UNIT-I
Introduction To Computers

Introduction to Computer

- Early days people use fingers for computing purpose.
- As years go, the computing needs also grew. This leads to the invention of calculators and computers.
- The term **computer** is derived from the word compute, it means **to calculate**.

Definition

- **Computer** is an electronic device. It accepts data, process the data and gives the desired output.

Basic functions or operations

- Input
- Processing
- Output
- Storing
- Controlling

- **Input**
  It is the process of getting the data from the user or from somewhere else into the computer to process.

- **Processing**
  It is the process of converting the input to output.

- **Output**
  It is the outcome or result of the process.

- **Storing**
  It is the process of saving the data. so that it can be retrieved whenever

needed.

- **Controlling**

  It is the process of directing the sequence in which the operations to be performed.

Applications of computer:

- Business
- Industry
- Home
- Education
- Printing & publishing
- Entertainment etc.,

CHARACTERISTICS OF COMPUTER

- **Speed**
- **Accuracy**
- **Diligence**
- **Versatility**
- **Resource sharing**
- **Storage**

- **Speed**

  The computer process the data extremely fast. (i.e.) in millions (1,000,000) of instructions and even more per second. A computer can perform a huge task in few sec where a human being may take hours or even days to complete the same task.

- **Accuracy**

  The degree of accuracy of computer is very high and every calculation is performed with the same accuracy. The accuracy level is determined on the basis of design of computer. The errors in computer are due to human and inaccurate data.

- **Diligence**

A computer is free from tiredness, lack of concentration 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.

- **Versatility**

  It means the capacity to perform completely different type of work. For example At a moment a computer can be used to draft a letter. Next moment it can be used print a document or play a music file etc.,

- **Resource sharing**

  In organizations the computers are connected to form a network. The resources such as printers, scanner, plotters are connected to the network and it can be shared by the computers in the network.

- **Storage**

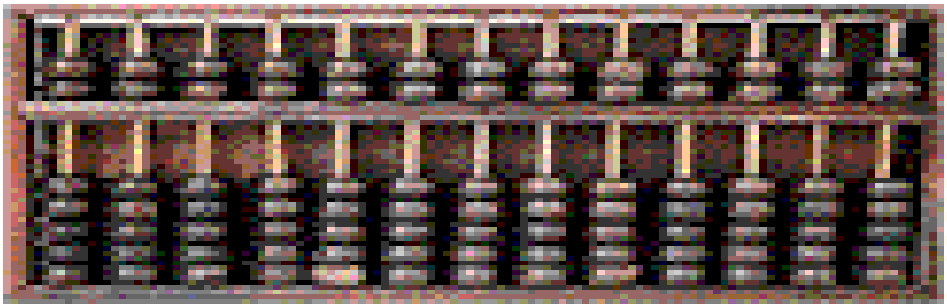
  Computers are capable of storing huge amount of data and it can be located and retrieved very quickly. It uses storage devices such as hard disk to store huge amount of data.

Evolution of Computers

Evolution of Computers

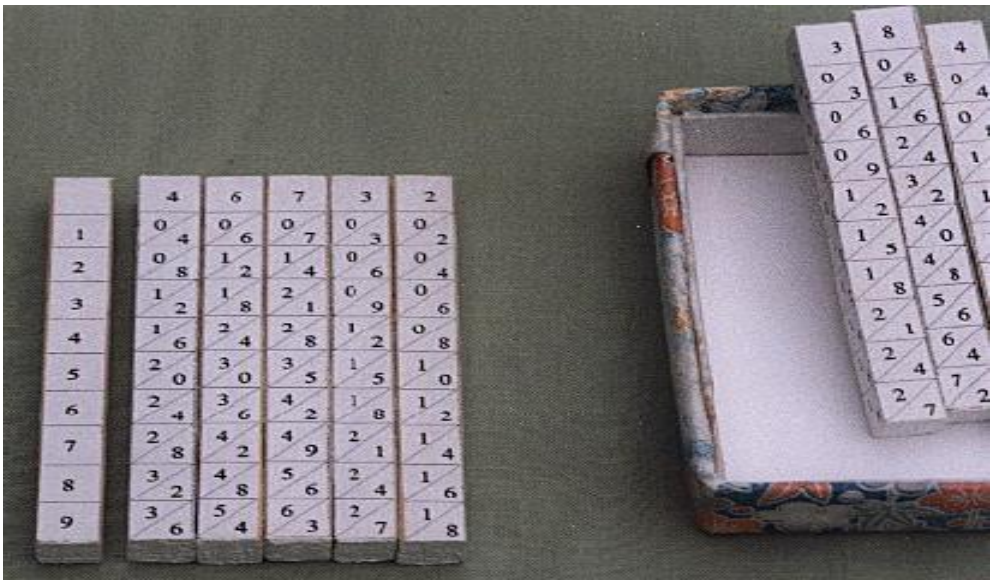
- **Abacus**

  The first calculating device called ABACUS was developed by the Egyptian and Chinese people. It consisted of sticks in horizontal positions on which were inserted sets of beads. It has a number of horizontal bars each having ten beads. Horizontal bars represent units, tens, hundreds, etc.



