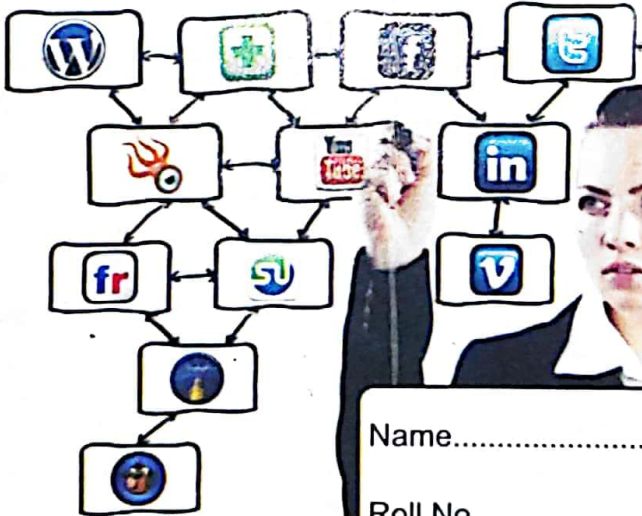
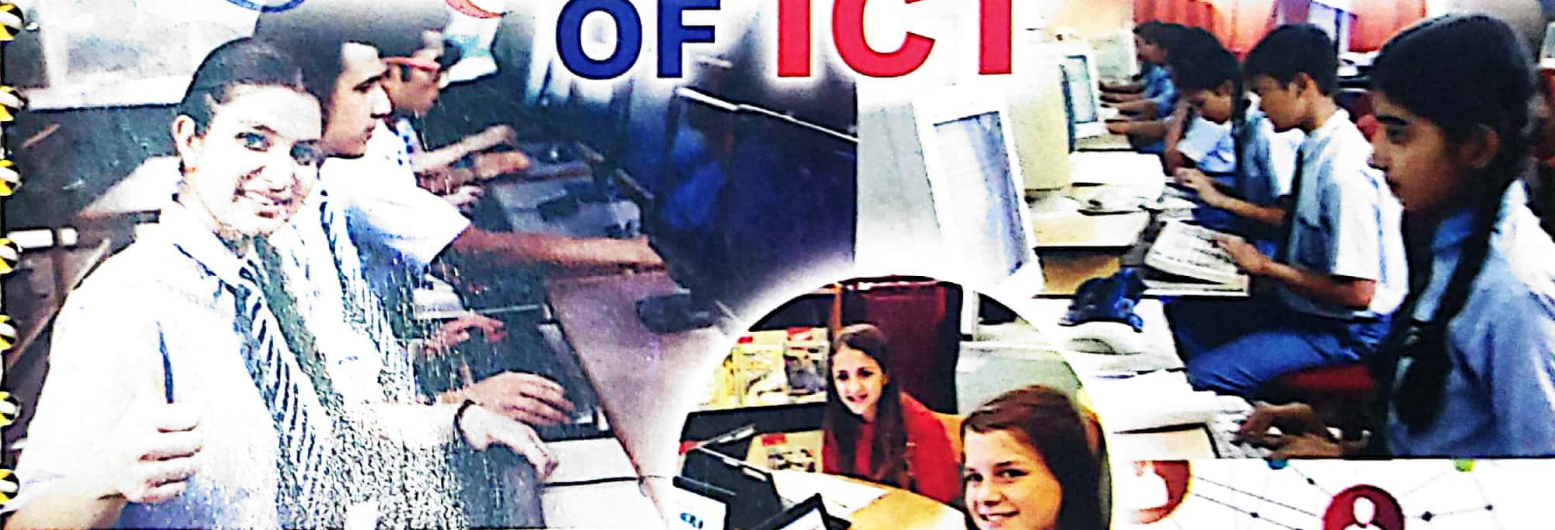
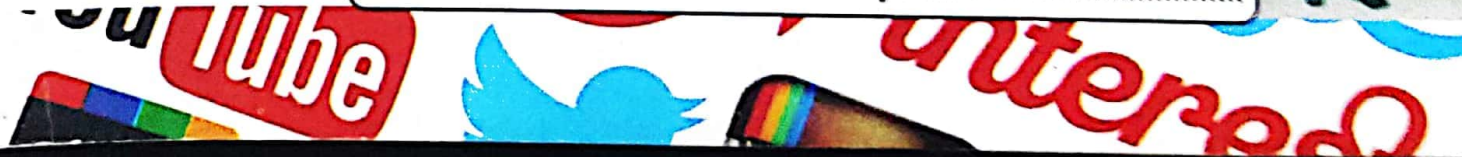


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CRITICAL UNDERSTANDING OF ICT



Name.....Class.....
Roll No. University Roll No.



Sr. No.	Topic	Page No.	Date	Teacher's Sign Remarks
1)	Introduction of ICT	1-2		
2)	uses & Advantages of ICT	3-3		
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5)	computer hardware and software.	7-11		
6)	Memory	12-13		
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Introduction Of Ict Information Technology

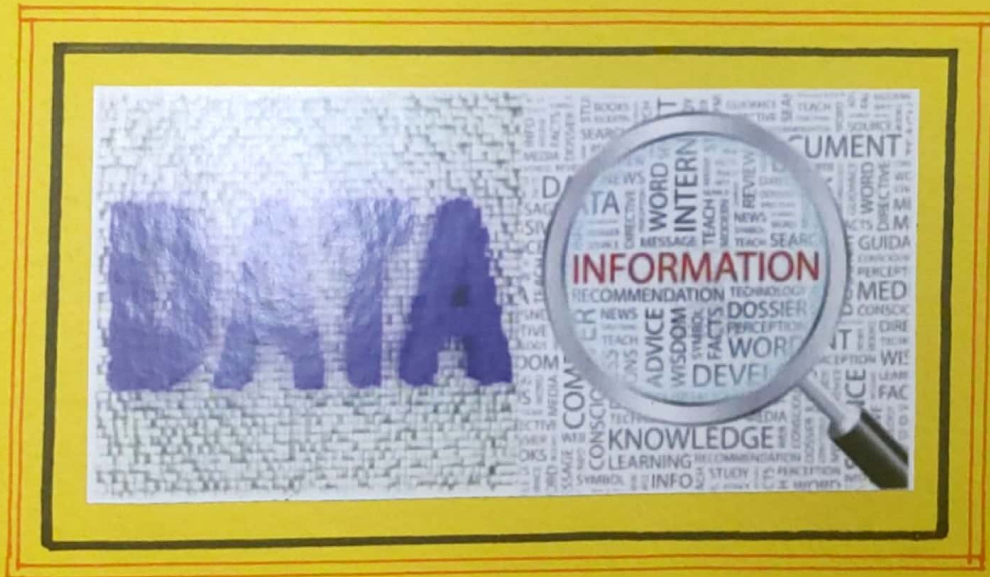
Today we are living in such a knowledge based society & knowledge based global world, where knowledge is a great power, economy and strength of an individual and the asset of a nation. we are in need of new technology & growing knowledge. It can only happen with the assistance of science of information and communication technology.

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Meaning :-

Information and communication technology is that type of technology employed in the shape of tools, equipments and application support which helps in the collection, storage, retrieval, use of transmission of information as accurately and effectively as possible for the purpose of enriching the knowledge and develop communication, decision making as well as problem solving ability of the user.

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Information - Decision making

Data & Information :-

Data :- Data are raw facts computerized of number letters of the alphabets, words or special symbols.

Information :- It is obtained from manipulating the facts. Actually it is the sum user section of data which is used in decision making

DATA → PROCESSING → INFORMATION

Levels of Information :-

- 1) DECISION SUPPORT SYSTEM :- It is used at top level
- 2) MANAGEMENT INFORMATION SYSTEM :- It is used a mid-level
- 3) TRANSACTION PROCESSING SYSTEM :- It is used at floor-levels.
- 4) OFFICE AUTOMATION SYSTEM :- It is used as critical & clerical level

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Advantages In Education

Information technology may prove useful to all the person connected with the field of education.

1) USEFUL FOR THE STUDENTS :- Students may get the required opportunities and training for receiving and using information for their self improvements. It may helps them to satisfy their wages of curiosity construction etc.

