

CHAPTER-1

# COMPUTER FUNDAMENTAL

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- ii) Working Principle of computer
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# DEFINITION

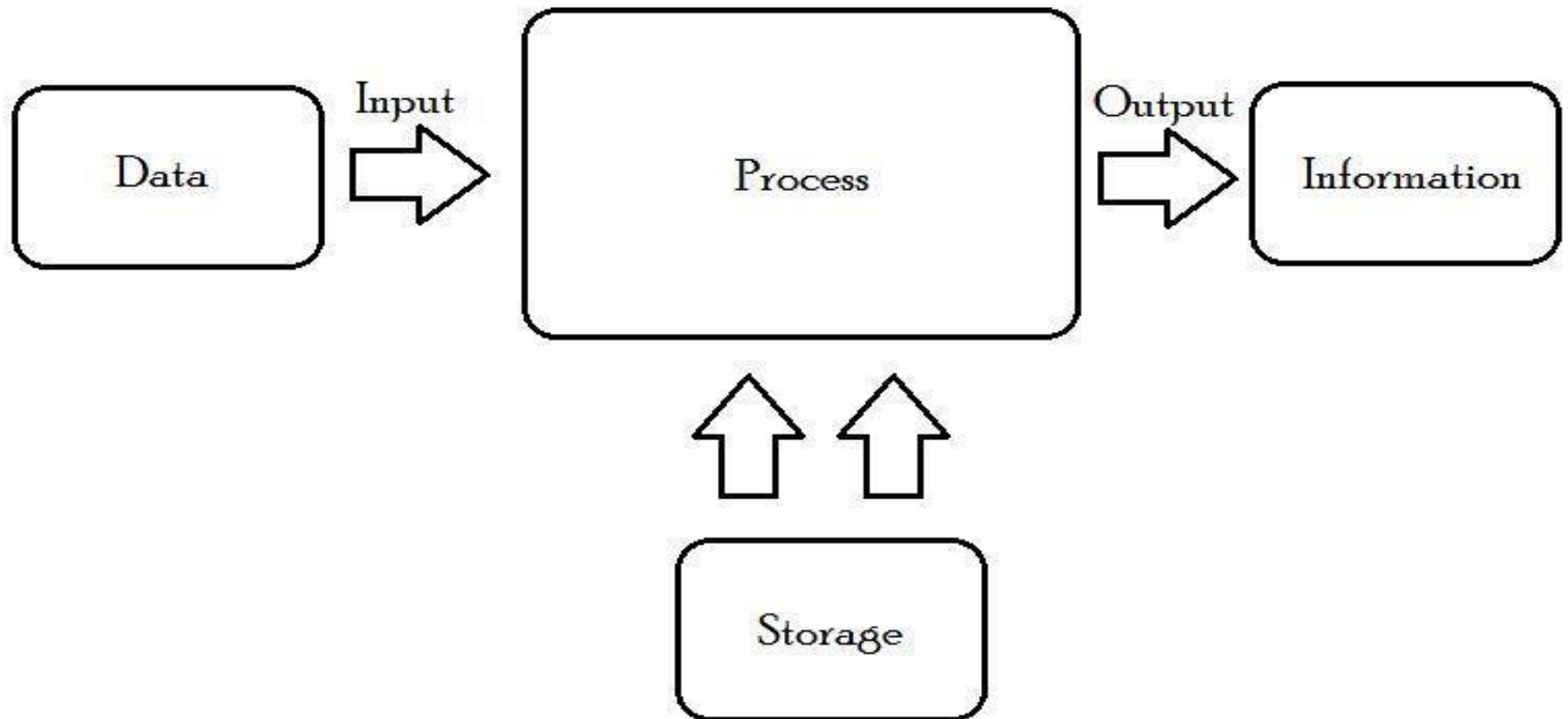
A computer is an electronic machine that is used for data processing to produce information. The term 'computer' has been derived from a Latin word 'computare' meaning 'calculation'. Computer is one of the most useful electronic machines in this modern world. Computer can process both numerical and non-numerical (arithmetic and logical) operations.



# WORKING PRINCIPLE OF COMPUTER

Computer works on the basis of IPO cycle.

## **INPUT - PROCESS - OUTPUT CYCLE**



# WORKING PRINCIPLE OF COMPUTER

INPUT: Input is the data or instructions given to the computer through input devices like keyboard, mouse etc.

PROCESS: Process is the manipulation of data as per given instruction. It is totally inner process of the computer system.

OUTPUT: Output is the information displayed by the computer through output devices like monitor, printer etc.

STORAGE: When the data are processed, they are stored in storage devices like hard disk, flash drive etc.

# CHARACTERISTICS OF MODERN COMPUTERS

- a) Speed
- b) Accuracy
- c) Storage
- d) Automatic Operation
- e) Diligence
- f) Versatility
- g) Reliability



# CHARACTERISTICS OF MODERN COMPUTERS

**1. Speed:** - As you know computer can work very fast. It takes only few seconds for calculations that we take hours to complete. You will be surprised to know that computer can perform millions (1,000,000) of instructions and even more per second.

