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## Basics of Computer

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### 1.1 INTRODUCTION

In this lesson we present an overview of the basic design of a computer system: how the different parts of a computer system are organized and various operations performed to perform a specific task. You would have observed that instructions have to be fed into the computer in a systematic order to perform a specific task. Computer components are divided into two major categories, namely, hardware and software. In this lesson we will discuss about hardware, i.e., the machine itself and its connected devices such as monitor, keyboard, mouse etc., as well as software that makes use of hardware for performing various functions.

### 1.2 OBJECTIVES

After going through this lesson you would be able to:

- explain basic organization of computer system
  - explain different types of input and output devices
  - define Software and its classification
  - distinguish between system software and application software
  - describe computer language and its classification
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### 1.3 WHAT IS A COMPUTER?

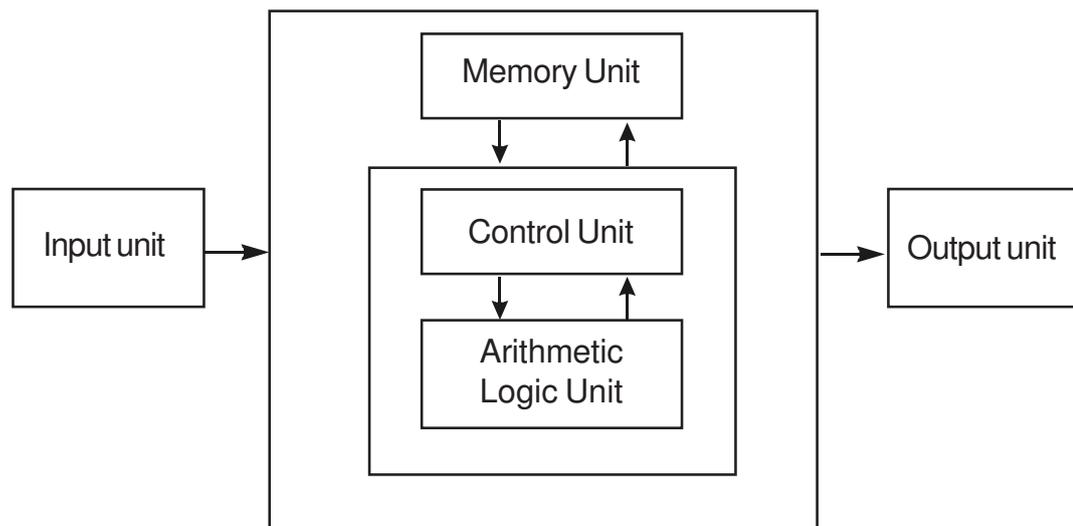
Computer is a device that transforms data into meaningful information. Data can be anything like marks obtained by you in various subjects. It can also be name, age, sex, weight, height, etc. of all the students in a class.

Computer can also be defined in terms of functions it can perform. A computer can i) accept data, ii) store data, iii) process data as desired, and iv) retrieve the stored data as and when required and v) print the result in desired format.

The major characteristics of a computer are high speed, accuracy, diligence, versatility and storage.

#### 1.3.1 Computer Organisation

The block diagram of computer is shown in Fig. 1.1.



**Fig. 1.1** Block diagram of Computer Organisation

The computer performs basically five major operations of functions irrespective of their size and make. These are 1) it accepts data or instruction by way of input, 2) it stores data, 3) it can process data as required by the user, 4) it gives results in the form of output, and 5) it controls all operations inside a computer. We discuss below each of these operations.

1. **Input:** this is the process of entering data and programs into the computer system.
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2. **Control Unit (CU):** The process of input, output, processing and storage is performed under the supervision of a unit called 'Control Unit'. It decides when to start receiving data, when to stop it, where to store data, etc. It takes care of step-by-step processing of all operations inside the computer.
3. **Memory Unit:** Computer is used to store data and instructions.
4. **Arithmetic Logic Unit (ALU):** The major operations performed by the ALU are addition, subtraction, multiplication, division, logic and comparison.
5. **Output:** This is the process of producing results from the data for getting useful information.

The ALU and the CU of a computer system are jointly known as the central processing unit (CPU). You may call CPU as the brain of any computer system.

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## INTEXT QUESTIONS

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1. What are the five basic operations performed by the computer?
2. Define ALU, CU and CPU.
3. Choose the correct answer.
  - (a) The task of performing arithmetic and logical operations is called:  
(i) ALU (ii) editing (iii) storage (iv) Output
  - (b) The ALU and CU jointly are known as  
(i) RAM (ii) ROM (iii) CPU (iv) None of above
  - (c) The process of producing results from the data for getting useful information is called:  
(i) output (ii) input (iii) processing (iv) storage

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## 1.4 PERIPHERAL DEVICES

Peripheral devices are connected to the computer externally. These devices are used for performing some specific functions.

Peripheral devices are as follows:

1. Input Devices
  2. Output Devices
  3. Other Peripherals
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