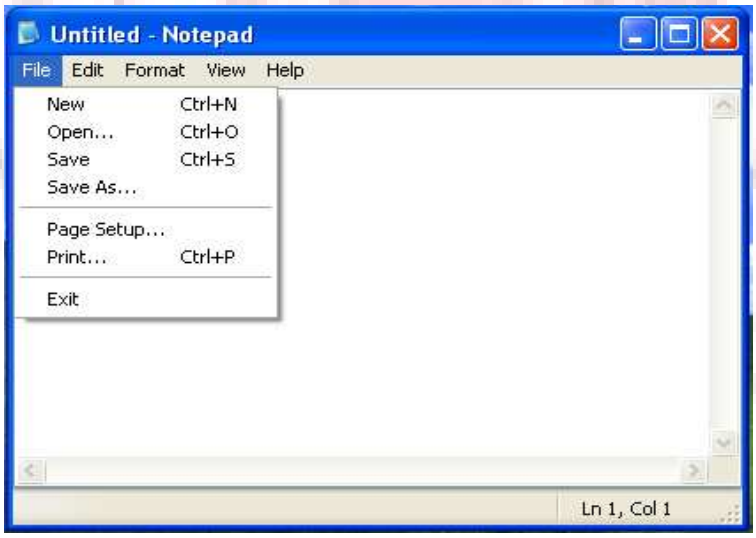



**Fig. 27**

For open notepad take the following steps are:

**START > PROGRAM >ACCESSORIE>NOTEPAD**

The following menus of notepad are:

“Notepad” is used t create and edit those files, which are no needed to format and whose lengths are less than 64 KB. “Notepad” text is saves in ASCII format. “WordPad” is used for those files whose lengths are more that 64 KB.

## FILE MENU

**New:** By which we cab create new file in notepad

**Open:** By which we can open the created file in notepad

**Save:** By which we can save the current file.

**Save As:** By which we can save current file with different name.

**Page Setup:** By which we can set the page size.

**Print:** Bu which prints the given file name.

**Exit:** By which you can exit form notepad

## EDIT MENU

**Undo:** By which you can reverse the last position.

**Cut:** we can cut the text.

**Copy:** By which you can copy the text.

**Paste:** we can past the copy of cutting text.

**Select All:** By which you can select whole text of the page notepad

**Time/date:** These option show he date tie of system.

**Word Wrap:** by which we can wrap the text in line.

## SEARCH MENU

**Find and Find next:** You can search the text.

## HELP MENU

**Help Menu:** Provides help on various listed topics.

## 2. WORDPAD

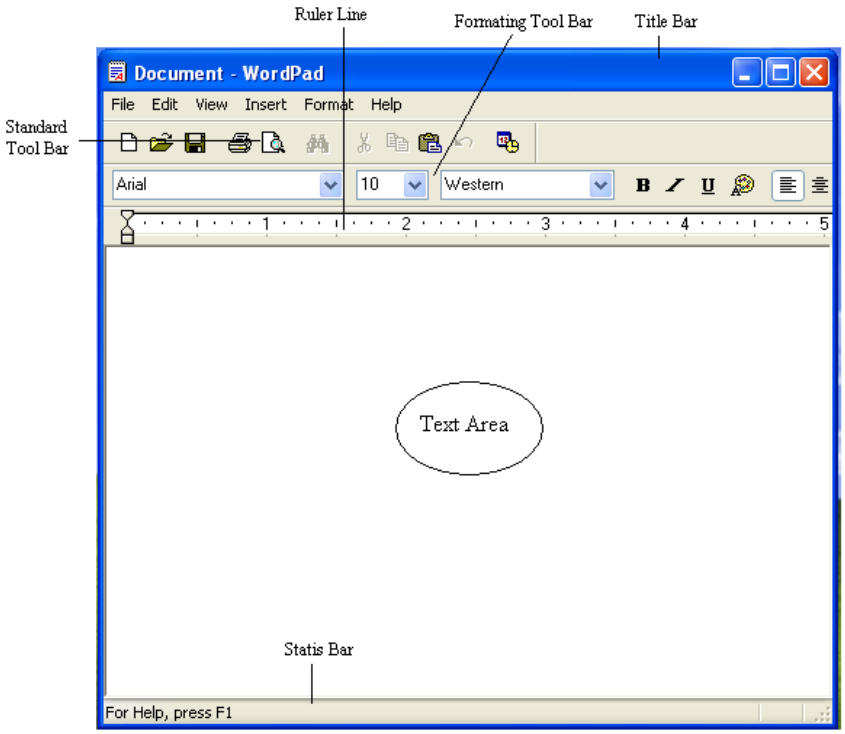



**Fig. 28**

For open WordPad take the following steps are:

**START > PROGRAM > ACCESSORIES >WORDPA**

**Word pad:** The task of typing and editing in a desired way can be done in this window. Text graphics and sound may be merged in document.

- **Title Bar: -** It is situated at topmost part of the "WordPad" windows. If a document is open then its name can be seen in the left part of this bar.

- **Menu Bar: -** It is just below the "Title Bar" This men bar has many "Drop Down" menus, such as File, Edit, View, Insert, Format and Help. Clicking once the left button of mouse will help to open any menu and do the desired work.

- **Standard Tool Bar: -** It is just below the "Menu Bar" It contains any buttons in a single line, which are used to perform various task. The name of the button displayed as soon as we keep the mouse pointer over any button.

- **Format Tool Bar: -** It is below the "Standard Tool Bar" a document can be made more effective and attractive with its help. It has Font, Font Size, Italic Bold, and Underline etc. button.

- **Ruler: -** It is just below the “Title bar” It is used to arrange various margins. We can change the format of one or more sections with its help.

- **Text Area: -** It is in the form of rectangular box and just below the “Ruler” It is called text are and also types matter is displayed in this area.

- **Status Bar: -** It is situated at down most part of the screen. Message given by “WordPad” is display in this bar.

## 3. PAINT BRUSH

The Paint brush is graphical composition program that allow using for drawing purpose. By using this application we can create picture, wallpaper etc.

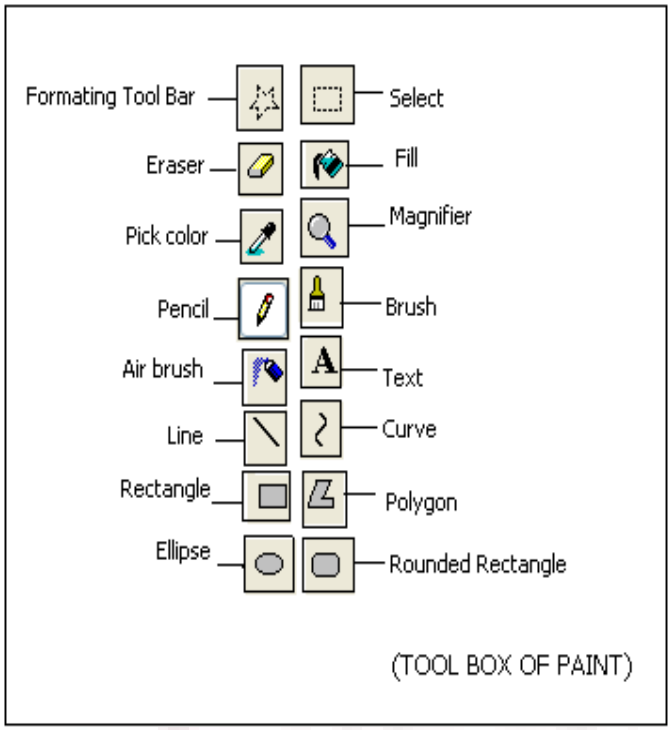



**Fig. 29**

With the help of paint we can make various types of graphics or colored pictures. A tool bar is present on the left side of paint windows with the help of this we can make various types of figures and graphics. When we put mouse cursor on any tool, the name of that tool is displayed. Paint windows also contains a palette of colors which provide us with different colors and it located toward down. Other part of these windows is empty and white part is used to make picture.

### The Tool Box of Paint-Brush

**The paint brush tool box is combination of buttons hat select drawing tools.**

**(1) Free form select: -** We can select the object as pencil function type.

**(2) Select: -** We select the object in rectangular shape.

**(3) Eraser: -** The eraser is used to eras an object.

**(4) Fill: -** The fill color on any part of object.

**(5)** Pick color: - The work of this option like dropper (means pick color form other software to paint brush).

**(6) Magnifier: -** The magnifier tool is used to zoom in and zoom out of the picture work area.

**(7) Pencil: -** The Pencil tool is used to draw a object freehand.

**(8) Brush: -** These option same as pencil tool but different is that it used in different shape.

**(9) Airbrush: -** The Airbrush too sprays a design on picture.

**(10) Text: -** These tools allow for text writing facilities on paint-brush.

**(11) Line: -** The line tools allow us to draw the straight line.

**(12) Curve: -** The curve tool draws the curves.

**(13) Rectangle: -** The Rectangle tool draws rectangle.

**(14) Rounded Rectangle:** The Rectangle tool draws the Rounded Rectangle.

**(15) Polygon: -** The Polygon tool draws a many sides shape formed form straight lines.

**(16) Ellipse: -** The Ellipse tools draw an ellipse.

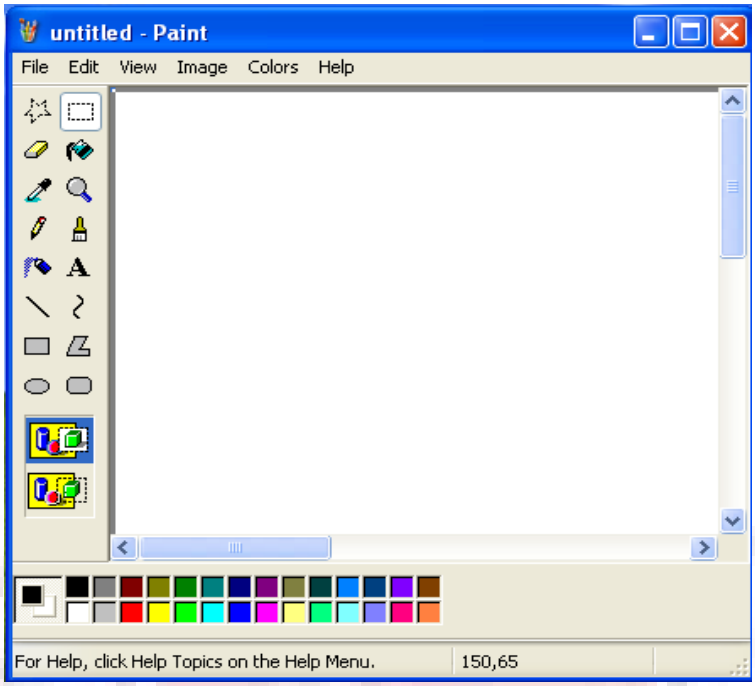



**Fig. 30**

## 4. Calculator

Various types of calculation can be performed with the help of Calculator.

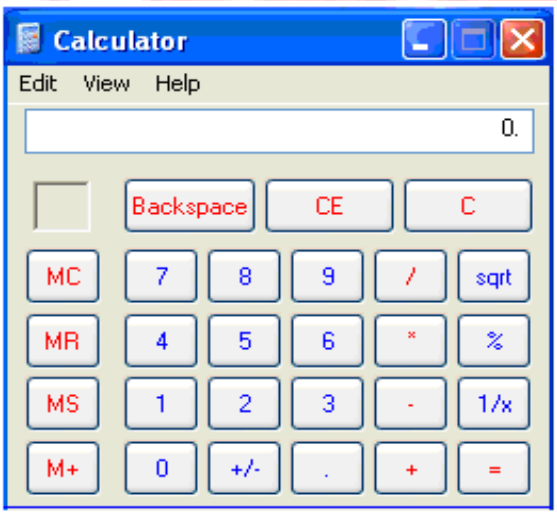



**Fig. 31**

## 5. Character Map

Character map is used to type various types of characters, Follow the given process to open the ‘Character Map’:

1. Point of programs' option in 'Star 'menu. A list will appear on the right side.

2. Point to 'Accessories'
   Again a list will appear.

3. Point to 'System Tools'
   Again a lit will appear.

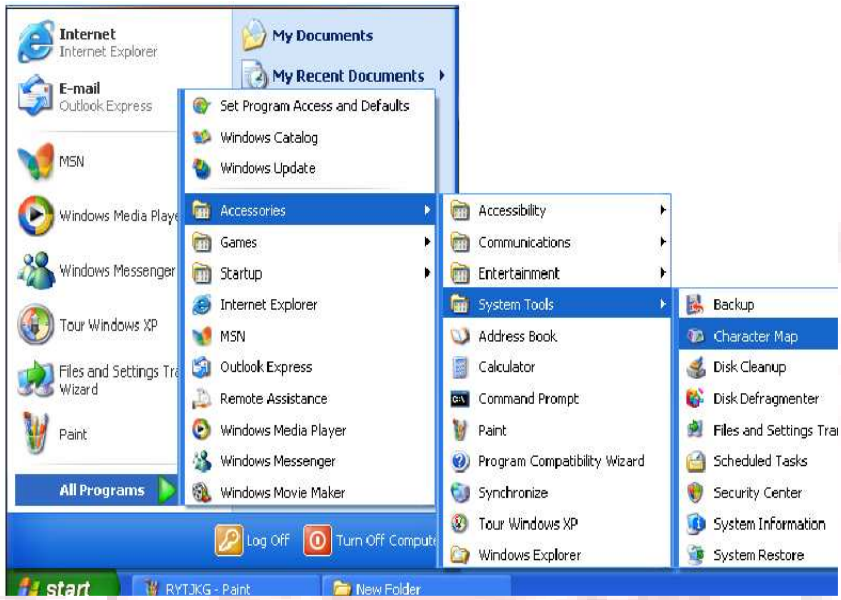



**Fig. 32**

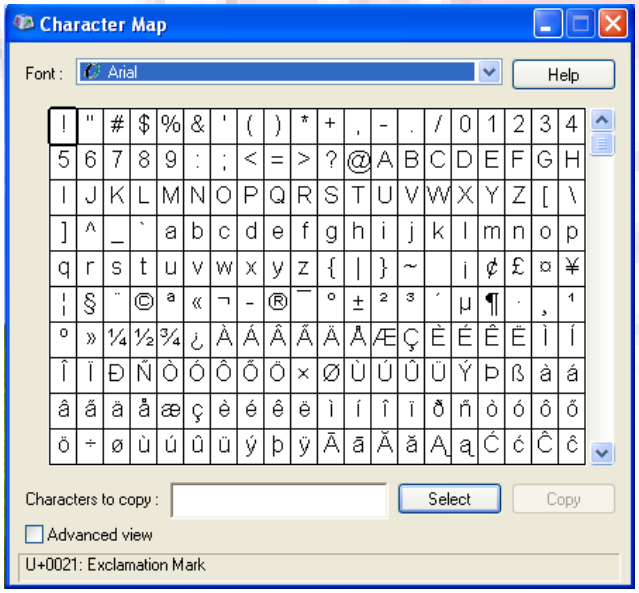



**Fig. 33**

4. Click on 'Character Map option

‘Character Map’ window will appear.

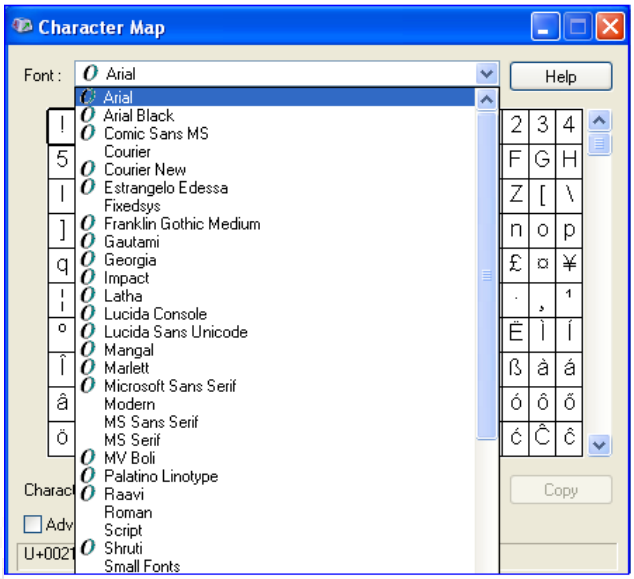



**Fig. 34**

## 6. Entertainment

This option of Window has many facilities for entertainment such as ‘CD’ player’, DVD player’ Media player’ and Sound Recorder etc Entertainment option is percent in accessories’ option and this option contains CD player’ Media player and ‘Sound Recorder’ etc Clicking once in any option will open its windows and we are able to the desired work, see following figure.

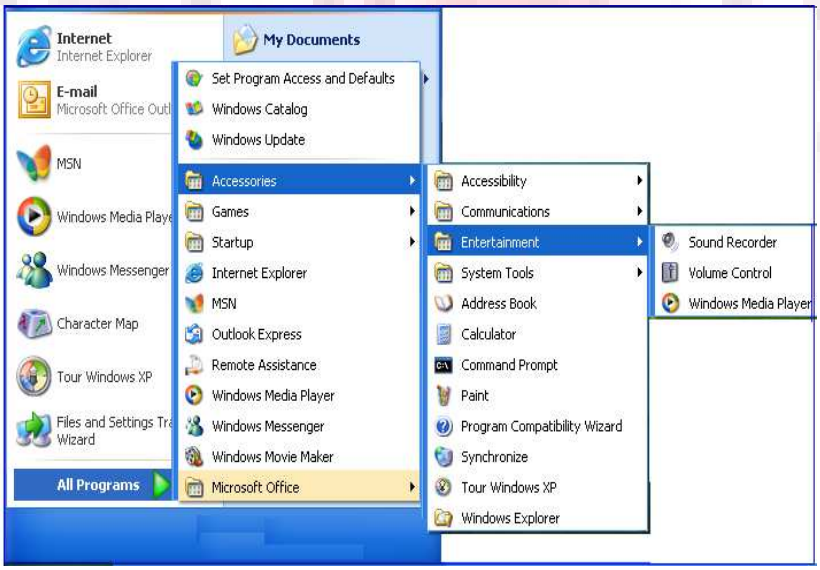



**Fig. 35**

1. **Sound Recorder**

It helps to record sound.


**Fig. 36**

2. **Volume computer**

It helps to the volume of sound.

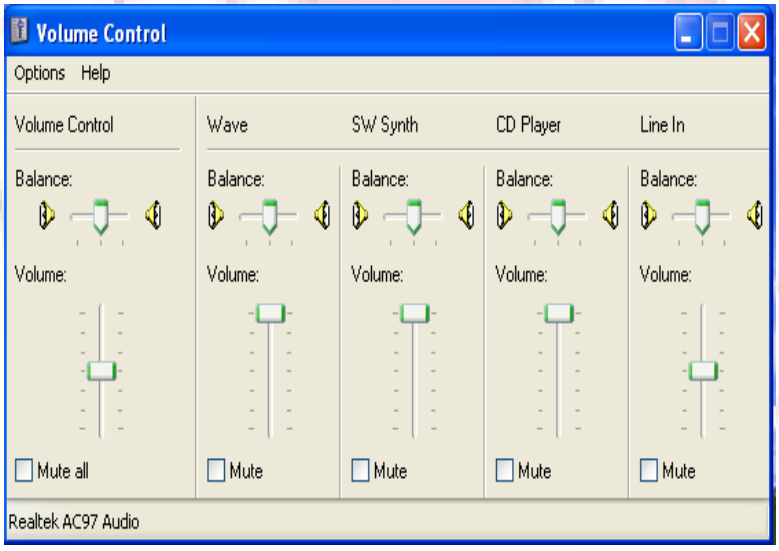



**Fig. 37**

3. **CD,DVD and Media player**

It helps to see movie or educational CD. It also helps to hear music.


**Fig. 38**

## 11. WINDOWS EXPLORER

A program performing the work of management of file or folder in the Win-dow Operating System is called Window Explore. All objects, which are available in computer, can b seen in hierarchical order. Window Explore is used in following work:

1). Observe and change the structure of folder of disk.

2). Observe and change the matter of files of folders.

3). Start a program and open a document.

4). Move file of folder, copy, create o rename.

5). Observe and change the property of file.

### Other Explorer Facilities

To create a new folder inside a folder, click twice on the previous folder and create new folder according to the above given process.

**To move a document or folder into another folder follows step as under**.

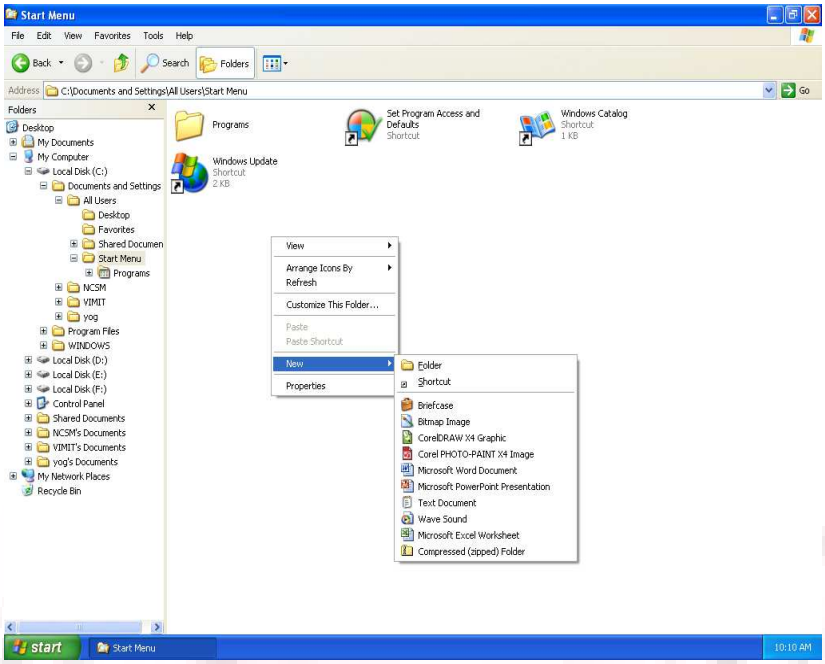



**Fig. 39**

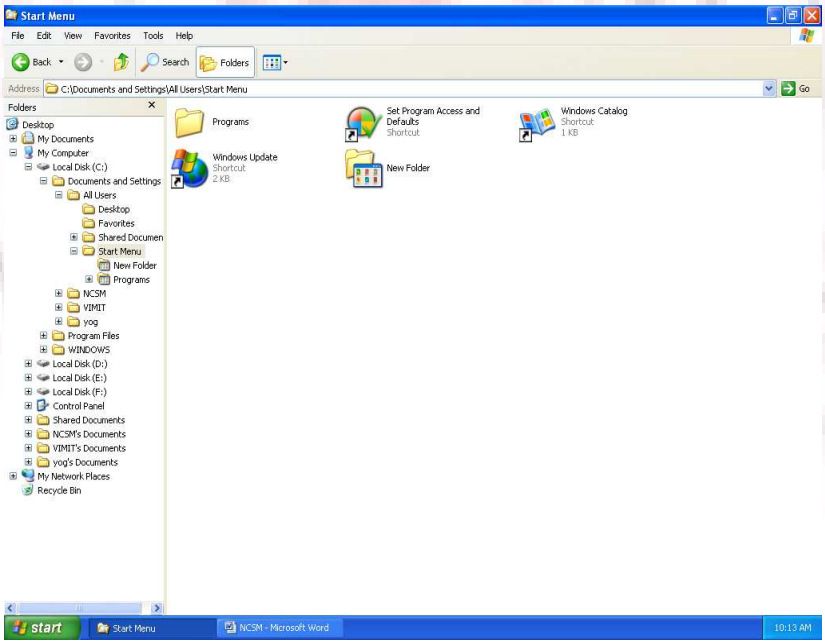



**Fig. 40**

1). Choose the folder to be moved.

2). Click on Edit' men is' menu bar' A drop down menu will open.
3). Click on 'cut' button.

4). Open that folder where desired document or folder to inserted.

5). Click on ‘Pasta’ button in ‘Edit’ menu. As soon as we do this process the desire document or folder to be inserted in required location.

**To copy a document or folder into another folder follows the steps as under:**

1). Choose the folder to be copied.

2). ‘Click on Edit’ menu in Menu Bar. A drop down menu will open.

3). Click on ‘copy’ button.

4). Open that folder where desired document or folder to be copied.

Click on ‘Past’ button in ‘Edit’ menu. As soon we do this process the desired document folder to be inserted in required location.

**To copy a document or folder on floppy disk follows the steps as under.**

1). Choose the file or folder be copied.

2). Right click on the icon of desired object.

3). Point to ‘Send To’ button.

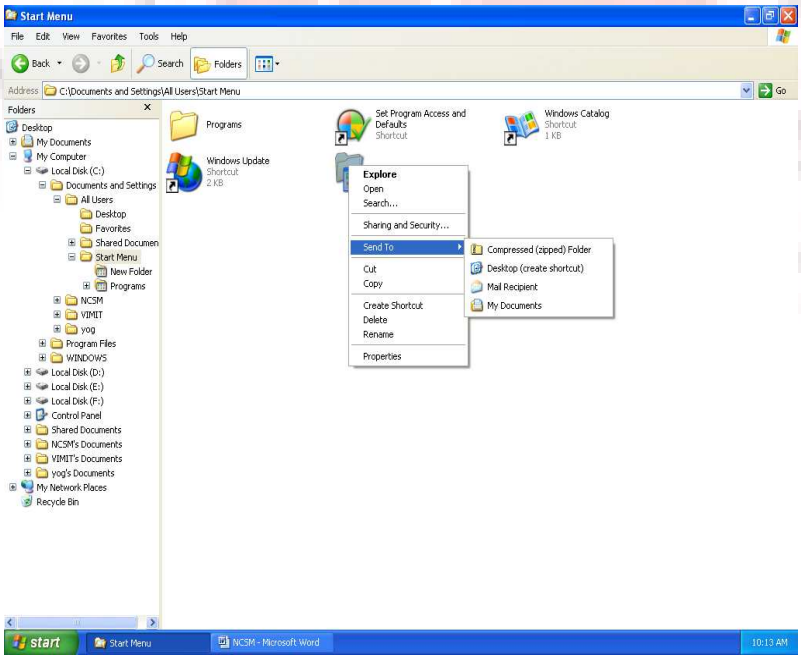



**Fig. 41**

## 4. Click on ‘31/2 Floppy (A)’ option.

As soon as the process of copying of desired document or folder will start on floppy disk. See following figure.

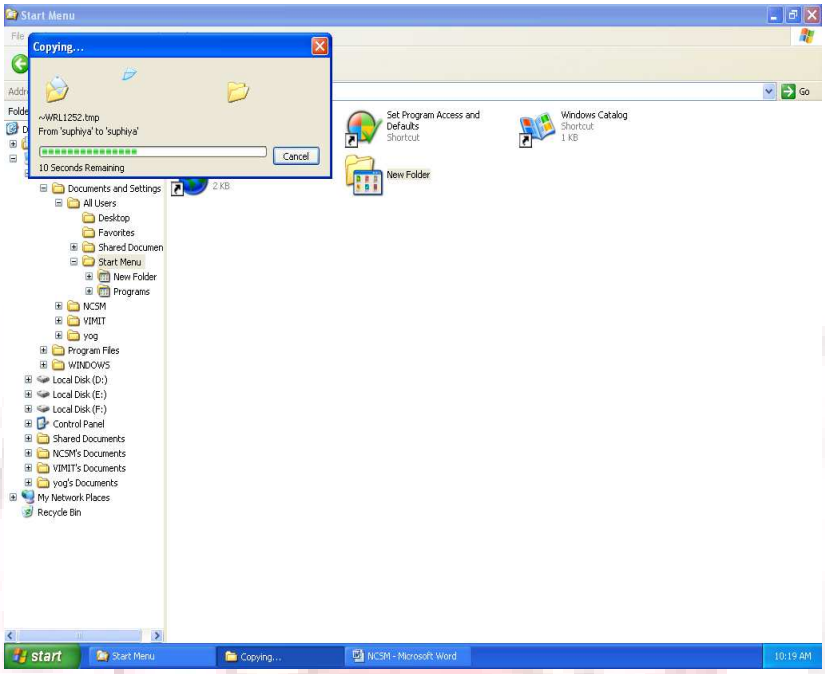



**Fig. 42**

**To rename a document or folder follows the steps as under.**

1). Select the desired document or folder.
2). Right click on the icon on desired object.
3). Click on ‘Rename’ button. Color or the name document or folder will change.
4). Type new name in the place of previous name and press ‘Enter’ Key.
5). The name of document or folder will change.

**To delete a document or folder follows the steps as under.**

1). Select the desired document or folder.

2). Right click on the icon of desired object A menu will open.

3). Click on ‘Delete’ button. Confirm file ‘Delete’ dialog box will open.

4). Click on ‘Yes’ button.

5). Desired document or folder will delete.

7

# M.S. OFFICE

## 1. Introduction to M. S. Office

Microsoft office 2000 is not new software but it is the new version of the previously popular Microsoft 97.

The main feature of Microsoft 2000 is the has additional presentation through graphics and availability of additional program.

The program which are found in M.S. office are as follows-

| | |
|---|---|
| Microsoft Work | Microsoft Outlook |
| Microsoft Excel | Outlook Express |
| Microsoft Access | Microsoft Tools |
| Microsoft PowerPoint | |

## 2. Microsoft Word

In Microsoft word you can do all work selected to work processing. In any office the work of documentation is given top priority.

In word you can use different fount and type your document as you wish. The document typed in word can be saved in disk and when there is necessity changes can be made and print out can be taken.

In word the matter typed in English can go through checking of spelling. You can choose any picture from the clip Art gallery and place it any where in the document prepared by Microsoft, which makes the presention of document more attractive.

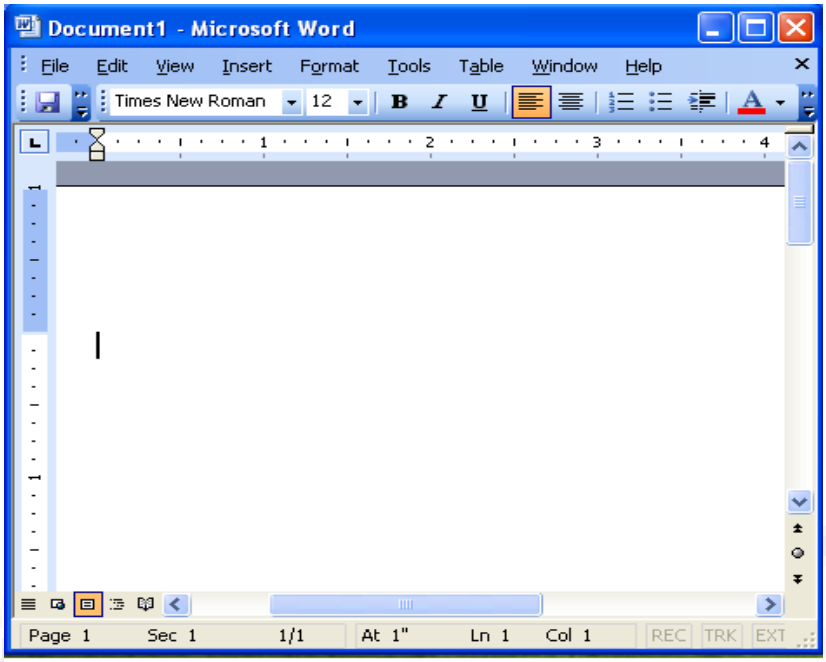



**Fig. 1**

## 3. Microsoft Excel

In Microsoft Excel you can prepare worksheet in the from of table and main-tain the data and do calculations also.

In Excel you can set any box for formula which is needed for calculation in this way, by specifying cell address in formula result can be obtained, the main benefit of excel is that if any data is changed in any of the all them the result will also change on its basis.

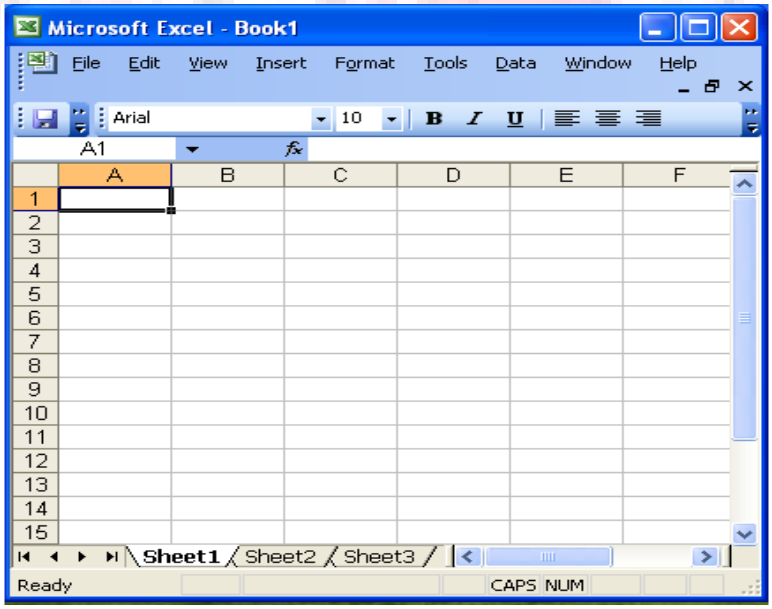



**Fig. 2**

## 4. Microsoft Access

Access is a data base program in which you can collect data related to office or people of business organization or name of Institution or address etc. Out of the thousand's or lakhs of data which is stored in data base, the necessary data on the basis of some logic such as, name of city can be picked out and can be seem.

Microsoft access is the best program for data base management which is a part of office.

## 5. Microsoft PowerPoint

In PowerPoint, presentation is prepared on slides. There is need to show many things with decoration in the conference of office or seminar. For such, purposes power point is used.

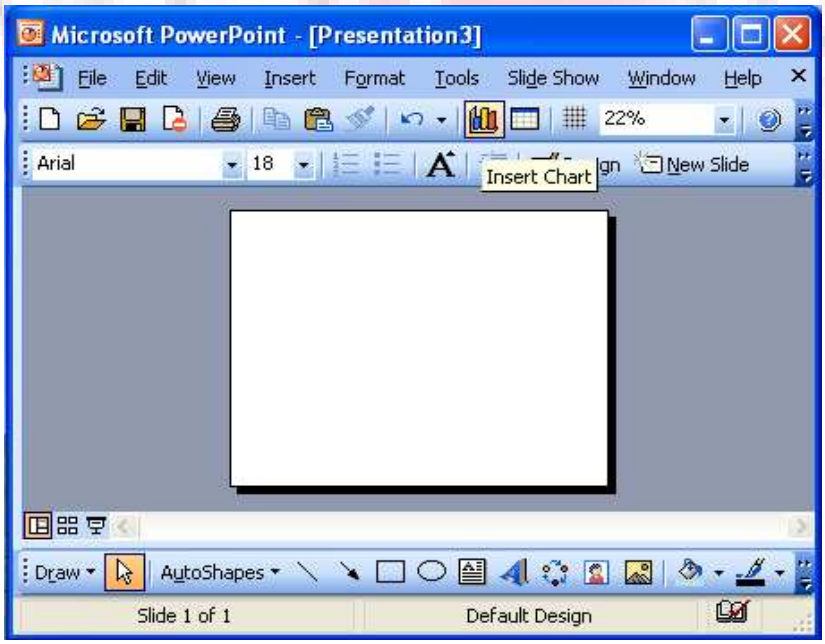



**Fig.**

## 6. Microsoft Outlook

Microsoft outlook is used in the form of an elestonic diary. In this you can maintains the description about your work and meeting. Which timely informs you what is to be done and when? By its used also decide meeting selected to internet.

