

COMPUTER APPLICATIONS

MEANING

The word “Computer” is a Latin word. Computer an electronic machine that is used for storing, organizing, and finding words, numbers, and pictures, for doing calculations, and for controlling other machines.

CHARACTERISTICS OF COMPUTER:

SPEED:

Computers can perform 100 millions of instructions per second. The speed of a computer is calculated by the unit MIPS (Millions of Instructions Per Second). Normally computer speed is measured in NANO seconds.

ACCURACY:

computer can process data accurately. Error occurs very rarely. The error comes due to the following conditions.

- * inputting faulty data
- * wrong set of instructions
- * Hardware failure

STORAGE:

Computer can store large amount of data in small storage area. The stored data can be retrieved quickly. The storage capacity is measured in MB (Mega Bytes) or GB (Giga Bytes)

VERSATILITY:

Computers are capable of solving various types of problems. It is used both in simple activities such as preparing payroll and in complex activities such as controlling the aircraft.

AUTOMATION:

Computers can do calculations automatically without human intervention until the completion of a program.

DILIGENCE:

Diligence means constant effort in works. Computers do calculations repetitively with same speed and same accuracy. Like human beings, computers do not have problems such as fatigue, lack of concentration, etc.

AREAS OF APPLICATION

Computers are used everywhere. The following topics show some of the areas of computer applications.

ACCOUNTING:

computers are used to maintain accounts efficiently. Computers do inventory management, financial management, and cash management easily.

BANKING:

Nowadays all banks are computerized. Customer transactions are maintained by computers. Computer controlled Automatic Teller Machine (ATM) are used for cash withdrawals and deposits. In this way computer helps to improve the services of banks.

MEDICAL:

In hospitals, computers are used to maintain patient details, their diseases, and treatments given by the doctors. Also, in hospitals, most of the equipments are computer controlled.

EDUCATION:

Computers can be used in education to teach students. It is used to create 'Virtual class rooms' and "Virtual University". Students can get most of the details using various websites available in the internet.

DESIGNING:

In textile business, it is used to draw new designs. By using AutoCad, software, engineers draw the blue prints of their proposed buildings.

TRANSPORT:

In railways, it is used for reservation and cancellation of tickets in an easy manner. By this method people can book their tickets from anywhere in the country.

COMMUNICATION:

E-mail, voice mail, and video conferencing are possible by using computers. Computer control telephone communications also.

ENTERTAINMENT:

Computers are used to play movies and to play games.

PUBLISHING:

Publishers use computers to prepare and format the contents of books.

SPACE TECHNOLOGY:

Computers control space research stations. Computing efficiency of computer is used in space technology.

INSURANCE:

Insurance companies use computer to maintain their policyholder details .

COMPONENTS OF COMPUTER :.

The three major components of a computer are

1. Input Unit
2. Output Unit
3. Central processing unit (CPU)

INPUT UNIT:

The data and the programs are entered into the computer through this device. When the data and instructions are entered into the input unit they are passed to the memory unit of the CPU. Some of the input devices are Keyboard, Mouse, OCR, (Optical Character Reader) and OMR.(Optical Mark Reader)

OUTPUT UNIT:

The data fed into a computer are processed as per the given set of instructions. Computer returns the results of this processing through the output unit. Some of the output devices are Monitor, Printer, and plotter.

CENTRAL PROCESSING UNIT:

This unit contains the following three subunits;

- a. Arithmetic and Logic Unit. (ALU)
- b. Control Unit.(CU)

Main memory unit (MMU)

ARITHMETIC AND LOGIC UNIT:

actual data processing occurs in this unit. All arithmetic and logical operations such as addition, subtraction, comparison etc. are performed here. It has many subunits.

a. Registers:

it is used for temporary storage. Some of the registers are instruction registers, address registers, etc.

b. Program counter:

It is used to store the address of the instruction, that is to be executed.

c. Adders:

It is used to perform arithmetic and logical operations.

CONTROL UNIT:

This unit controls the activities of other units in the computer system. It instructs the input device to transfer data and instructions to main memory and then to the ALU

MAIN MEMORY UNIT:

It holds all data and instructions temporarily. It is otherwise called primary memory or internal memory. There are two types of main memory.

