Course Outline

1. Computer:

      Introduction

      Characteristics

      Use (Specially in Business)

      History

      Generation

Today

2. Classification of Computer:
- ☐ Size & volume of data processing
  - ■ Micro, mini, mainframe, super
- ☐ Working principle
  - ■ Analog, digital, hybrid
- ☐ Purpose of use
  - ■ Special purpose, general purpose

Types of Computer

- On the basis of Size & Data process
  - Microcomputer
  - Minicomputer
  - Mainframe Computer
  - Super Computer

Micro Computer

- Smallest among all digital computer.
- usually 01 processor.
- Uses: Usually in the office & home
- Micro computer known a PC, are micro processor based small desktop, laptop, notebook, palmtop, PDA system varying with size, speed, processing capacity.
- The brain of computer is μ processor, a silicon drip containing millions of CKT to perform arithmetic and logic operation and to contrast input output system.

Micro Computer

- ☐ Early computers had single μ processor, primary & secondary memory and input output device with limited processing power, now days micro computers have wider processing capabilities with wide range of input output devices.

- ☐ In addition to general purpose computations, micro computers are also used for special purpose applications in a automobile, airplane, toys, clerks and also in multi tasking, multi user networking.

Mini Computer

- High speed, More than 01 I/O is found, With the help of `TERMINAL` hundreds of people can work together.

- Ex- IBM-S/34, IBM-S/36, PDP-11

- Uses- Industry, Quality control, Research

- It is larger in size as compared to micro Computers and has higher memory and storage capacity, speed and price.

- It supports multi processor input output device

Mini Computer

- ☐ It perform basic arithmetic and logic functions and supports some of the programming language used with large computer.

- ☐ They are suited for processing tasks that do not require accent to loge volume of stored data.

- ☐ Some expensive mini computers are capable of supporting number of terminals in time shared mode.

- ☐ They are used in industry, research and in news media.

Mainframe Computer

- [ ] A large computer generally consists of modules mounted on a mainframe. known as mainframe computer.

- [ ] As compared to micro and mini computers, it has greater processing speed, greater storage capacity, a larger variety of input output devices, support for a number of high speed storage device, multi programming and time sharing environment.

- [ ] It requires high trained staff to run efficiently.

Mainframe Computer

- All types of high level `Peripheral System`
- languages & software are used. With the `TIME SHARING/SLICE` system hundreds of people work together.
- MULTIPROGRAMMING & Large scale input is operated by highly trained operator.
- Ex: CYBER-170, IBM-4300, UNIVAC-1100
- Uses: Census, Space research, Large business & universities, Military, WAN etc

Super Computer

- The most powerful, expensive, with highest processing speed computer is super computer.

- The astronomical cost of super computers has limited their development to only a few hundred world wide and it is considered a national wealth.

Super Computer

- High speed calculation, More than thousand processor works simultaneously, Can handle a large number of data.

- Ex: PARAGON, CRAY X-MP, PARAM, DEEP BLUE,ETA-02P, SUPER SXll

- Uses: Used in Medical science, atomic energy control, weather & element analysis, gene analysis and more complex and sophisticated scientific analysis, Simulation, In the Spaceship

On the basis of Working principle

- Analog
- Digital
- Hybrid

Analog

- ☐ Works by using `continuously varying Analog signal`,
- ☐ no memory is found,
- ☐ shows output directly with the help of `indicator/plotter/graph/metre`,
- ☐ only one task can perform at a given period of time.
- ☐ Represents physical quantities such as Distance.
- ☐ Accuracy is less than 0.1%
- ☐ Ex: Speedometer, Slide roll, Operational amplifier etc.

Digital

- ☐ Made on the basis of Digital signal.
- ☐ Works on `Binary system`. Mathematical calculation with 0 & 1 is done for problem solving.
- ☐ Requires storage capacity.
- ☐ Accuracy is high as result is shown with more places of number after Decimal.
- ☐ Shows result on the screen. Can access several tasks at time.
- ☐ Ex- Desktop, Laptop etc
- ☐ Uses- Official works, Playing games etc

Hybrid

- ☐ Combination of `Analog & Digital` system of data processing.

- ☐ In this system data is input by analog method, then it is processed and shows result digitally.

- ☐ Use: Used where both application of Analog and digital is needed.

- ☐ Ex: In hospital, Spaceship, Missile etc

On the basis of Purpose of use

- General Purpose
- Special Purpose

General Purpose

- ☐ Used to execute different types of tasks using the same hardware.
- ☐ It is done using `Stored Program Concept`.
- ☐ These are `more versatile` but `comparatively slow` than the special purpose computer.
- ☐ Ex: Desktop, Palmtop, laptop etc
- ☐ Uses: Home, Office etc

Special Purpose

- ☐ Designed for special/specific task execution

- ☐ As it performs only one major task its `efficiency` and `speed` is more.

- ☐ Also known as `Dedicated computer`.

- ☐ Ex: Autorefractometer

- ☐ Uses: Traffic signal control, Toll collection on highway, In the Automobiles etc