**2. Accuracy:** - The degree of accuracy of computer is very high and every calculation is performed with the same accuracy. The errors in computer are due to human and inaccurate data.

# CHARACTERISTICS OF MODERN COMPUTERS

**3. Storage:** - The Computer has an in-built memory where it can store a large amount of data. You can also store data in secondary storage devices such as floppies, which can be kept outside your computer and can be carried to other computers.

**4. Automatic Operation:** Once the instruction is given to the computer to do any work, the computer does it automatically by itself.



# CHARACTERISTICS OF MODERN COMPUTERS

**5. Diligence:** - A computer is free from tiredness, lack of concentration, fatigue, etc. It can work for hours without creating any error. If millions of calculations are to be performed, a computer will perform every calculation with the same accuracy. Due to this capability it overpowers human being in routine type of work.

**6. Versatility:** - It means the capacity to perform completely different type of work. You may use your computer to prepare payroll slips. Next moment you may use it for inventory management or to prepare electric bills.

# CHARACTERISTICS OF MODERN COMPUTERS

**7. Reliability:** - A computer is a reliable machine since the computer can do its work faster, accurately and without taking rest. It also stores data for future use.

# APPLICATION AREAS OF COMPUTER

1. Business
2. Education
3. Marketing
4. Banking
5. Insurance
6. Communication
7. Health Care
8. Military
9. Engineering Design

# APPLICATION AREAS OF COMPUTER

## 1. Business

A computer has high speed of calculation, diligence, accuracy, reliability, or versatility which has made it an integrated part in all business organizations.

Computer is used in business organizations for –

- Payroll calculations
- Budgeting
- Sales analysis
- Financial forecasting
- Managing employee database
- Maintenance of stocks, etc.



# APPLICATION AREAS OF COMPUTER

## 2. Education

The computer helps in providing a lot of facilities in the education system.

- The computer provides a tool in the education system known as CBE (Computer Based Education).
- Computer education is rapidly increasing the graph of number of computer students.
- There are a number of methods in which educational institutions can use a computer to educate the students.
- It is used to prepare a database about performance of a student and analysis is carried out on this basis.



# APPLICATION AREAS OF COMPUTER



## 3. Marketing

In marketing, uses of the computer are following –

- **Advertising** – With computers, advertising professionals create art and graphics, write and revise copy, and print and disseminate ads with the goal of selling more products.
- **Home Shopping** – Home shopping has been made possible through the use of computerized catalogues that provide access to product information and permit direct entry of orders to be filled by the customers.

# APPLICATION AREAS OF COMPUTER

## 4. Banking

Today, banking is almost totally dependent on computers. Banks provide the following facilities –



- Online accounting facility, which includes checking current balance, making deposits and overdrafts, checking interest charges, shares, and trustee records.
- ATM machines which are completely automated are making it even easier for customers to deal with banks.

# APPLICATION AREAS OF COMPUTER

## 5. Insurance

Insurance companies are keeping all records up-to-date with the help of computers. The insurance companies, finance houses and stock broking firms are widely using computers for their concerns.



## 6. Communication

Communication means to convey a message, an idea, a picture or speech that is received and understood clearly and correctly by the person for whom it is meant for. Some main areas in this category are: Chatting, E-mail, FTP, Video-conferencing and Telnet.





# APPLICATION AREAS OF COMPUTER

## 7. Health Care

Computers have become an important part in hospitals, labs, and dispensaries. They are being used in hospitals to keep the record of patients and medicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, ultrasounds and CT scans, etc. are also done by computerized machines.



## 8. Military

Computers are the main tools which help in developing missiles and other equipment in the defense system. Designing and the maintenance are possible only through computers. Computer builds the links between the soldiers and commanders through the satellite..



# APPLICATION AREAS OF COMPUTER

## 9. Engineering Design

computers aid in designing buildings, roads, bridges and many others. The construction layouts are designed beautifully on system using different tools and software. One of the major areas is CAD (Computer Aided Design) that provides creation and modification of images.



# ADVANTAGES OF COMPUTER

- 1) It helps to produce error free documents.
- 2) Computers simplify our work and help us save time, money and effort.
- 3) Data stored in computer can be used for multiple purpose.
- 4) Communication is cheaper and faster.
- 5) Computers have created employment opportunities in the field of designing, teaching, manufacturing etc.
- 6) The use of computer can make teaching and learning more effective and interesting.

# DISADVANTAGES OF COMPUTER

- 1) It is expensive to install and update the fast changing technology.
- 2) Accidental loss of data may cause a serious problem.
- 3) It decreases interpersonal relationship as the computer users fully rely on computers to communicate.
- 4) Continuous and regular use of computer may lead to health problems.
- 5) Computers cannot think and decide on its own.
- 6) It has given rise to several computer crimes.

# THANK YOU