## 7. OUTLOOK EXPRESS

The program is specially prepared for internet. Through outlook express you can keep the world wride internet on your computer desktop available and share the information with any website.

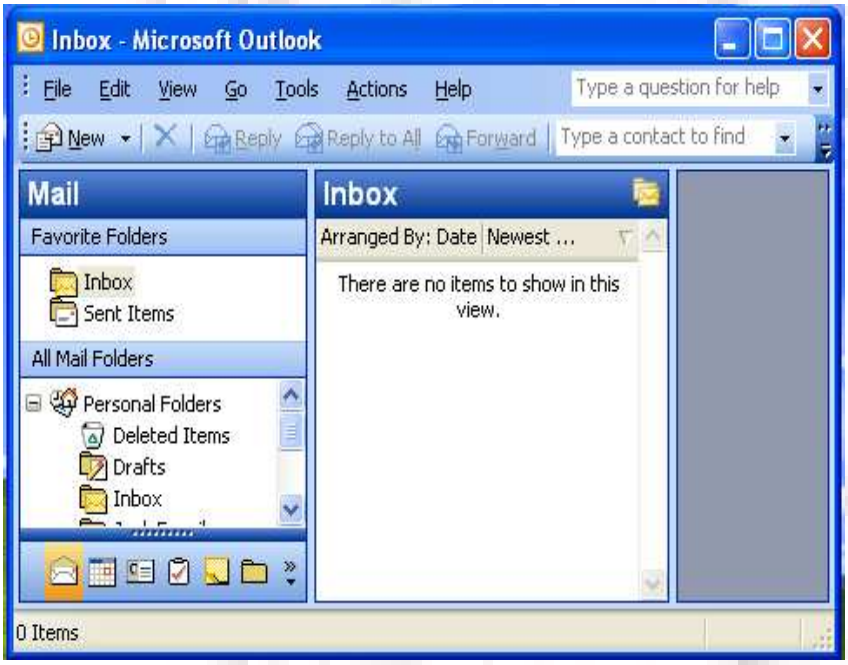



**Fig. 5**

## 8. Microsoft office Tool

By using the tools falling under Microsoft office Tools such as access snashat viewer, office language setting and office shortcut, Microsoft office can be main-tained. It can also be presented as desired.

8

# M.S WORD

## 1. Introduction to M.S. Word

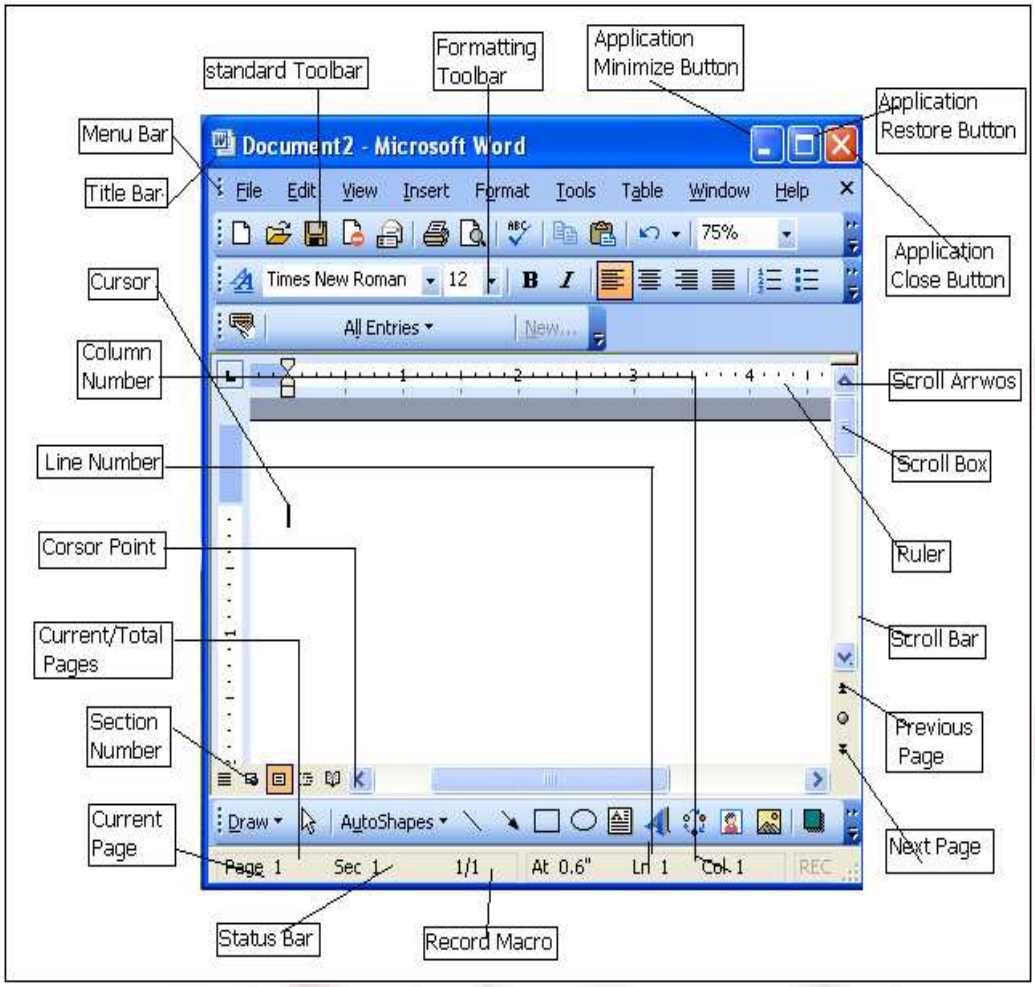



**Fig. 1**

Microsoft Word is a full- featured processing program which can be used for any work involving creating and managing text. Using word, you can wried litters and reports. Prepare bills and invoices, office stationary- letter heads, envelopes, forms, etc:

## 2. STARTING WORK

To star Word click once on the Start button, choose programs and click once on Microsoft Office and then once on Microsoft Word.


**Fig. 2**

## 3. Parts of Word Windows

**Title bar-** The tells you which application package is currently running and which document is currently open.

**Menu bar-** In these bar consist of all menus (File, Edit, View, Insert, Format, Tools, Table, Windows, and Help).

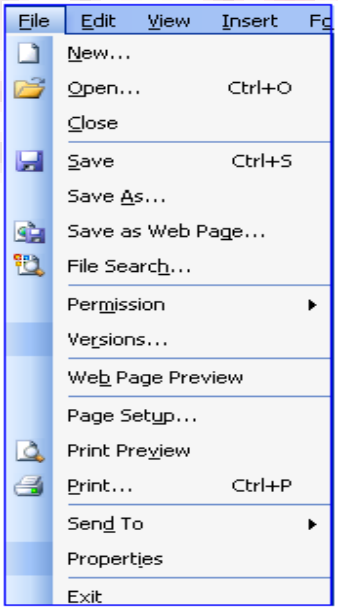



**Fig. 3**

**Standard toolbar-** The Standard toolbar contains icon for basic functions like opening file, saving files, printing file, cut copy, paste, etc.

**Formatting toolbar-** The contains icons for changing the look of your text for example, there are icons for changing fonts, styles font sizes, text alignment etc.

**Ruler-** The Ruler helps you create documents as per dimension required.

**Scroll tools-** These help you travel within your document. You can go any-where, up and down, right and left in your document mainly by two ways: Using the horizontal and vertical scroll bars with he help of the mouse; or Using the keyboard to press PgUp, Home, End and arrow keys

**Status Bar:** Also called the status area, this is the normally the last line of screen. The gives the following information about your work.

## 4. Toolbars and Their Icons Word Standard Toolbar


**Fig. 4**

**New**
Creates a new document based
on normal template.
Alternative: File- Save
Shortcut - ctrl + N

**Save**
Save the active document or
Tem plate.
Alternative: File- Save
Shortcut – Ctrl + S

**Print**
Prints the active document
Using current defaults.
Alternative: File- print
Shortcut – Ctrl +P

## Spelling
Checks the spelling in the active
Document
Alternative: Tools- Spelling
Shortcut- F7

## Copy

Copies the selection and puts it
On the clipboard.
Alternative: Edit – Copy
Shortcut Ctrl +C

## Redo
Reverse the action of the Undo
Command.
Alternative: Edit – Repeat
Shortcut –Ctrl +Y

## Insert Table
Inserts a table
Alternative: Table- Insert Table

## Insert Excel Worksheet
Insert Microsoft Excel
Worksheet.
Alternative: Insert – File

## Drawing
Shows or hides the Drawing
Toolbar.
Alternative: View – Toolbars – Drawing

## Shows/Hide
Shows/hides non-printing
Characters.
Shortcut - +*

## Office Assistant
Provides help topics and tips to
Accomplish your taks
Alternative: Help – Microsoft
Word Help
Shortcut – F1

## Format Painter
Copies the formatting of the
Selection to a specified location.
Shortcut – Ctrl + shift + C

## Open
Open an existing document or template.
Alternative: Edit – open Shortcut – Ctrl +O

## E -mail
It sends the contents of the
Document as the Body of the E –mail message.
Alternative: File – send to – Mail

## Print Preview
Displays full page as they are printed.
Alternative: File – Print Preview Shortcut – Ctrl + F2

## Cut
Cuts the selection and puts it on the clipboard.
Alternative: File – Cut Shortcut – Ctrl +X

## Paste
Inserts the Clipboard contents at the insertion point.
Alternative: Edit – Paste Shortcut – Ctrl + V

## Undo
Reverses certain commands.
Alternative: Ctrl + Z

## Insert Hyperlink
Displays the destination object.
Document of page.
Alternative: Edit – Repeat Shortcut – Ctrl +K

## Table and Borders
Displays the Tables and borders toolbar.
Alternative: View – Toolbars – Tables and Borders

## Columns
Changes he column format of the selected sections.
Alternative: Format – Columns

## Document Map
Shows on outline of a document

Heading and helps to quickly
Navigate around the document.
Alternative: View – Document Map

### Zoom Control
Scales the editing view (zoom)
Alternative: View – Zoom

## 5. WORK FORMATTING TOOLBAR

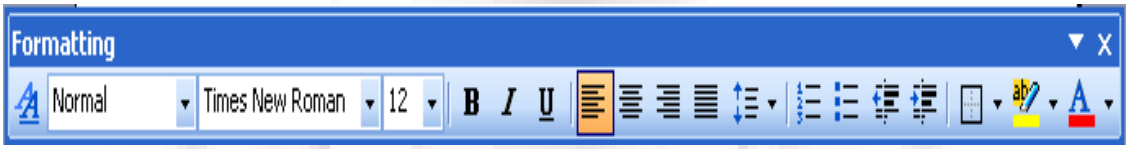



**Fig. 5**

### Style
Applies a style or records a style by example.
Alternative: Format – Style Shortcut – Ctrl + Shift +S

### Fount Size
Changes the font size of the selection.
Alternative: Format – Font – Size Shortcut – Ctrl + Shift +P

### Italic
Makes the selection Italics.
Alternative: Format- Font- Font Style Shortcut – Ctrl + I

### Align Left
Aligns the paragraph at left indent.
Alternative: Format – Paragraph – Alignment Shortcut – Ctrl +L

### Align Right
Aligns the paragraph at right indent
Alternative: Format – Paragraph – Alignment Shortcut – Ctrl +R

### Numbering
Creates a numbered list based on
The current defaults.

## 6. WORD TABLES AND BORDERS TOOLBAR


**Fig. 6**

## Draw Table
Inserts a table where you drag in the document.
After you drag to insert the table,
Drag inside the table to add cells, columns or rows.

## Line Width
Click the width you want for the border
On the selected object.

## Border Color
Click on the border Color you want.

## Fill Color
Adds, modifies, or removes the fill color
Or fill effect from selected object.
Fill effects from the selected object.
Fill effects include gradient, texture, pattern, and picture fills.

## Eraser
Removes a table cell line and merges the contents of the adjacent cells.
If the cell has a border. Word removes the border
Bur does not merge the cells. Click Eraser,
And then drag the eraser pointer over the table
Cell lines or borders you don't want.

## Border Style
Click the style and thickness you want for the selected line.

## Outside Border
Adds or removes a border around the selected text,
Paragraphs, cells, pictures, or other object.

## Merge Cells
It combines the contents of the selected
Adjacent cells into a single cell.

## Align Top Left
Aligns horizontally oriented text with the top of the table cell.
Similarly you can choose from the various
Options to align the text differently.

### Distribute Column evenly
Changes the selected columns or
Cells to equal column width.

### Change text Direction
Orients selected text in a text box.
Cell or frame horizontally, left to right.

### Sort Descending
Sorts the selected items in order from the end of the
Alphabet, the highest number, or the latest data, using
The columns the insertion point. If you previously set other
Sorting options, those options are still in effect.

### Insert Table
Inserts a table in the document with the
Number of columns and rows you specify.

### Spilt cell
It splits the selected cells into the
Number of rows and /columns you enter.

### Distribute Rows Evenly
Changes the selected rows or cells
To equal row height.

### Table Auto Format
It automatically applies formats, including
Predefined borders and shading to a table.
Automatically resizes a table to fit the contents of the table cells.

### Sort Ascending
Sort the selected items in order from the beginning of the
Alphabet the lowest number, or the earliest data, using the
Column that contains the insertion point. If you previously
Set other sorting options, those options are still in effect.

### AutoSum
Inserts a = (Formula) Field that calculates and displays the
Sum of the values in table cells above or to the left of the
Cell containing the insertion point.

## 7. WORD DRAWING TOOLBAR


**Fig. 7**

## Draw
Activates the Draw Menu.

## Free Rotate
Rotates the selected object to any degree.
Select the object, click on the icon and
Then drag a corner of the object in the
Direction you want to rotate it.

## Line
Draws a straight line where you click or drag in the active Window.
To constrain the line to draw at 15 degree angle from its starting
Point, hold down SHIFT as you drag.

## Rectangle
Draws and rectangle where you click or drag in the active window.
To draw a square, press SHIFT and drag.

## Text Box
Draws a text box where you click or drag in the active window.
Use a text box to add a text –such as captions or callouts
To your pictures or graphics.
Alternative: Insert – Text Box.

## Clip Art
Opens the clip Gallery where you can select the insert
In your file or update your clip art collection.
Alternative: Insert – Picture- Clip Art.

## Select objects
Changes the pointer to a selection arrow so that you can
Select objects in the active window. To select a single
Object clicks the object with the arrow.
To select one or more object you want to select.

## Auto shapes
Activates the Auto Shapes menu.

## Arrow
Inserts a line with an arrowhead where you click or drag
In the active window. To constain the line to draw at the
15- degree angle from its starting point, hold down SHIFT
as you drag.

## Oval
Draws an oval where you click or drag in the
Active window. To draw a circle, press SHIFT
And drag.

## Word art
Creates text effects by inserting a Microsoft Office
Drawing object.
Alternative: Insert – Picture – Word Art.

## Fill Color
Adds, modifies, or removes the fill color or fill
Effect from the selected object. Fill effects
Include gradient, texture, pattern and picture fills.

## Font Color
Formats the selected text with
The color you click fills.

## Line Color
Adds, modifies, or removes the line
Color from the selected object.

## Dash style
Click the dashed line or dash dot line style you
Want for the selected shape or border. Click the
Solid line if you don’t want the dotted line.

## Shadow
Click the arrowhead style you want for
the selected object

## Line Style
Click the shadow style you want for
The selected line.

## Arrow style
Click the arrowhead style you want for the selected line.

**3- D**
Click the 3- D style you want for the
Selected object.

# 8. MOVING, SCROLING IN A DOCUMENT

With the help of Mouse Pointer and Insertion Point we can move within and part of document. Their descriptions are as follows:

**Mouse Pointer:** It is in the form of a large l. We can move it any where on the screen. It changes its shape in other part of window. We can see it only when it is lying within text area.

**Insertion Point:** It is called cursor of document. It is in the from of a large line 'l'. Any typed text is inserted in text area with the help of it. Cursor can reach any where in text area by clicking once. See following figure number 9.

With the help of Scroll Bar and arrow buttons we can move document either up-down or lift- right. See following figure:

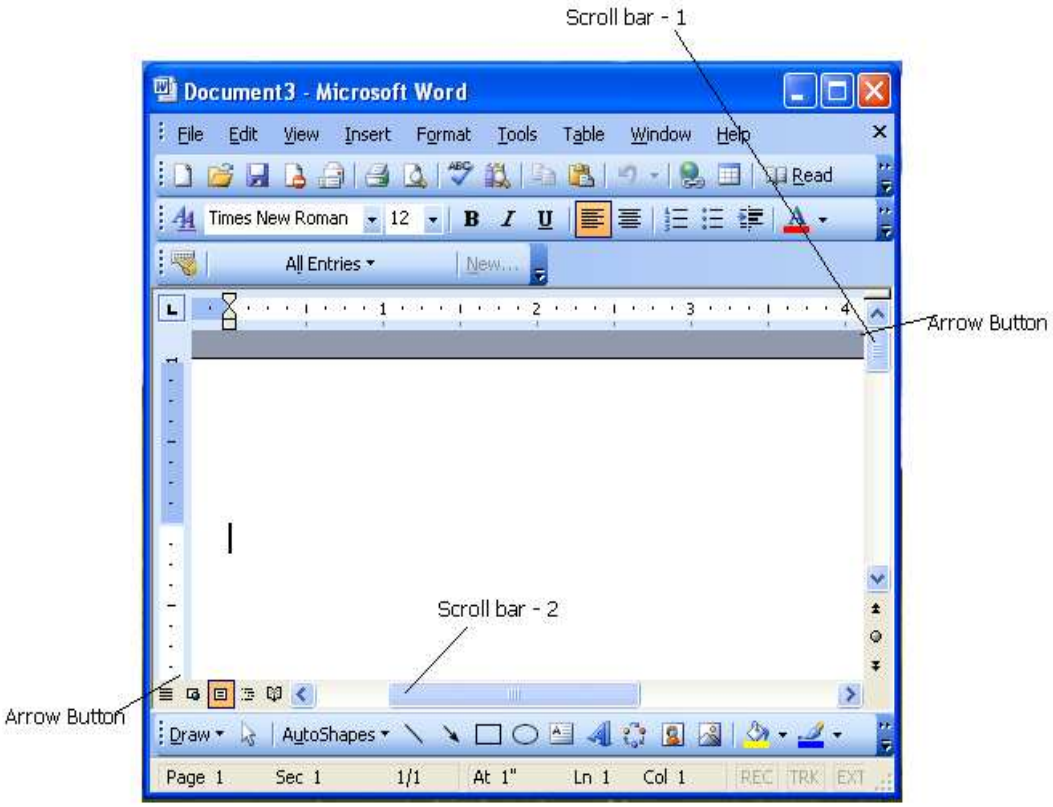



**Fig. 9**

**Note:**

1. Document can be moved up- down with the help of Scroll bar- l The arrow buttons of this document also help up to document up- down

2. Document can be moved left- right with help of Scrollbar- 2 the arrow Buttons of this document also help up to move document left- right.

## 9. OPENING MULTI DOCUMENT WINDOWS

We can open two or more document at time in MC Word, but only one document will appear in the window of MS Word. The symbols of all opened document can be seen at the task bar. To open desired document click on their symbol in the task bar. For example see following fig:

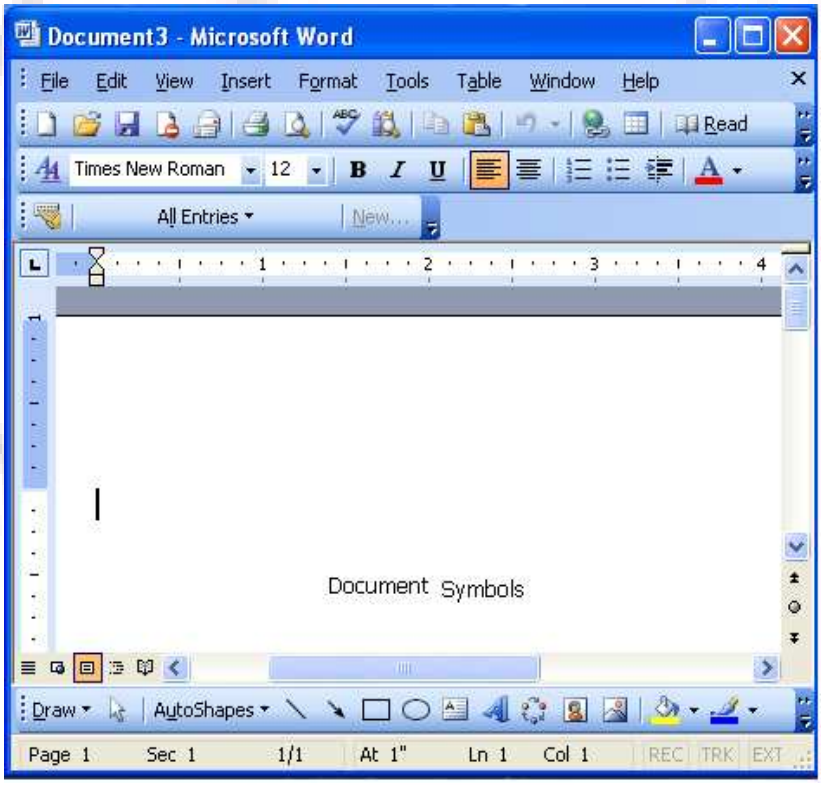



**Fig. 10**

## 10. Editing Text

### 1). Selecting Tex

(I). In order to select a block of text, place the mouse cursor at the beginning of the block of text, press the left button of mouse (and hold it down), and drag the mouse cursor to the end of block text. As we drag the mouse cursor the text gets selected. Finally, release the left button of mouse.

(2). In order to select a single work, simply doubly click that work.

(3). To Select a line press the 'Ctrl' key and click any where in the line.

(4). In order to select a line, place the mouse cursor at the beginning of the lien and click once.

(5). In order to select a single paragraph, simply triple click that paragraph. For example, see figure number 3. 10.

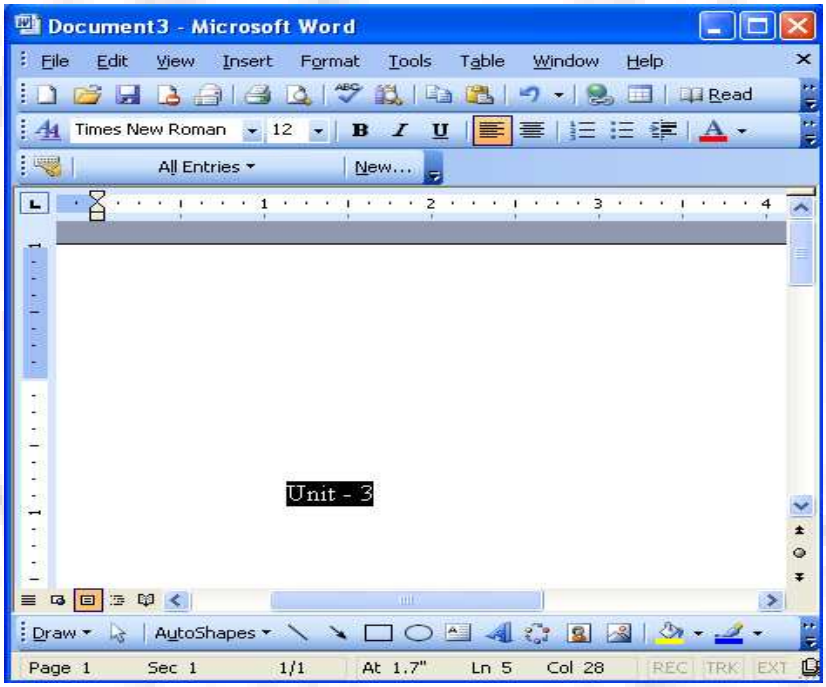



**Fig. 11**

## 11. INSERTING TEXT

To insert new text any where in the old text, place the insertion point at desired location and start required typing. As soon as we go on typed text is in serted and previously typed text moves forward. See figure number 3.11 and 3. 12.

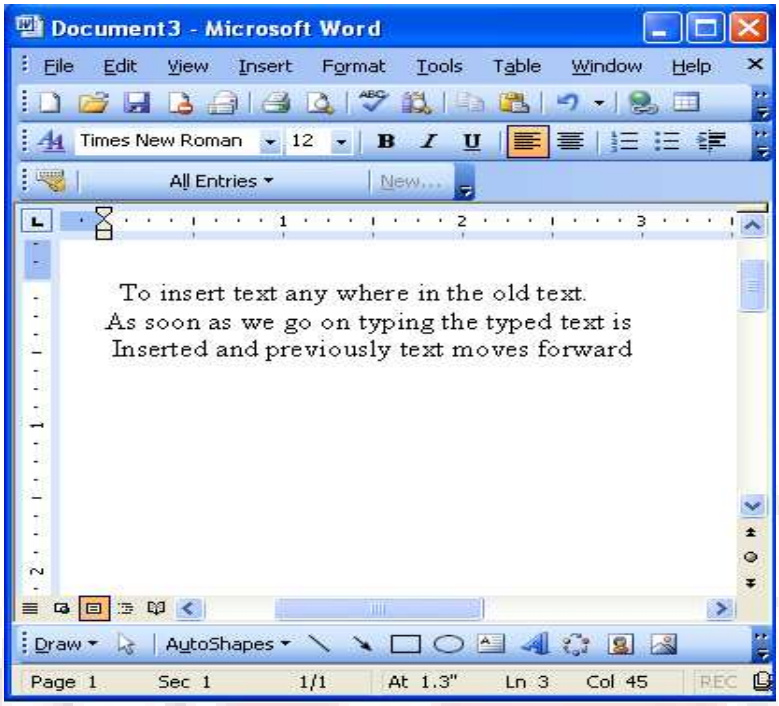



**Fig. 12**

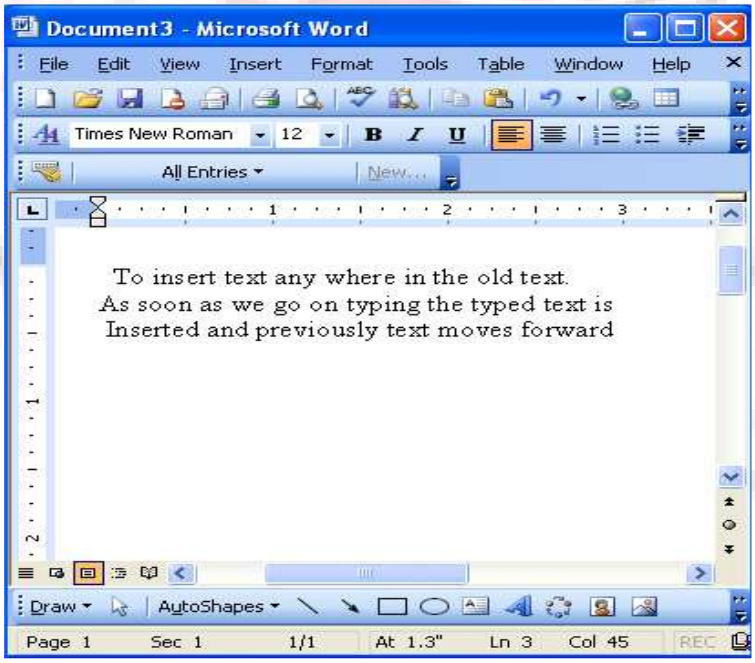



**Fig. 13**

## 12. DELETING

To delete a text or part of a text form a document follows these steps:

(1). Select desired part for deleting.

(2). Press ‘Delete’ button form keyboard. Selected text or part of text will or text in figure number 3.13 and 3.14 selected part or text in figure number 3.13 is not available in figure number 3.14.

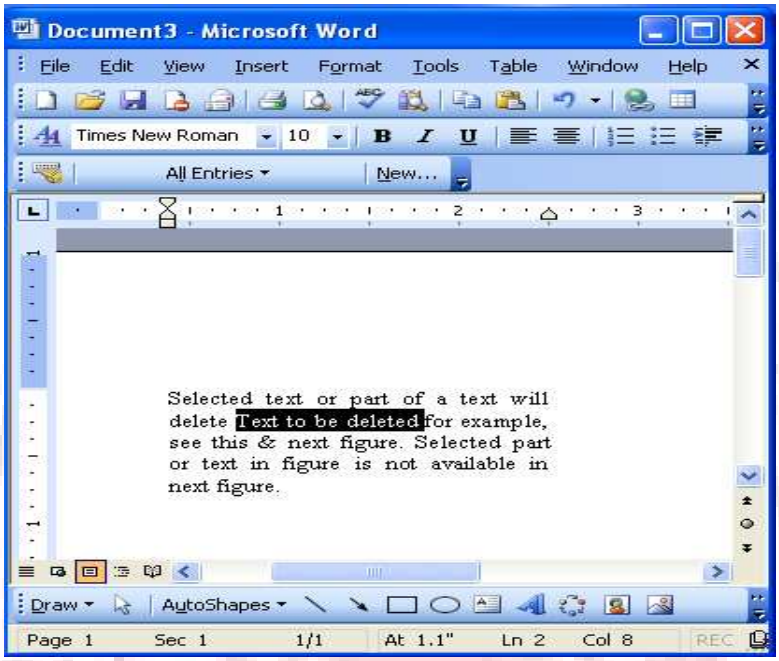



**Fig. 14**

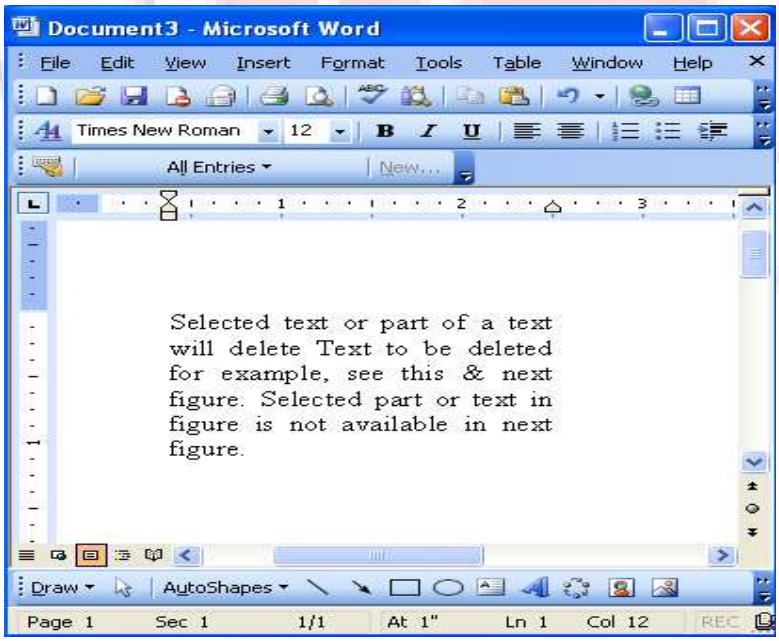



**Fig. 15**

# 13. MOVE TEXT

To Move some part of a text follow these steps:

(1). Select desired part of text to be moved.
(2). Place the mouse pointer in selected area. Press left button and old it.
(3). Drag the cursor at desired place.
(4). Release the left button of mouse.

Selected part of a text will move form one place to another place. For example, see figure number 3. 16.

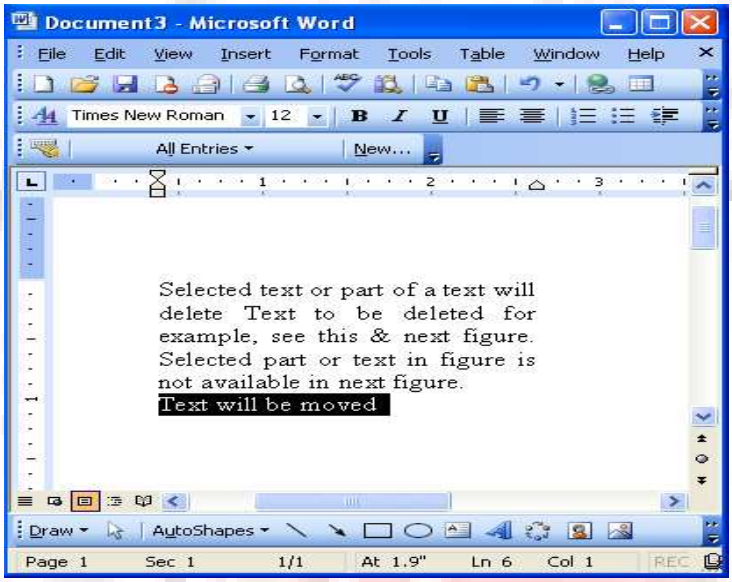



**Fig. 17**

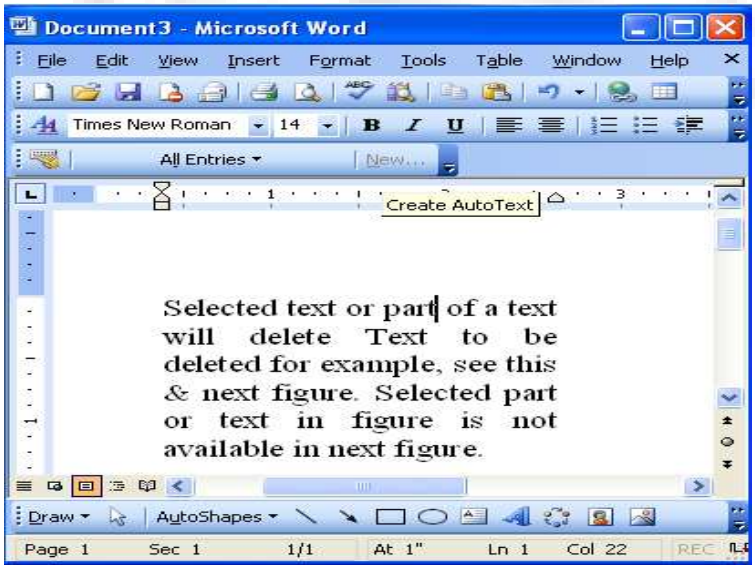


**Fig. 18**

## 14. SHRINKING A DOCUMENT

Shrinking a Document to a file page and Reduced the number of pages by one:

To shrink a document for a file page. We use font size button of formatting tool bar. We can reduce page number by same task. To do this work, follow these steps.

(1). Select the document.

(2). Click on Font size button in for mating tool bar.

(3). A drop down list will open.

(4). Select desired font size and click on it.

(5). Required work will complete.

For example, see figure number 3. 17 and 3.18 In figure number 3.17 we see that some part of document is in the next page when we reduce the size, we see in figure number 3.18 that the example part of the document comes back from next page to previous page.