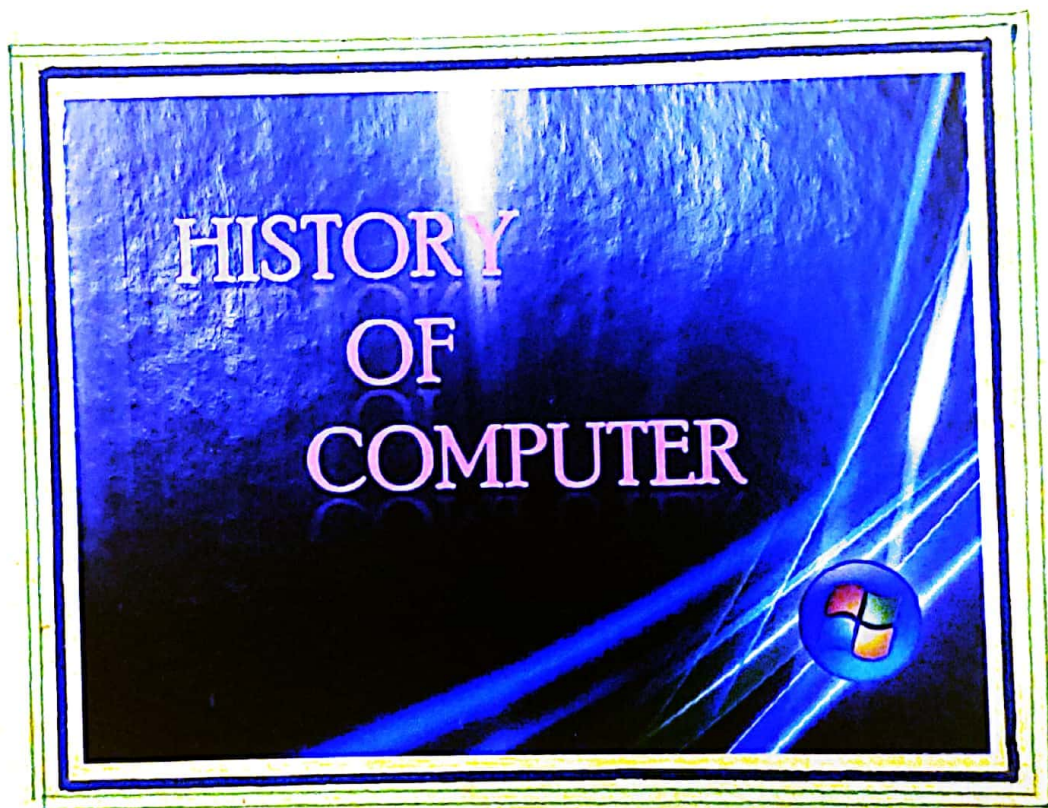
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2) USEFUL FOR THE TEACHERS :- Teachers get sufficient help from technology in their task of teaching their acquaintance with the relevant source of information in the form of books, audio - videos material and equipments and communication media make them able

3) USE FOR COUNSELLERS :- With the help of electronic devices they may record the educational level interest aptitudes, punctuality & characteristics of various students.

4) USEFUL FOR THE ADMINISTRATORS & PLANNERS :- It may help in the task of exercising their professional responsibilities in an appropriate functioning of the Institutes and help them in administration in a proper way.

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Origin and History of Computers

The word "computer" comes from the word "putare" which means "to calculate". Charles Babbage is known as the father of computers. There are five generations of computer :-

- 1) FIRST GENERATION COMPUTERS :- First generation computers are built on architecture of vacuum tubes. All computers built from 1941-1956 EDVAC & UNIVAC were built as first generation computers.
- 2) SECOND GENERATION COMPUTERS :- This generation of computers built on architecture of "transistors". It stores memory concept & magnetic core memory making them smaller, faster & more reliable. But they generate lot of heat.
- 3) THIRD GENERATION COMPUTERS :- In 1958, IC was invented. All electronic components were on a single semi-conductor chip made of silicon, drastically reducing the size of computers.
- 4) FOURTH GENERATION COMPUTERS :- Tens of ICs

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were fit in a single minicore chip using VLSI & ULSI technology. The period of fourth generation was from 1971-1980. VLSI circuits having about 5000 transistors and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generations.

5) FIFTH GENERATION COMPUTERS :- It includes present day computers and based on artificial intelligence. The fifth generation computer system was an initiative by Japan's ministry of international trade and industry begun in 1982, to create computers using massively parallel computing and logic programming. It was to be the result of massive government research project in Japan during the 1980's.

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Computer Fundamentals

Definition of Computer :-

According to Oxford Dictionary :-

" Computer is an automatic electronic apparatus for making calculator or controlling that are expressible numerical or logical term.

Computer is a data processing device which is derived from human intelligence. During the processing it has to perform the following instructions

- Accept data or instructions from user (Input)
- Convert data into information (Processing)
- Display the result (Output)

The whole unit, computer is represented in fig 2.1 from the figure it is clear that computer process only data which is supplied to it. In computer technology wrong data is termed as "GARBAGE"

Parts of Computers :-

In computer terminology, physical computer is termed as Hardware and the instructions are termed

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software. If one of them is missing then processing can't be performed.

computer consists of two basic parts :-

Hardware

All electrical, electronics and machines are called "Hardware". Hardware is a physical device that can be touched, try and seen.

For example - Keyboard, monitor, mouse etc

Computer hardware can be broadly classified into two types i.e

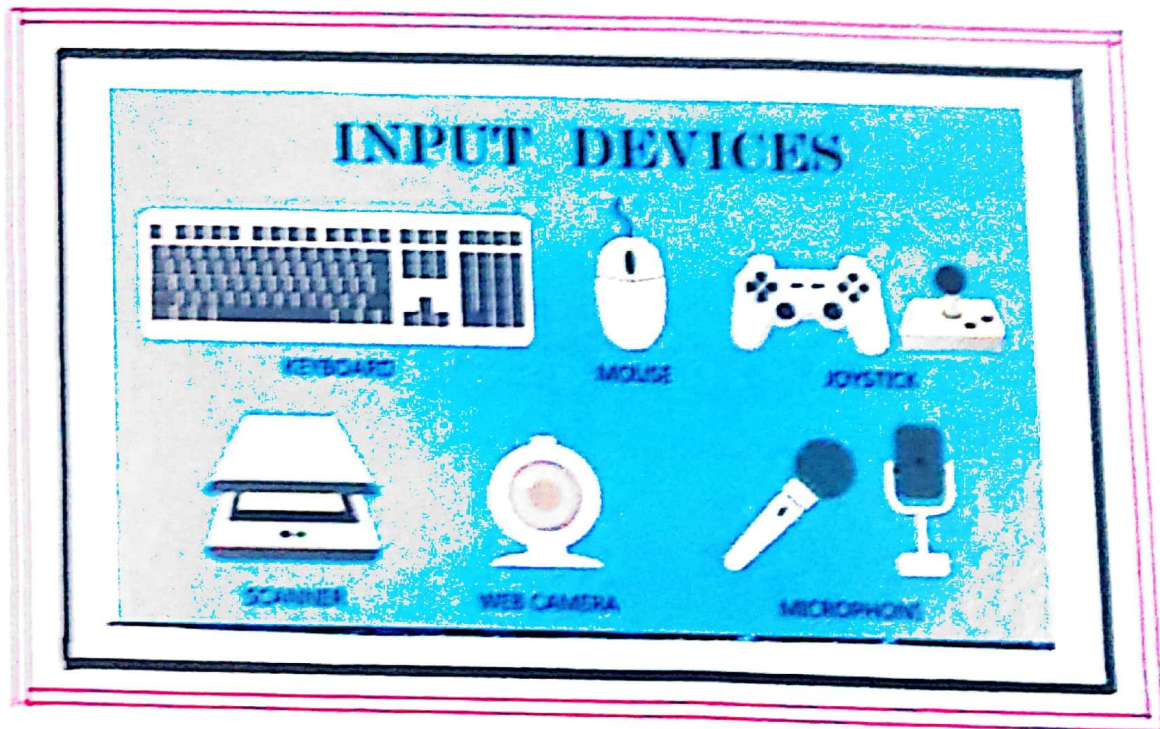
- computer peripherals (Input/output devices)
- C.P.U (central processing unit)

Input Devices

Data and Instructions are entered into a computer through input devices. An input device converts into data and instruction into electrical signals that can be accepted by the computer. Some of these are:-

1) KEY BOARD :- A keyboard is used to enter data directly into the computer. It resembles a type-writer. When a key on the board is pressed that

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Computer is displayed at the point where the cursor is flashing

2) MOUSE :- A mouse is a pointing device which rolls on a small bearing and has one or more buttons at the top user can move the mouse stop it at one point where the pointer is to be located and the help of buttons make selection of choices

3) LIGHT PEN :- The light Pen is consists of a photo pen shape type and having a capability of sensing a position on the screen when its tip touches the screen of the computer.