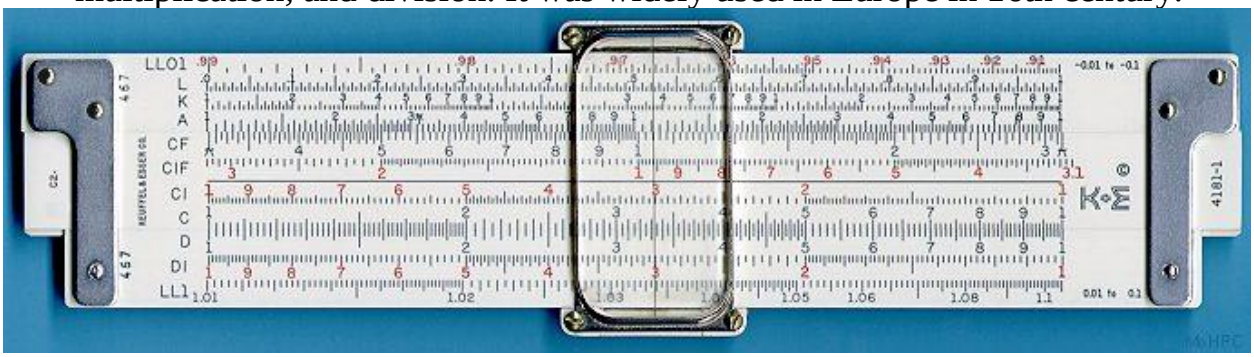
- **Napier's bones**

  English mathematician John Napier built a mechanical device for the purpose of multiplication in 1617 A D. The device was known as Napier's bones.



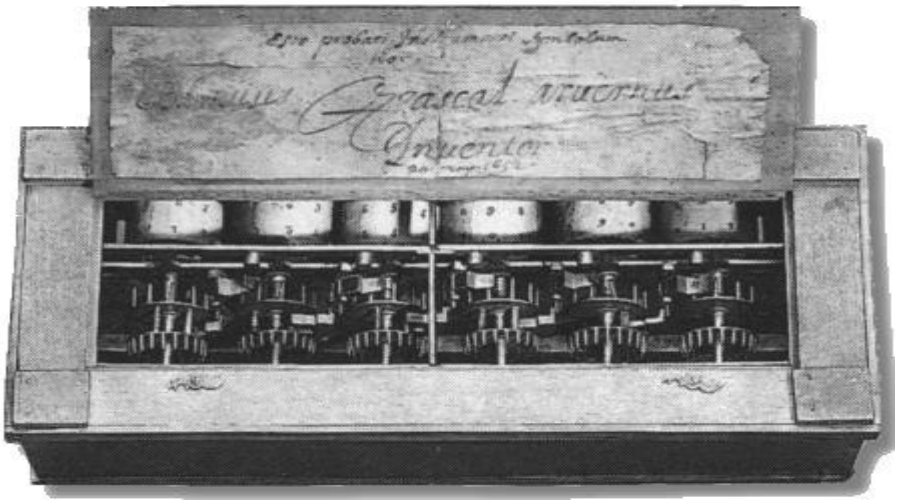
- **Slide Rule**

  This machine could perform operations like addition, subtraction, multiplication, and division. It was widely used in Europe in 16th century.



- **Pascal's Machine**

  Blaise Pascal developed a mechanical calculating machine called Pascal's calculating machine. It could add and subtract. The machine consisted of wheels, gears and cylinders.



- **Leibniz's Machine**

  The Pascal's calculating machine can perform addition and subtraction but it could not perform multiply and division. Leibniz built a mechanical device that could both multiply and divide.

- **Babbage's Analytical Engine**

  In the year 1823 that a famous English man Charles Babbage built a mechanical machine to do complex mathematical calculations. It was called *difference engine*. Later he developed a general-purpose calculating machine called *analytical engine*. Charles Babbage is called the *father of computer*.

- **Electronic Calculator**

  The electronic calculator used in 1960's was run with electron tubes, Later it was replaced with *transistors* and as a result the size of calculators became too small. It can compute all kinds of mathematical computations. Some calculators have in-built programs to perform some complicated calculations.