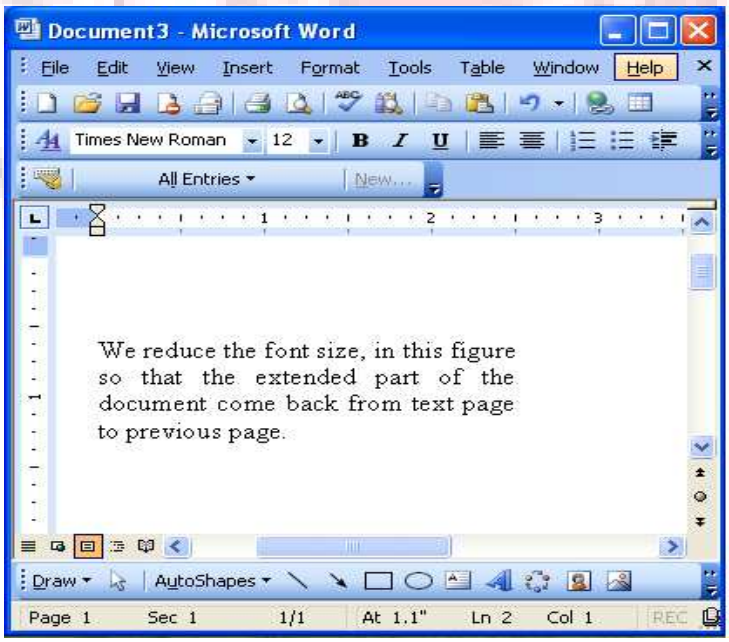



**Fig. 19**

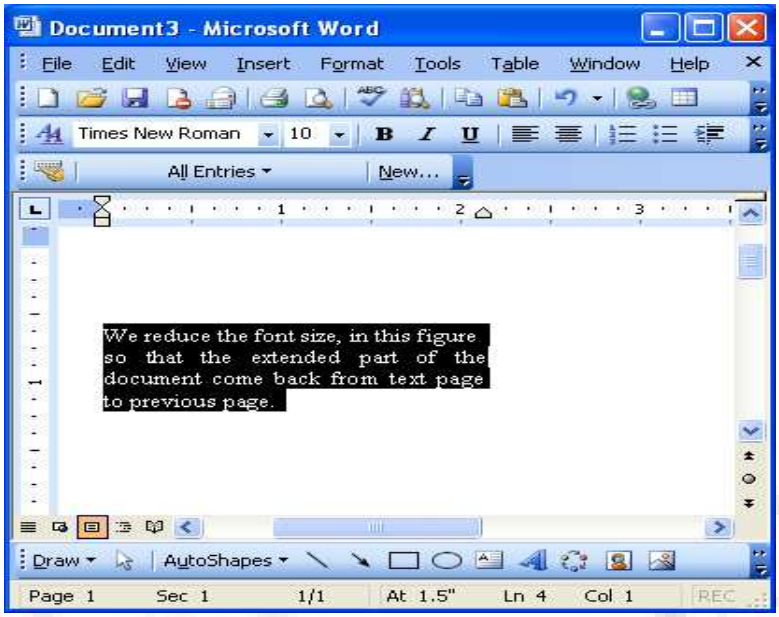



**Fig. 20**

## 15. CHANGING THE FONT STYE AND FONT SIZE

(1). Place the mouse pointer at beginning of the text click the left button and start high lighting the entire text by dragging the mouse till the end of the text.

(2). Click at the font box of formatting toolbar. Click once at the pull down arrow symbol and a list of all the available font would be displayed.

We can change the font as per using following box: Example under line, bold Italic, strikethrough etc. (These boxes comes form format menu).

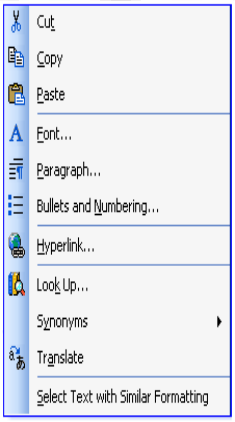



**Fig. 21**

## 16. CHANGE CASE

If we have type any text in a case then to into other case, the option format change case will very easily do that work. If any text is selected than on clicking the option format change case. We will obtowing five options (figure) these options are as follows sentence case, lowercase, upper case, title case and toggle case.

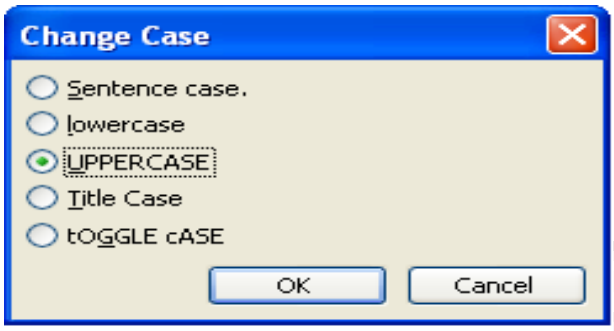



**Fig. 22**

**Sentence case:** In it the first better is capital and remaining covert into lower case.

**Lower case:** In the all letters of the sentence covert into lower case.

**Upper case:** On selecting it all the letters of the sentence convert into upper case

**Title case**: In it the files letter of every word is capital and the remaining covert into lower case.

**Toggle case:** Thought the alphabet can be converted form the case where it is into other case. It can be used through key border by (Shift +F3). For example aB cD converting will become A bcd.

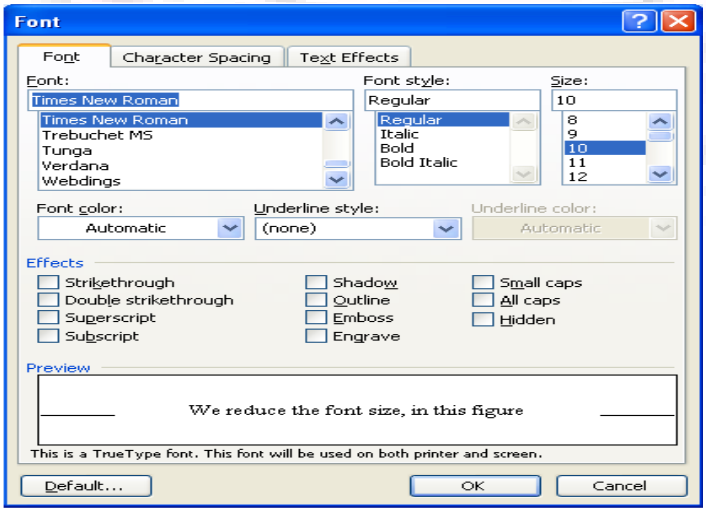



**Fig. 23**

# 17. PARAGRAPH SETTING

In paragraph setting you can align the text and give the space between them these options come format menu and choose the paragraph option then following box will appear on screen.

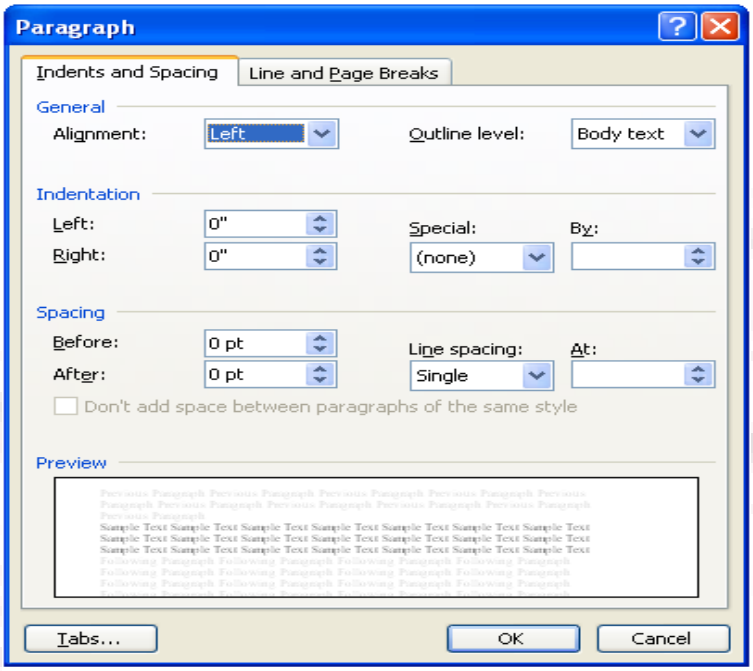



**Fig. 24**

# 18. NUMBERING

(1). Highlight the text.

(2). Choose Bullets and Numbering option format menu or click once on the numbering icon.

(3). Click here to choose Numbered.

(4). Choose the numbering pattern wish to apply by clicking any where in side the choose pattern box.

(5). Click once on OK button.

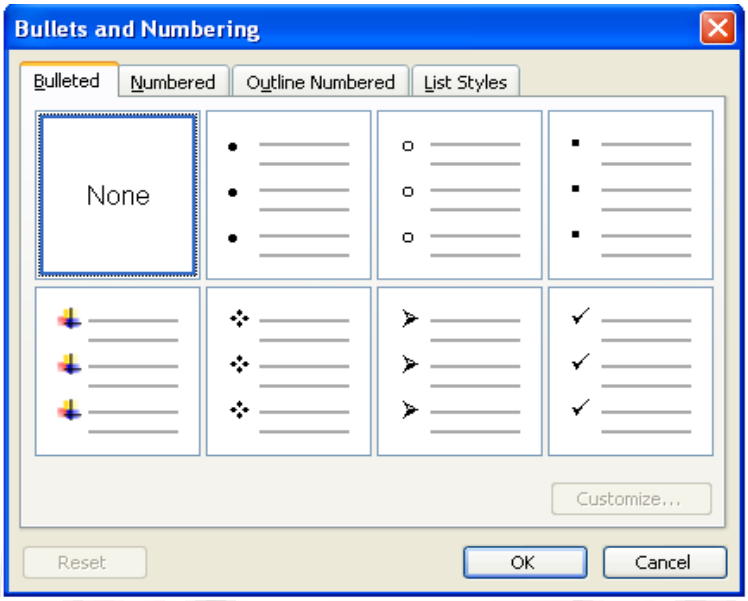



**Fig. 25**

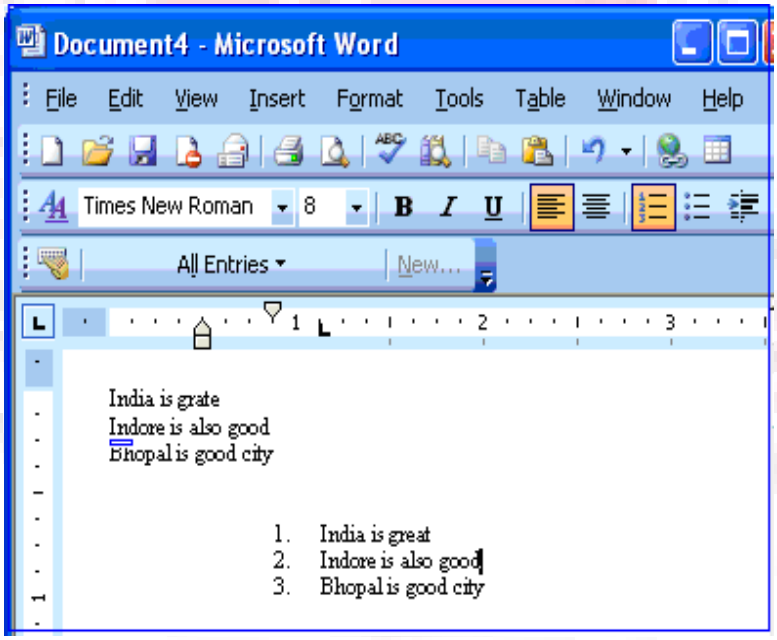



**Fig. 26**

## 19. BULLETS

(1). Highlight the text and choose Bullets and Numbering option form Format menu.

(2). Click on the Bulleted using following tab.

(3). Choose the bullet mark you with to apply by clicking once it.

(4). Click on the Ok button.

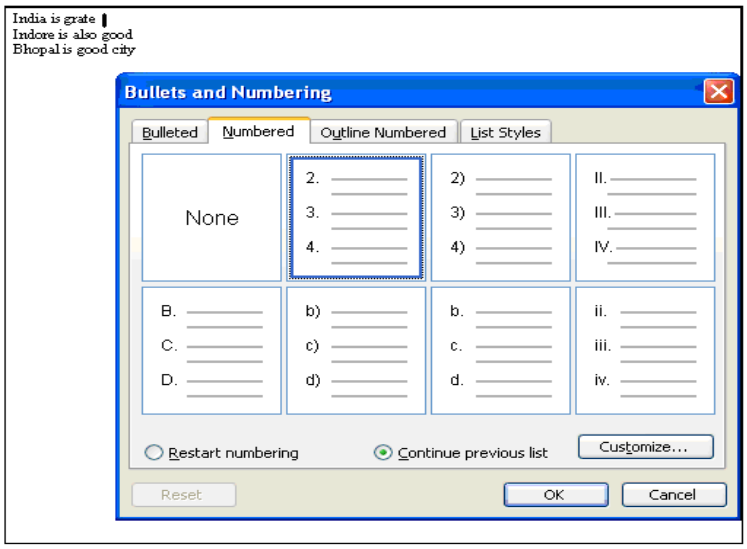



**Fig. 27**

## 20. SPELLING

Once the entire matter has been typed and formatted as required, now is time to make sure that on spelling mistakes have been made.

(1). Place the cursor right in the beginning of the document.
(2). Choose spelling and Grammar command form the Tools menu.
(3). A spelling check dialogue box appears.

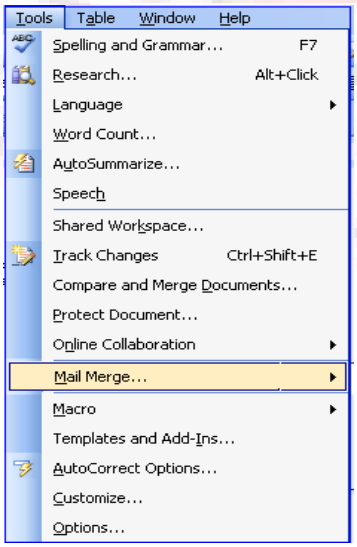



**Fig. 28**

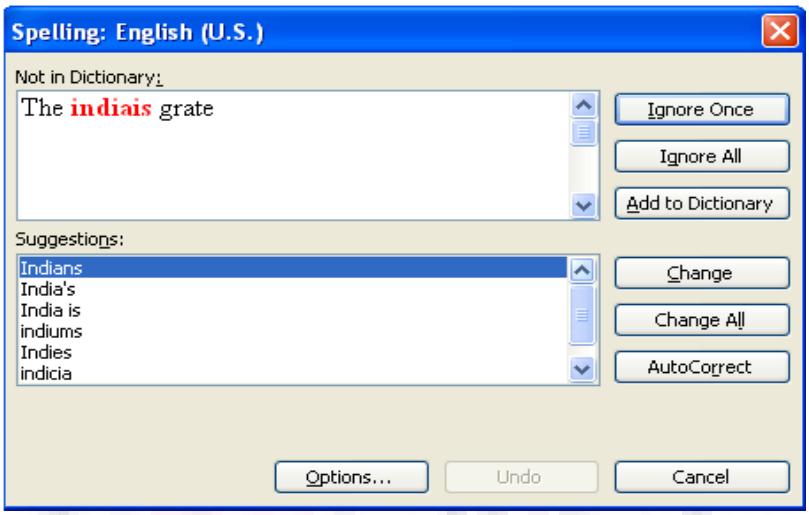



**Fig. 29**

**Spell – Check program are given below:**

1. **Suggestion:** Based upon the misspell word would try to thing of all possible suggestion for the correct word.
2. **Ignore:** Through this word is not found in the dictionary, leave it unchanged.
3. **Ignore all:** Ignore this word for all subsequent occurrences.
4. **Change:** Change this word with the suggestion specified.
5. **Change all:** Change this word for all subsequent occurrences, with the suggestion specified.
6. **Add:** Add this word to the dictionary
7. **Auto:** Correct- Add the suggested correction to Auto- Correct.
8. **Options:** For changes Spells Check's default settings.
9. **Undo Last:** Cancel one of the previous replacements.
10. **Cancel:** Terminate Spelling Check and return at the document.

# 21. MAIL MERGING

The process in which we can send same matter to different name is called mail merging.

For mail merging we create the main document those we want to send different users the take following steps are:

Select Tool menu > MERGE OPTION
(1) Click on mail merge option then following screen will appear.

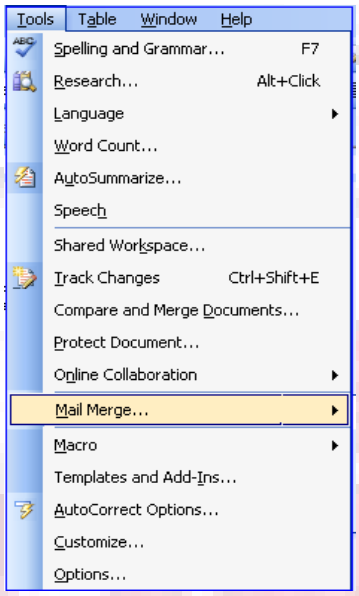



**Fig. 30**

(2). Click on Create button.
(3). Choose Form letters option.

## The following window be displayed

(4).Click here to choose the currently active document.
(5). Click on Get Data.
(6). Choose Create Data Source option.

A. Type the desired filed name and click on Add Field Name button to add any additional filed(s) that is not already provided.

B. Highlight the filed name from the next window and click on Remove Field Name button or Remove any fields that are not required.

After selecting ok button we give the database file name as per following screen displayed

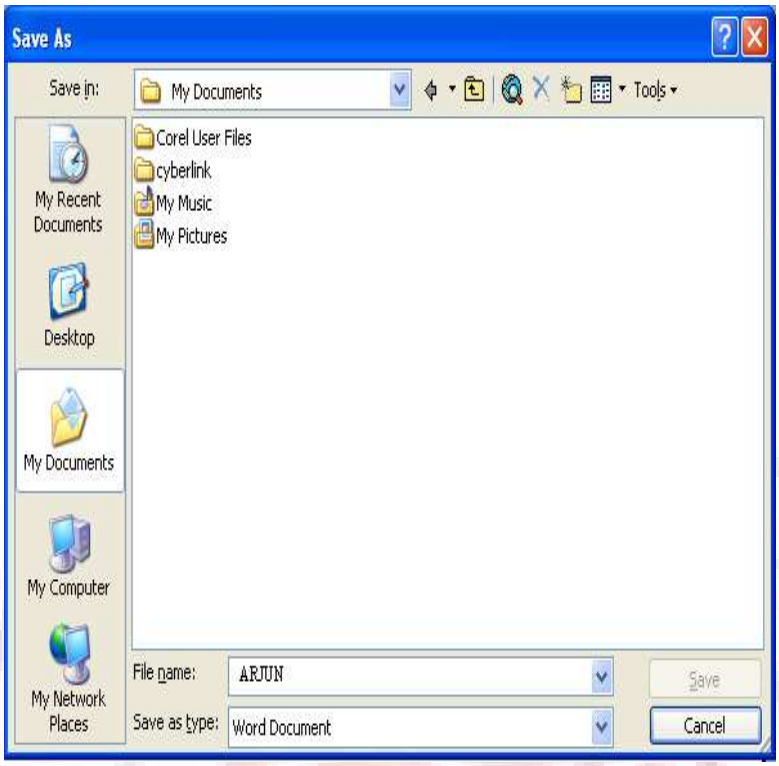



**Fig. 31**

After save the file the following screen will be displayed.

For these we click on EDIT DATA SOURCE option from these window then the next step will be display for entering record format.

Here, we can add new record of remove record or delete record or restore record and also find the record by using these winds. After enter record we click on ok button then some to main document following type.

Here insert merge field option through you can select the field which you want to use in you document. These filed will display one- by – one all record by using (<<ABC>>) option. After if you want to see all record with many document then use mail- merge helper box. The all record will displayed in merged form.

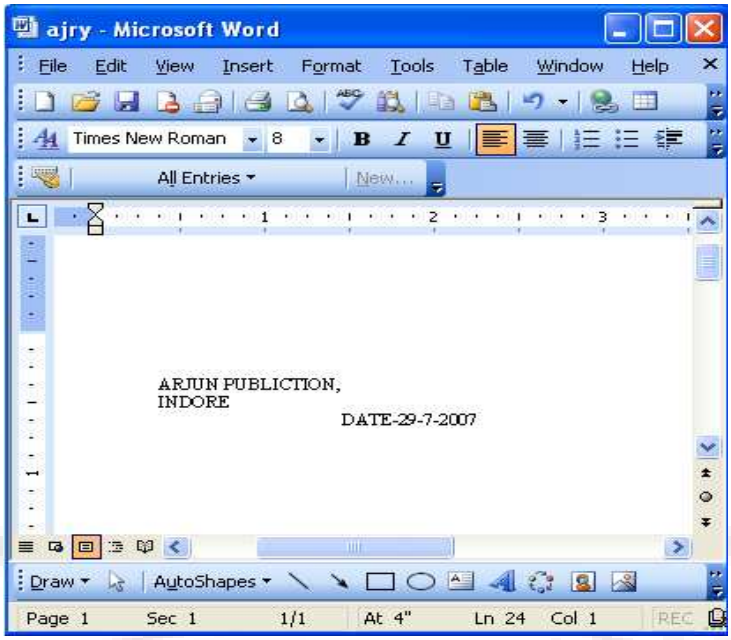



**Fig. 32**

In this window for address, in the beginning of letter and the place when name and address has to come. The cursor is taken to the filed related and tool icon consert merge filed is clicked on. Add is inserted from the list as shows in the figure.

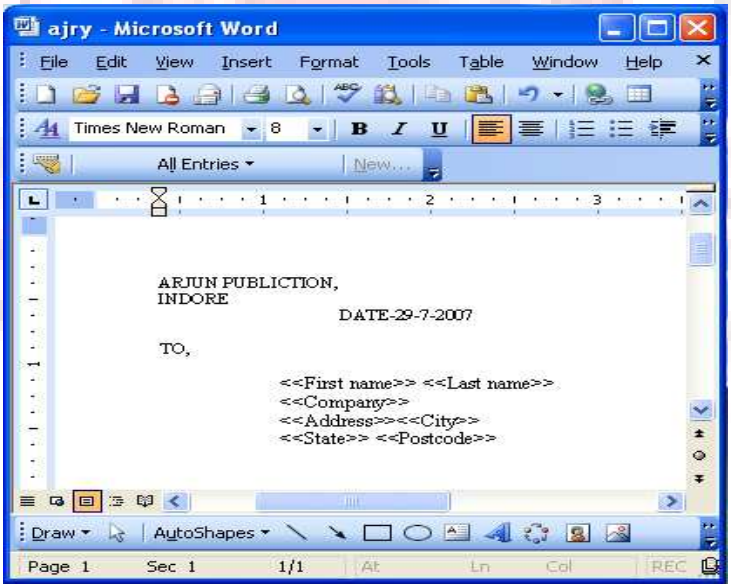



**Fig. 33**

According to the used data in mail merging how the letter will look can be seen only on the monitor screen. The display of the record which we want on this letter, the serial number of the record is to be typed in mail merge toolbar on the tool icon go to record text box end on clicking on both sides of the given arrow tool icons and choosing it now the tool icon

view merge data icon of the toolbar in clicked. On clicking view merge data the information in record which we have and where we have done the merge field inset will be represented as shows in the above figure.

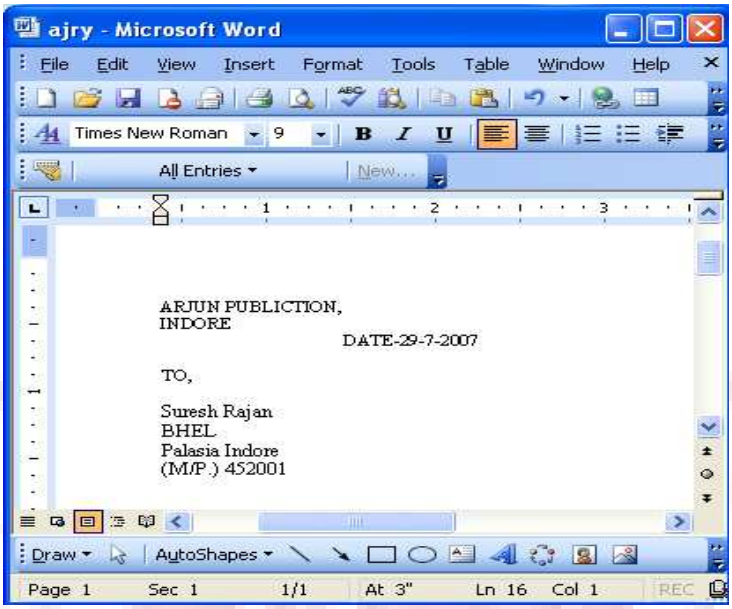



**Fig. 34**

# 22. MACROS

**For creating macros use following steps:**

**(1). Use macros option of tool menu.**

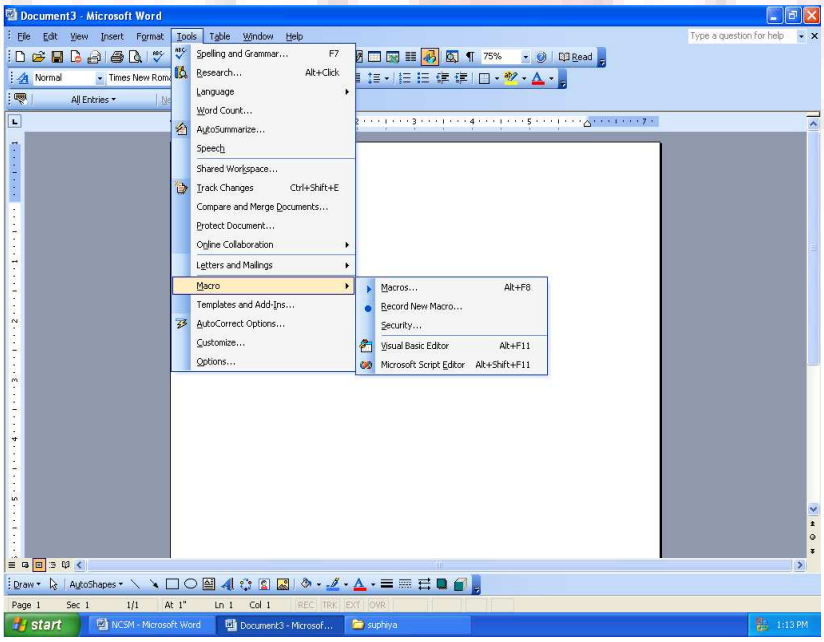


**Fig. 35**

**(2).then used record new macros option.**

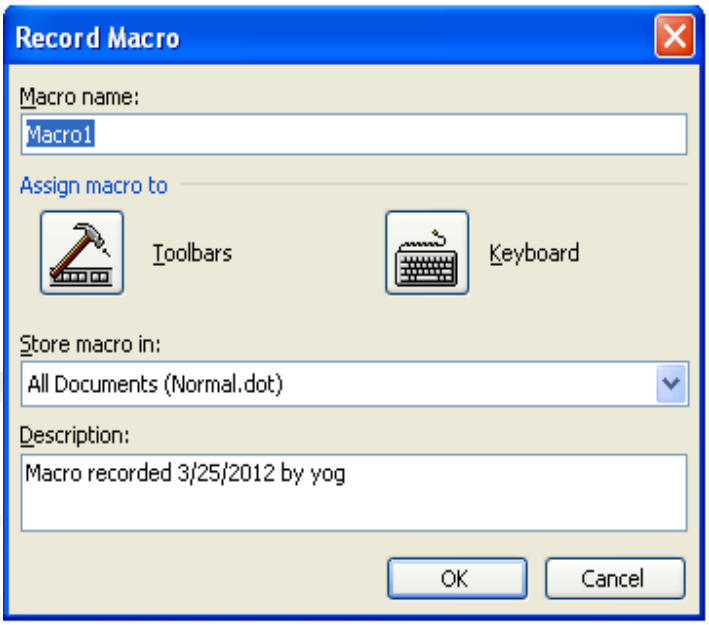



**Fig. 36**

**(3). Used keyboard macros option then click over their.**

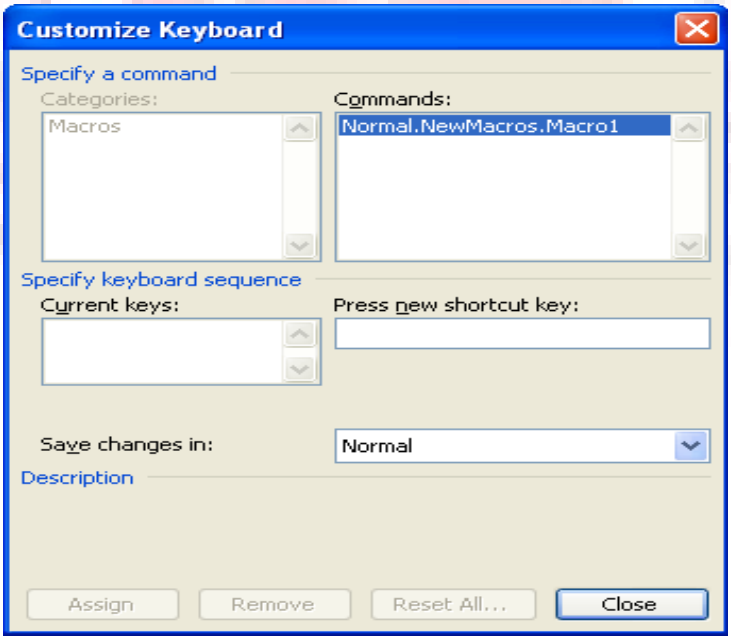



**Fig. 37**

**(4). Assign the shortcut key then close and type the matter which you want to use through macros in many times.**

**(5). After complete work of record new macros use stop option for record the macros.**

**(6). Now we assigned the shortcut key for performed last option.**

# 23. HEADER AND FOOTER

The use of header Footer in word of perpetration of information on top and bottom margin of the page.

**For create header for every page the following steps are:**

1. Choose view menu> header footer option then toolbar will be display.
2. Now you can type or insert as you want. These will be repeat in every page.

**For create footer for every page the following steps are:**

1. choose view menu> header footer option then toolbar will be display.
2. Now you can the type or insert image as you want. These will be repeat in every page.


**Fig. 38**

The following option of Header and Footer are:

**INSERT PAGE NUMBER:** By these option we can insert the page Number.

**INSERT NUMBER OF PAGE:** By these command we can insert number of page.

**FORMAT PAGE NUMBER:** By these option we can decide the format the page number where we want to display style of it.

**INSERT DATE:** By these we can insert the date.

**INSERT TIME:** By these we can insert the time.

**PAGE SETUP:** We can change the page setup for header/footer.

**SHOW/HIDE TEXT DOCUMENT:** By these we can hide/show the document.

**SWITCH BETWEEN HEADER AND FOOTER:** We can move between header and footer matter.

**SHOW PREVIOUS:** We can go back to previous.

**SHOW NEXT:** We can go to the next.

**CLOSE:** Close HADER AND FOOTER.

## 24. CREATING A TABLE IN A DOCUMENT

A table is collection of row and column. For create a table following step are.

(1). Choose the insert Menu then select table option and click then the following box will be appear.

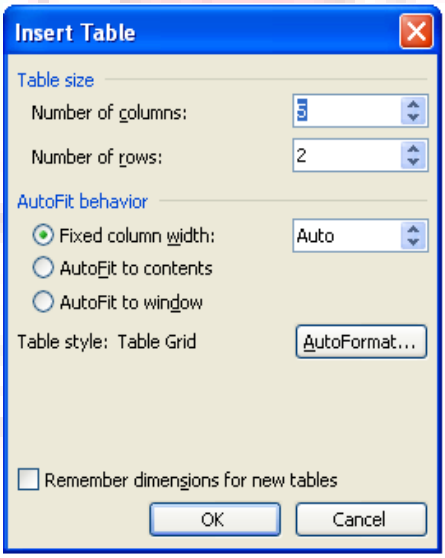



**Fig. 39**

(2).In these menu we give the no. of columns you want to take in table.
(3). And give the total no of rows.
(4). In Auto fit behavior we adjust the column width.
(5). By using auto format we can select the layout of table (How table will be appear on screen).

# 25. EDITNG OF TABLE

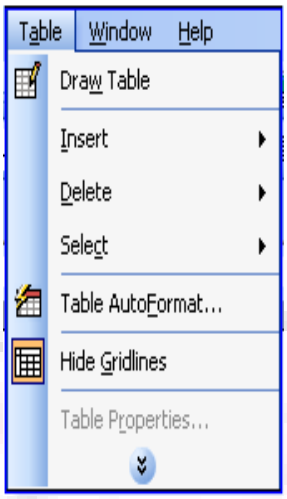



**Fig. 40**

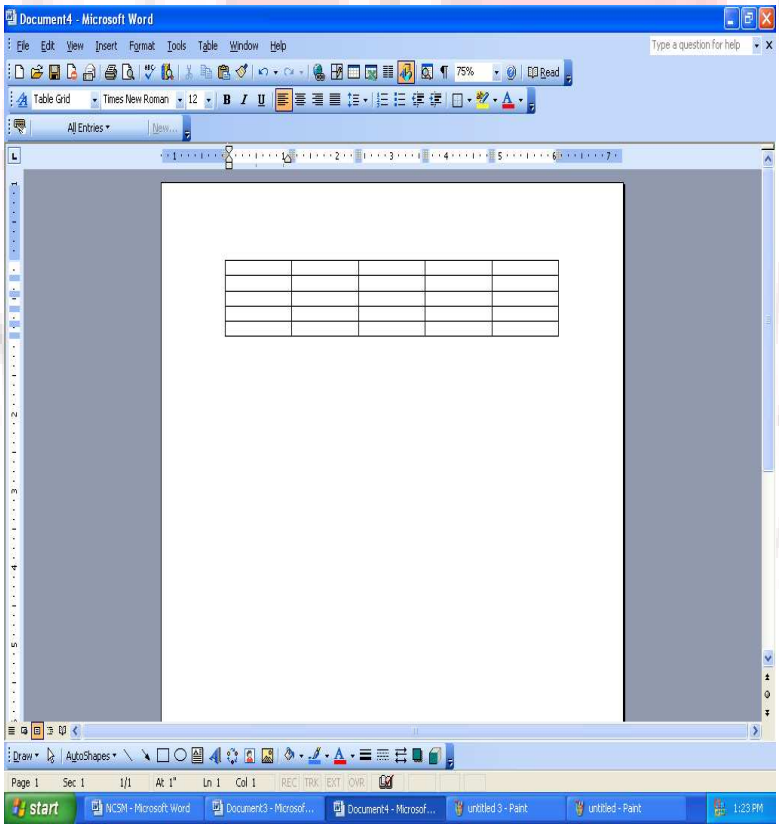



**Fig. 41**

**(1). MERGE CELL:** By which we can merge two cell.

**(2). SPLIT CELL:** By which we can split one cell.

**(3). INSERT ROW:** We can insert Rows.

**(4). INSERT COLUMNS:** We can insert columns.

**(5). DELETE ROW:** We delete the row by selecting.

**(6). DELETE COLUMN:** We can delete the column.

## PAGE - SETUP

By using these options we can set the page margin, orientation, header and footer etc.

File Menu >> PAGE SETUP option.