4) TRACK BALL :- A Track Ball is similar to a mouse but in this case the roller ball is mounted in a fixed position and the user spins the ball in various directions to move cursor on the screen. This is normally used in laptops.

5) JOY STICK :- A joy stick is also a pointing device It has a spherical ball at its lower end as well as on its upper end. The lower ball moves in a socket

6) SCANNER :- A scanner is an output device that

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changes data written on the paper (hand copy) into a file form (Soft copy) that can be run on a computer.

7) MAGNETIC INK CHARACTER READER :- Machine readable characters are printed on documents such as cheques using a special ink that contains magnetic particles of iron-oxide. MICR reads these characters.

8) OPTICAL MARK READER (OMR) :- This device is capable of detecting alphabetic and numeric characters on a computer printout containing computer pages of typed or hand writing text.

9) BARCODE READER :- This device can read special bar codes. Barcode is found stamped on most of the grocery items.

Output Devices

The output devices are responsible for displaying the final result in the form of human readable language. The output normally can be produced in two ways either on display unit or on a paper. There are two output devices :-

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1) VISUAL DISPLAY UNIT (VDU) :- The vdu is similar to a TV screen and can display both text and graphic images. This display can be either in black and white colour.

2) PRINTER :- Printers are the most popular output devices. These devices print the data written in the computer files into the paper. Printers can be classified into categories :-

- Input Printers
- Non-Input Printers

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Software

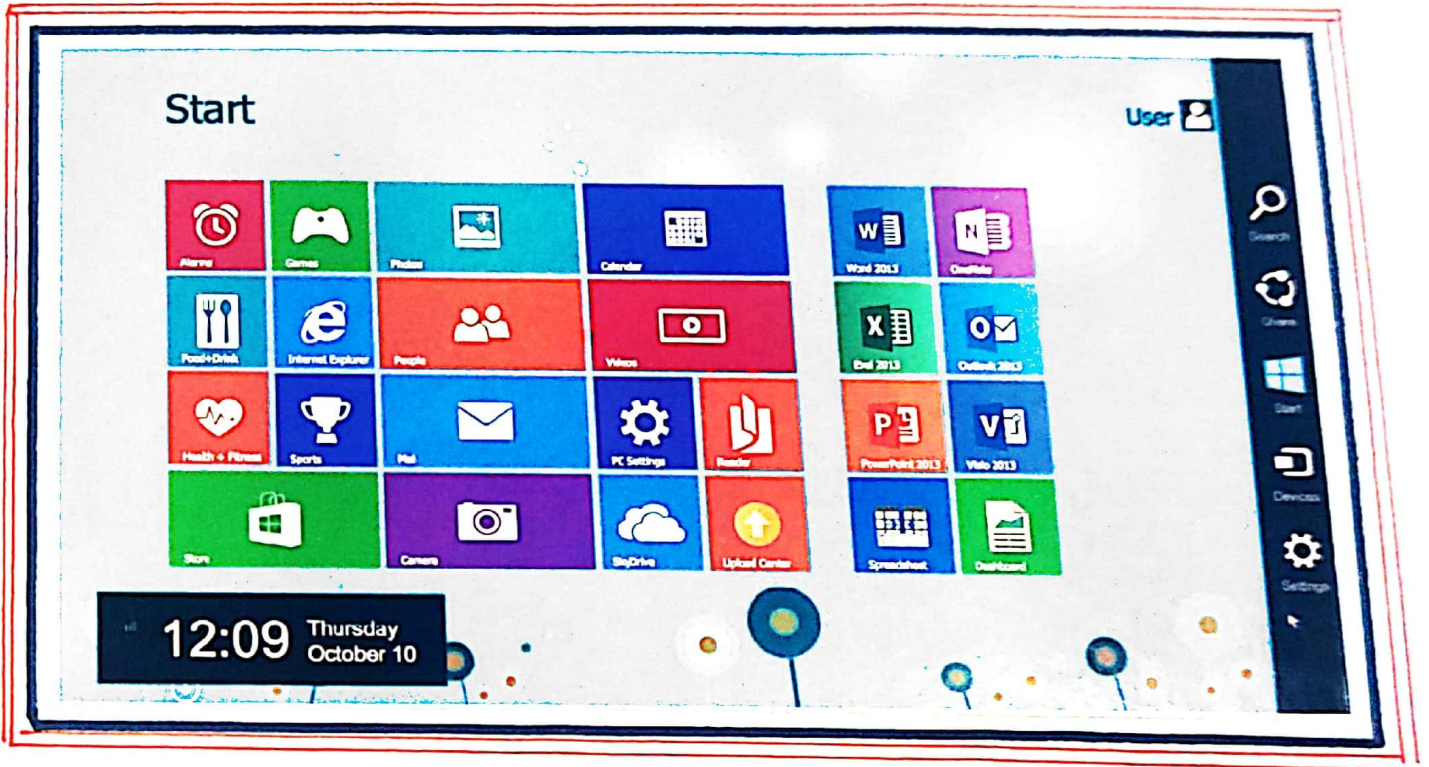
Like hardware, software is also an important part of a computer. Without software, a computer stores different types of problems, creates a friendly environment for software development.

Software is a set of logical and authentic instructions given to the computer to process data and is also known as a set of computer programmes. Computer software can be broadly classified into two categories :-

- System software
- Application software

1) SYSTEM SOFTWARE :- Operating system is a system software which communicates with the hardware of

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computer. It accepts command in simple English language and converts into signals or machine language which computer hardware can understand. It then again changes them into human readable language. The functioning of operating system is shown in the figure.

GUI :- GUI stands for graphical user interface. It is a type of operating system. Instead of typing commands we select commands from menus and pictures to tell the computer the required task. The most popular Eg. of GUI is windows etc.

2) APPLICATION SOFTWARE :- These software are classified for specific application such as payroll processing inventory etc. Application software is written to enable the computer to solve a specific data processing task. The most important categories of application software packages available are :-

- Data base Management software

eg - for Prod-base

- Spread sheet software

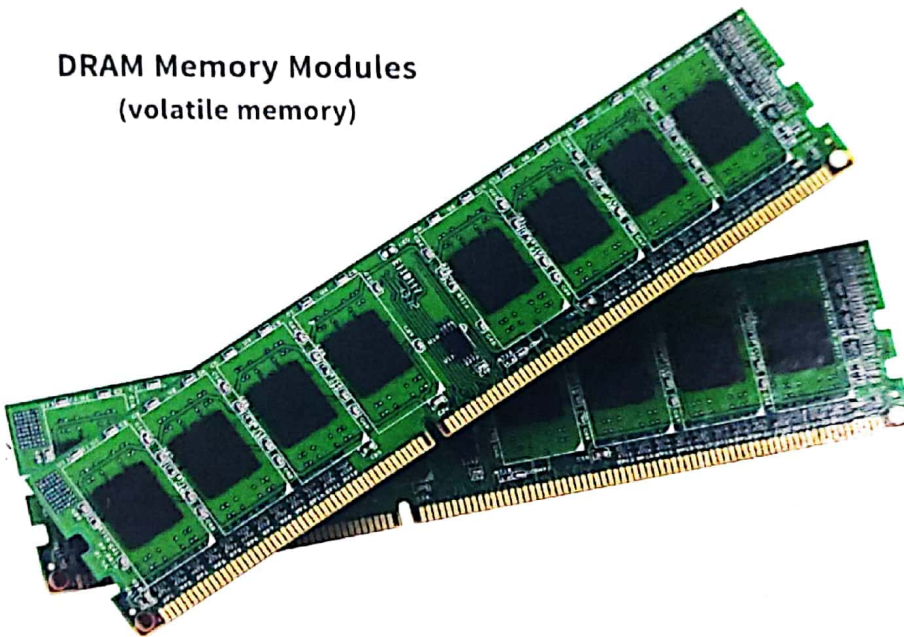
eg - M.S Excel

- word-Processing software eg. word Pad, MS-word

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DRAM Memory Modules
(volatile memory)



Memory

Memory is that component of the computer which works for the storage and retrieval of data. Computer has two types of memory i.e. Internal & External.

