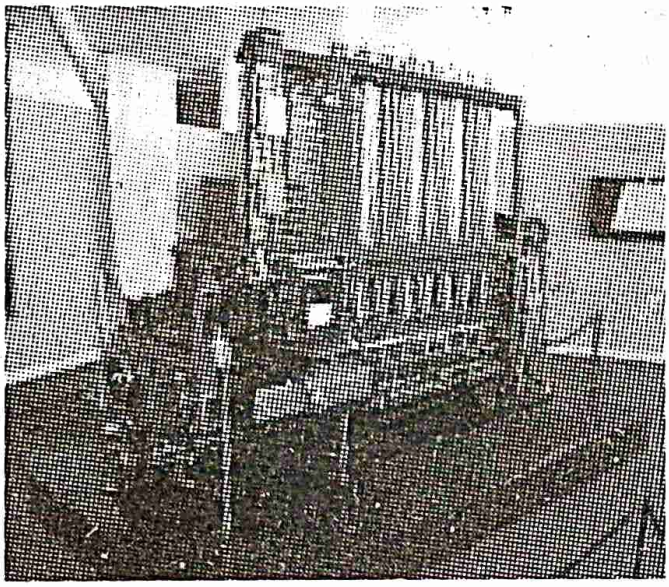
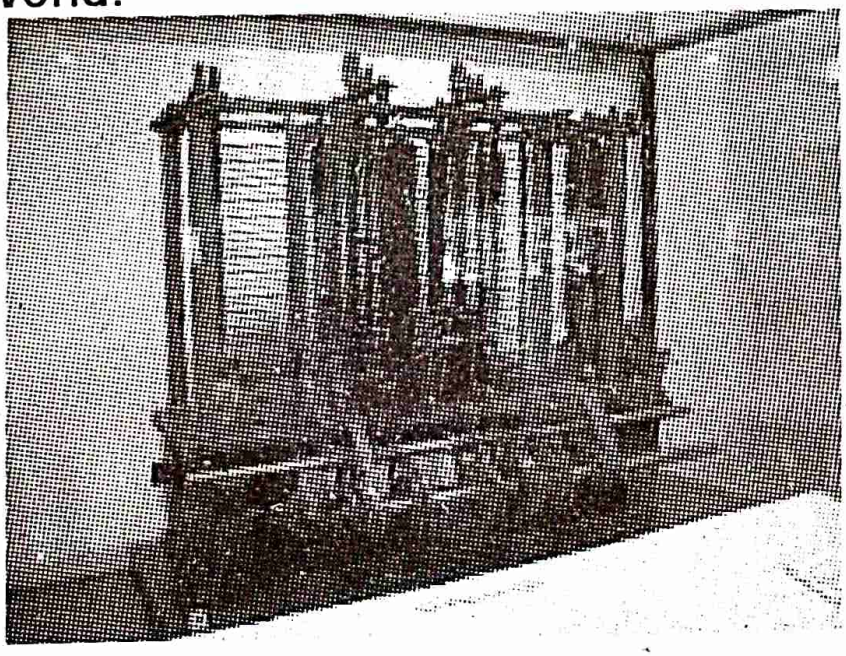
Difference engine :- The intervention of human beings was eliminated by Charles Babbage in calculations by using Difference engine in 1822. It could perform arithmetic operations and print results automatically



Analytical engine :- In 1833, Charles Babbage introduced this. Charles Babbage is considered as the "Father of computer" It is considered as the predecessor of today's computer. This engine was controlled by programs stored in punched cards. These programs were written by Babbage's assistant, Augusta Ada King, who was considered as the first programmer in the World.



Evolution of computing

Computing machines are used for processing or calculating data, storing and displaying information. In 1940's computer were used only for single tasks like a calculator. But nowadays computer is capable of doing multiple tasks at a time. The "Stored Program Concept" is the revolutionary innovation by John Von Neumann helped storing data and information in memory. A program is a collection of instructions for executing a specific job or task.

Augusta Ada Lowelace : She was the Countess of Lowelace and she was also a mathematician and writer. She is considered as the first lady computer programmer.

Programming languages

The instructions to the computer are written in different languages. They are Low Level Language(Machine language), Assembly Language(Middle level language) and High Level Language(HLL).

In Machine Language 0's and 1's are used to write program. It is very difficult but this is the only language which is understood by the computer.

In assembly language mnemonics (codes) are used to write programs

eg :-	ADD	A, B	A = A + B
	SUB	A, B	A = A - B
	INC	A	A = A + 1

Electronic Delay Storage Automatic Calculator(EDSAC) built during 1949 was the first to use assembly language.

In HLL English like statements are used to write programs. A-0 programming language developed by Dr. Grace Hopper, in 1952, for UNIVAC-I is the first HLL. A team lead by John Backus developed FORTRAN @IBM for IBM 704 computer and 'Lisp' developed by Tim Hart and Mike Levin at Massachusetts Institute of Technology. The other HLLs are C, C++, COBOL, PASCAL, VB, Java etc. HLL is very easy and can be easily understood by the human being.

Usually programmers prefer HLL to write programs because of its simplicity. But computer understands only machine language. So there is a translation needed. The program which perform this job are language processors.

Algorithm and computer programs

The step-by-step procedure to solve a problem is known as algorithm. It comes from the name of a famous Arab mathematician Abu Jafer Mohammed Ibn Musaa Al-Khowarizmi, The last part of his name Al-Khowarizmi was corrected to algorithm.