In margins:

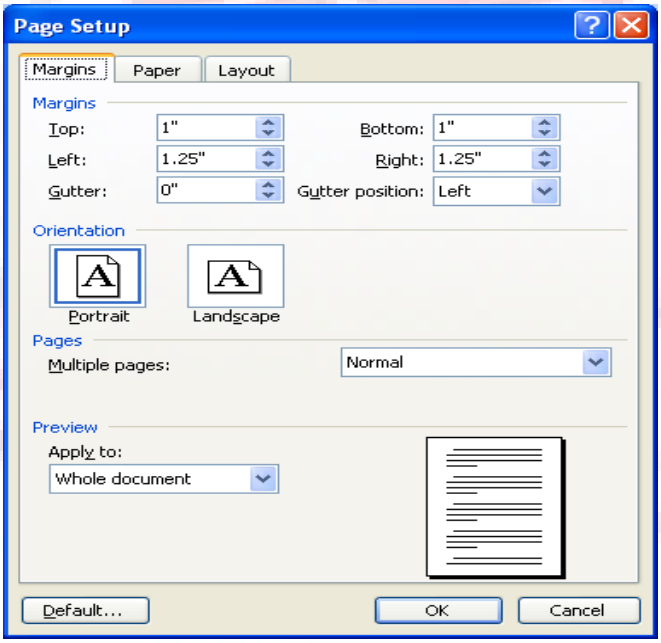



**Fig. 42**

## 26. IN PAPER SIZE

Here we can change the size of paper and also change the orientation of page.

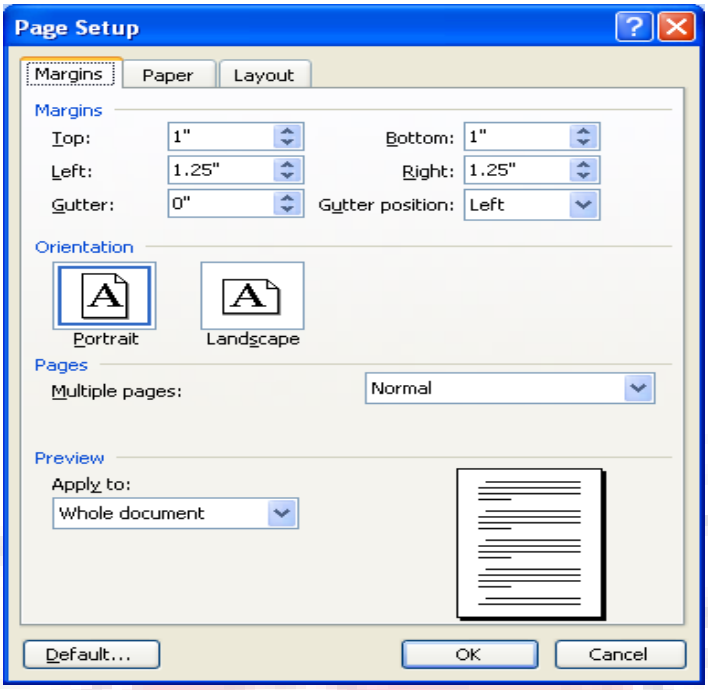



**Fig. 43**

**In paper source:** In paper source we set the paper setting or printing.

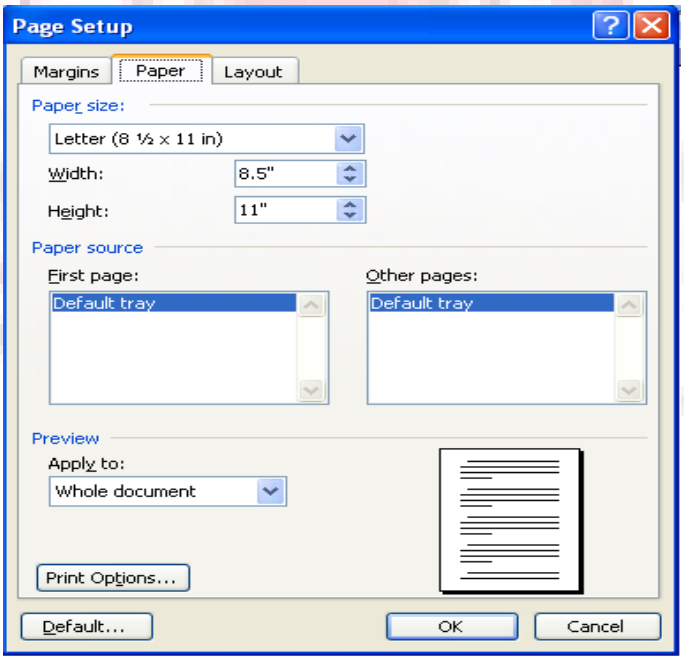



**Fig. 44**

**IN LAYOUT: HERE DESIGN THE LAYOUT OF PAGE**

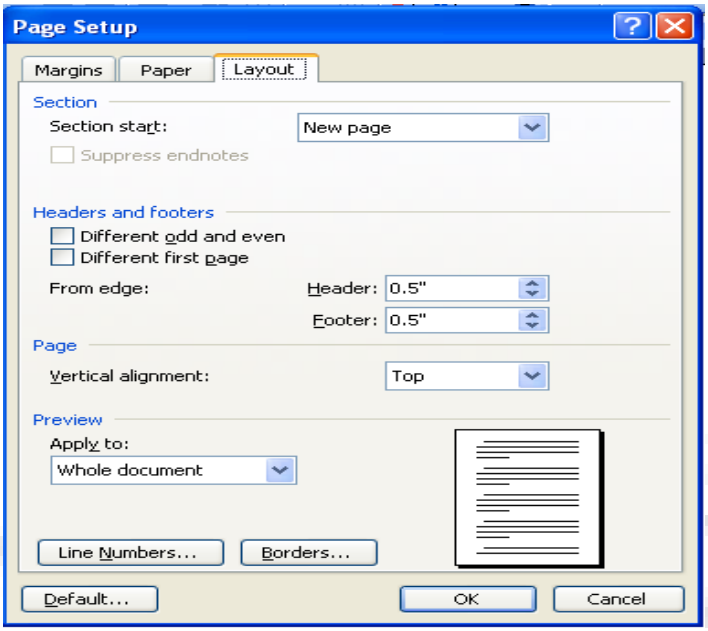



**Fig. 46**

## 27. INSERT PICTURE USING CLIP ART

The following steps are.

(1). Select Insert menu and click on art option then.

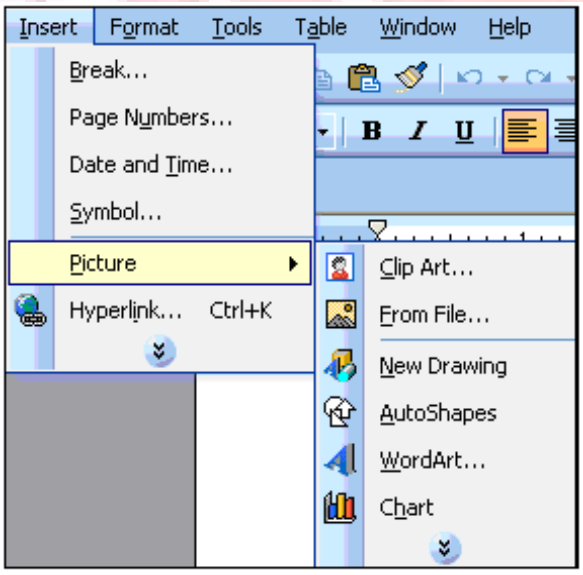



**Fig. 47**

(2). Here the different category available. Select any one category.

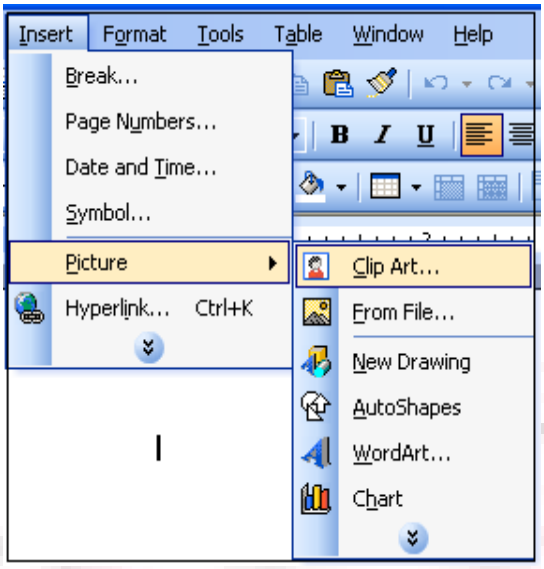



**Fig. 48**

(3). In these category we select any one by double clicking then the following screen will look like

(4). In these menus, we select insert option by right clicking.

## 28. IMPORTANT TOOL

**(1). Auto shape Tool:** these tool select from drawing tool bar. By select these shape we can draw any picture.

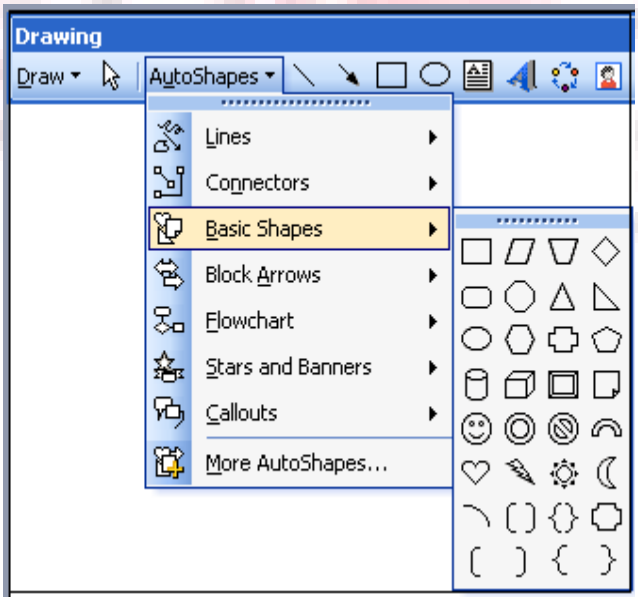



**Fig. 49**

**(2). Word Art:** The standard formatting of word found in these tools. In drawing tool bar, We select the word art.


**Fig. 50**

After click on word art.
Then the following word art gallery will be appear. In these given style we select any one of them and click over their.

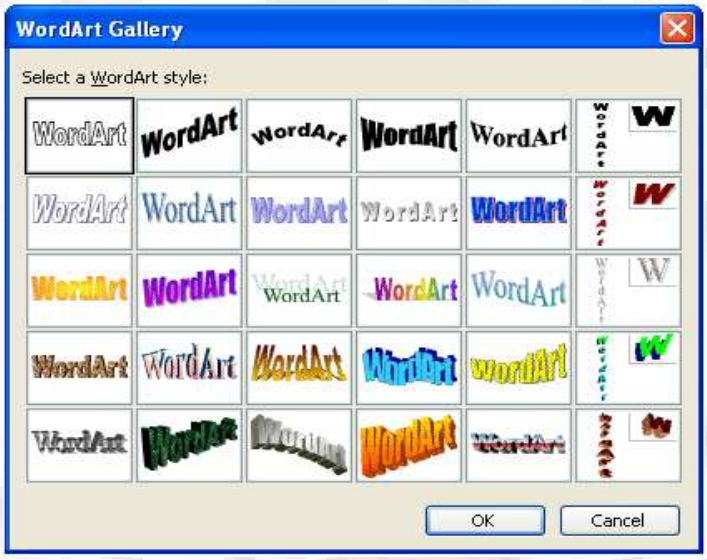



**Fig. 51**

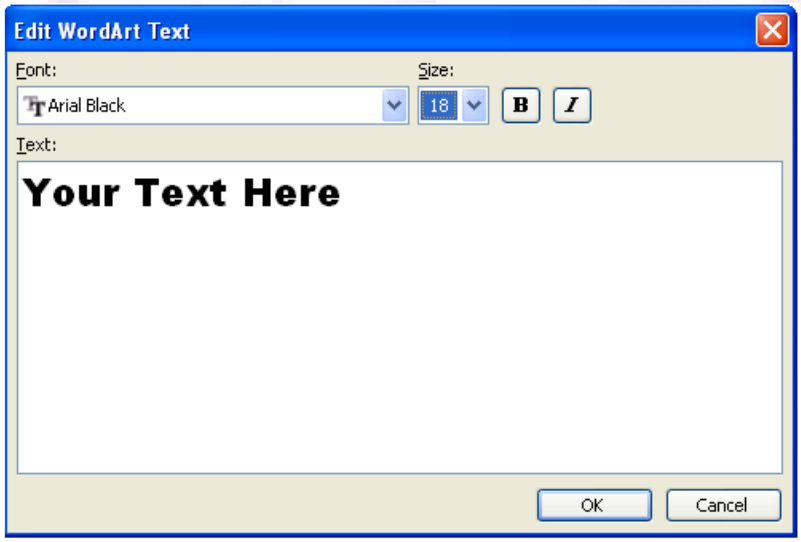


**Fig. 52**

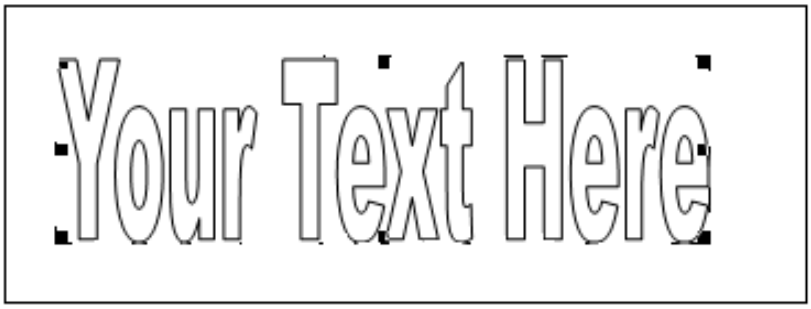



**Fig. 53**

## 29. THE TOOLBAR OF WORD ART ARE

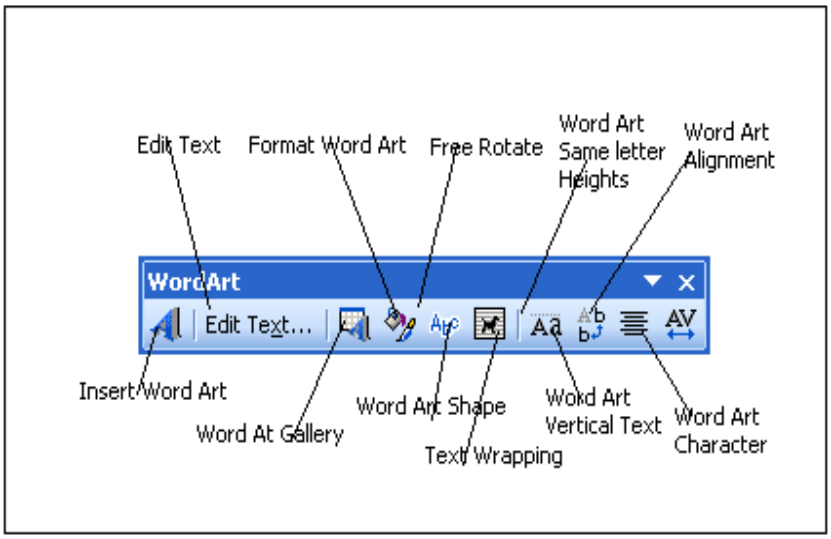



**Fig. 54**

## 30. BORDER AND SHADING

By which we can give the border and shading of the page and table.
In format menu select border and shading option.

**(1). In border option:** In these option we can draw border on table on table or any box.

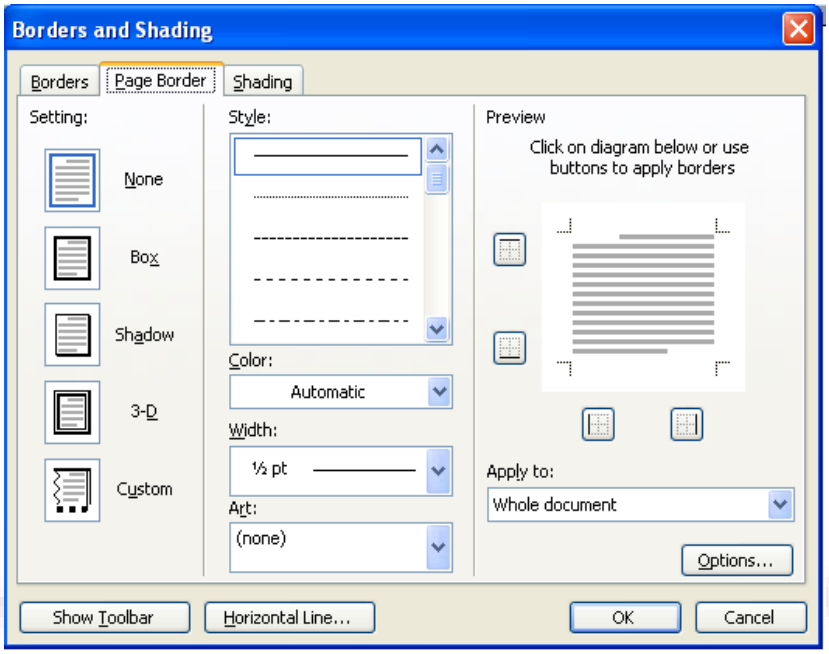



**Fig. 55**

**(2). Page Border option:** We can give the border of page.

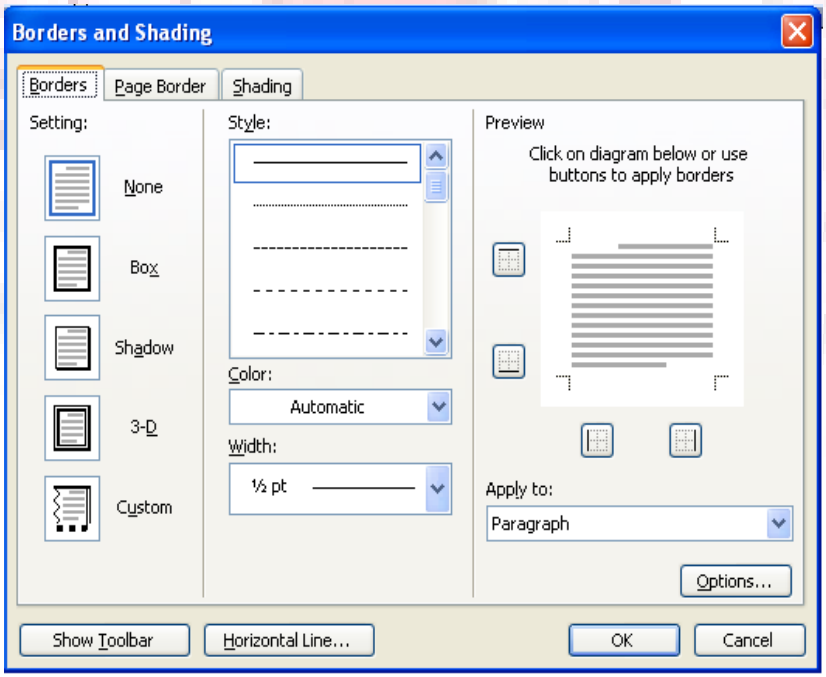



**Fig. 56**

**(3). In shading option:** We give the given shade on selected object.

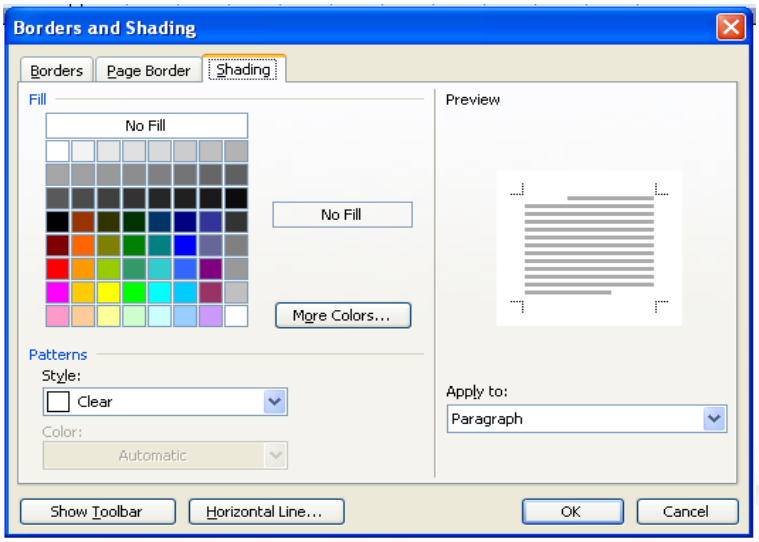



**Fig. 57**

**(4). ORDER SETTING:** We an set the order of object on document.

# 31. MOST IMPORTANT MENU BAR OF WORD

**1. FILE MENU:** These menu is used for file operation.

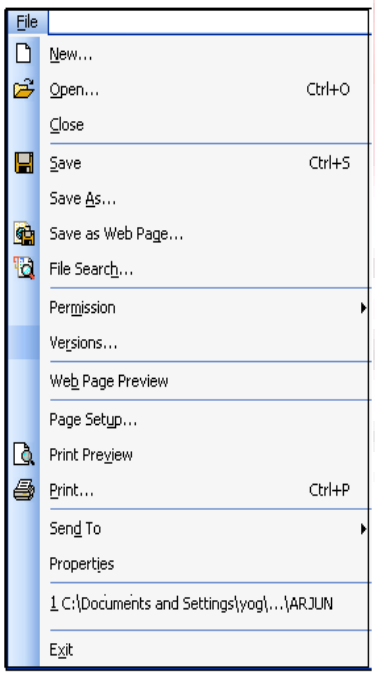



**Fig. 58**

Here, we choose document option for create document in word. For creation of template we choose temple option.

Also, Predefined example of Legal Pledging, Letter & Faxes, Memos, Other Document, Publications, Reports, and Web pages.

**(1). The Open Option:** These option used for open the new file.

Click on open option the following dialog box will be appear.

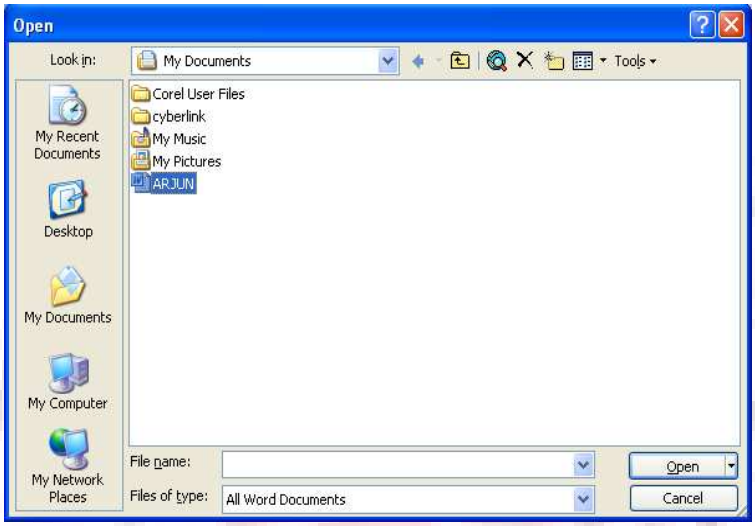



**Fig. 59**

**(2). The Save Option:** This option used for Save the given name file.

Click on Save option the following dialog box will be appear.

**(3). The Save As Option:** These options used for Save As the given name file.
Click on Save option the Following dialog box will be appear.

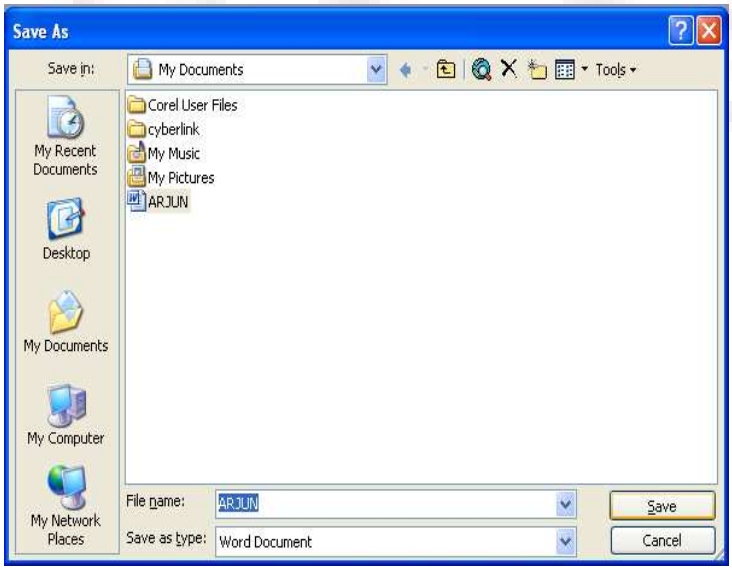


**Fig. 60**

**(4). The Print Preview Option:** These options used for Print Preview of the file.

Click on open option the following dialog box will be appear.

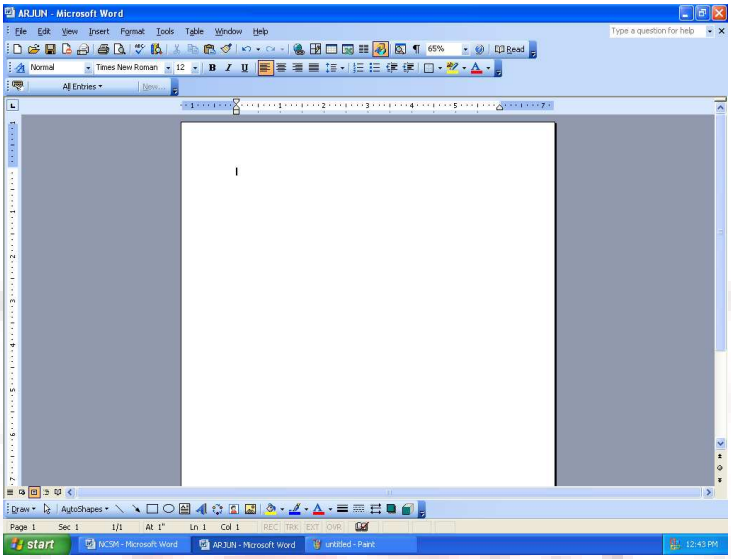



**Fig. 61**

**(5). The Print Option:** These options used for print of the file.

Click on Print option the following dialog box will be appear.

**2. Edit Menu:** These Menus is used for Edit Operation.

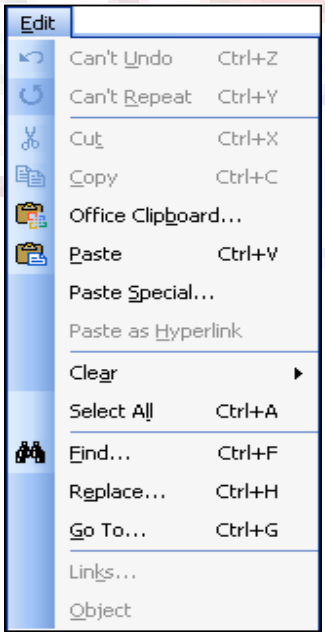


**Fig. 62**

**(1). The Undo Option:** These Undo option for previous operation of file.

**(2). The Repeat Typing Option:** These Repeat Typing option used for repeat last typing operation of file.

**(3). The Cut Option**: These cut option used for cutting for selected Text of file.

**(4). The Copy Option:** These Copy option used for copying for selected Text of file.

**(5). The Paste Option:** These Paste option used for pasting for selected Test of file.

**(6). The Paste Special Option:** These Paste special option used for pasting Special for last Text of other location.

**(7). The Select All Option:** These option used for Select All Text of file.

**(8). The Find Option:** These option used for Find The Text of file.

Click on the find option the following dialog box will be appear. In blank place we write the text which we want to find.

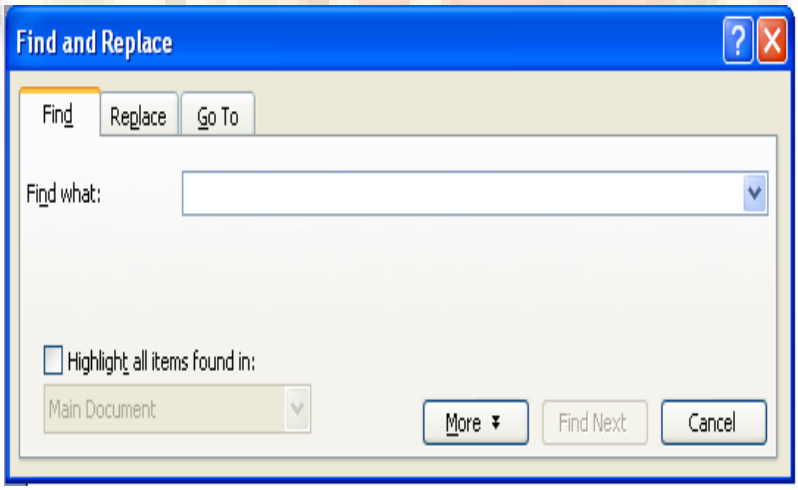



**Fig. 63**


**Fig. 64**

Click on the Replace option the following dialog box will be appear. In Blank place we write the text which we want to find and be the replace with option we replace the find text place.

3. **Format Menu:** These menu is used to formatting the text of file.

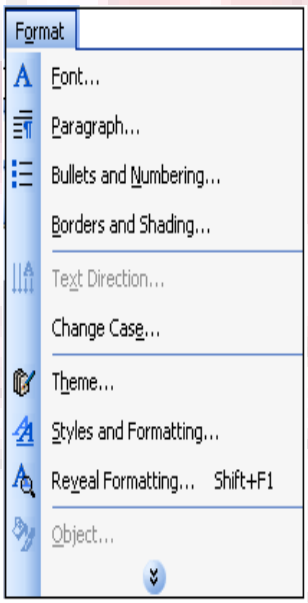



**Fig. 65**

**(1). The Font Option:** These font options used for changing the style and size of the Text. On the click of font option the following dialog box will be appear.

On the click of font option the following dialog box will be appear. These option include font's sizes, underline styles, Add effects like superscript, subscript etc.

Change default Characters spacing, Inset special characters and symbols, change case Create draft case.

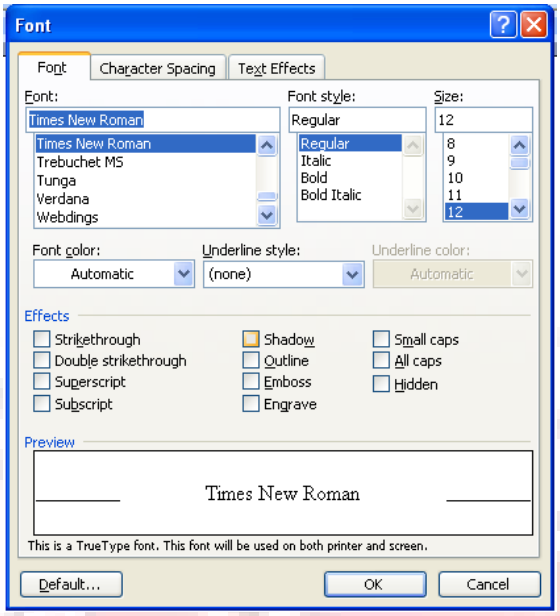



**Fig. 66**

**(2). The Paragraph Option:** These paragraph options used for set the paragraph of the page. On the click of paragraph option the following dialog box will be appear.

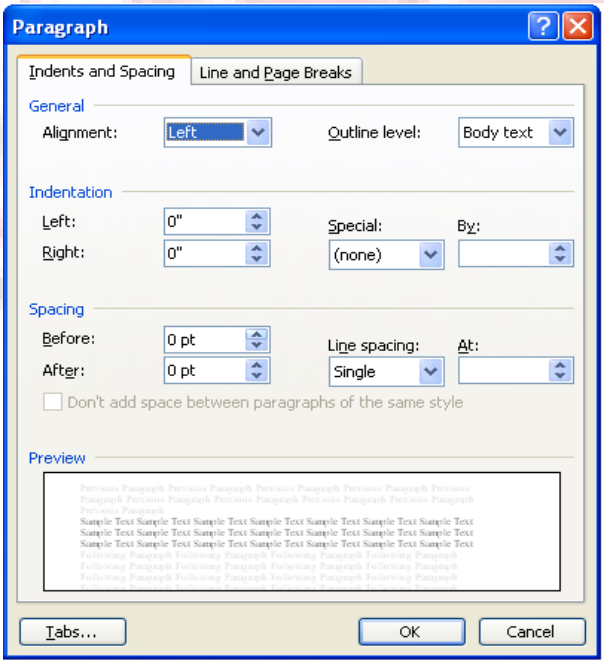



**Fig. 67**

**(3). The Background Option:** These Background option used for set the Background of the page. On the click of Background option the following dialog box will be appear.

On the click of Background more Colors option the following dialog box will be appear.

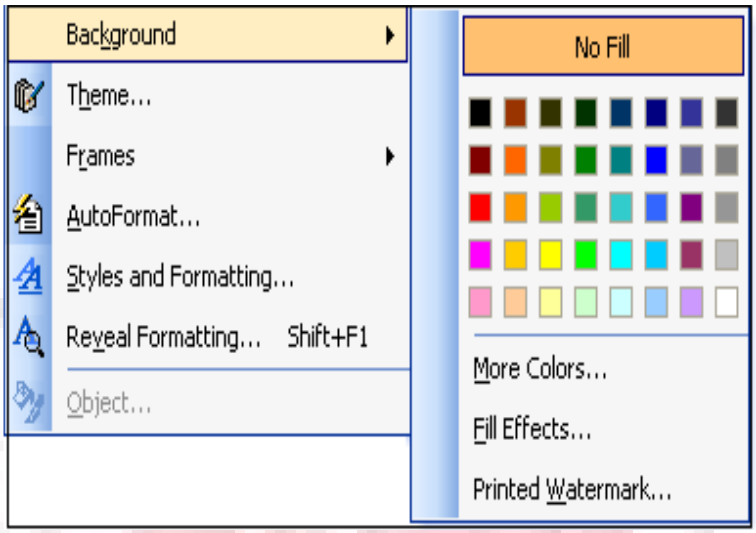



**Fig. 69**

On the click Background. Fill effects option the following dialog box will be appear.

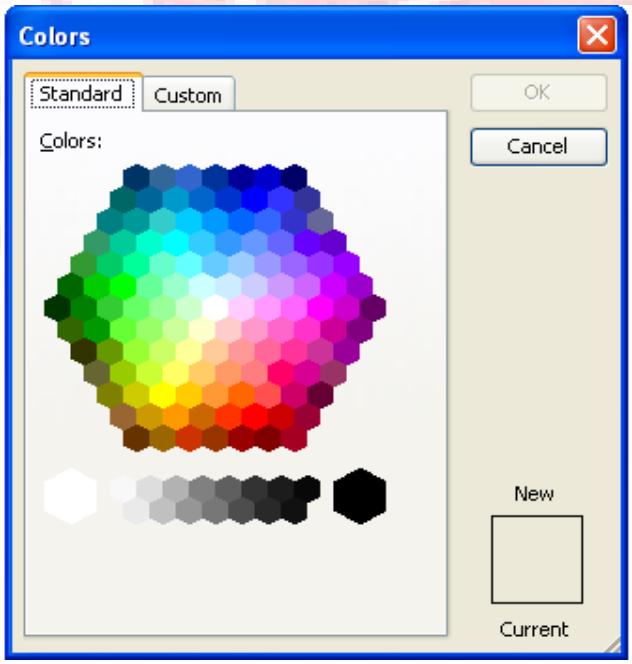



**Fig. 70**

Here we can choose the mix color.

On the click of Background. Fill effects option the following dialog box will be appear.