INTERNAL MEMORY :-

Internal memory of a personal computer is present on the motherboard of the computer in the form of chips. It is also referred to as internal storage, primary storage. Primary storage or internal memory is of two types

- i) RAM (Random access memory)
- ii) ROM (Read only memory)

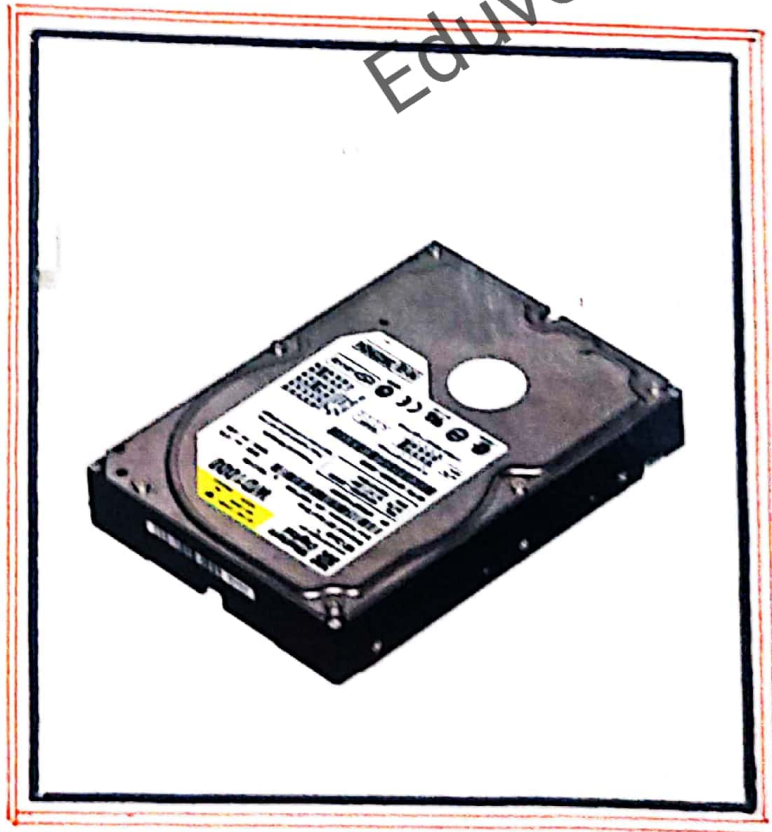
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RAM (RANDOM ACCESS MEMORY)

RAM is used to read and write memory. This means that information to be written into and read from RAM. It retains the stored information as long as the power is not switched off. When power supply is switched off or tripped the information in the RAM is lost.

ROM (READ ONLY MEMORY)

ROM is permanent memory i.e. its contents are not lost when power supply is switched off. It is read



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only memory and we cannot write in it.

The various types of Rom are:-

- i) Programmable Read only memory (PROM)
- ii) Erasable programmable read only memory
- iii) Electricity Erasable programmable read only memory

2) SECONDARY MEMORY :-

Since a computer's primary memory is largely temporary in nature. Secondary memory is used for bulk storage of programme & data.

i) HARD DISK :- A Hard disk is made up of collection of disks known as platters. These platters are coated with a material which allows to be recorded magnetically. These disks rotate at a very high speed. The read/write head of the device moves across the disk surface to read data or to write on it. It can store large amount of data, hard disk of capacity of 20gb is available. Its capacity can be measured in

- Kilo Bytes (KB)
- Mega Bytes (MB)
- Giga Bytes (GB)

ii) Floppy Disks :- Floppy disks are removable as

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well as portable. This plastic disk is coated with magnetite. These are placed in a square size plastic jacket. The head of the floppy drive makes contact with exposed surface of disk. It is transferable storage media that are available in the following size

i) $5/4$ " diameter ii) $3/2$ " diameter

storage capacity \rightarrow 12 MB storage capacity \rightarrow 1.44 MB

iii) CD-Rom (COMPACT DISK-READ ONLY MEMORY)

CD-Rom can store large amount of data. It can also be carried easily as they are small in size. This is read only type memory and one can't write on it.

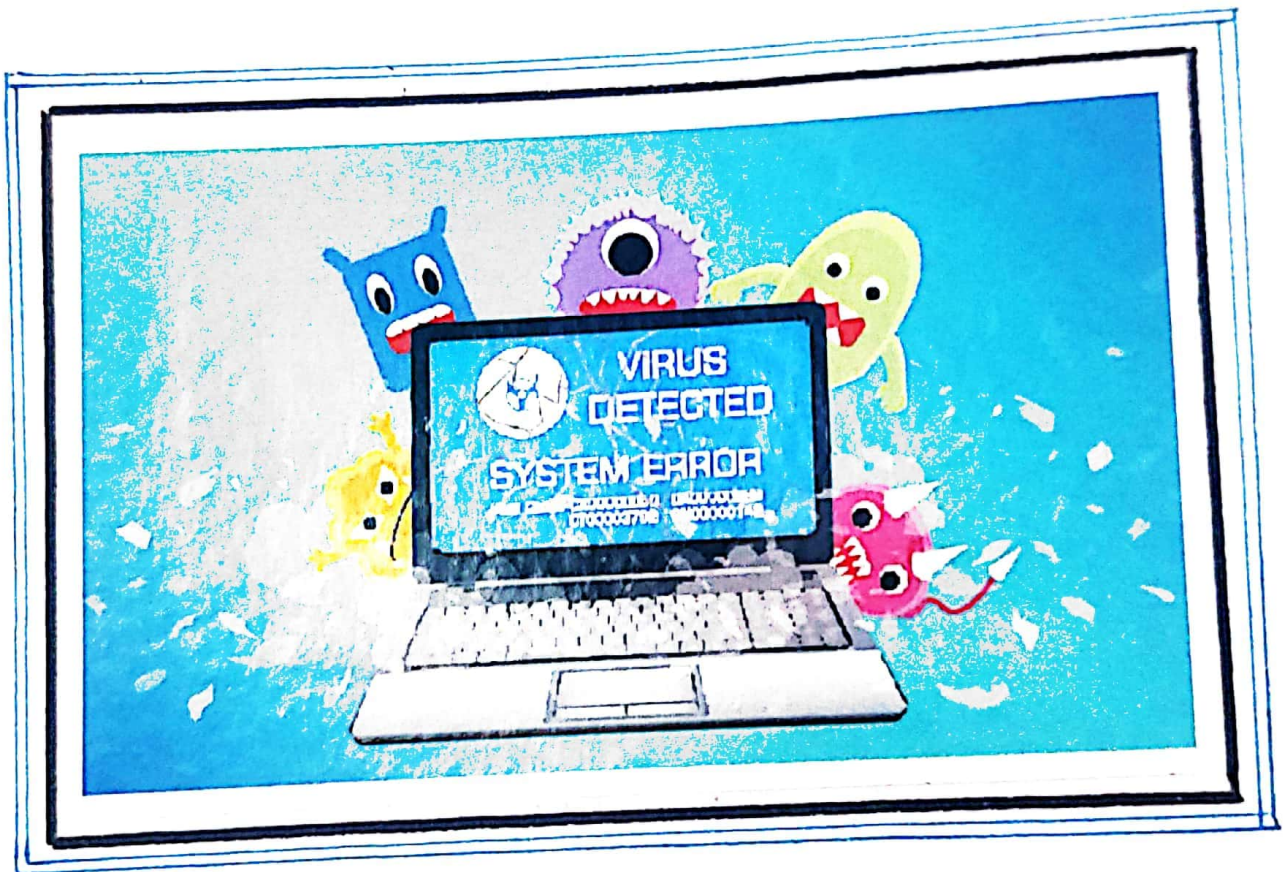
To read a CD-Rom a device called CD-Rom device is needed.