1. Random –Access Memory (RAM)
2. Read-Only Memory (ROM)

RANDOM ACCESS MEMORY:

It is a volatile memory. So this type of memory loses its contents when the power is turned off. There are two types of RAM.

- a. Static RAM (SRAM)
- b. Dynamic RAM (DRAM)

READ ONLY MEMORY:

It is nonvolatile memory, so its contents are not lost when the power is turned off. This memory contains the programs, which are used to boot the computer system.

a. PROM –

It stands for programmable ROM. The user records its contents only one time.

b. EPROM:

It stands for erasable programmable ROM. The contents of EPROM are removed by focusing the chip to ultra violet light.

c. EEPROM:

It stands for electrically erasable programmable ROM. Its contents are removed by applying electrical charge.

Difference between RAM and ROM memory:

RAM	ROM
the contents will be lost when the power goes off	The content is permanent even when the power goes off
Accessing speed is large	Accessing speed is short
Requires high power	Requires low power
Used in large systems	Used in small systems

INPUT DEVICES:

Devices, which are used to feed data into the computer are called input devices. Some of the input devices are

- ❖ Key board
- ❖ Mouse
- ❖ Joystick
- ❖ Light pen
- ❖ Track ball
- ❖ OCR (Optical Character Reader)
- ❖ OMR (Optical Mark Reader)
- ❖ MICR (Magnetic Ink Character Reader)
- ❖ BCR (Bar Code Reader)
- ❖ Scanner
- ❖ Digital Camera
- ❖ Digitizing tablet
- ❖ Touch screen

OUTPUT DEVICES:

- Printer
- Plotter
- Monitor

HARDWARE AND SOFTWARE:

Hardware :

The physical components of a computer are called hardware. Following are the examples of hardware.

Keyborad, mouse, etc.

Microprocessor, memory etc.

screen, printer, plotter, etc.

Floppy disk, hard disk, optical disk, etc.

Modem.

Software:

A set of computer program is called software. It is classified as below:

System software:

A set of programs, which are used to control the system or used to improve the efficiency of the system is called system software.

The following are the examples of system software:

Operating system such as Dos, Unix, etc.

Utility program such as virus scan programs

Language processor such as complier, interpreter etc.

Application software:

A set of programs which are developed by the used for his day to day activities like accounting is called application soft ware. The following are the examples of application software:

word processors such as MS-Word, Notepad, etc.

Spread sheets such as Ms-Excel, Lotus 1-2-3

database packages such as EOXPOR. DABSE, etc.

- **OPERATING SYSTEM:**

It is a system software that controls the computer system. It also coordinates and supervise the activities of various components of the computer. As soon as the computer is switched on, its operating system starts functioning.

Functions of operating system:

- Controls the computer resources like printer, keyboard etc.
- Executes the application programs such as word, excel etc.
- Informs user about wrong input or system fault.
- Maintains priority among users
- Provides security
- Manages memory

CLASSIFICATION OF OPERATING SYSTEM:

- Single user operating system
- Multiuser operating system
- Graphical user interface operating system
- Multiprocessing operating system
- Multitasking operating system

DIFFERENCE BETWEEN HARDWARE AND SOFTWARE:

HARDWARE	SOFTWARE
It is the physical unit of computer	It is the collection of programs used to operate the hardware components
It consists of electronic components like transistors, Ics, insulators, etc	It consists of numerals, alphabets, special symbols, signs etc.
It works with binary coes 0's and 1's	It is represented by high level languages such as BASIC, FROTRAN,CLOBAL, C,
It can understand only machine level or assembly level language	It is written in high level language which readable by human beings
It is classified into Input units, output units, CPU, etc.	It is classified into operating system, utilities, application programs, etc.

Desk top and Task bar

Desktop is a work area on the screen, on which we see various icons and the application windows, which are in run state. Icon is a graphical representation of objectives.

Creation of files and folders:

Folder is a kind of file that contains a list of other files. A file is a collection of related information. Folders and files can be created either on desktop or in the windows explorer window.

Windows explorer:

It is a file-folder manipulating program. The following steps are followed to execute it.

Find option:

It is used to search a particular folder, and sub folder or file in the hard disk of a computer.

Shortcuts:

Shortcut is used to create two or more logical places for the same file.

Briefcase

It is a folder containing files and folders that can move between desktop computer and a laptop computer

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