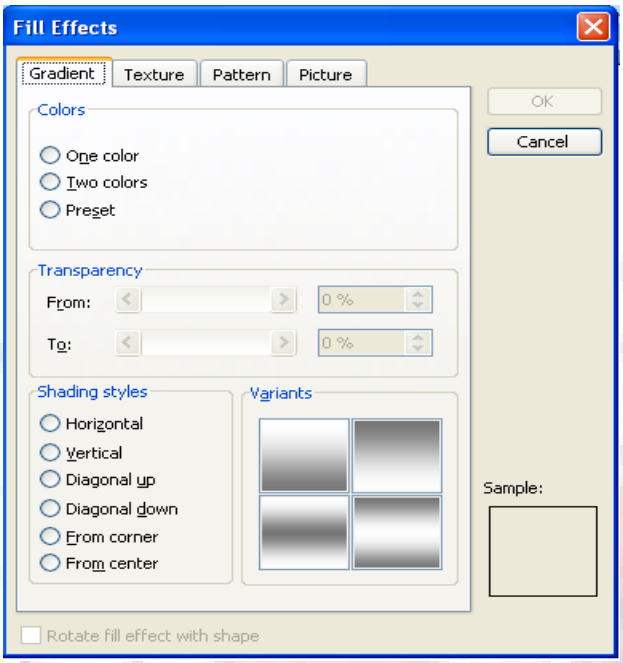



**Fig. 71**

Here we can set two color and mix color by using given option.

**4. Insert Menu:** These menus are used for insert menu given option.

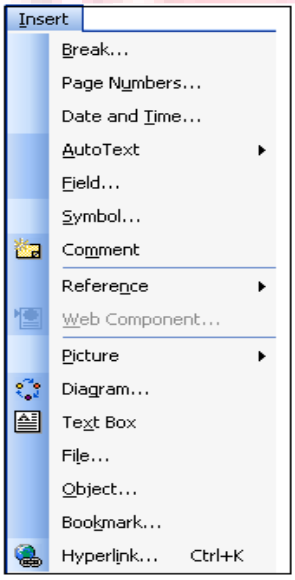



**Fig. 72**

**(1). The Break option:** These Break option used for break the page, column, text.

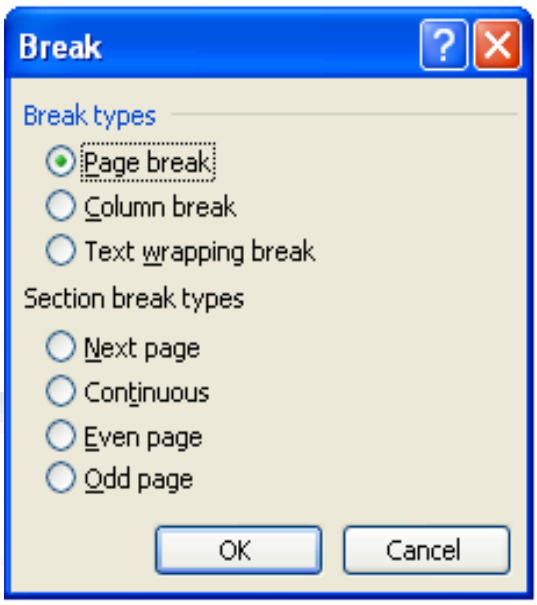



**Fig. 73**

**(2).The page Numbers option:** These page Number options used to print the page Number on the page. On the click of font option the following dialog box will be appear.

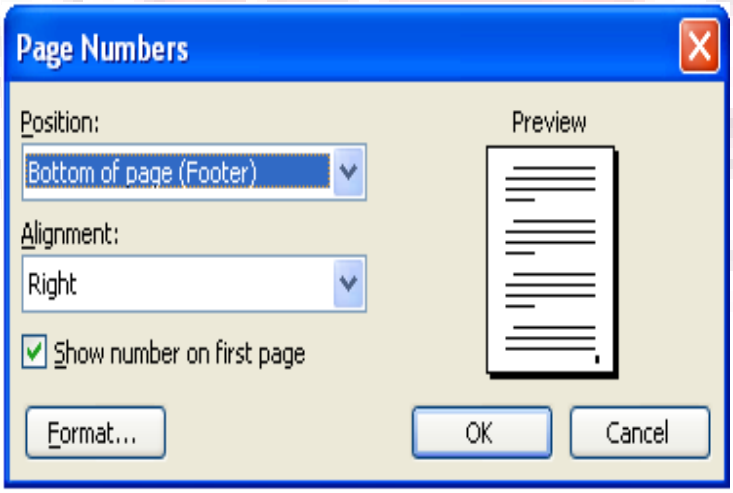



**Fig. 74**

**(3). The Date & Time Option:** these Data & Time option used Print the will be appear.

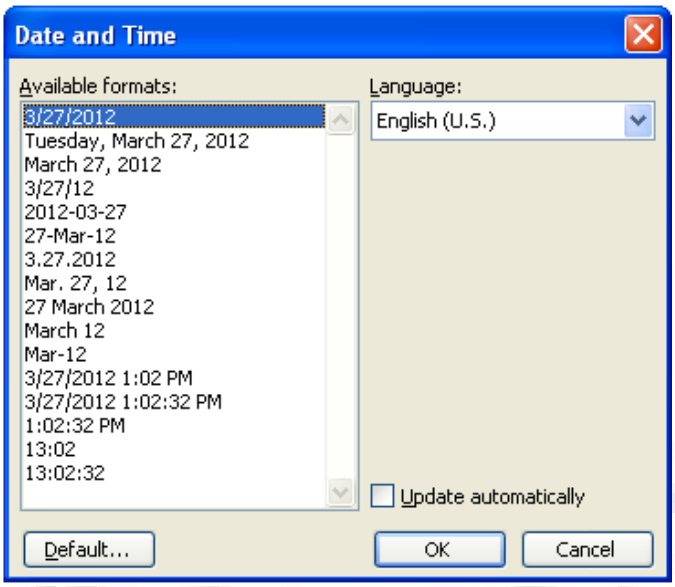



**Fig. 75**

**(4). The Symbol Option:** These Symbol option used to Print the Symbol on the page. On the click of font option the following box will be appear.

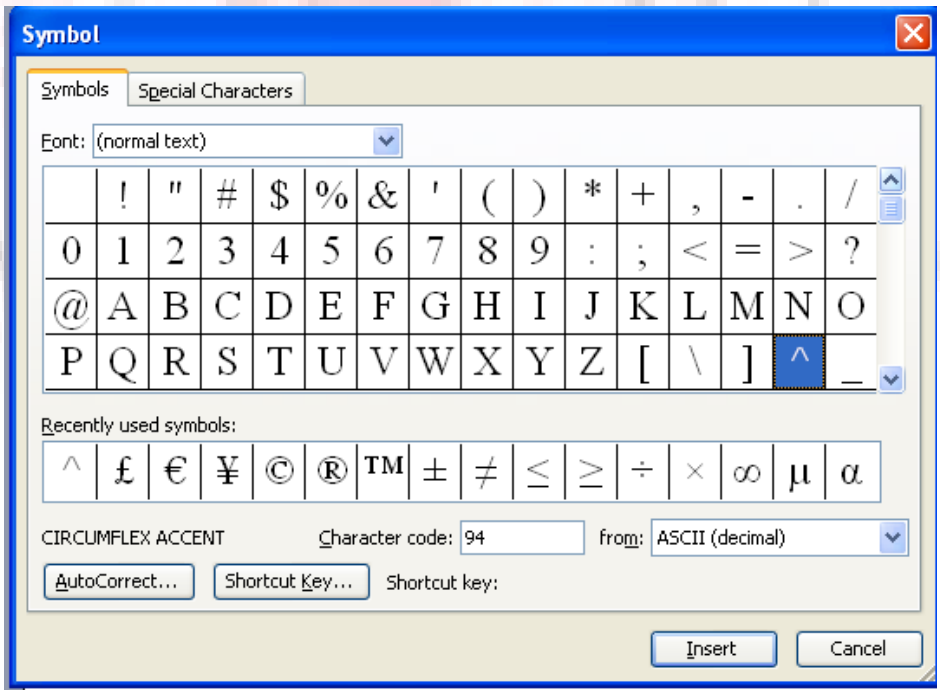



**Fig. 76**

**(5). Insert Hyperlink Option:** These Insert Hyperlink Option used to Insert Hyperlink on page. On the click of font option following dialog box will be appear.

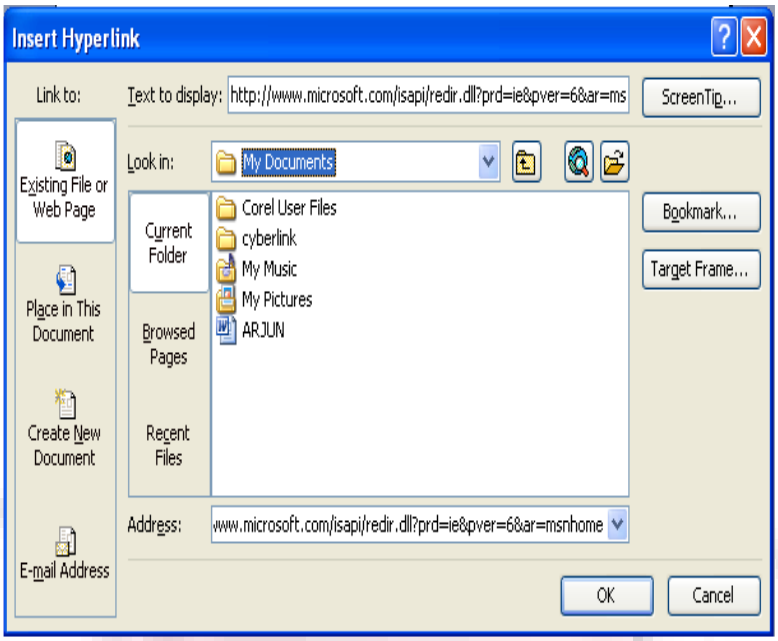



**Fig. 77**

**(6). Insert File Option:** These Insert Fill option used to insert file on the page. On the click on fount option the following dialog box will be appear.

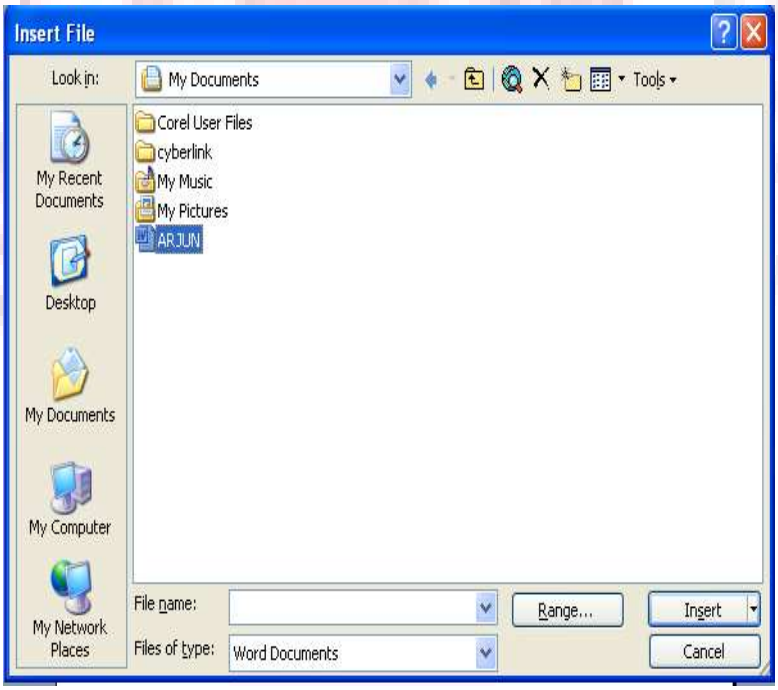



**Fig. 77**

**5. Table Menu:** These menus are related to the operation of Table. (Insert, Delete select, Merge Cells, Split Table)

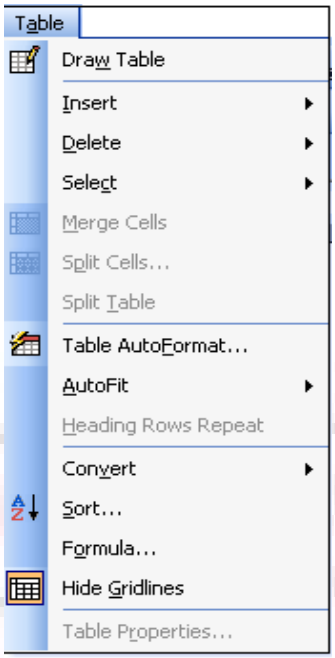



**Fig. 78**

**6. Tools Menu:** These menus used to special option of word (mail merge, macro etc.)

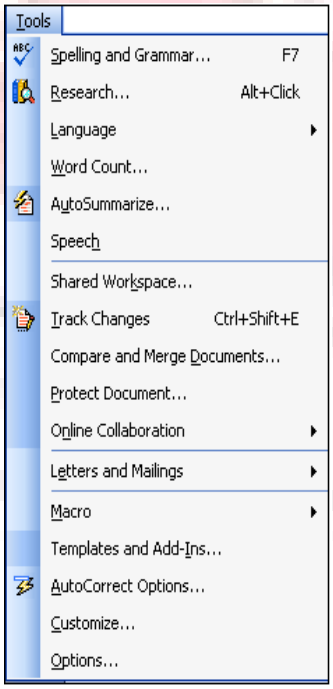



**Fig. 79**

**7. View Menu:** This menu is related to the operation of View. (Normal and footer

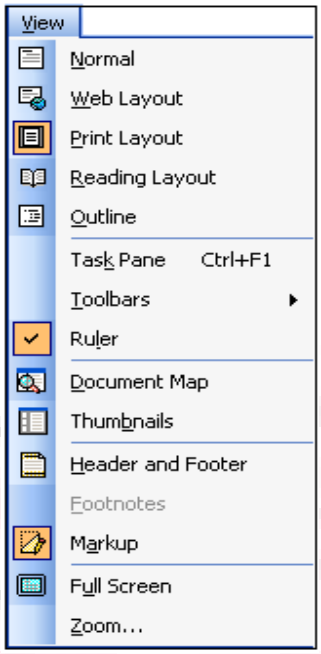



**Fig. 80**

(1) **Tool Bar Option:** These option used for sect the tool Bar in current file.

9

# M.S. EXCEL

## 1. INTRODUCTION TO M. S. EXCEL

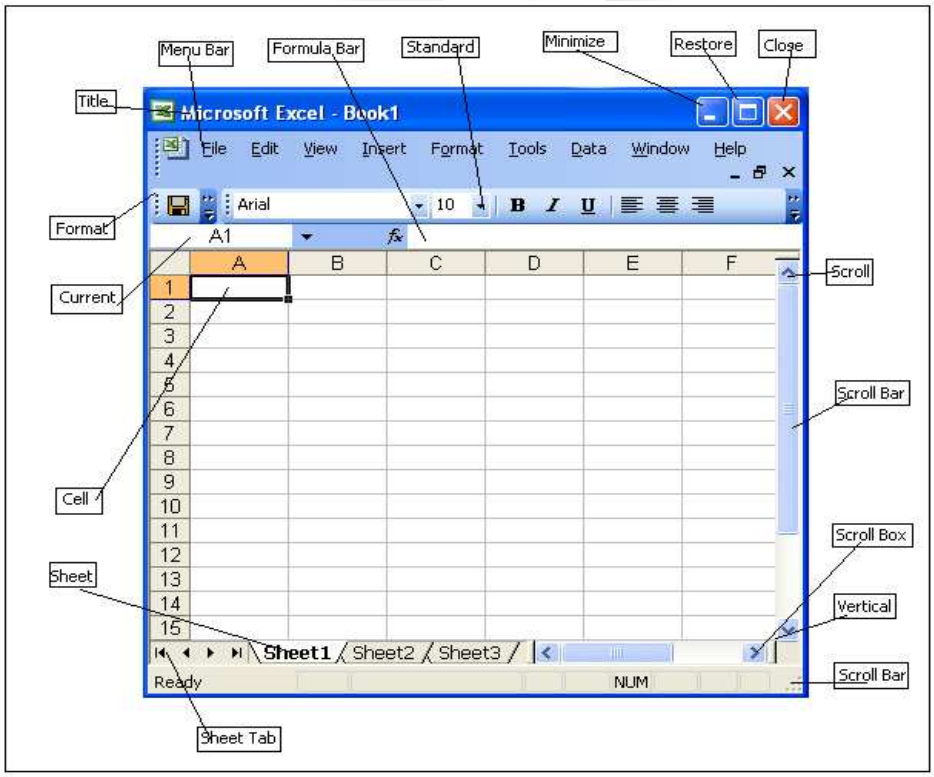



**Fig .1**

Ms- Excel is advanced version of Lotus- 123. It is Application software. By using these software we can create reports, chart and calculation of any row or column of any type of data. The ms- excel provide many function (Mathematical, Statistical function etc.)

## 2. WORKSHEET

Spreadsheet is the most important and the biggest part of excel. Which appears like a graph paper: As spreadsheet is big in size it is not completely visible on screen but its right side is always seen on the screen, from there we can start to input our data. The each and every small box upon the size of our data See fig. 4.2.

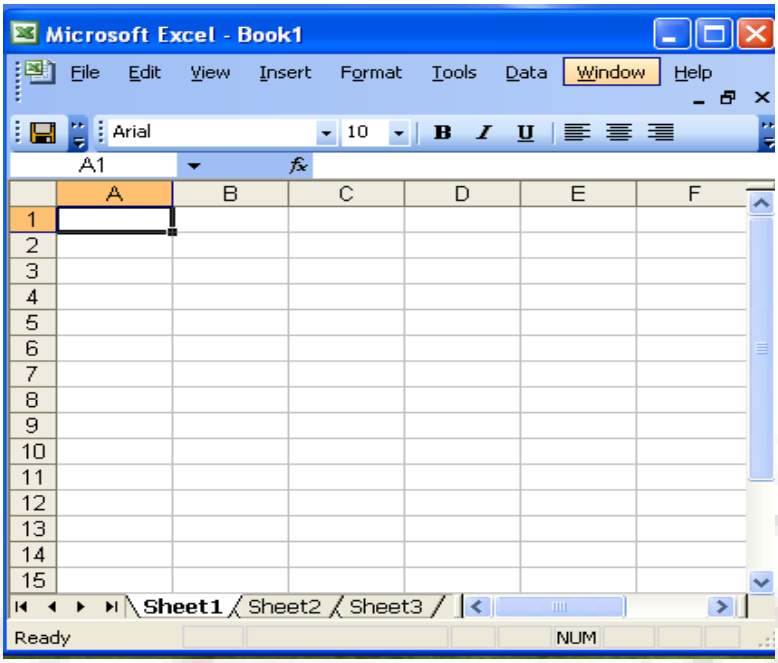



**Fig .2**

## 3. COLUMN HEADING

In spreadsheet, going from left to right is not recognized by the number but they are through the alphabets such as A, B, C they are known as column heading. See fig. 4.3.

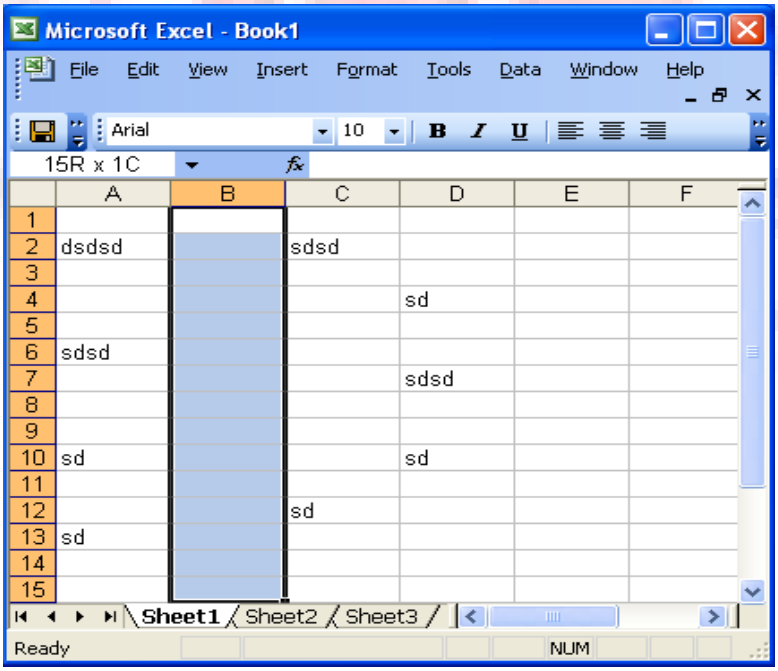



**Fig .3**

## 4. WHAT IS WORKBOOK?

Workbook is such a file in which are kept the spreadsheet and chart, in a worksheet we can keep chart, in a workbook we can keep only one type of or many spreadsheet related to one work.

## 5. WHAT IS WORKSHEET?

Spreadsheet is also said to the worksheet. Worksheet is rectangular sheet in which there are made small boxes. Every box of worksheet is used to store the data as in the from of table and it can be moved or coping as per requirement this data can be calculated by giving formulae according to our work.

## 6. BASIC TERMINOLOGY OF EXCEL

**1). WORKSHEET:** It is collection of column and row.

**2). SPREADSHEET:** It is group of worksheet. Also called work-book.

**3). CELL:** Intersection of every column and row is called cell.

**4). SIZE OF WORKSHEET:** In excel sheet consist of 256 column and 65536.

**5). CELL ADDRESS:** where the position of cell (For example C6) means is column and $6^{th}$ row.

**6). TYPE OF:** After selecting ok button we the database file name as per following screen displayed:

## 7. FORMAT CELL IN EXCEL

The main following type of format cell is used in excel are:

**GENERL:** General format cell's have on specific number format.

**NUMBER**: Number is used for general display of number.

**DATE:** Display Date formats.

**TIME:** Display Time formats.

**PERCENTAGE:** Percentage formats multiply the cell value by 100 and display the result with a percentage symbol.

## 8. HOW TO MOVE IN WORKSHEET?

The necessity to move form one cell to another all in order to input or edit the date in a worksheet. We can go on any cell very easily by the method given below:

| Command | Work |
|---|---|
| → | Move one column left. |
| ← | Move one column right. |
| ↑ | Move one row up. |
| ↓ | Move one row down. |
| Ctrl +↑ | Move to the top most first row in which data is entered |
| Ctrl +↓ | Move to the last first row in which data is entered. |
| Ctrl + → | From left move to the first filled box. |
| Ctrl + ← | From right move to the first felled box. |
| Home | Move to the starting row. |
| End | End mode is set |
| End +Enter | Move to last cell. |
| PgUp | Moves one screen up. |
| PgDn | Moves one screen down. |
| Ctrl + Home | Move to the topmost row the first box. |
| Ctrl End | Move to the last filled box of spread sheet. |
| Alt + PgUp | Move one screen right. |
| Alt + PgDn | Moves one screen left. |

## 9. MOVEMENT THROUGH MOUSE

Tab can be moved on the scroll in the required discretion and the work sheet can be moved very easily. if we want to move a row or a column then. We click once on the scroll

bar or if we what to move many rows and column together then by the help of mouse tab is dragged. Worksheet is established in the direction in which, we drag the tab. See fig 4.4.

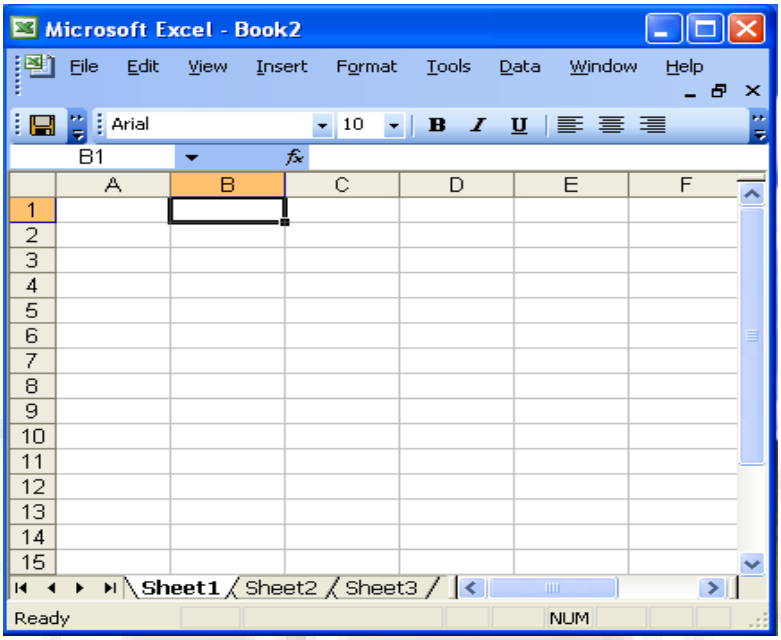



**Fig .4**

## 10. TO MOVE IN CELL

In worksheet, in order to move to the box which is at a distance for away, it is the simplest way to use the command 'Edit Go to' To use this method we must know the address of that cell we can move to any fixed cell by the following method.

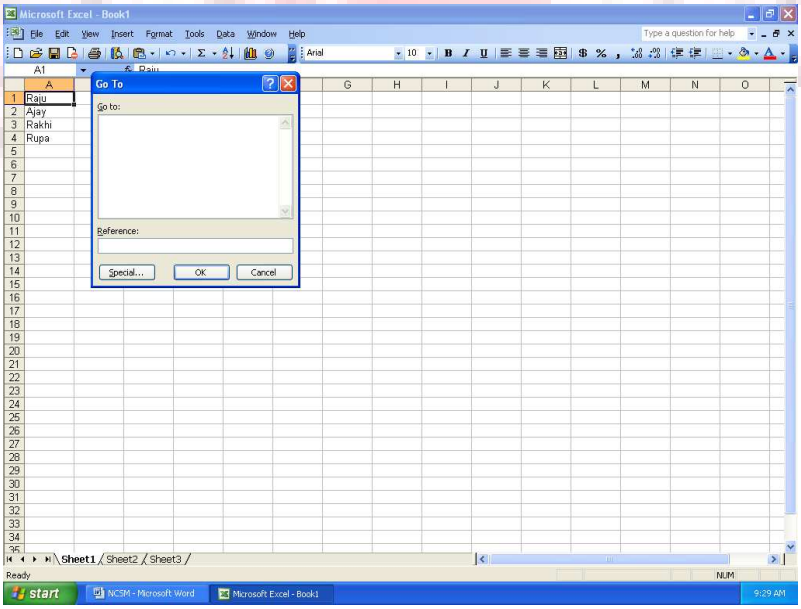



**Fig .5**

1). ‘Go To’ option is clicked in ‘Edit’ menu The ‘Go To’ box is visible on the screen after that. See fig. 4.5.

2). In ‘Go To’ box on the ‘Reference’ option, the cell address is typed on which one has to go.

3). OK button is clicked or enter is pressed.

4). Now our cell pointer comes to specified cell address in move to move from one sheet to another in worksheet.

## 11. TO MOVE FORM ONE WORKSHEET TO ANOTHER IN WORKBOOK

In excel, in a workbook, many worksheet are kept which can exchange data each other. This type of movement of going from one other worksheet, the use of key Ctrl + PgUp is down and to return back Ctrl + PgUp is done and to return back Ctrl + PgDn keys used.

## 12. FORMATTING A WORKSHEET

To start work in the worksheet of excel has to be firstly formatted according our work. In order to format the worksheets we must know what type of data will be kept in it generally in excel. We can give in the form of number, text or formulae.

## 13. NUMBER

All the numbers, decimals formed on the basis or 0 to 9, #, %, +, - such fall under this category.

## 14. TEXT

All the alphabets from A to Z and the word formed by the use of these alphabets come under this category.

## 15. FORMULAE

The formula made on the basis of mathematics for doing calculation are written with sign = in the staring. Example if the contents of cell c1, c2, c3, are to be added then the formula will be written as = c1+c2+c3

## 16. SETTING OF AUTO CORRECTION

There are some words whose spelling we are in a habit to incorrectly. For example, if someone writes the spelling of her name Singeeta and we according to our habit write it Singeeta again ad again. In order to get rid of such errors we use the facility of 'Auto Correct' of excel. The word whose spelling is expected to be typed incorrectly is set in 'Auto Correct' and when we type that word excel itself corrects it Let us assume that we want to get rid of typing the word sangeeta as sangita them its setting will be done in the following manners.

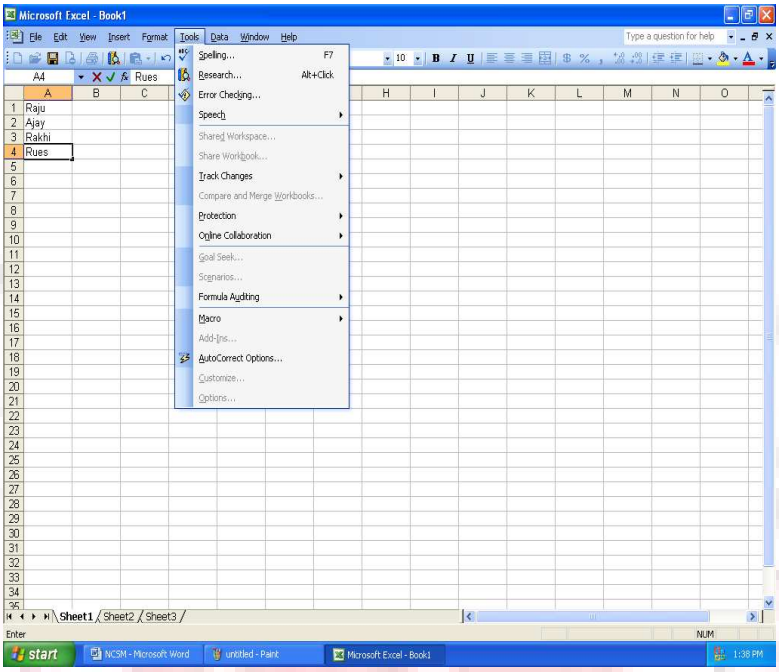



**Fig .6**

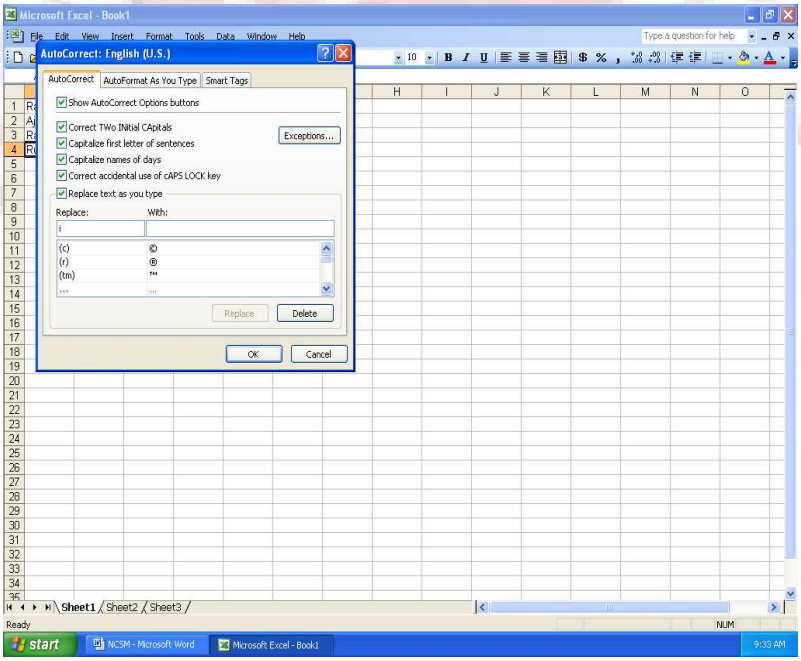



**Fig .7**

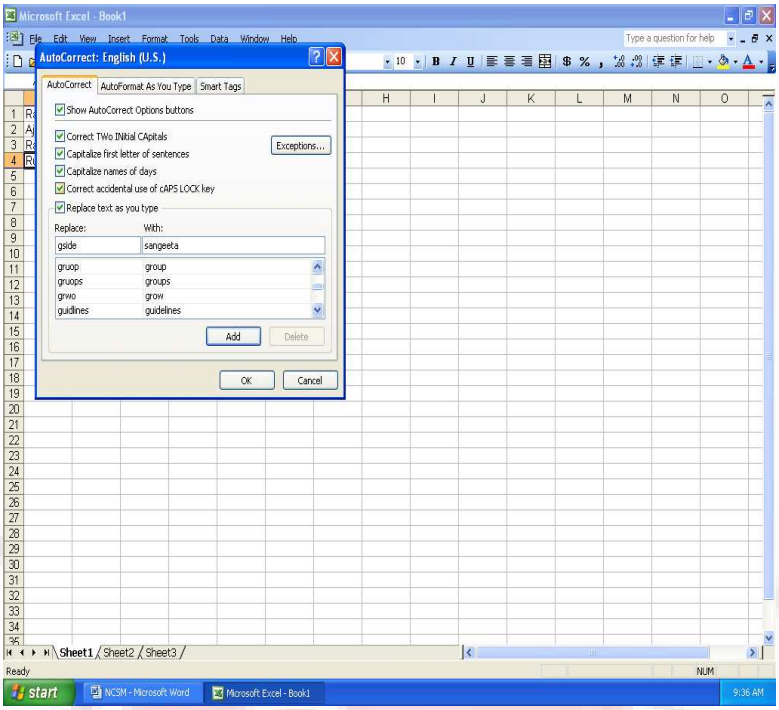



**Fig .8**

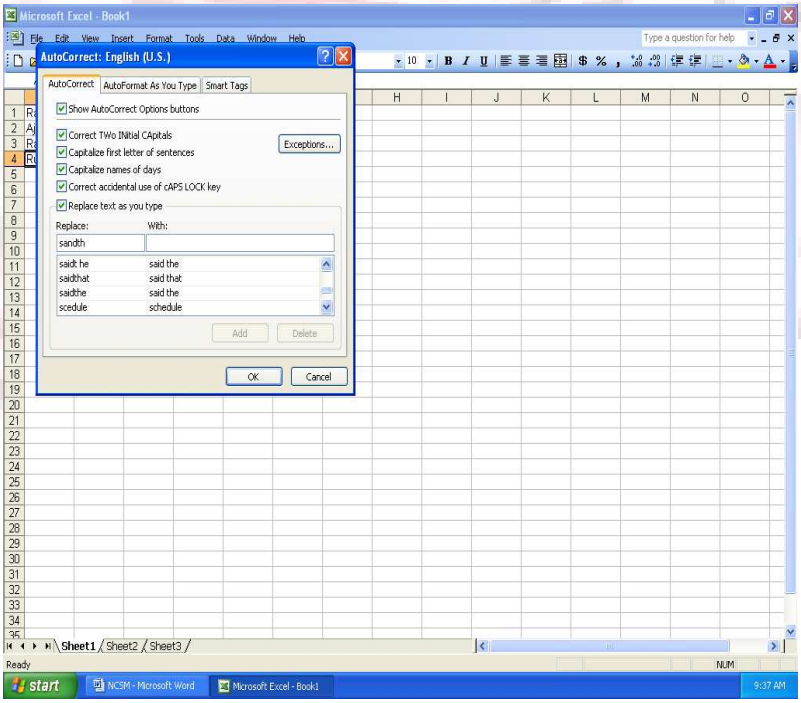



**Fig .9**

1. Auto Correct option will be chosen on tool menu. Now dialog box will be seen on the screen. See fig. 4.6
2. The sign of ‘tick’ is placed on ‘Replace text as you type’ in check box and it will be present. See fig 4.7

3. The possibility of the word being typed incorrectly is the box under ‘replace’ For example: We can type sangita here. See fig. 4.8
4. In ‘with’ box the correct spelling of that word is typed. For example, we can type Sangeeta. See fig 4.9
5. this word is added in dictionary by clicking the button ‘add’
6. Now ‘OK’ button is pressed. After this action is down whenever we type the wrong spelling excel will itself correct it.