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Computer Virus

DEFINITION :- A computer virus actually is not an organism but a software program that has been written to copy itself into other computer files. It gets executed automatically. Whenever infected files is used and destroys data and other programmes residing in the computer storage media (Floppies, hard disk etc)

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Effects of Viruses

- corruption of data files
- Increase in the size of files
- Improper display on the V.O.U
- Deletion of field files on the disks
- Reduction in the speed of the system

Anti-Virus Programs

There are number of anti-virus softwares available to detect and remove a virus from the computer. Anti-virus software checks the RAM and the files for any virus activity and report it. Some of the anti-virus programs are :-

- Norton Anti-virus
- Mc Atv Anti virus Plus etc

VIRUS PREVENTION :-

virus spread when infected floppy disk are transported from one computer to another, some of the precaution to prevent virus are as follows :-

- Make sure that the system is always located from the hard disk
- Buy software from authorised selling agents

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- we write protect task on floppy disk that donot need data to be written into them
- New Run & unknown programs, make sure that they have no virus
- Do not copy game programs from user who work on different systems
- Since games are the most frequently disturbed type of software, they are frequently infected by virus

Computer Networking

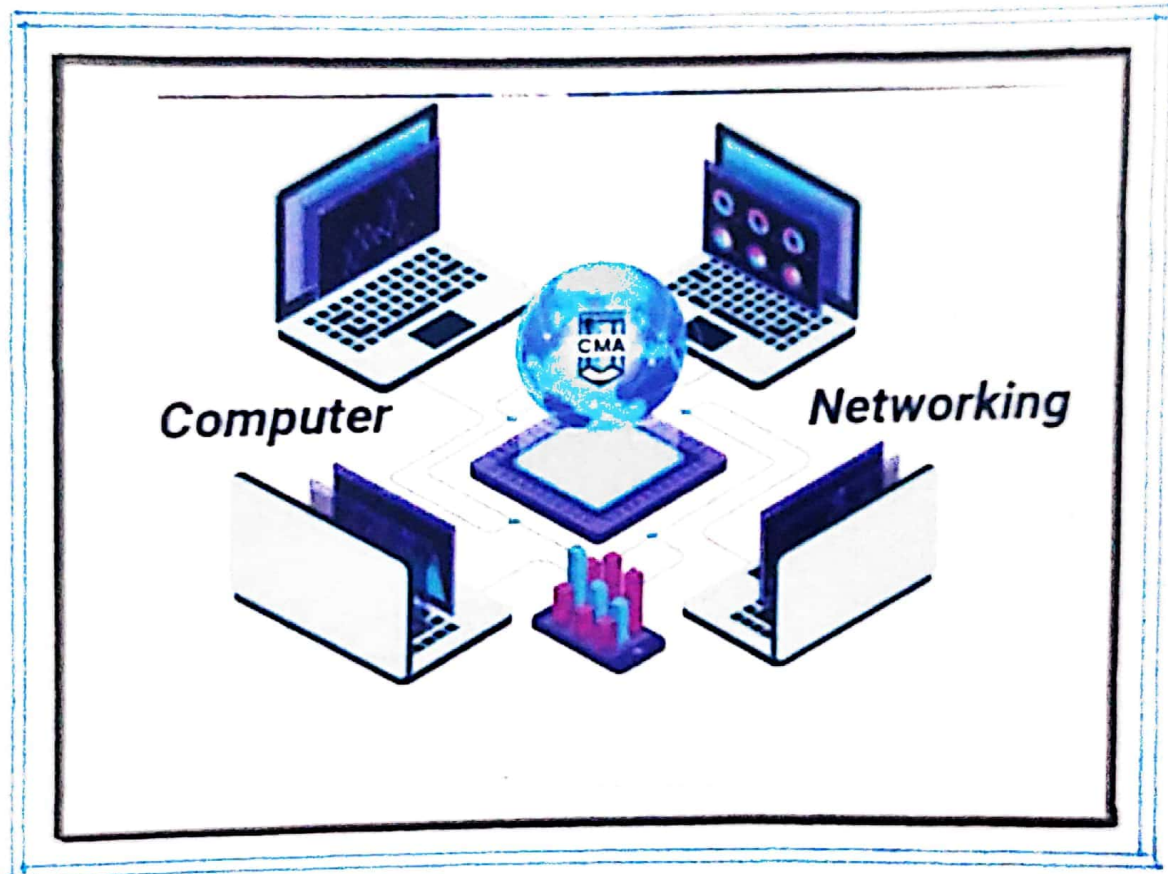
What is a computer networking ?

A computer networking is an arrangement for linking two or more computers so that they can communicate with each other over a transmission medium referred as "Data communication channel"

It employed for the inter-connection between two locations through cables, telephones, lines, micro waves and satellite links. For location in the same school, office or building.

NETWORK MODELS :- Different computers can be inter-

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linked to each other in the network technology through a number of possible configurations. The most fundamental models of such network may be named as :-

1) STAR NETWORK :-

Different computers can be placed together but star computer is a centralized computer which is interconnected with other computers. This network model suits the purpose of those instructions who have to share the pooled database or costly device like laser printer.

2) BUS NETWORK :-

This system facilitates direct inter-communication among the different computers or devices included in the network. This system is a model of networking which is frequently used in Local Area Network (LAN).

3) RING NETWORK :-

All the different computers are connected to each other in a ring shape. Here all computers can communicate with each other without the help of a centralized host computer as happens in the case of star shaped networking.

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4) COMPLETELY CONNECTED NETWORK :-

The communication between two computers in such a model which is highly reliable, fast and independent.

The breakdown of any line does not affect the communication between two computers.

Any institution, organisation or network system may choose a typical exclusive model or combination of models depending upon its requirements. Connecting the different computers in a local area with its reach covered, scattered and distant area.

Need & Importance of Computer network

1) SHARING OF INFORMATION :-

Network helps in the sharing of information or data between and among the computers (different) connected through a network model.

2) SHARING OF RESOURCES :-

Network also helps in pooling as well as utilizing the common valuable resources. If there is an expensive costly device like laser printer, CD-ROM recorder, scanner etc, which cannot purchase, they can share such resources through the computer network.

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c) ACCESS TO CENTRALISED DATA BASES :-

Many business organisation who do online business have all information on their computer. One can easily get the required information from their database.

d) PROVIDING DISTANCE COMMUNICATION LINK :-

Network has made possible the maintenance of the desired communication link through on-line & e-mail service.

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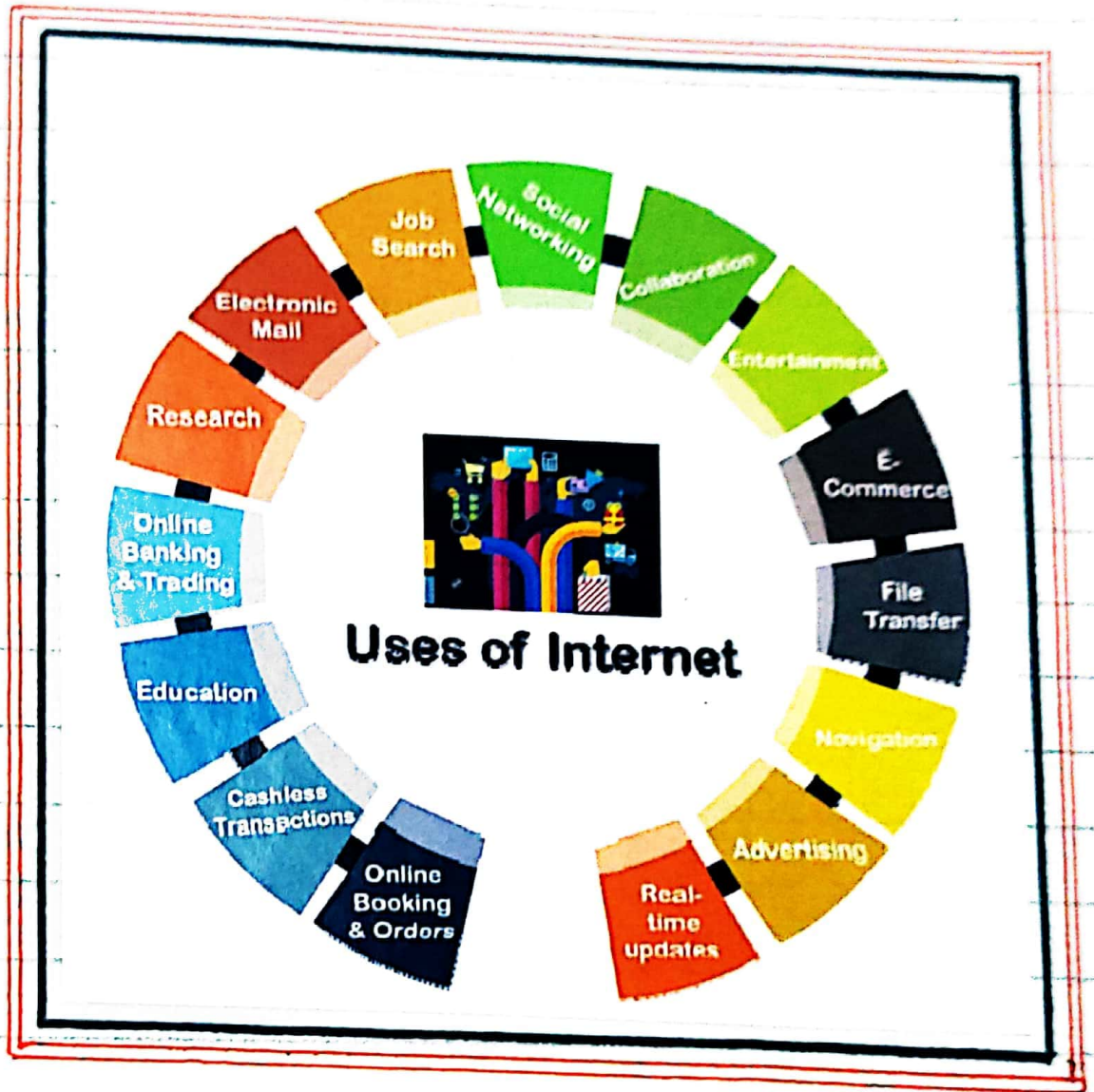
Internet

CONCEPT OF INTERNET AND ITS TOOLS :-

It is world wide computer network comprising of thousands of computers network all over the globe that contains a large collection of information which could be made available to us on our computer.

