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BASIC CONCEPTS OF COMPUTER

1.1 INTRODUCTION

A computer is a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and gives the desired output after processing. Computer components are divided into two major categories namely hardware and software. Hardware is the machine itself and its connected devices such as monitor, keyboard, mouse etc. Software are the set of programs that make use of hardware for performing various functions.

1.2 OBJECTIVES

After going through this lesson you would be able to:

- familiarise yourself with characteristics of computers
- identify the basic components of a computer
- explain the importance of various units of a computer
- differentiate between system software and application software
- explain the importance of operating system
- get acquainted with open source
- appreciate the need of computer security

1.3 CHARACTERISTICS OF COMPUTERS

The characteristics of computers that have made them so powerful and universally useful are speed, accuracy, diligence, versatility and storage capacity. Let us discuss them briefly.

Speed

Computers work at an incredible speed. A powerful computer is capable of performing about 3-4 million simple instructions per second.

Accuracy

In addition to being fast, computers are also accurate. Errors that may occur can almost always be attributed to human error (inaccurate data, poorly designed system or faulty instructions/programs written by the programmer)

Diligence

Unlike human beings, computers are highly consistent. They do not suffer from human traits of boredom and tiredness resulting in lack of concentration. Computers, therefore, are better than human beings in performing voluminous and repetitive jobs.

Versatility

Computers are versatile machines and are capable of performing any task as long as it can be broken down into a series of logical steps. The presence of computers can be seen in almost every sphere – Railway/Air reservation, Banks, Hotels, Weather forecasting and many more.

Storage Capacity

Today's computers can store large volumes of data. A piece of information once recorded (or stored) in the computer, can never be forgotten and can be retrieved almost instantaneously.
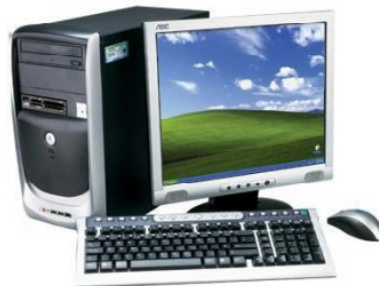
1.4 COMPUTER ORGANIZATION

Fig.1.1: Computer System