## 17. USE OF AUTO COMPLETE

While doing the input of data we need to type some of the words again and again Excel gives us an important facility that whenever we type any word again some staring alphabets when matched it beings the first word itself in cell For example if in the cell earlier we typed name suranjana, Archana Gita, Now as we type in any cell surangana will automatically come in written if we want to keep this name in this cell we will press arrow key and move to the next cell or if we want to type any other word (say-sangeeta). Then we will type it fully Now it we type S in any other cell then any word will not come itself but as the common alphabets of suranjana or sangeeta match. For example if we type it in font of ‘S’ sangeeta word will appear of it ‘U’ is typed after S then suranjana will appear in this way, on the basis of alphabets, excel presents data for us in cell and provided us the facility of auto complete. See fig 4.10

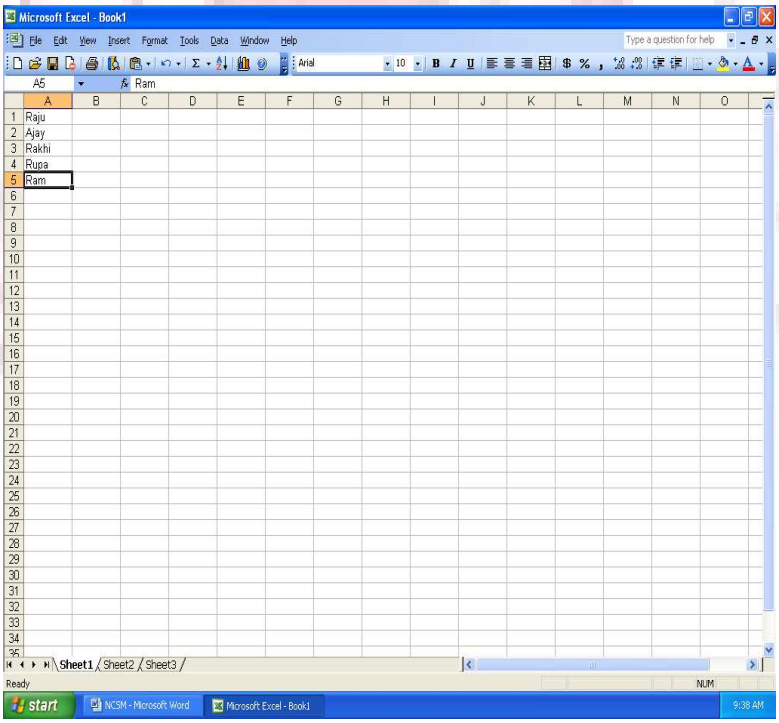



**Fig .10**

## 18. FORMATTING OF CELL

In Worksheet we input different types of numbers. We want to keep some numbers up a fixed decimal place and some numbers with the sing of currency (such as -$) in this way, in format of data, time, percentage, fraction, scientific etc cell is format in different ways to keep the data For example. If we want to keep the number in cell up to three decimal places then following type of format will be done.

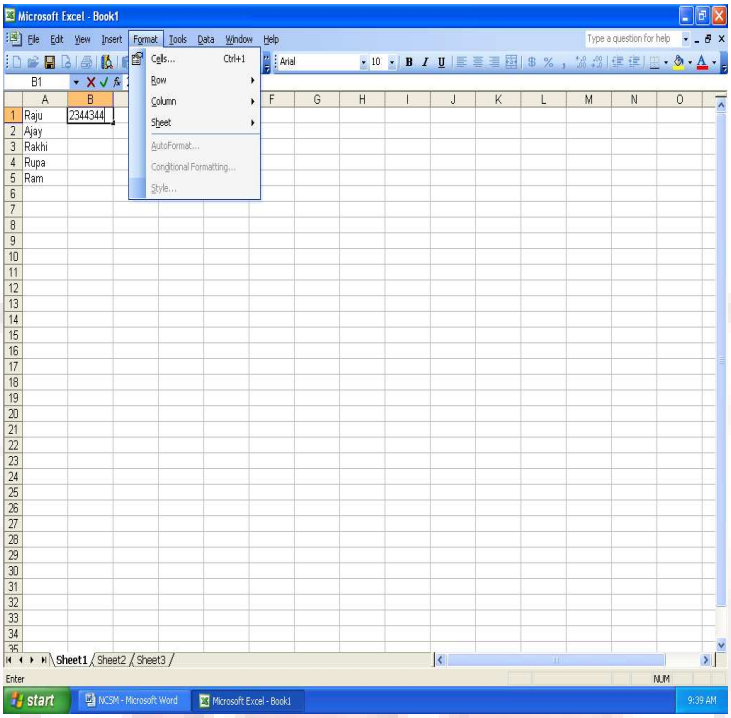



**Fig .11**

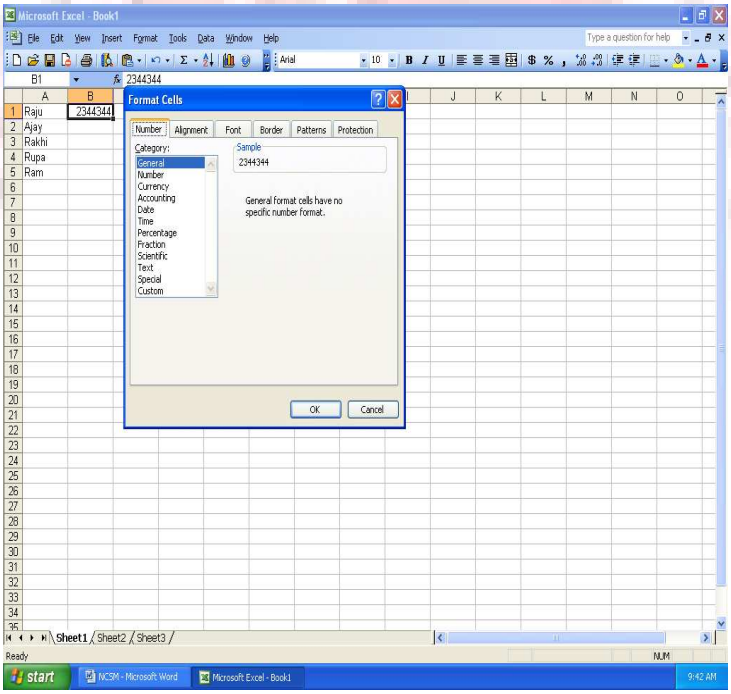



**Fig .12**

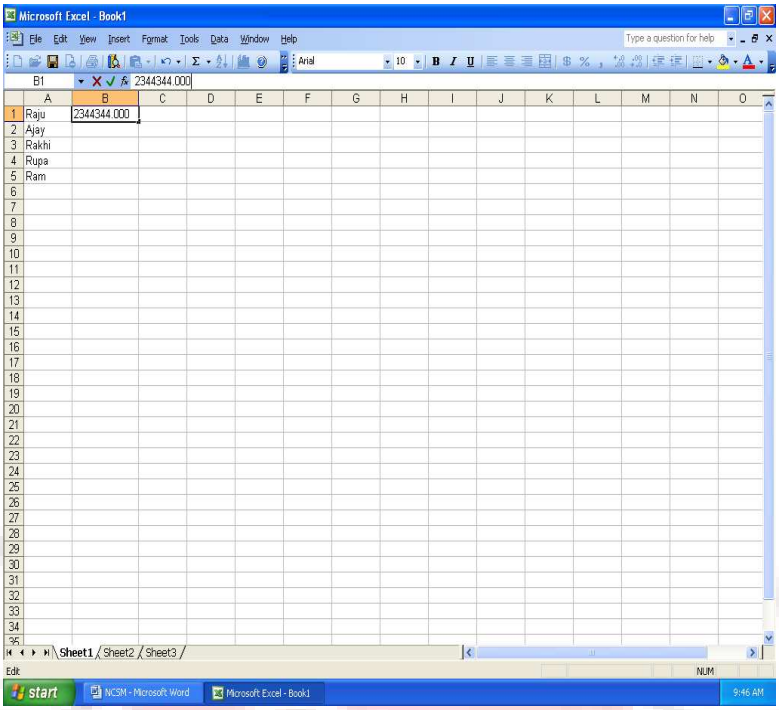



**Fig .13**

1. The cell to be format is selected.
2. Format option is chosen. See fig 4.11
3. Cell option …… Is chosen. See fig 4.12
4. The number option is clicked.
5. The decimal place up to which we want digit, we type that number after the decimal place, in this example we will type 3.
6. Click on OK button. See fig. 4.13

## 19. CHANGE WIDTH THROUGH FORMAT MENU

To Change width trough format menu if any input data is digger than the all the than in the cell '# # # # # # # # # # #' will be seen in place of data In this way in that cell mouse bigger input can be down than the limit of its breadth.

1. The cell whose breadth is to be changed is selected.

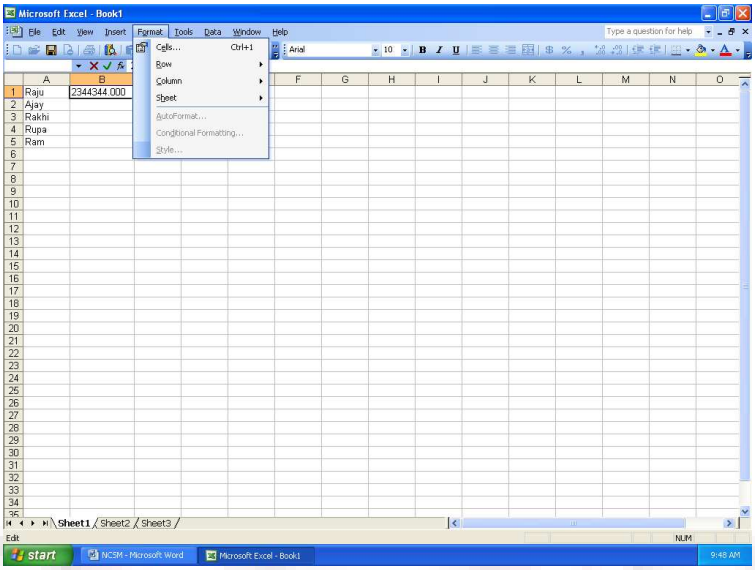



**Fig .14**

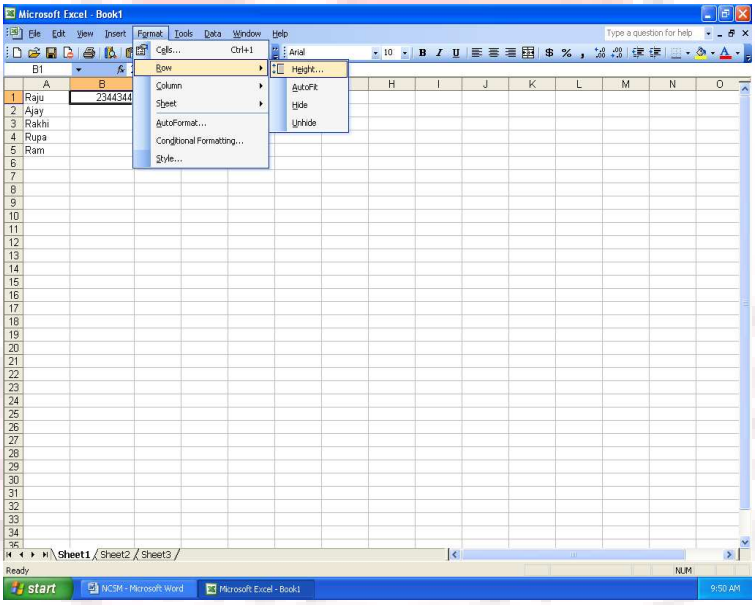



**Fig .15**

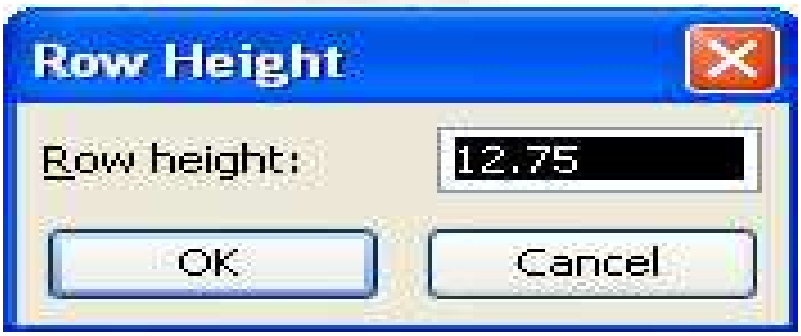



**Fig .16**

2. In format menu, column if clicked, see fig 4.14

3. In column sub menu, Width …. Is clicked. See fig 4.15

4. We will type breadth in the ‘Colum width’ according to the requirement of alphabets kept in this column. See fig 4.16

5. Now Ok button is pressed.

## 20. TO CHANGE COLUMN WIDTH BY MOUSE

It is very easily to change the breadth by mouse the method is as follows.

1. In the Right side margin of column heading ‘point’ Is done mouse.

2. The arrow form of pointer when moved by mouse will increase or decrease the ‘Column width’ depending on the move to and for.

## 21. HOW TO INSERT ROW OF COLUMN?

If we have done the input of all the data and then it comes to our mind that some row or column has been left to by typed shill that row and column can be inserted on its required place. In excel any blank row or column can be inserted, the method is the following way to insert row.

## 22. INSERT ROW

1. The pointer is placed under the row where blank row is wanted. Foe example if

2. A black space is wanted after number 1 then pointer is placed at row number 2.

3. If move that one row are to be increased then many rows are selected below.

4. Now in ‘Insert’ menu row is clicked on.

5. After than ‘Black row’ appears on the selected place and all the data below moves down words one by one.

## 23. TO INSERT COLUMN

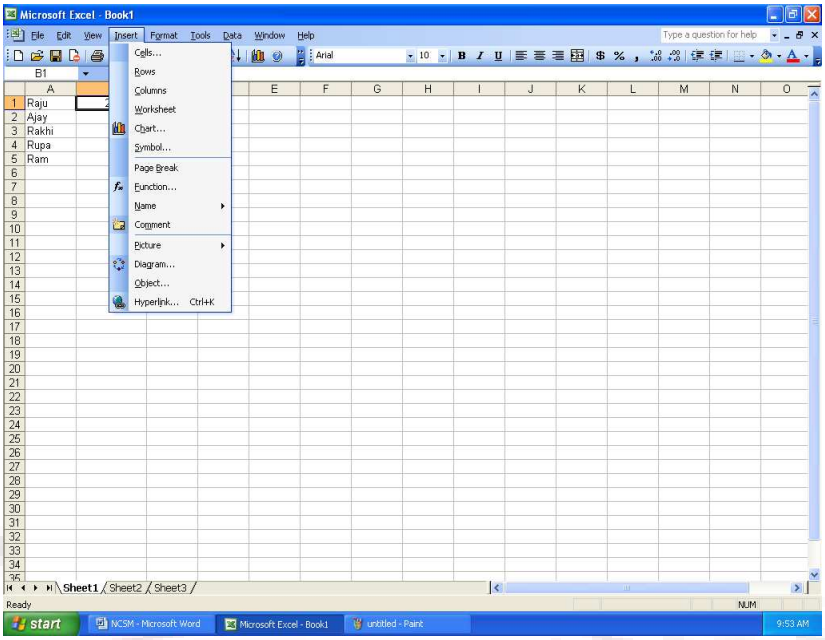



**Fig .17**

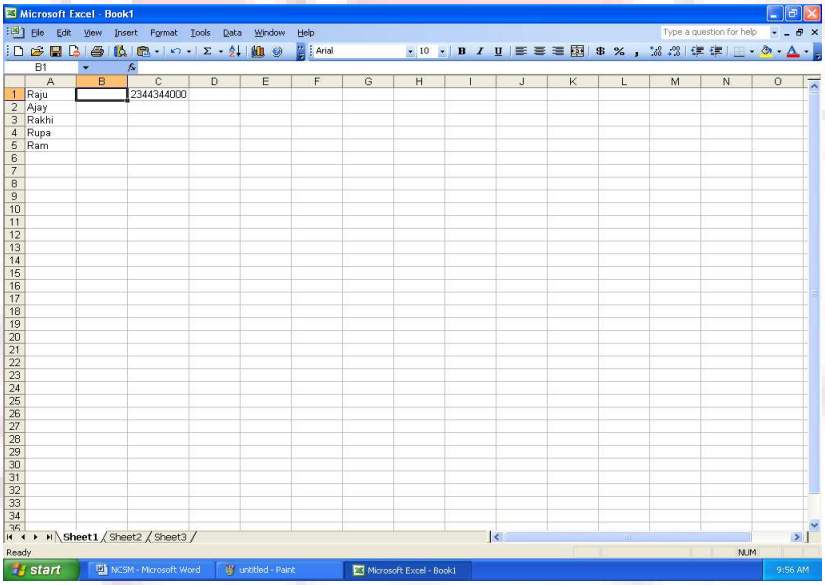



**Fig. 18**

As insert way row is inserted column is also inserted in that manner.

1. The Right of column there you want the black column the pointer is placed in front of that. For example if we want to inset column B after column A then pointer will be placed on B.

2. If more than one column is needed then tat many blank columns can b selected on right side.

3. Click on insert menu. See fig.

4. The option of column is clicked. In this way blank column is inserted See fig 4.18

## 24. HOW TO COPY A CELL

1. Those cell are selected which are to be coping and taken to other place See fig. 4.19

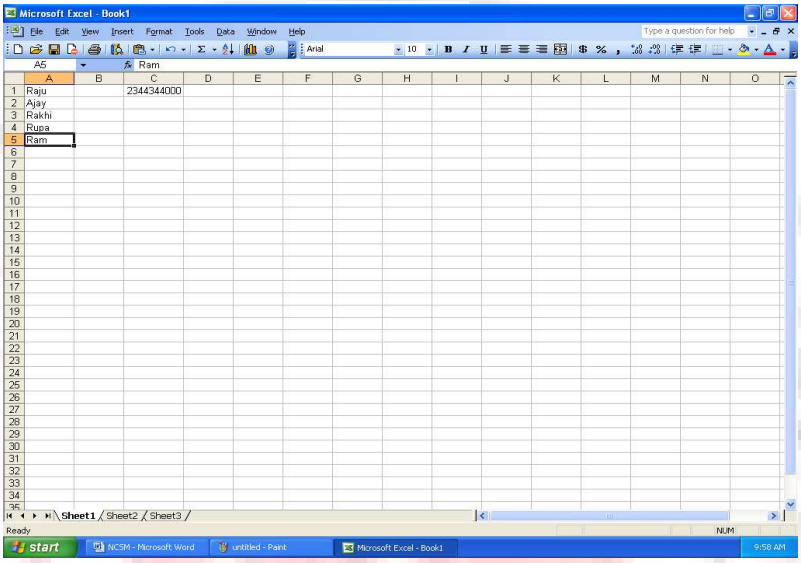



**Fig. 19**

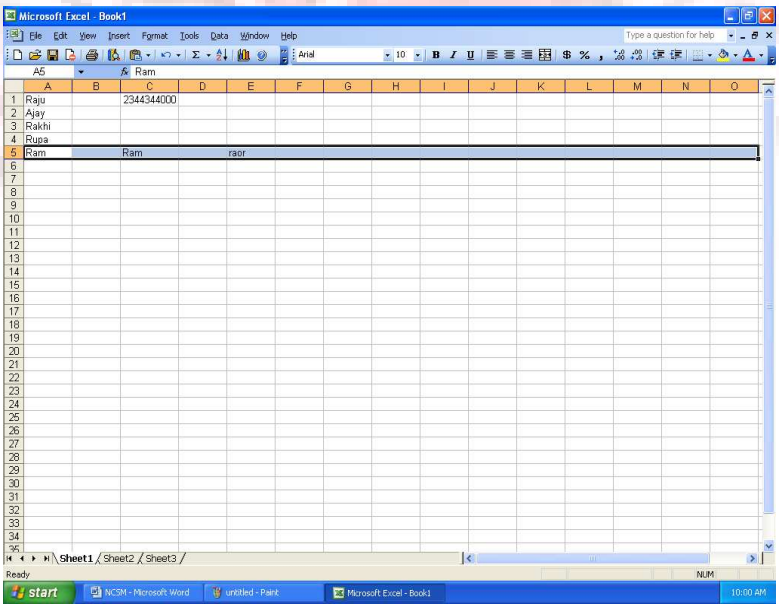



**Fig. 20**

2. The border of cells which are blacked is clicked then the mouse pointer changes from + to arrow () form.

3. All the ‘Cells’ whose contents we want to copy from one place to another they are dragged through the mouse from that corner to the other corner in front, then all the cells get select.

4. With one hand ctrl key is pressed & through mouse the selected cell box are dragged to the place where the contents o cell are to keep. See fig 4.20

## 25. HOW TO MOVE A CELL?

1. Those cells are selected which are moved and taken to other place. See fig. 4.21

2. The border of cells which are bloke I clicked then the mouse pointer changes from cross + to arrow () from

3. All the cells whose content we want to copy from one place to another they are dragged through the mouse from that corner to the other corner in front, then all the cells get select.
4. With the help of mouse, the box of selected cells is dragged to that place where you want to ‘mouse’ them in a workbook there are many worksheet selected to one work. The method of copying files in between then is as follows. See fig. 4.2.

## 26. COPY FORM ONE WORKSHEET TO OTHER

In a workbook there are many worksheet related to one work. The method of copying files in between then is as follows-

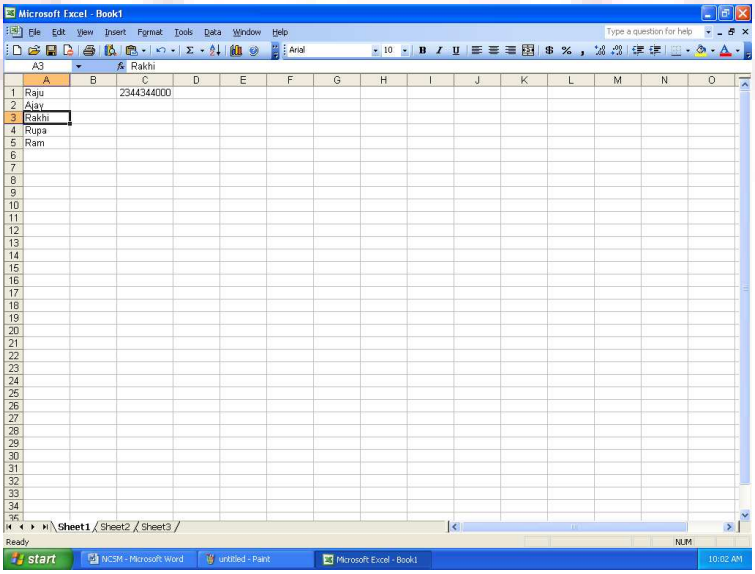



**Fig .21**

In Excel if We want to copy the contents of any worksheet in other worksheet then.

1. That range will be selected which is to be copied.

2. The chosen range box will be clicked.

3. With one hand ctrl and alt key be pressed a with the other hand holding the brother of that box drag it that worksheet and release it on taking it on tab. Now the chosen rage of our. First worksheet is copied in the other worksheet copy from one workbook to another.

## 27. COPY FORM ONE WORKBOOK TO ANOTHER

When in workbook we work in any worksheet and want its contents to be coping to the worksheet of another workbook then the action will be as follows.

1. That range is selected in worksheet which is be coping in another workbook.
2. Whichever range we have selected now the complete box of it is clicked.
3. Whit one hand control key is pressed and with the other. Hand the box is dragged through mouse in that worksheet in which it is to be coping.

## 28. HOW TO SAVE EXCEL WORKSHEET?

If we have saved our worksheet earlier then by pressing ctrl + s is can be saved. Again But if worksheet is saved for saved for the first time the following method I followed.

1. File menu is clicked on. See fig. 4.22
2. 'Save As' option is chosen then dialog box is visible on the screen. See fig 4.23

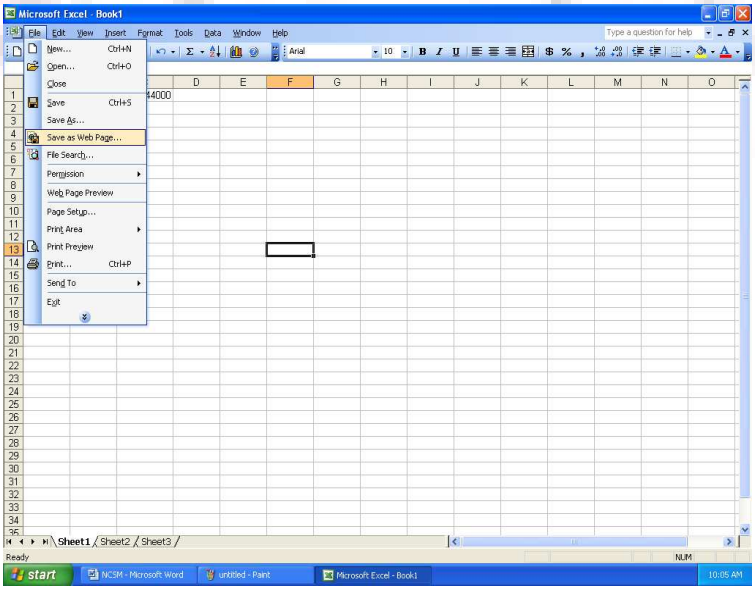


**Fig .22**

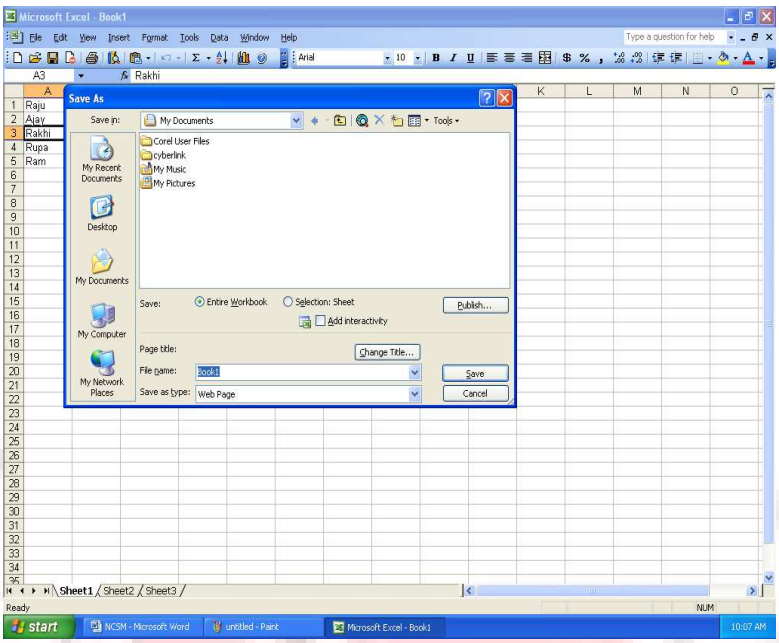



**Fig 23**

3. In the ‘Save in’ that drive and folder are shown in which the file is ready to ‘Save now if we want ‘Save’ our worksheet in any other drive and folder then it is selected in the box in front of ‘Save in ‘.

4. By pressing ‘tab’ we come in the box ‘File menu’ and then for our worksheet file any such appropriate Small is types. Which can be remembered and we can recognize our worksheet file in the lost of file.

5. Only Microsoft excel book is highlighted in the save as type box, save as

6. ‘Save’ button is clicked by mouse. In this way worksheet is saved in the form of a file on the disk which can be opened again and can be used.

## 29. TO SAVE A WORKBOOK LIKE TEMPLATE

If we want to ‘save’ our workbook like template then ‘Template’ is highlighted is ‘Save As Type’ box The method is as follows.

1. File menu is clicked on. See fig. 4.24

2. Save As options is clicked then save as dialog box is seen on the screen. See fig 2.25

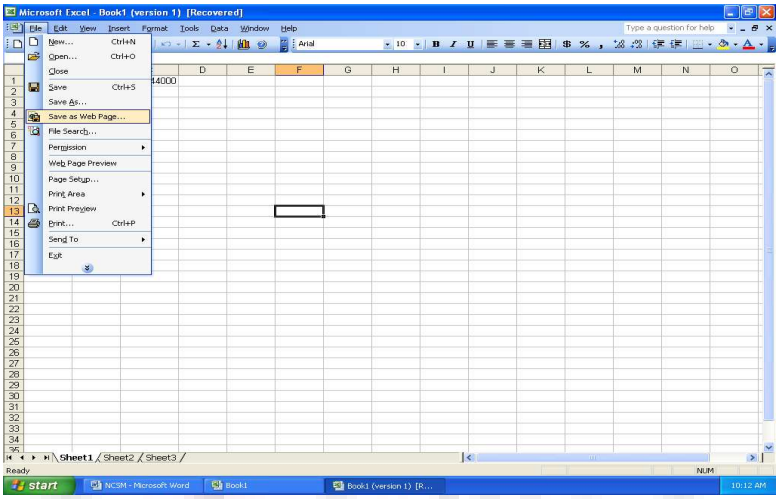



**Fig .23**

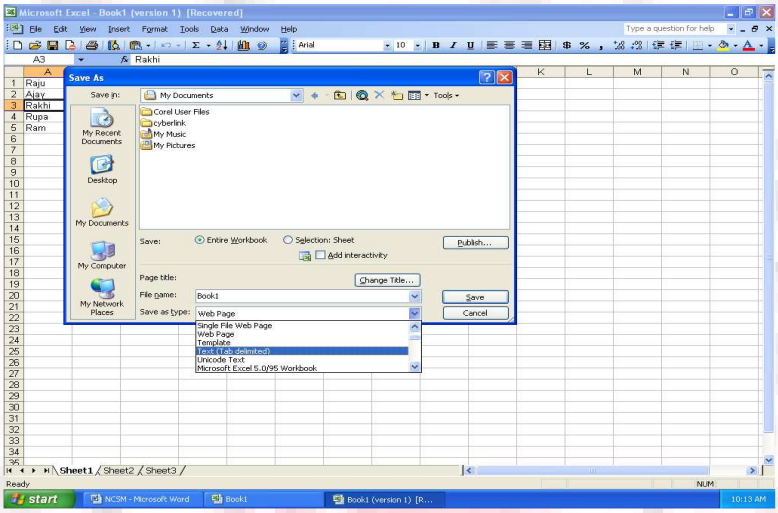



**Fig .24**

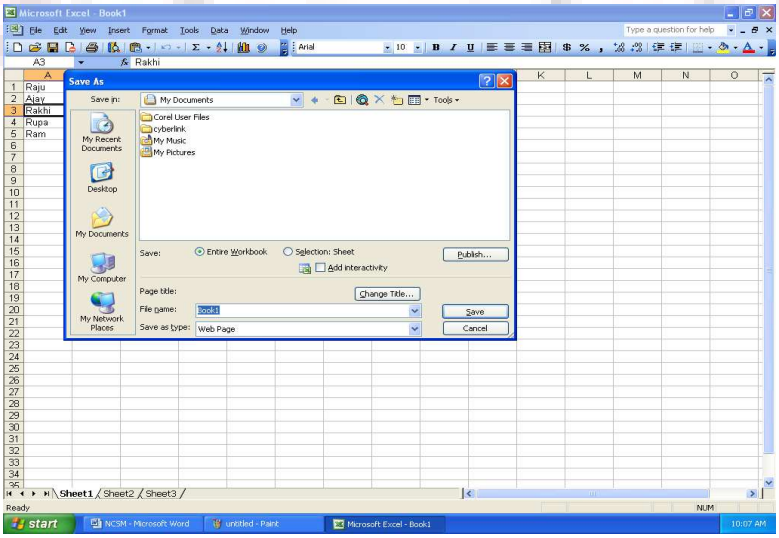



**Fig .25**

3. Template folder is selected to place template on general tab.
4. To open the new folder to template the new folder button is clicked.
5. Template option is chosen by clicking on save as type See fig 4.26
6. On creating new folder in templates a new tab appears on the screen.

## 30. SUM OF THE CELLS

When we want to find the total of the contents of some of together then in excel we use the sum function if in tool bar we know about the auto sum button we can press it find the sum. The method is in this way.

1. All the cell which are kept together whose contents. Sum is to be found out are selected.

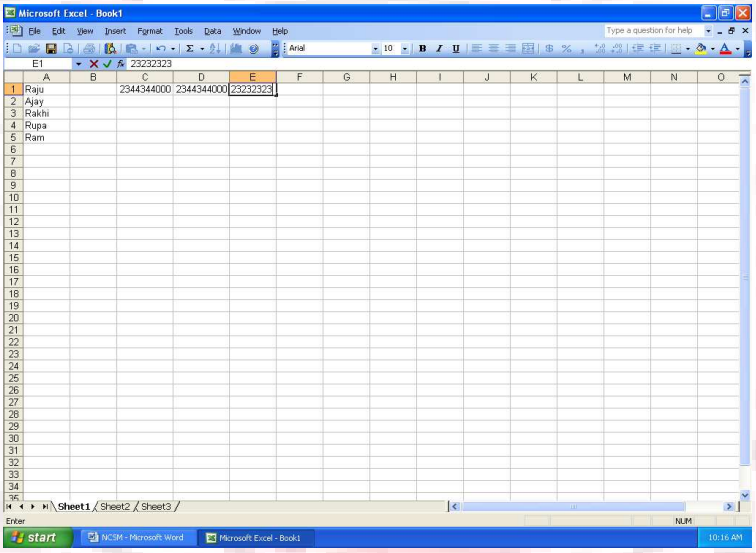



**Fig .26**

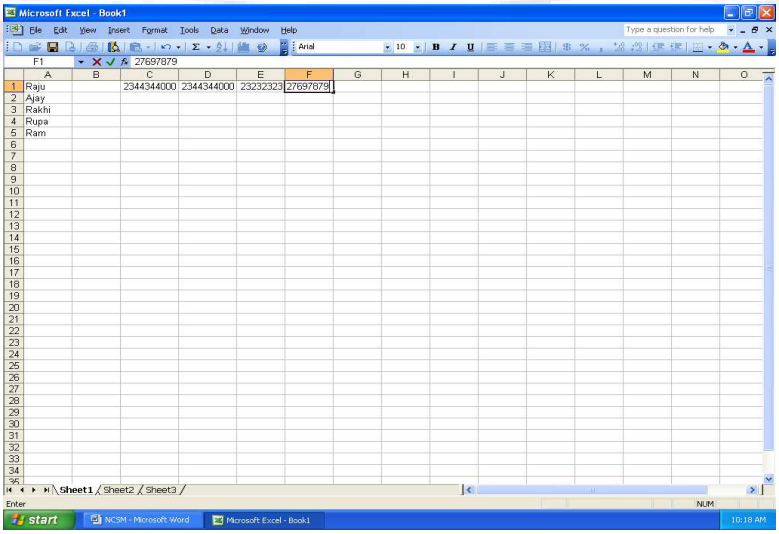



**Fig .27**

2. In standard tool bar ‘auto sum’ button is pressed As a result, all the cells that are selected by us the sum of their contents appears on the screen. See fig 4.28

# 31. IF FUNCTION

Some logical operators are used with if function then according t those operators, when the condition is established a type of action is performed and if not established in that condition, the other type.