It may also be defined as a network of networks that interconnected physically and capable of communicating and sharing data with each other. It is able to act together as a single network.

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Uses Of Internet

- 1) ELECTRONIC MAIL :- At least 85% of the inhabitants of cyberspace and receive e-mail. Some 20 million e-mail messages cross the internet every week.
- 2) RESEARCH
- 3) Downloading files
- 4) Discussion groups :- These include public groups such as those on usenet and the private mailing lists that Listserv manages.
- 5) Interactive games
- 6) Education and self-improvement - on-line courses & workshops have found yet another outlet.
- 7) Friendship and dating
- 8) Electronic newspaper & magazines
- 9) Job-hunting
- 10) Shopping

Essential for Internet Access

- MODEM
- COMPUTER / LAPTOP
- WIRELESS ROUTER
- ETHERNET CABLES
- ACCESS POINTS

Modem

A modem is a computer peripheral that allows you to connect to and communicate with other computers i.e. telephone lines.

Different types of modem are :-

1) INTERNAL MODEM :-

An internal modem is fixed into an expansion inside the computer.

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2) EXTERNAL MODEM :-

It is placed outside the computer.

Hypertext

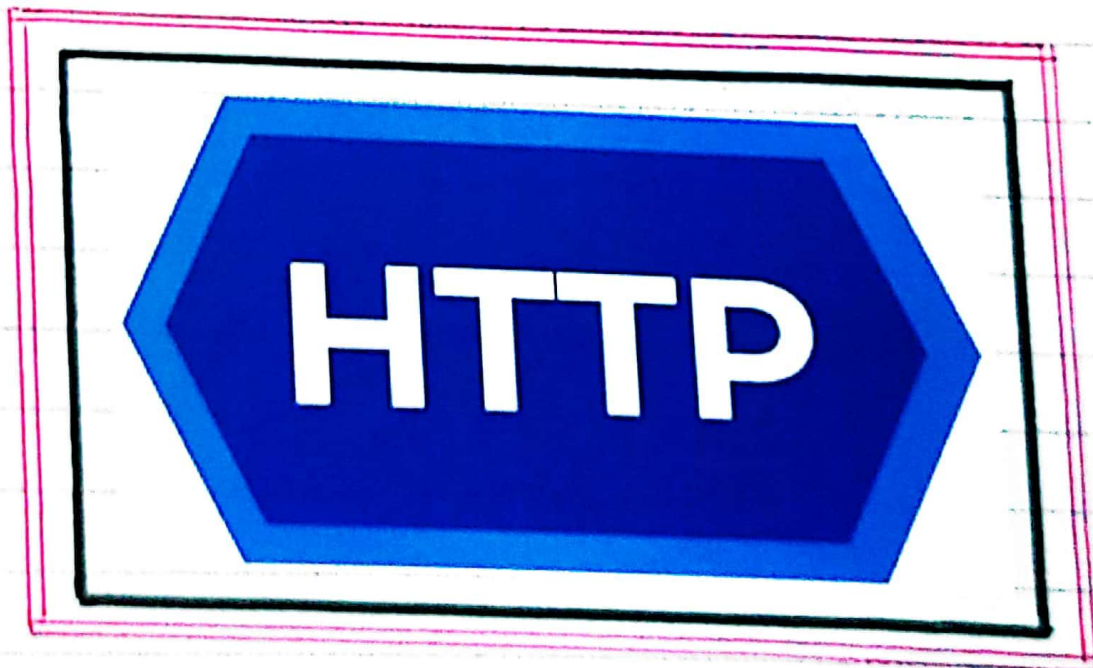
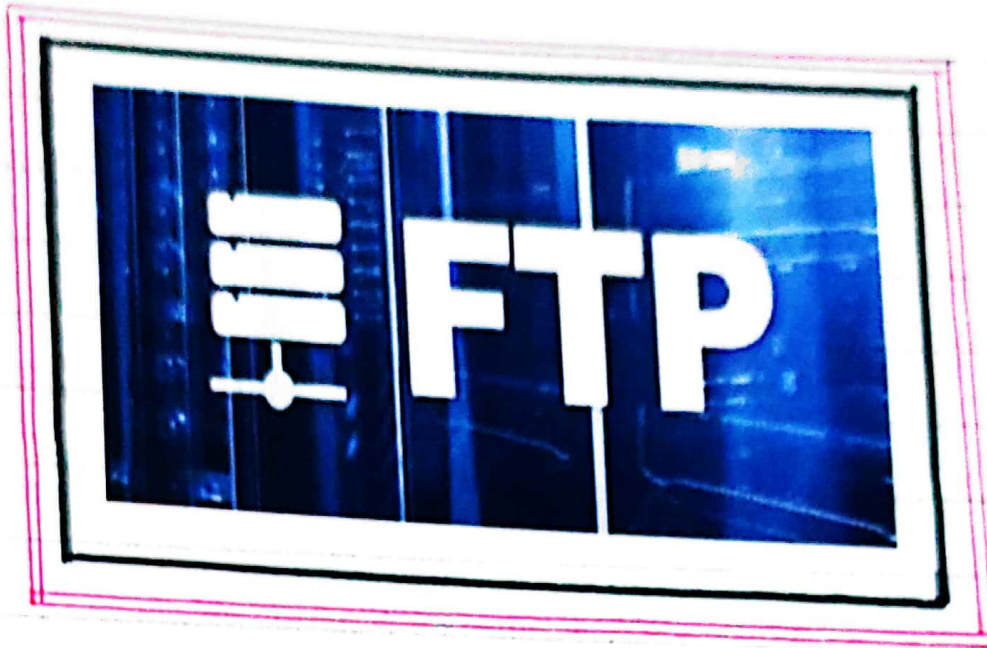
It is type of text that allows embedded links to other documents. clicking on a hypertext link displays another document or a section of a document

For example :-

"As compared to odd times, the dialogues are changed"

The word "dialogues" is a hyperlink and by clicking on a hyperlink, it opens a new document. The mouse cursor changes from arrow to hand.

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HyperText Transfer Protocol (HTTP)

It is a set of rules that govern the transfer of hyper-text between two or more computers. It works on the client principle.

File Transfer Protocol (FTP)

