Introduction to Computing

About Instructor

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About Course

- This course focuses on a breadth-first coverage of the use of computing and communication technologies to solve real life problems

- An introduction of the program of study in computing for which this course is being taught (CS, IT, SE etc.). The course attempts to provide every student a set of productivity tools that they will be ableto use for the rest of their lives.

Lecture Plan

- Lectures
- Labs
- Class Activities
- Assignments
- Projects
- Presentation
- Viva
- Quiz

COMPUTER

Introduction

The 'Computer' is an English word. This is derived from the English word 'compute'. 'Compute' is derived from a Latin word 'Computare' which means to calculate something.

Definition

"Computer is normally considered to be a calculating device that can perform arithmetic operations at enormous speed."

OR

"An electronic device, which is used to take input, store, retrieves and process data according to the instructions given by its user and gives us output."

CHARACTERISTICS OF COMPUTER

Speed

A computer is a very fast electronic device. It can perform in a few seconds the amount of work that a human being can do in an entire year. While talking about the speed of a computer, we do not talk in terms of seconds or even milliseconds. Our units of speed are the microseconds, the nanoseconds and even the Pico-seconds.

Accuracy

Accuracy means correctness. The accuracy of a computer is consistently high and the degree of accuracy of a particular computer depends upon its design. Errors can occur in a computer, but these are mainly due to human rather than technological weaknesses.

CHARACTERISTICS OF COMPUTER

Diligence

Diligence means un-tiredness. Unlike human being, a computer is free from tiredness, lack of concentration etc. and hence can work for hours together without creating any error and without grumbling. If ten million calculations have to be performed, a computer will perform the ten millionth calculations with exactly the same accuracy and speed as the first one.

Versatility

Versatility is the ability to perform multiple tasks. Versatility is one of the most wonderful things about the computer. One moment, it is preparing the results of particular examination, the next moment it is busy in preparing electricity bills, and in between it may be providing some entertainment like music, video etc.

CHARACTERISTICS OF COMPUTER

Power of Remembering

A computer can store and recall any amount of information because of its storage capability. Every piece of information can be retained as long as desired by the user and can be recalled as and when required. Even after several years, the information recalled would be as accurate as on the day when it was fed to the computer.

No Feelings

Computers are emotionless. They have no feelings because they are machines. Any kind of weather or human feelings cannot effect on computer's working. It continues to work whatever the weather is or whatever the mood of computer operator is.

CHARACTERISTICS OF COMPUTER

No I.Q.

Computer has no I.Q. It cannot do anything by itself. Computer can perform only those operations, which are instructed by its user. Computers cannot make any judgment by themselves. There judgment is based on the instructions given to them in the form of programs that are written by humans.

USES OF COMPUTER

- Business
- Education
- Healthcare
- Retail and Trade
- Government
- Marketing
- Science
- Publishing
- Arts and Entertainment

- Communication
- Banking and Finance
- Transport
- Navigation
- Working From Home
- Military
- Social
- Booking Vacations
- Security and Surveillance
- Weather Forecasting
- Robotics

ANALOG COMPUTERS

- Analog computers are designed to measure continuous electrical or physical conditions, such as current, voltage, flow, temperature, length, or pressure.

Purpose

- Mostly analog computers are special-purpose computers. Normally they are designed to perform some specific task not multiple tasks.

Examples

- Wrist watch (if non-digital), your car's speedometer, pressure, temperature, and fuel gauges are also considered analog computers.

Uses

- The output of an analog computer is often an adjustment to the control of a machine; such as, an adjustment to a valve that controls the flow of steam to a turbine generator. It is also used in temperature setting to control the ovens for baking.

- They have been widely used in simulating the operation of aircraft, nuclear power plants, and industrial chemical processes.

DIGITAL COMPUTERS

- Digital computers are designed to perform daily routine tasks such as writing letters, sending e-mails, performing calculations in an office or creating a database to store large amount of data etc.

Purpose

- Digital computers may be either special or general purpose. Mostly these computers are designed to perform multiple tasks.

Examples

- Personal Computer, Laptop, Mainframe, Super Computer etc.

Uses

- The following are some of the uses of digital computers:
- Word Processing, Accounting, Record, Industrial, Science