The logical operators which are used with IF function are follows:

=Equal to

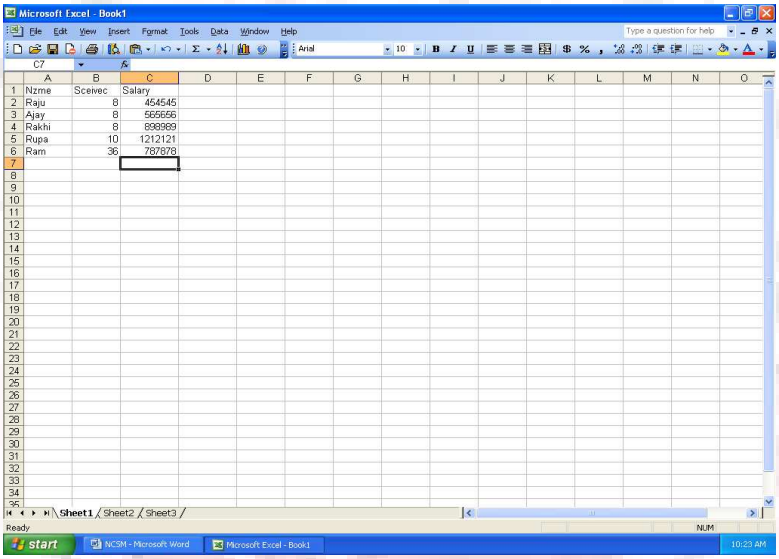



**Fig .28**

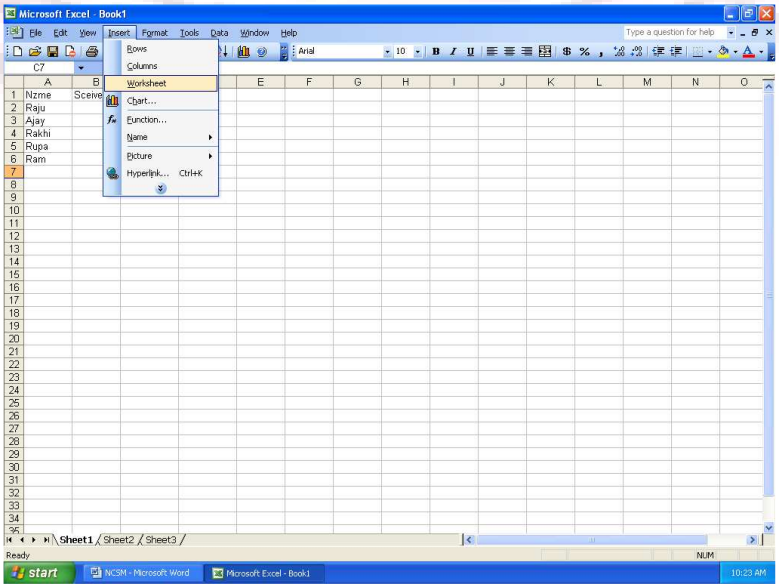


**Fig .29**

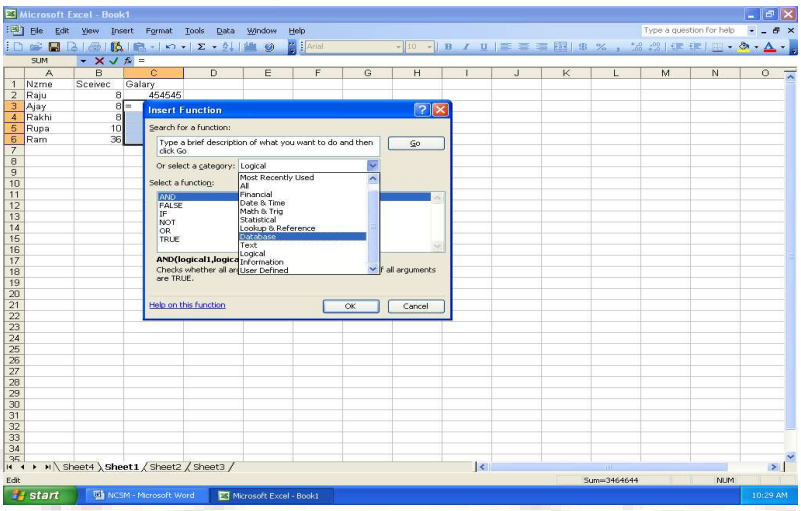



**Fig .30**

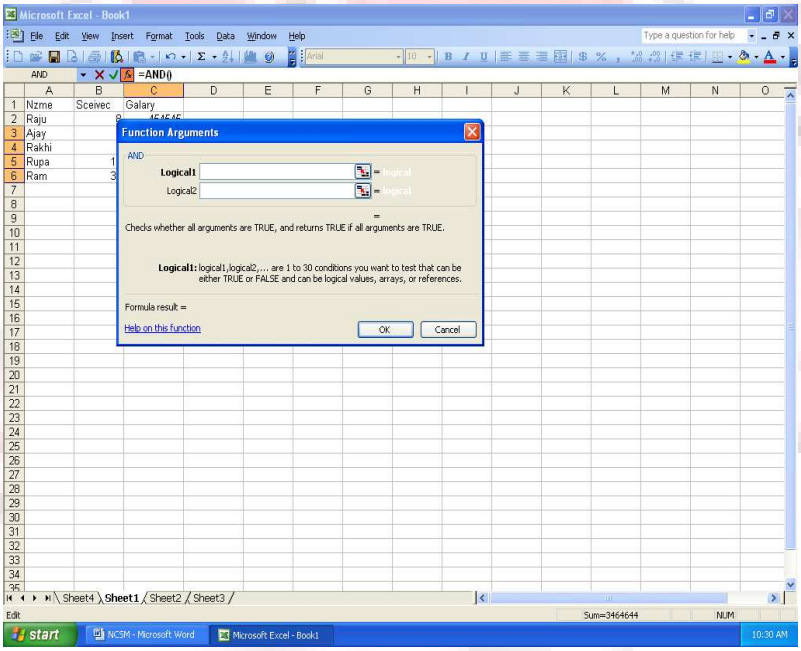



**Fig .31**

<> Not equal to
> Greater than
< Less than
>=Grater that or equal to
<= Less that equal to

We get if () in function wizard in logical category.

Let us assume that we have to give bonus to our worker for the following conditions are there:

Those who are working for a time of 5 less that they will be given 5 percent salary.

Those who are working for of a time 10 years or less than they will be given 10 percent.

Those who are working for a time of 20 years or less than that they will given 20 percent

Those who have been working for a time of 25 years of more they will be given 25 percent

On the basis or these conditions if function is used to calculate bonus/ the method is as follows:

1. The point is placed in that cell from which result is desired. see 4.29
2. Insert menu is clicked on.
3. Function option is clicked on then the ‘Paste function’ dialog box is visible on the screen see fig. 4.30
4. Logical option is clicked in function category.
5. In ‘Function name’ if clicked on see fig. 4.31
6. When ok button is clicked then other dialog box appears see fig 4.32
7. In logical test box that condition is typed which we want to check. Foe example if Length of service is in C3 then to give the condition in if function, C3 >= 20 is typed.
8. The process is down in value if true box when condition is true. For example when the value of all address is more than 20 for the salary then 25 percent bonus is given. Hence (DB*25) or 100 will be typed.
9. An action performed when the condition is false is down in the option ‘Value if false’ in this way a condition can be checked every time and when our data matches the condition than result obtained on its basis can be checked.
10. This work is ended by clicked the ok button.

# 32. TOOLBARS AND THEIR ICONS STANDARD TOOLBAR


**Fig .32**

**New**
Create a new blank file.
Alternative: File “New
Shortcut Ctrl +N

**Save**
Saves the active file.
Alternative: File “Save
Shortcut Ctrl +S

**Print Preview**
Display full page as they are printed.
Alternative: File “Print Preview.
Shortcut Ctrl +F2

**Cut**
Cuts the selection and puts it on the Clipboard.
Alternative: Edit “Cut
Shortcut Ctrl + X

**Paste**
Insert the Clipboard contents at the insertion point.
Alternative: Edit “Paste
Shortcut Ctrl + V

**Undo**
Reversers certain last commands.
Alternative: Edit “Undo
Shortcut Ctrl + Z

**Insert Hyperlink**
Displays the destination object, document or page.
Shortcut Ctrl + O

**Open**

Opens or finds a file.
Alternative: File “Open
Shortcut Ctrl + p

E-Mail
Sends contents o the current worksheet as body of the e-mail message.

## Print
Prints the active file using current defaults.
Alternative: File “Print
Shortcut Ctrl + P

## Spelling
Checks the spelling in he active file.
Alternative: Tools “Spelling
Shortcut F7

## Copy
Copies the selection and puts it on the clipboard.
Alternative: Edit “Copy
Shortcut Ctrl + C

## Format Painter
Copies the formatting of the selection to a specified location.
Shortcut Ctrl + Shift + C

## Redo
Reverses the action of the Undo command.
Alternative: Edit “Repeat
Shortcut Ctrl + Y

## Auto Sum
Add numbers automatically with the SUM function. Excel suggests the range of cells to be added. If the suggested range is incorrect, drag through the range you want, and then press ENTER.

## Sort Ascending
Sorts the selected items in order from the beginning of the alphabet, the lowest number or the earliest data, using the column that contains the insertion point. If you previously set other sorting options. Those options are still in effect.

## Chart Wizard
Starts the Chart Wizard, which guides you through the steps for creation an embedded chart on a worksheet or modifying an existing chart.

### Zoom Control
Scaliest the editing view (Zoom)
Alternative: View “Zoom

### Paste Function
Displays a list of function and their formats and allows you to set values for arguments.

### Sort Descending
Sort the selected items in the order form the end of the alphabet, the highest number or the highest data using the column that contains the insertion point. If you previously set other sorting options, those options are still in effect
Alternative: Table “Sort
Descending

### Drawing
Shows or hides the Drawing Toolbar.
Alternative: View “Toolbar” Drawing.

### Microsoft excel Help
Provides help topics and tips to accomplish your task.
Alternative: Help “Microsoft Excel
Help
Shortcut F1

## 33. FORMATTING TOOLBAR

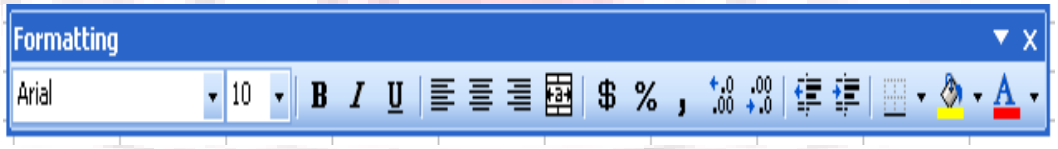



**Fig .33**

### Font
Changes the font of the selection.
Alternative: Format “Font
Shortcut Ctrl +Shift+ F

### Bold
Makes the selection Bold.
Alternative: Format “Font” Font Style
Shortcut Ctrl +B

## Font Size

Changes the font size of the selection.
Alternative: Format “Font” Size
Shortcut Ctrl + shift+ P

## Italic

Make the selection Italics.
Alternative: Format “Font” Font style
Shortcut Ctrl +I

## Under line

Formats the selection with continuous underline.
Alternative: Format “Font” Effects
Shortcut Ctrl + U

## Align Right

Aligns the paragraph at right indent.
Alternative: Format “Paragraph” Alignment
Shortcut Ctrl + R

## Marge and centre

Combines two or more selected adjacent cells to create a single cell. The resolution merged cell contains only the upper left most data in the selection, which is centered within the cell. He cell reverence for a merged cell is the upper left cell in the original selection range.

## Percent Style

Applies the percent style to the selection cells. To change the Percent Style, use the Style command on the Format menu.

## Increase Decimal

Increase the number of digits displayed after the decimal point in the selected cells.

## Decrease Indent

Decreases or promotes the selection one level.
Alternative: Format “Paragraph” Indentation

## Borders

Shows or hide the border toolbar.
Alternative: Format “Border and shading

## Font Color

Selects and applies Font Color.
Alternative: Format “Font Color.

### Align Left
Aligns the paragraph at left indent.
Alternative: Format “Paragraph” Alignment
Shortcut Ctrl +L

### Center
Centers the paragraphs between the indents.
Alternative: Format “Paragraph” Alignment
Shortcut Ctrl + E

### Currency
Applies on international currency style to the selected cells. Depending on the country selected in the Windows Regional Settings dialog box, the International Currency Style button might appear instead of the currency style button.

### Comma Style
Applies he comma style to the selected cells. To change the comma style, use the Style command on the Format menu.

### Decrease Decimal
Decreases the number of digits displayed after the decimal point in the selected cells.

### Increase Indent
Increase indent or demote the selection one level.
Alternative; Format “Paragraph” Indentation

### Fill color
Add modifies, or removes this fill color or fill effect from the selected object. Fill effects include gradient, texture, pattern or picture fills.

## 34. DRAWING TOOLBAR


**Fig .34**

### Draw
Activates the Draw Menu.

### Free Rotate
Rotates the selected object to any degree.

Select the object, click on the icon and
Then drag a corner of the object in the
Direction you want to rotate it.

## Line

Draws a straight line where you click or drag in the active Window.
To constrain the line to draw at 15 degree angle from its starting
Point, hold down SHIFT as you drag.

## Rectangle

Draws and rectangle where you click or drag in the active window.
To draw a square, press SHIFT and drag.

## Text Box

Draws a text box where you click or drag in the active window.
Use a text box to add a text –such as captions or callouts
To your pictures or graphics.
Alternative: Insert – Text Box.

## Clip Art

Opens the clip Gallery where you can select the insert
In your file or update your clip art collection.
Alternative: Insert – Picture- Clip Art.

## Select objects

Changes the pointer to a selection arrow so that you can
Select objects in the active window. To select a single
Object clicks the object with the arrow.
To select one or more object you want to select.

## Auto shapes

Activates the Auto Shapes menu.

## Arrow

Inserts a line with an arrowhead where you click or drag
In the active window. To constain the line to draw at the
15- degree angle from its starting point, hold down SHIFT
as you drag.

## Oval

Draws an oval where you click or drag in the
Active window. To draw a circle, press SHIFT
And drag.

## Word art

Creates text effects by inserting a Microsoft Office
Drawing object.
Alternative: Insert – Picture – Word Art.

### Line Color
Adds, modifies, or removes the line
Color from the selected object.

### Fill Color
Adds, modifies, or removes the fill color or fill
Effect from the selected object. Fill effects
Include gradient, texture, pattern and picture fills.

### Line Style
Click the width you want for
The selected line.

### Arrow style

Click the arrowhead style you want for the selected line.

### 3- D
Click the 3- D style you want for the
Selected object.

### Font Color
Formats the selected text with
The color you click fills.

### Dash style
Click the dashed line or dash dot line style you
Want for the selected shape or border. Click the
Solid line if you don’t want the dotted line.

### Shadow
Click the shadow style you want for
The selected object..

## 35. FUNCTIONS

Functions are power tools which help you perform complex computer icons easily and quickly. Functions are like predefined formulas in which the user has to simply provide the values based upon which the calculations are done.

**SUM ():** the Sum () function calculates the sum (total) of entries in a specified range. In our present example we have a range A2 To A8 for which we want to add up the numbers.

=sum (A2:A8)

**ROUND ():** The Round () function rounds of a number to the specified number of decimal places. In our present example we have a number 3.786 which we want to round off only tow decimals.

=round (3.786, 2)

**SQRT ():** The SQRT function calculators the square root of any specified number. In our present example we have number 9 for which we want to find out the square root. If the 9 in cell address c3 then

=sqrt (c3) will be type

**AVERAGE ():** The AVERAGE () function calculates the average of a series of specified number. In our present example we have number, 9 and 81, for which we want to calculation the average.

If in c10 and in c11
=average (c10:c11)

**MAX ():** The MAX () unction finds our maximum (highest) value from a series of specified numbers. In our present example we have a range of four cells A2 to A5 from which the highest number has to be found out.

=max (A2:A5)

**MIN ():** The MIN () function finds our maximum (smallest) value from a series of specified numbers. In our present example we have a range of file cell 2 to A6 in form which the smallest number has to be found out.

=min (A2:A6)

**COUNT ():** The COUNT () function finds our total number of entries in a specified range. In our present example we have a range A2 to A7 in which we want to count the number of entries.

=count (A2:A7)

**ABS ():** The ABS () function is used to get the absolute value of a number. The absolute value of a number means the number without plus or minus sign. In our present example we have a number – 45 in the cell A11 for which we want to get the absolute value.

=abs (A11)

**UPPER ():** The UPPER () function is used to convert your case text entry into upper case i.e. capital letters. In cell 13 there is a text entry 'big' which has to be converter to caps.

=upper (A13)

**LOWER ():** The LOWER () function is used to convert and upper case text into lower case, i.e. small. In cell A14 there is a text entry "SMALL" which has to be converted to small letters.

=lower (A14)

## 36. CREATING A CHART IN EXCEL

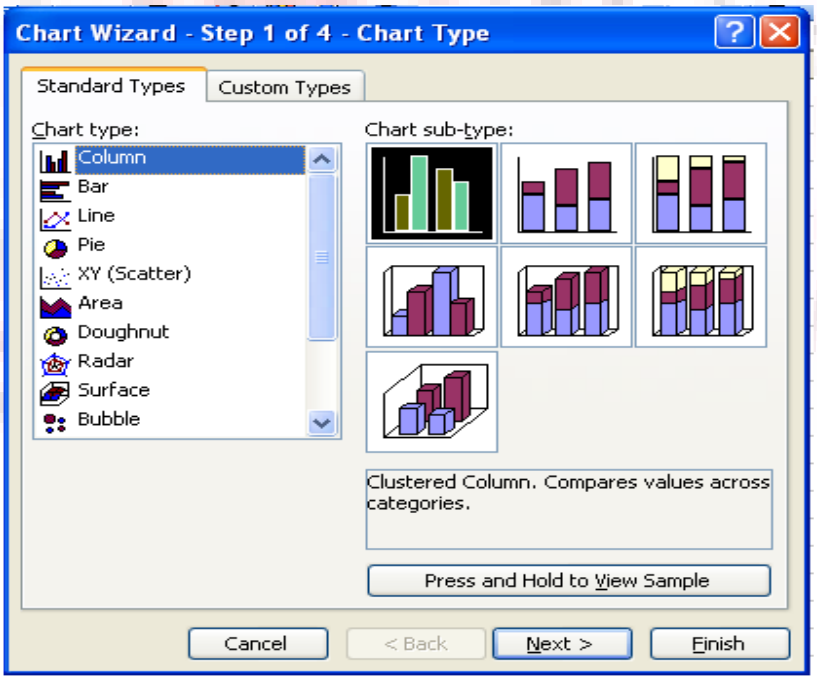



**Fig .35**

For create a chart in excel we take following step:

1. Select the Data Range (Row and Column, which you want to create a graph) Then click on Insert menu and select chart option or click on graph icon.

The following box will be display:

2. In these box we choose the column graph (for example) then click to next option. The box will be appear.
3.

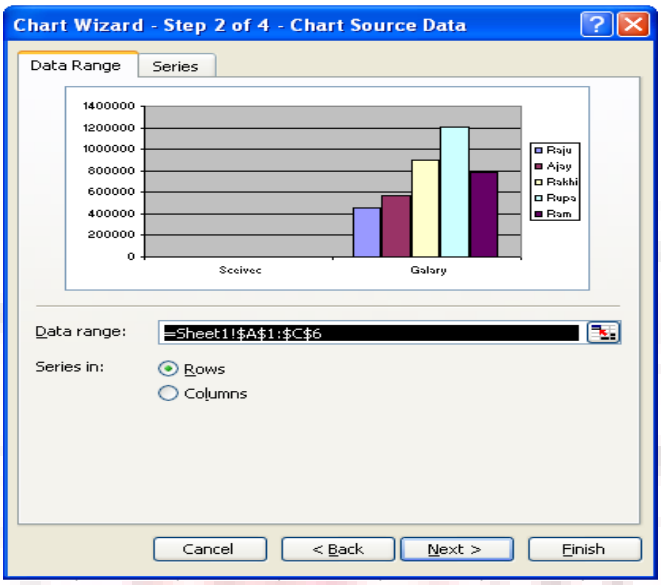



**Fig .36**

4. Now here, we will select the series tab then the box will be look like.

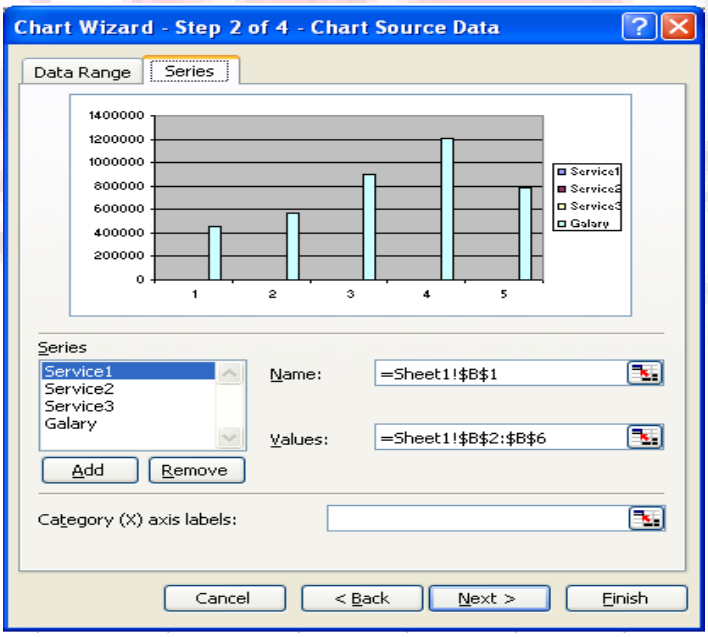



**Fig .37**

Here Series 1, Series 2, Series 3 etc will be display for giving label name of series.

Now, In name option we gave the name of Series. In category (X) axis label we write the label of X-axis. Then click on next button. The following type box will be appear.

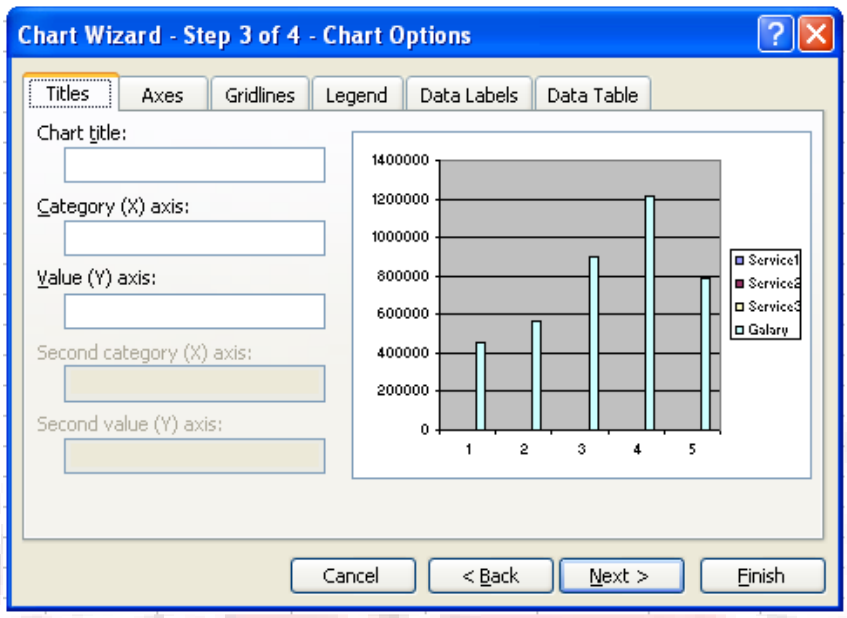



**Fig .38**

Here, type the chart title, type the category (X) axis name, Category (Y) axis name. Then Click on Next button.

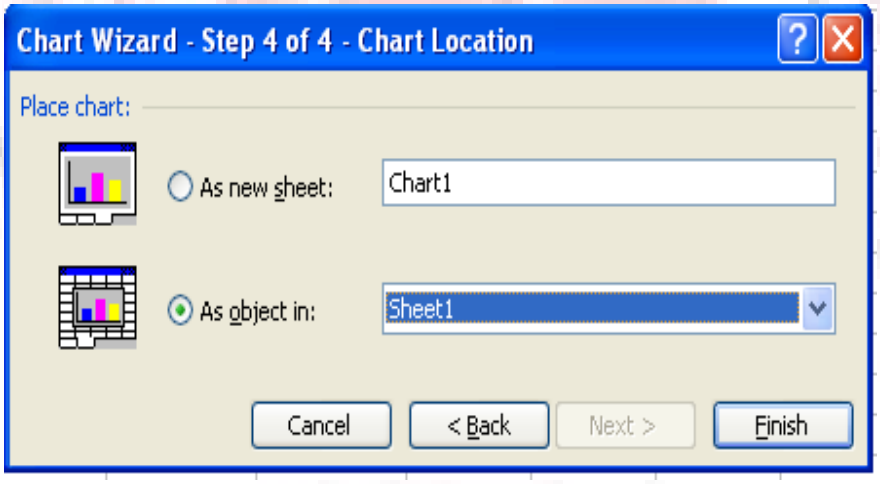



**Fig .39**

5. In these options if we use as new option then the chart will create on new sheet. If we use object then the chart will be display on working sheet position.

6. After that, we click on Finish option.

## 37. SETTING OF PARINTAREA

If you are not satisfied with your print area you can change it for this, you perform the following action.

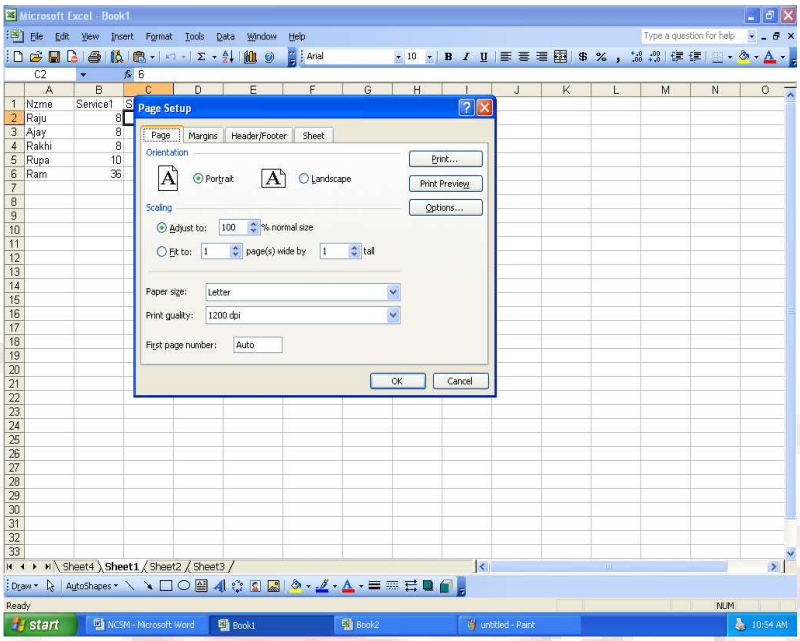



**Fig .40**

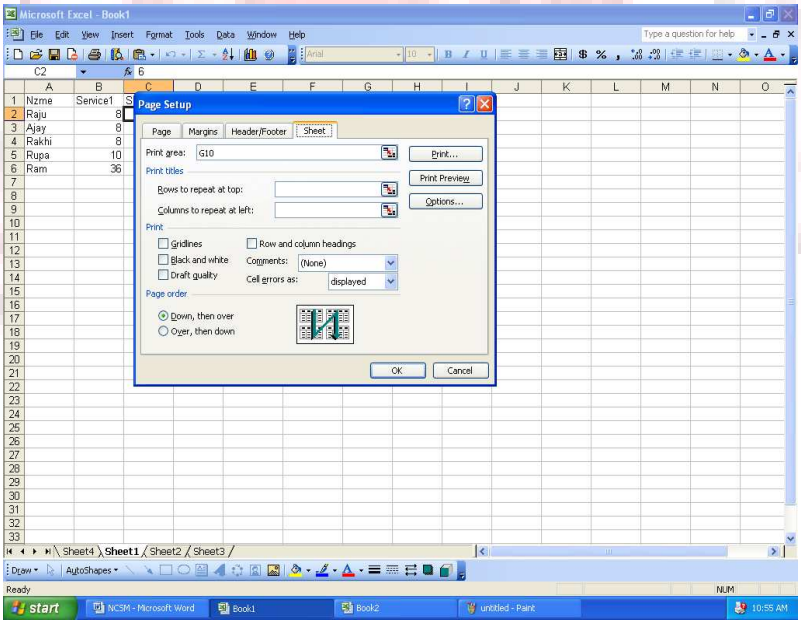



**Fig .32**

1. On clicking ‘File Menu’ the ‘Page set up…’ option is clicked ‘Page set up…’ dialog box appears. See fig 4.41
2. In the above dialog box, sheet option is clicked, the sheet dialog box appears. See fig 4.42

3. In the ‘Print area’ that part of worksheet is decided which to be is sent to print let us assume that we want range form A1 to G10 then we will type A1, G10.

4. Now Ok button is clicked. In this way the range chosen by us is set in ‘Print area’.

## 38. PRINT PREVIEW

If before, taking out the print out of worksheet on paper we see the ‘preview’ of it on screen then the problem of in correct Printing can be rid of. The method to preview is as.

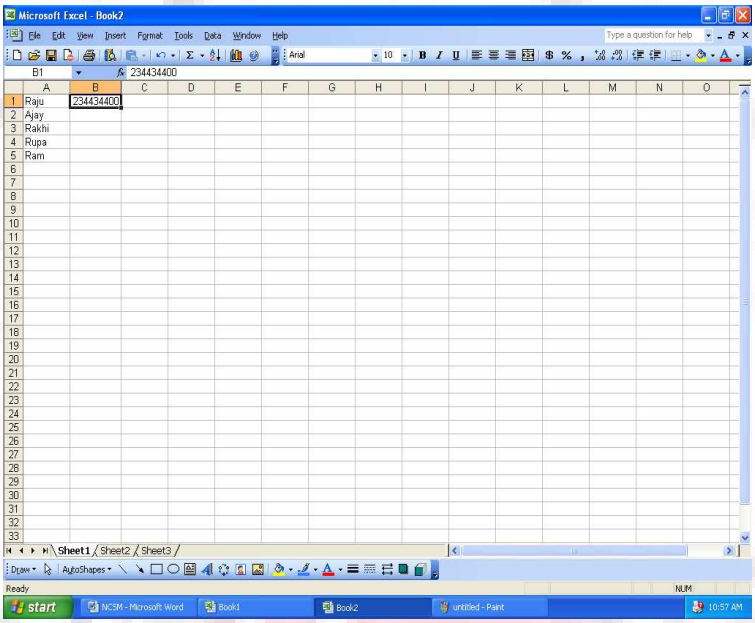



**Fig .41**

1. File menu is clicking on. See fig 1.13.

2. Print preview option is chosen then on screen the following id seen in this way see fig. 4.44.

3. Zoom button is clicked for closer view of the page from any place.

4. If after book at the preview we are satisfied and we want to take the same print on paper then click on ‘Print’ button If any error is found in the print then by pressing close button again come on the worksheet.

## 39. TO START PRINTING

If we have down all the type of setting and now we to start printing then it is sent to printer in the following Manner.