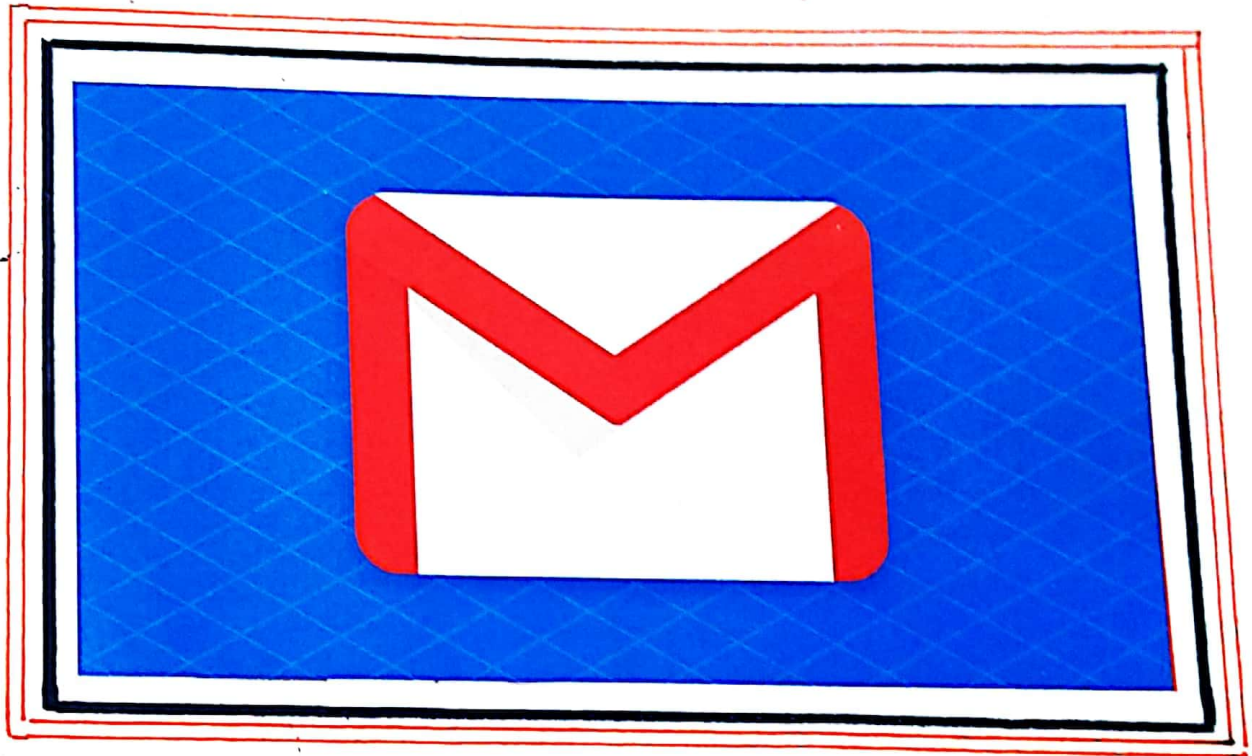
It is a set of rules which helps in transfer files b/w computer communication through network. There are two forms uploading or downloading which is used for sending and receiving the file between the computers.

In other words, FTP (file transfer protocol) stands for that protocol which is observed by file through programs used in those computers which share information or data away among themselves. FTP observes client/server principles.

World Wide Web (WWW)

It is an interlinked collection of types that documents (web pages) reading on web server and other documents versus database. It can also be defined as wide area hypermedia information which gives universal access to a large universe of documents that can be combination.

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of text, pictures and hyperlinks

Web Browser

It is a special communication program that records and interprets web pages. It contacts a web server & sends a request for information then reads its display on the computer. Netscape navigator and internet Explorer are few examples of it.

E-COMMERCE :-

It is short name for electronic commerce & provide services in the field of business, trade and commerce through the use of internet.

It makes sale and purchase through electronic means. ATM and smart cards are the example of E-commerce.

E-Mail

Internet is a medium for communication and the exchange of information. E-Mail is used to send letters and other information over the Internet.

SENDING OF E-MAIL :-

Following steps are required for sending an E-mail

- 1) Start an E-mail program like hotmail, outlook etc
- 2) Type E-mail address of the recipients and sender
- 3) click on send button.

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Microsoft Windows

It is an operating system which communicates with the hardware of computer, accept commands and converts them into machines signal language that computer understands

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WINDOWS XP :-

XP stands for experience, when you switch on the computer first screen to display on "Desktop". Everything that appears on computer is in form of frames called windows

STRUCTURE OF WINDOWS SCREEN :-

i) Desktop ii) wallpaper iii) Taskbar iv) Icons v) Start

1) DESKTOP :- It is base of windows where all icons or folders are stored and displayed.

2) WALLPAPER :- To decorate or to make desktop attractive we can create our own wallpaper with the help of paint

3) ICONS :- It is pictorial representation of any application, file or folder. By clicking on it, the application will start.

4) TASKBAR :- It is visible at the bottom of windows

5) START BUTTON :- It appears on the left side of taskbar when we click on start button the following options will appear :-

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i.e. All programs, Documents, settings, search, run shutdown etc.

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Microsoft Word

It can be started in many ways :-

- Start → All Programs → Microsoft Word
- Select → Run command & type "Microsoft Word"
- Click on MS-Word icon from MS-Office toolbar.

It helps us to create new documents quickly and easily. It is helpful in drafting official letters and preparing lists as well. They comprise of wide range of tools and functions and required for the formatting of documents.

MAIN FEATURES OF MS-WORD :-

- 1) Text is typed into the computer which allows alteration to be made easily.
- 2) Paragraphs, text can be inserted, amended or deleted.
- 3) Margins & page length can be adjusted as desired. Spellings can be checked & modified through the spell check facility.
- 4) Multiple copies of letters can be generated.
- 5) Multiple document files can be merged.

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Microsoft PowerPoint

INTRODUCTION :- MS PowerPoint is a presentation software that is used to create on screen slides, overhead projector slides, audience handouts and speaker notes. It is the most widely presentation software.

TYPES OF PRESENTATION CREATED :-

- It can be used to create black/white overhead slides.
- It can create 35mm slides.
 - It create slide show for computers or projectors
 - It supports graphs & organized charts.

MAIN COMPONENTS OF MS- POWERPOINT :-

TITLE :- A slide generally has title that describes the topic of the slide.

SUBTITLE :- It is descriptive message of few lines that gives the central idea & information contained in the slide.

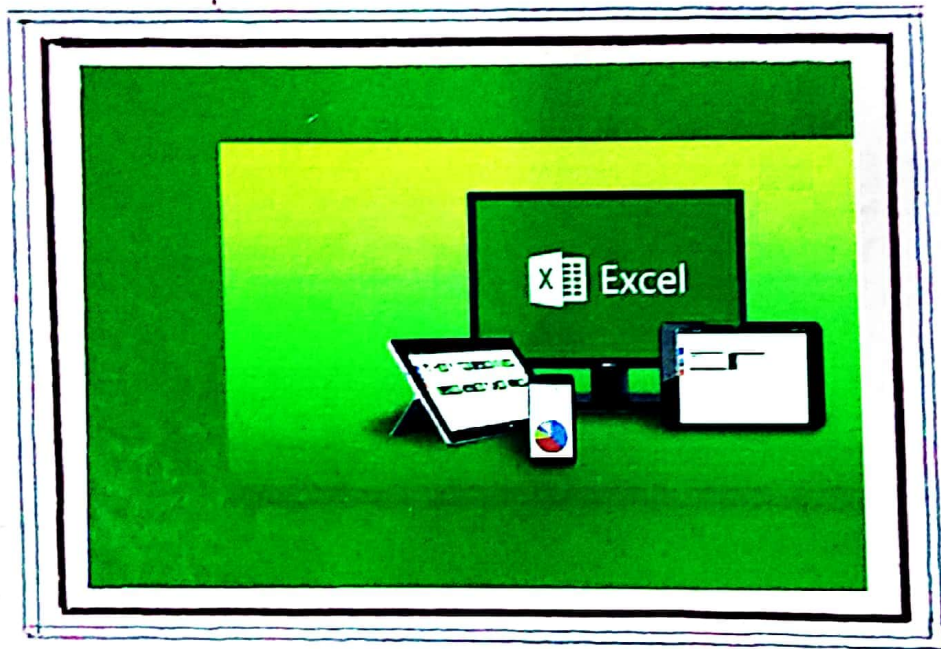
DRAWING OBJECTS :- various drawing objects like auto-shape and word art can be embedded into a slide.

CHART, CLIPART & PICTURE :- charts, clipart & pictures related to the subject of the slides can be added.

This helps audience to understand the presentation.

SUPPORTING COMPONENTS :- The slide is a compact

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with unit that contains information in a converse form
The speaker may require some supporting document
slide in a miniature form.

Microsoft Excel

It is a commercial spreadsheet application written & distributed by microsoft for microsoft windows. It is a spreadsheet tool capable of performing calculation analysing data and integrating information from different programs

START → ALL PROGRAMS → MS-OFFICE → MS EXCEL

When you open MS-Excel, it displays a new sheet by default. Sheet area is the area where you can type your text. The flashing vertical bar is called insertion point and it represents the location where text will appear when you type.

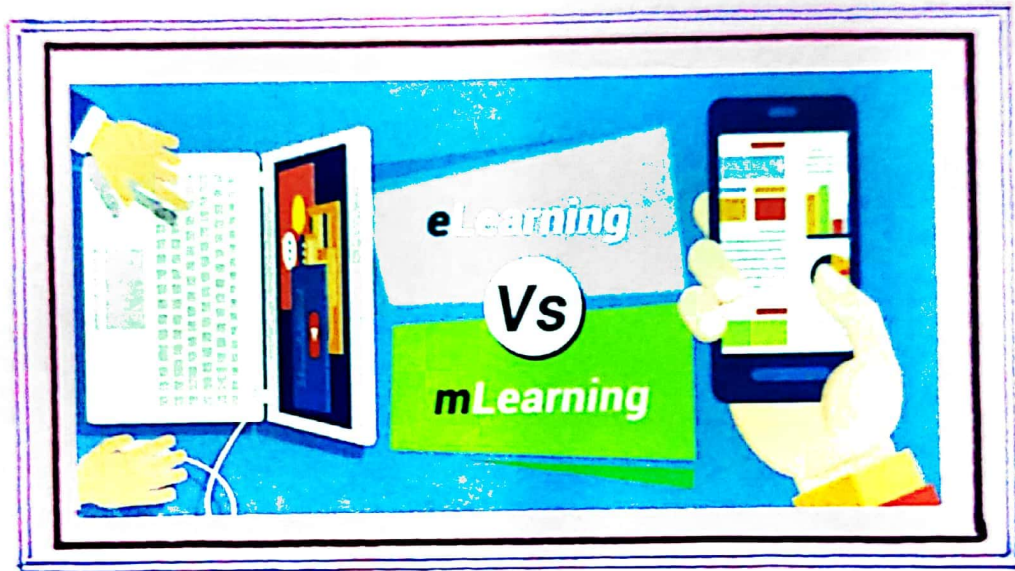
There are following 3 important points which would help you while typing :-

- Press tab to go to next column.
- Press enter to go to next row.
- Press Alt + enter to enter a new line in the same column.

Excel Features

- 1) **HYPERLINK** :- We can link one file to another file.
- 2) **CLIPART** :- We can add image or audio clips video clips.
- 3) **CHARTS** :- With the help of charts we can clearly show a product evaluation to the client.
- 4) **TABLES** :- Tables are created with different fields (eg. name, age, address, roll no & so forth) you can add a table to fill value in these specified column & rows to maintain data in more understandable & easy to read format.
- 5) **FUNCTIONS** :- There are both mathematical junctions (eg. Addition, Subtraction, multiply & divide) & logical ones (eg. average, sum, mod etc).
- 6) **IMAGES & BACKGROUND** :- you can incorporate images and Background into each sheet.
- 7) **DATABASE** :- With the data feature, you can add any database from starting to end in one go only.
- 8) **SORTING & FILTERING** :- We can sort and filter the data so that anything repeated can be removed.
- 9) **DATA VALIDATIONS** :- This tool can help you consolidate your data.
- 10) **PAGE LAYOUT** :- Themes, colour, Margins, size, title backgrounds, width, height, scaling, view, Bring to back or front many options are available to set a layout.

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E-Learning And M-Learning

E-LEARNING :-

E-Learning refers to electronically supported learning & teaching of any kind. Any form of learning in which digital communication, electronic device or the internet is used to support the learning process described as a form of e-learning.

E-learning includes such process as computer based learning and internet based learning, but it is important to remember that it does not necessary to have a computer or an internet connection but only the use of electronics. e-learning also refer to a network that can provide knowledge and skills to one or more individuals.

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M-LEARNING :-

m-learning is a abbreviation of learning, which means learning using portable devices that allow the students to learn in different environments and while on the move instead of being restricted to a classroom setting, tied to a desk. Mobile learning is of course by its electronic nature, a subset of e-learning but refers more specifically to hand held devices & portable technology.

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The term has grown enormously in popularity in the past few years such as wireless I-Pods, tablets increasingly sophisticated mobile phones, android handsets expanding the potential applications of the concept exponentially.

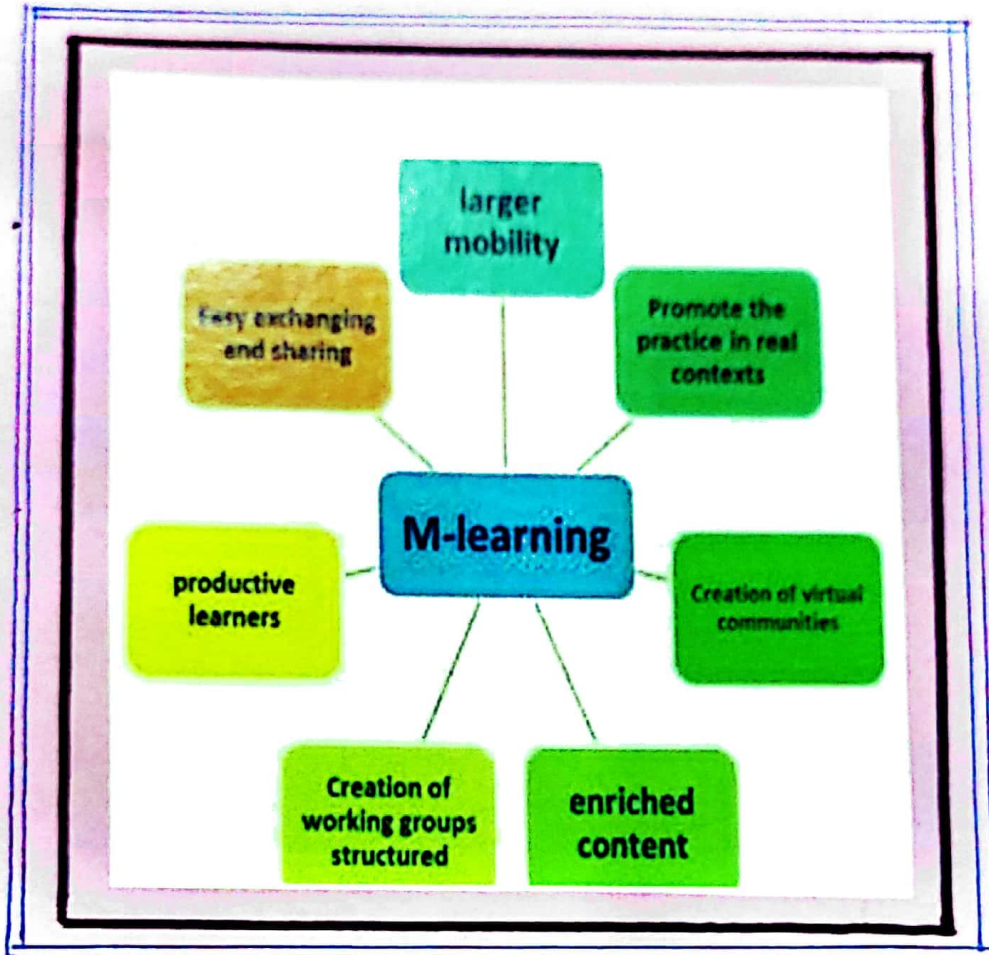
Best uses of E-learning and M-learning

E-learning is a fantastic resource for making lessons more interesting and interactive using online platforms. It is also particularly effective for flipping the classroom. The "flipped" classroom is a new model in which students are allowed by the teachers to use their homework time to study new topics and learn basic information they need to know about specific topic.

M-learning is best used in scenarios where there is concrete gain to be held from the potential for mobility. on class field trips, for example allowing students to use mobile device is a fantastic way to keep them engaged and working and giving them freedom to explore.

It is also extremely effective to use M-learning in classroom environment where modern technology may not be available to all.

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Students : In schools where there are not sufficient resources are available for all students, they may use device like single tablet, which can be easily shared among group of students to perform any educational activities planned by the teacher.

An Application like " MIND SNACKS " which presents language learning in simple and fun way and easy to use games which are easily and quickly available to the students.

Unlike the classroom teaching, lectures can be taken any number of times.

It also provides access to updated content.

It also gives consistency to the educators to get a higher degree of coverage to communicate the message in a consistent way to their target audience.

Hence due to the wide set of benefits it gives to students, e-learning has become quite popular and appreciated among students all over the world.

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Conclusion

Computers have very elaborated role in daily life. The biggest examples are set in our surroundings, i.e. shopping, banking, travelling, literature, entertainment - public or private sectors. Computers are available every-where and play their role efficiently.

Computers can be designed as one of the most innovative invention of human being. Technology is very advanced these days that they are used almost everywhere.

When teachers used computers for simulation and model or for data analysis, they get better results. A should be recommended that technology should be used to enhance the education by engaging students into higher order thinking skills and not as a substitute for teaching.

Technology is a necessity in today's world. Computers can provide universal success by dividing lessons into segments to make them to learn easily.

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