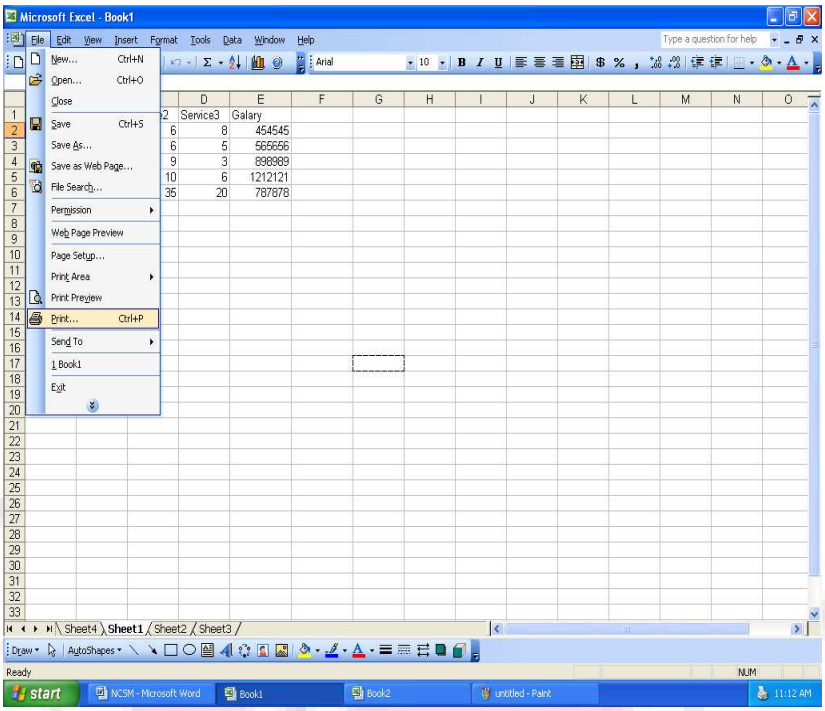

Microsoft Excel - Book1
File Edit View Insert Format Tools Data Window Help
New... Ctrl+N
Open... Ctrl+O
Close
Save Ctrl+S
Save As...
Save as Web Page...
File Search...
Permission
Web Page Preview
Page Setup...
Print Area
Print Preview
Print... Ctrl+P
Send To
1 Book1
Exit
Service3 Galary
6 8 454545
6 5 565656
9 3 898989
10 6 1212121
35 20 787878
Sheet4 Sheet1 Sheet2 Sheet3
Draw AutoShapes
Ready
NUM
start
NCSM - Microsoft Word
Book1
Book2
untitled - Paint
11:12 AM

**Fig .42**

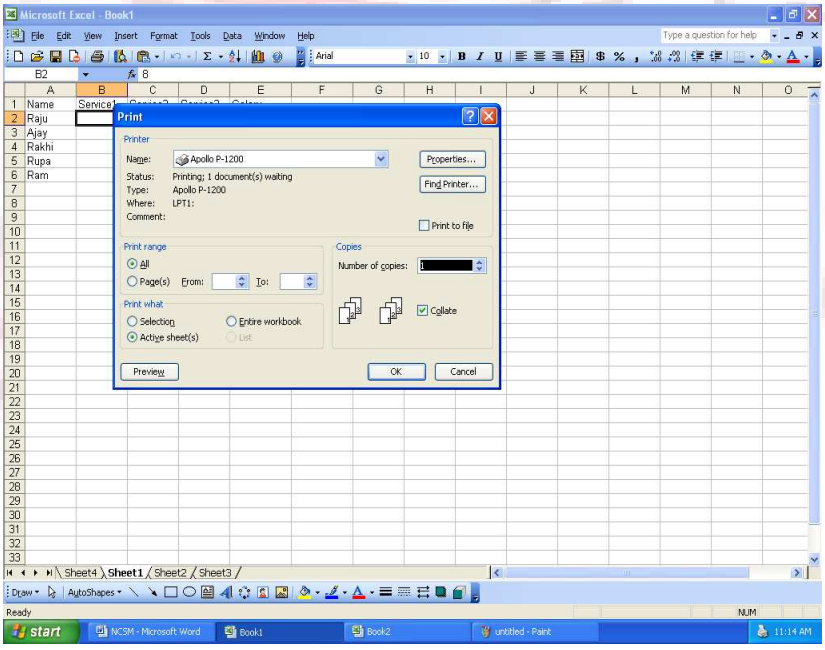

Microsoft Excel - Book1
File Edit View Insert Format Tools Data Window Help
B2
8
Name Service1
Raju
Ajay
Rakhi
Rupa
Ram
Print
Printer
Name: Apollo P-1200
Properties...
Status: Printing; 1 document(s) waiting
Type: Apollo P-1200
Where: LPT1:
Comment:
Find Printer...
Print to file
Print range
All
Page(s) From: To:
Copies
Number of copies: 1
Print what
Selection
Entire workbook
Active sheet(s)
List
Collate
Preview
OK
Cancel
Sheet4 Sheet1 Sheet2 Sheet3
Draw AutoShapes
Ready
NUM
start
NCSM - Microsoft Word
Book1
Book2
untitled - Paint
11:14 AM

**Fig .43**

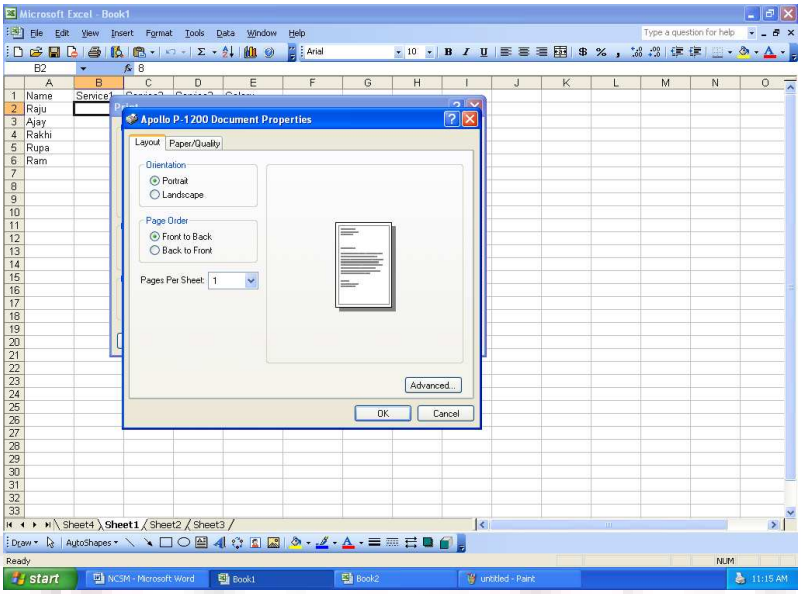



**Fig .44**

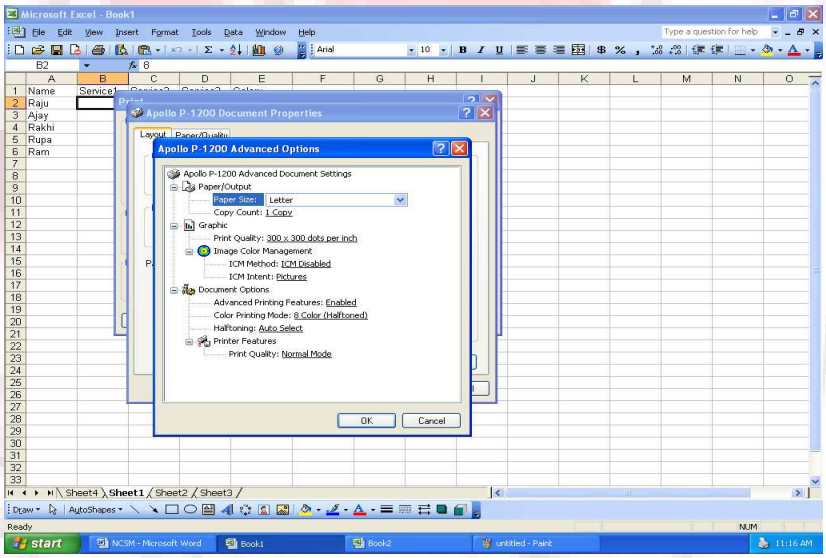



**Fig .45**

1. The ‘File Menu’ is Pull down’ See fig. 4.45

2. Print option is chosen See fig. 4.46

3. With the help of tab, in print what option, bullet of select sheet (s) box is clicked?

4. If ‘Page Range’ you want to take out print of all pages then the option in font of page(s) option, form and to the number of page is typed on the.

5. The number of copies to print is typed in option. ‘copy’.

6. When ‘Properties’ option is clicked other dialog box is seen on the screen See fig. 4.47

7. Graphics option is clicked then graphics dialog box is seen on the screen. In the above dialog box resolution, dithering intensity and graphics mode can set. See fig 4.49.

8. OK button is clicked.

9. If we want to that how worksheets are will look on paper after print then preview button can be clicked.

10. The printing of our worksheet can be started by clicking ‘Print’ button.
11. OK button is clicked on. New the paper starts to print on printer.

## 40. TO CLOSE EXCEL

1. File option is clicked by mouse then exit option is clicked by mouse. A dialog box is viewed on screen which demands the information to ‘Save the excel file.
2. If the changes down in file are be saved then ‘Yes’ and if not to be saved then ‘No’ and if excel is to be closed then ‘cancel’ option is clicked.
3. Let us suppose that you choose ‘Yes’ option then file is saved and excel closed down.

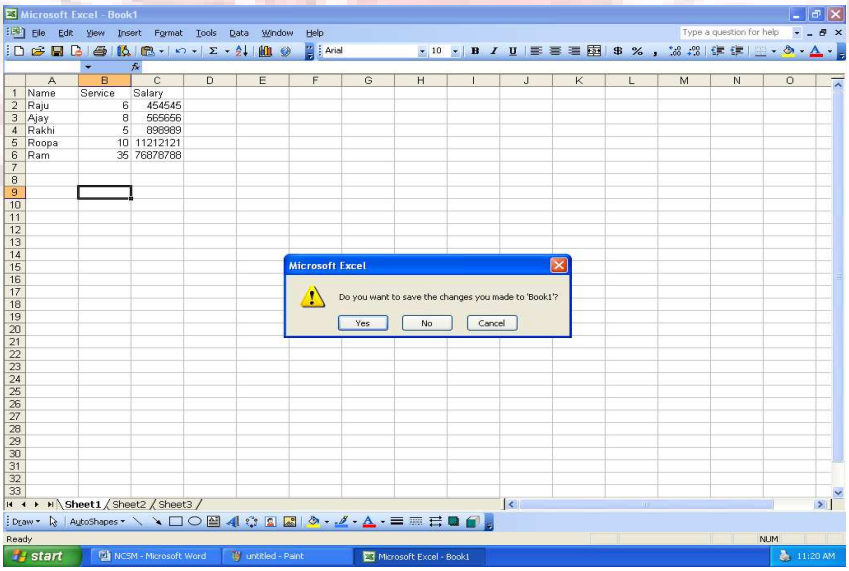



**Fig .46**

10

# POWER POINT

## 1. INTRODUCTION TO POWER POINT

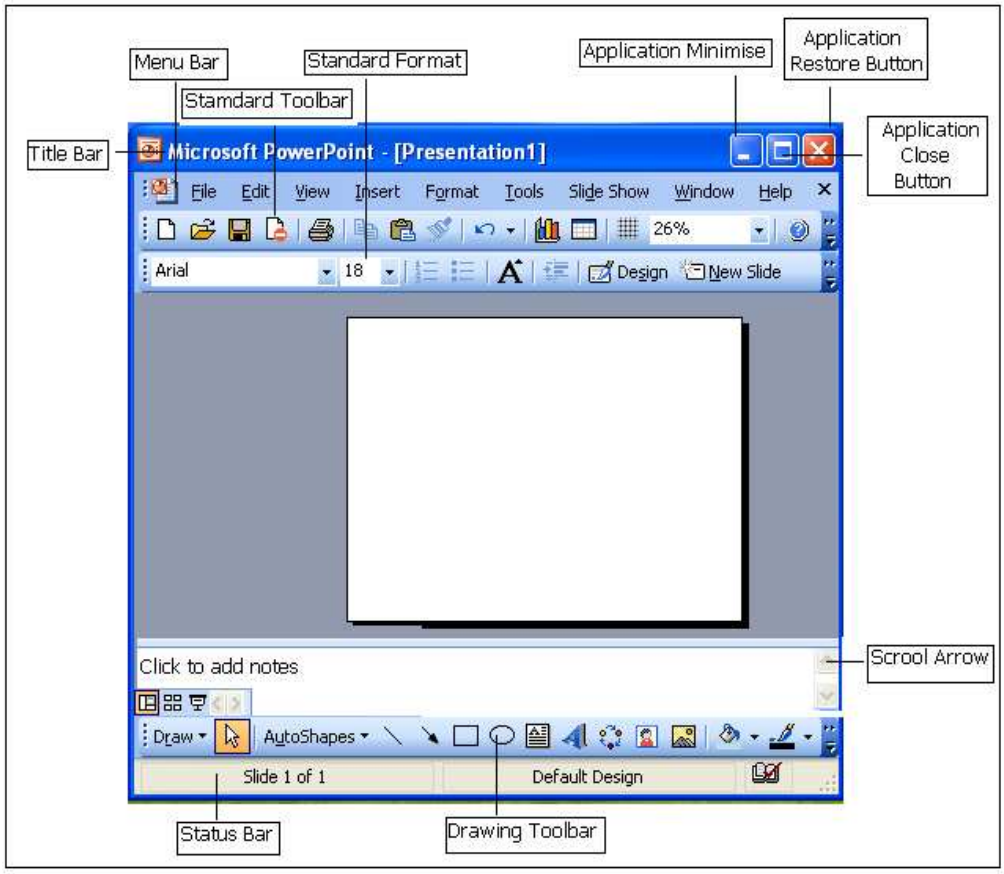



**Fig .1**

## 2. STARTING POWERPOINT

The Power Point is the application software which provides the electronic presentation of any topic. In presentation we can include graphics, chart, sound etc. we can shown the presentation in front of public by using projector.

Create presentation on PowerPoint take the following steps are:

- Click on start menu >> click on program.
- In program click PowerPoint option.
- The screen will be look like:

**Here, we received three following option for create presentation.**

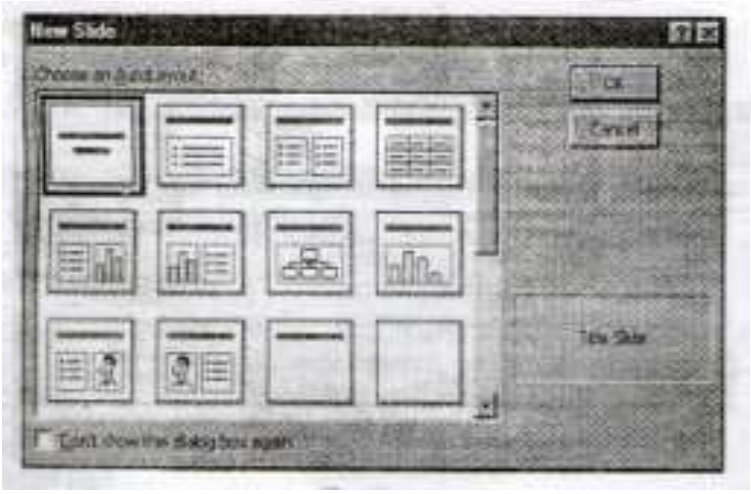
1. **Auto Content Wizard:** The option will provide wizard for guide us through the various steps increasing a presentation.

2. **Templates:** These option provide different the background design to create presentation.

3. **Blank Presentation:** These option Provide different the black screen to create any type of presentation.

## 3. BASIC ELEMENT OF PRESENTATION AREA

(I) **SLIDE LAYOUT:** How the slide look the following main layout of the slide are:




**Tile slide -** These slide provide on title facilities for presentation.

**Bulleted List** – These slide provide bulleted facilities for presentation

.

**2 Column text –** These slide provide 2 column creation facilities presentation.

**Table –** These slide provide table creation facilities for presentation.

**Text & chart –** These slide provide text & chart facilities for presentation.

**Chart & Text –** These slide provide chart & text facilities for presentation.

**Organization Chart –** These slide provide Organization Chart facilities for presentation.

**Graph –** These slide provide the graph facilities for presentation.

**Text & clip –** These slide provide the graph facilities for presentation

**Clip & Text –** These slide provide clip & text facilities for presentation.

**Title Only –** These slide provide one title for presentation.

**Blank** – These slide provide blank for presentation.

## 4. SLIDE VIEW BUTTON

**Normal view button –** By click these button we can see the normal view of slide.

**Outline view button –** By click these button we can see the outline view of slide.

**Slide view button –** By click these button we can see the single view of slide.

**Slide sorter view button -** By click these button we can see all slide view in small size.

**Slide show button -** By click these button we can show the view of slide.

## 5. CREATIG PRESENTATION USING AUTO CONTENT WIZARD

**The following steps are:**

1. Select New from file menu.

2. Select Auto Content option.

3. The Auto Content Wizard shown following screen:


**Fig .2**

4. Click on next button then the next screen will be appear

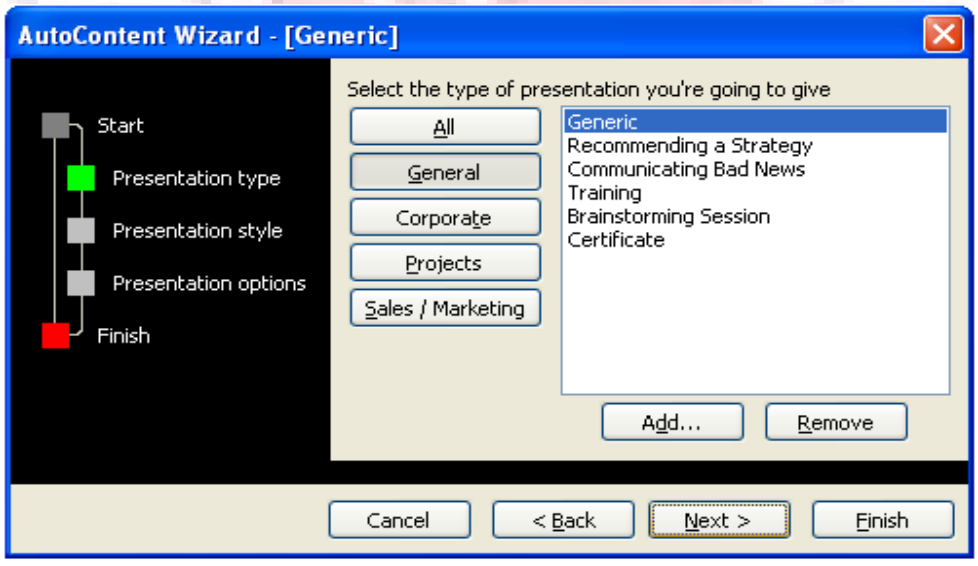



**Fig .3**

5. Click on generic option and click next option:

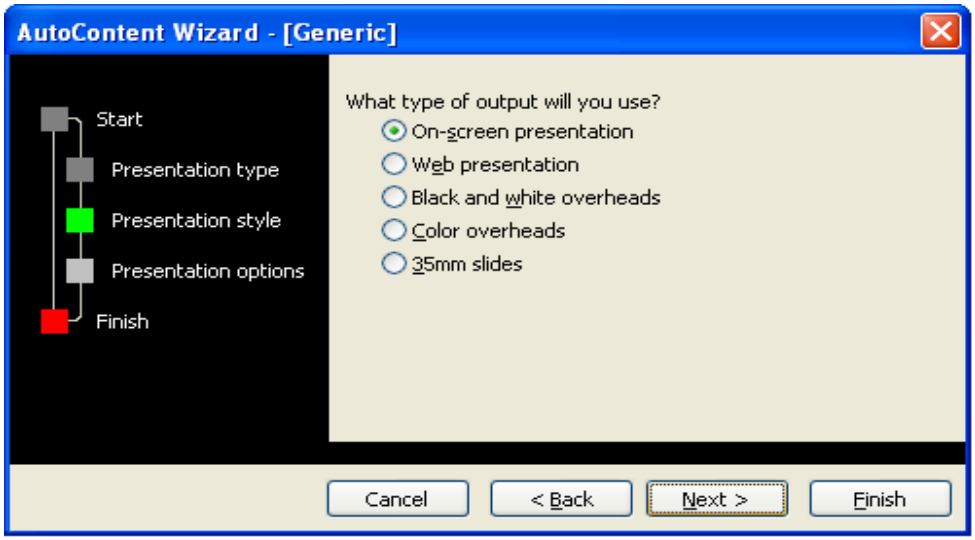



**Fig .4**

Here, different following options are;

**On-Screen Presentation:** It is used to show presentation on monitor.

**Web Presentation:** It internet presentation used these option.

**Black and White Overheads:** It creates a presentation Black & White.

**Color Overheads:** It create presentation in the form of paper of tr5ansparency.

**35 mm Slides:** It is used for a slide projector to give a presentation.

**Then choose On-Screen Presentation:** Option and click on next the following screen will b appear.

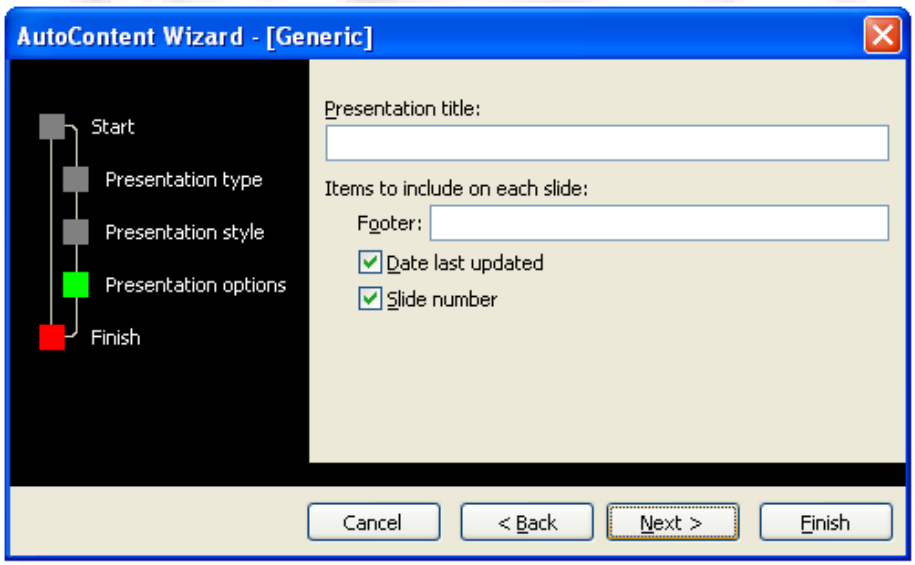


**Fig .5**

Here, In presentation title, we give3 the title. And footer we give the note footer of the slide.

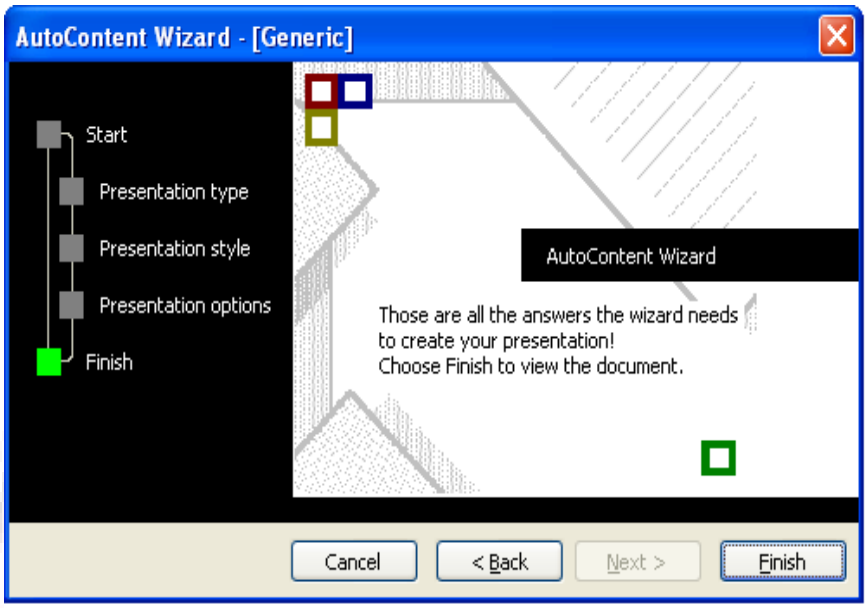



**Fig .6**

Then click on finish option. Here the presentation is created following type in slide sorter view.

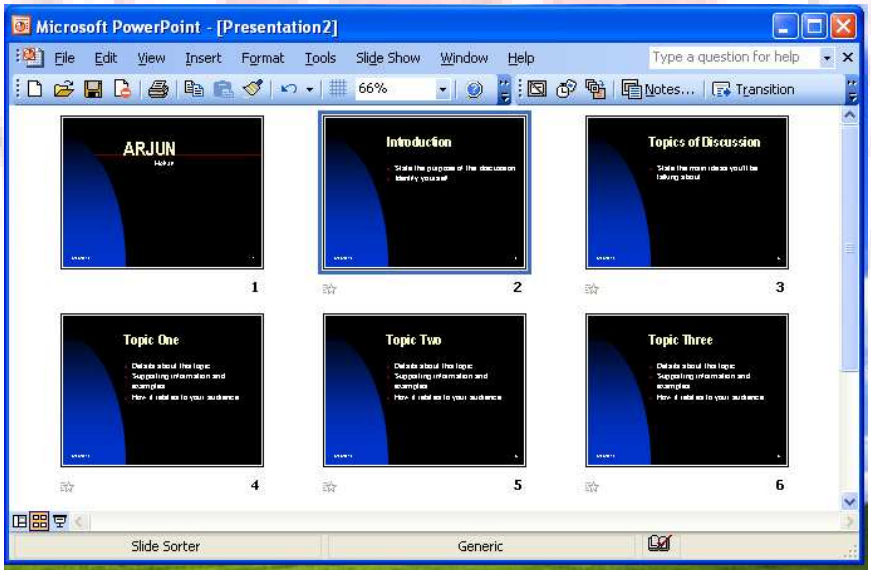
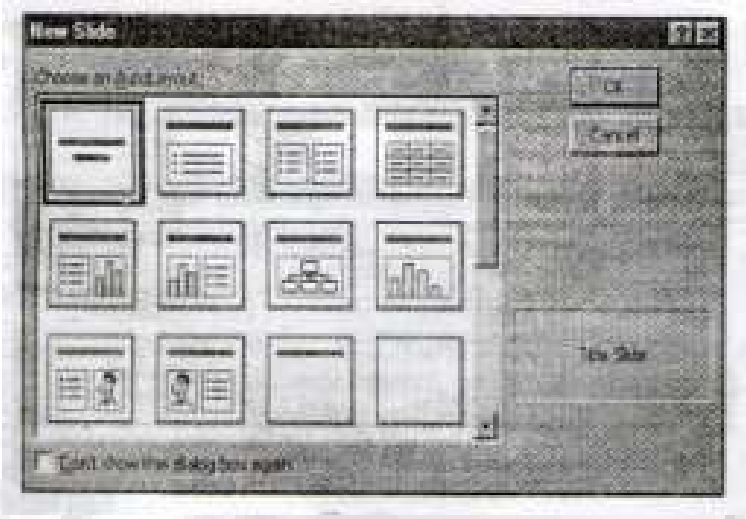



**Fig .7**

## 6. CREATING BLANK PRESENTATION

**The following steps are:**

1. Select New from the file menu
2. Select a blank presentation option
3. The following screen will be appear.



Here, select the any one slide layout then start to create presentation according to slide format.

## 7. CREATING PRESENTATION FROM TEMPLATE

### The following steps are:

1. Select New from the file menu
2. Select Design Templates options on the new presentation dialog box.

The following dialog box will be appear.

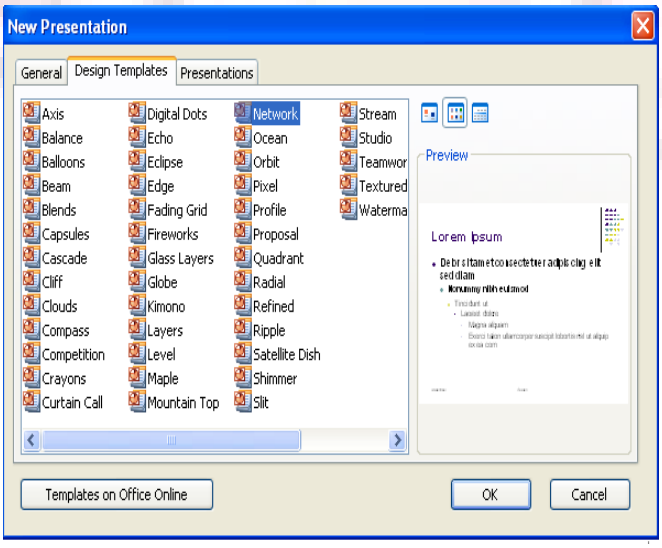
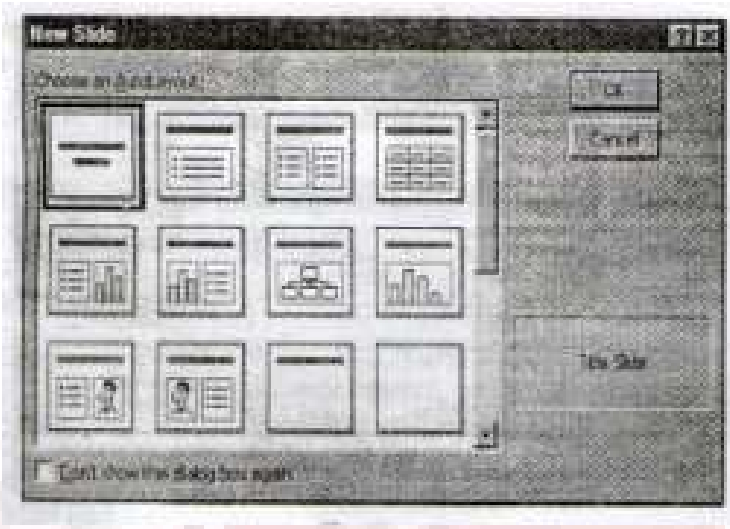



**Fig .8**

Here, we select background of slide which we want to take.

3. After click ok button then slide layout will be appear.



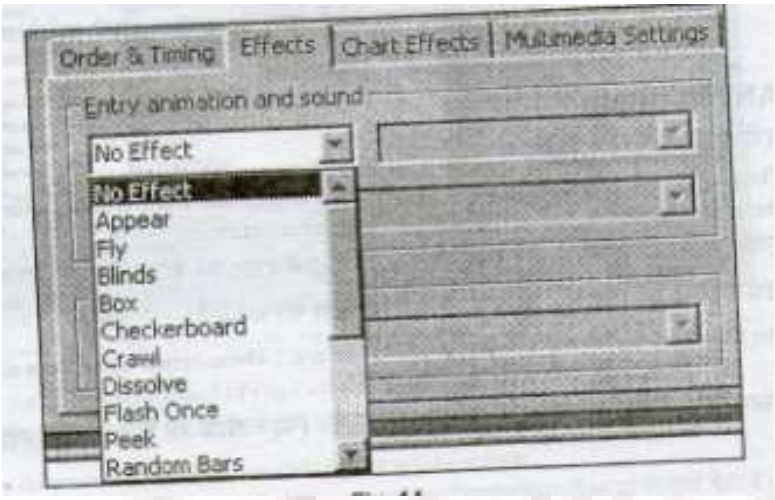

4. Here, select the slide layout and then click ok button and start presentation creation.

# 8. ANIMATION

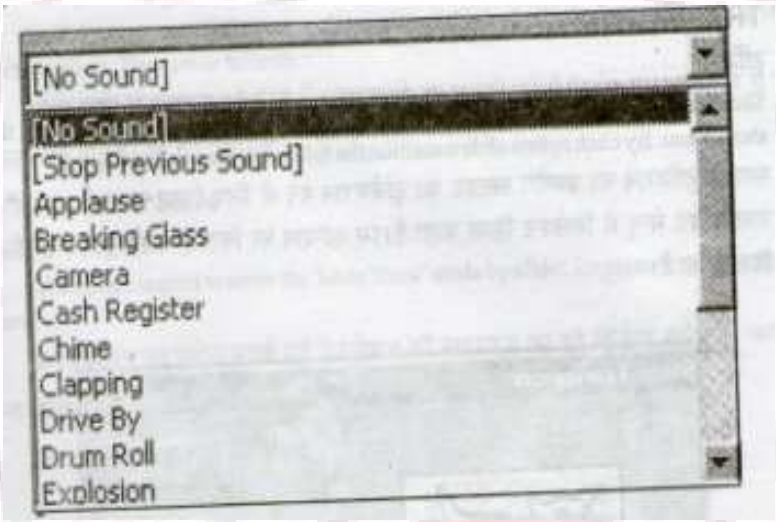
The Process which converts a static presentation into dynamic one is called animation. By which the presentation can move, rearrange with sound effect etc.

The following dialog boxes of custom animation are: (These option come form slide show menu).

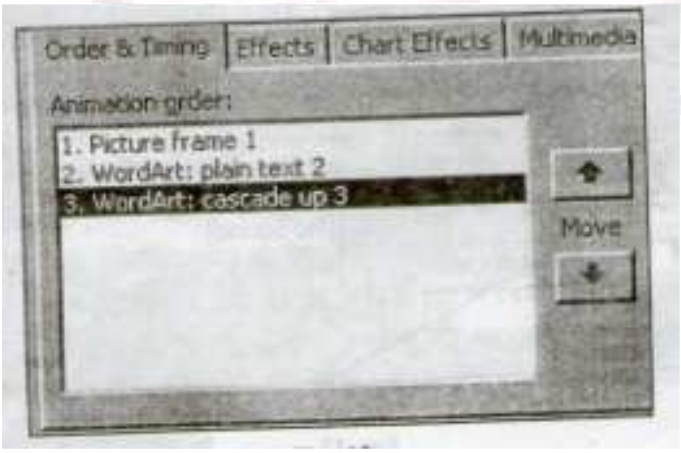

Here the following moving effect we can select.




The following sound effects are given:




In order & timing we can change by using move arrow key.



After select all effect use click on ok button.

# 9. TRANSITION

Slide transition is used to gibe the transaction of slide. These option select from the slide show menu. By click option slide transition the following menu will be appear.

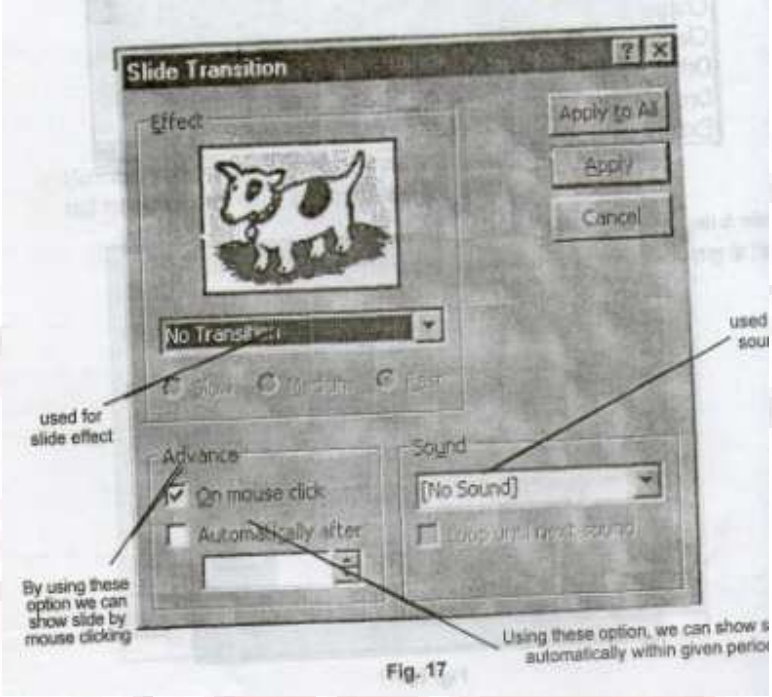



Fig. 17

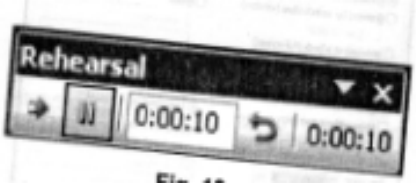
# 10. SLIDE SHOW MENU

In slide show menu of power point, to run slide show, the potions related to give special effect are given. They are as follows.

## 1. View Show

The option is used to show the ‘Slide Show’ made by slides for presentation on the monitor screen.

## 2. Rehearsal Timing



This option id used to represent time of different objects on slide and determines the time interval of the change of slide. On using this option slide show view is seen on the monitor screen. In the view ‘Rehearsal’ dialog box is represented as shown in figure. In this dialog box, on clicking, push button on the left side, the objects of side4 are displayed on by one. The time taken to click decides the time interval for it.

### 3. Record Narration

This option is used during side show to record the narration related to slide. In order to record this narration it is essential to have a sound card and microphone in the computer. After downward, a ‘Sound Icon’ is displayed.

### 4. Set Up Show

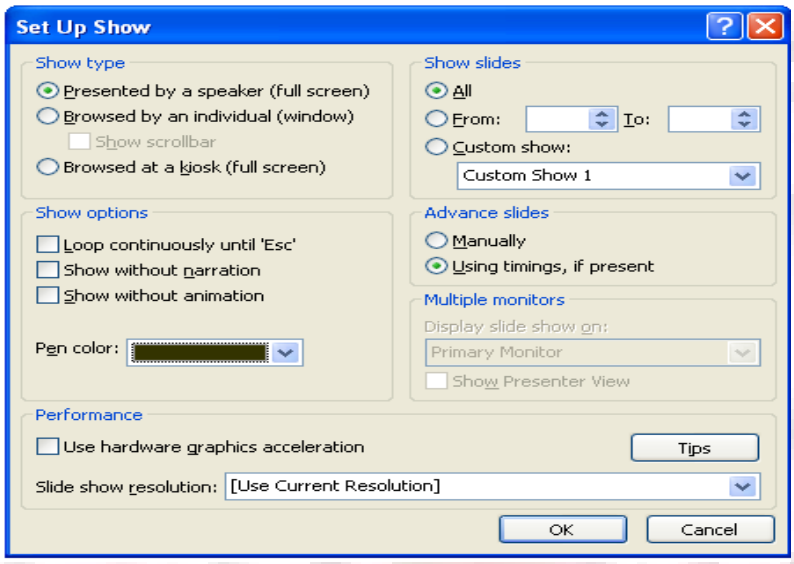



**Fig .9**

The option is used to determine then word related to slide show. On choosing this option the following ‘Set up Show’ dialog box is displayed on monitor screen as shown in the figure. This dialog box is has four parts. The first part used the options given in shown type to present the show on monitor screen and determines the type of display. The number of slides to be displayed in the part of slide during show is determined. In the ‘Advance Slides’ part when the other slide will come and in which manner after a slide, is determined. The box given in thee right, under the ‘Pen Color’ and the given, down arrow is clicked on the presentation done by speaker during side shown some pen color are decided to write on slide.