



ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



STUDY MATERIAL - 1

Subject: COMPUTER

Class - 5

Chapter: Evolution of Computers

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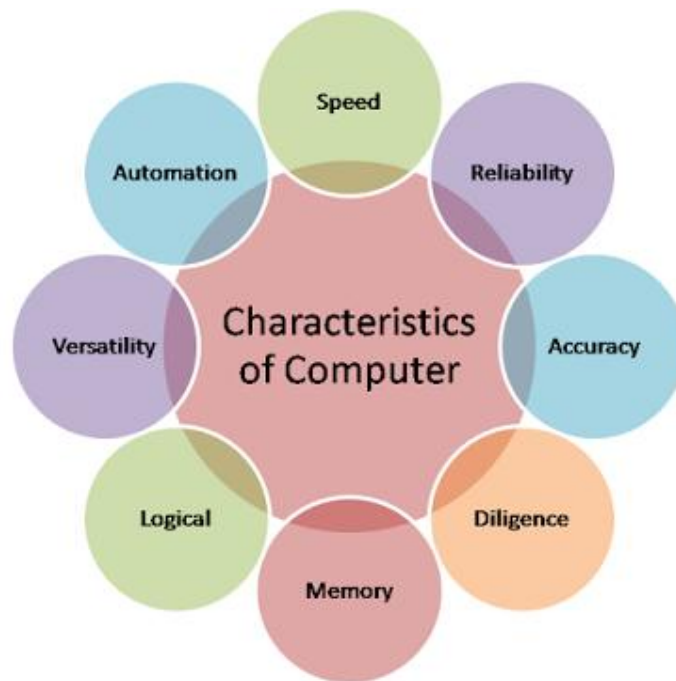
SOME EARLY COMPUTING DEVICES

Srl. No	Inventor's Name	Device and its brief description
1.	The Chinese people	ABACUS: It was a wooden rack which has metal rods with beads mounted on them. The beads were moved by the abacus operator according to some rules to perform arithmetic calculations.
2.	John Napier	Napier's Bones: In this calculating tool, 9 different ivory strips or bones were used to mark with numbers to multiply and divide.
3.	Blaise Pascal	Pascaline: It could only perform addition and subtraction. It was a wooden box with a series of gears and wheels. When a wheel is rotated one revolution, it rotates the neighbouring wheel.
4.	Gottfried Wilhelm Leibnitz	Stepped Reckoner or Leibnitz wheel: It was a digital mechanical calculator which was called the stepped reckoner as instead of gears it was made of fluted drums.
5.	Joseph Marie Jacquard	Punch Cards: It was to take inputs from user.
6.	Charles Babbage	Difference Engine: It was a mechanical computer which could perform simple calculations. It was a steam driven calculating machine designed to solve tables of numbers like logarithm tables. Analytical Engine: It was a mechanical computer that used punch-cards as input. It was capable of solving any mathematical problem and storing information as a permanent memory.
7.	Herman Hollerith	Tabulating Machine: It was a mechanical tabulator based on punch cards. It could tabulate statistics and record or sort data or information.

GENERATIONS OF COMPUTERS

Generations	Salient Features	Technology Used
First Generation (1942-1955)	<ul style="list-style-type: none">• computers were slow, huge and expensive• Machine level language was used	Vacuum tubes
Second Generation (1955-1964)	<ul style="list-style-type: none">• cheap, compact, consuming less power and faster than first generation computers• Assembly language and programming languages like COBOL and FORTRAN were used	Transistors
Third Generation (1964-1975)	<ul style="list-style-type: none">• more reliable, efficient and smaller in size.• operating system and high-level programming languages were used.	integrated circuits (ICs)
Fourth Generation (1975-1989)	<ul style="list-style-type: none">• more compact, powerful, fast and affordable.	large scale integrated (LSI) circuits and very large scale integrated (VLSI) circuits
Fifth Generation (1989-till present)	<ul style="list-style-type: none">• Extremely fast, very small and much cheaper, consume very little power	ULSI (Ultra Large Scale Integration)

CHARACTERISTICS OF A COMPUTER



SPEED : A Computer can perform tasks very fast In general, no human being can compete to solving the complex computation, faster than computer. Speed of a computer is measured in MIPS (Millions of Instructions per Second).

ACCURACY : Since Computer is programmed, so whatever input we give it gives result with accurately.

VERSATILITY : We can use computer to perform completely different type of work at the same time.

MEMORY : Computer can store huge amount of data or information. Every piece of Information that a user stores on a Computer can be retained as long as is needed.

RELIABILITY : Computers are devoid of emotions, they have no feelings and no instincts because they are machines. Computer can work for hours without any break and creating error.

LIMITATIONS

- Computer does not have intelligence of its own to complete the tasks. They give wrong output if the input given by humans is wrong.
- The computer cannot think and make decision on its own.
- Lack of feeling is another limitation of computer.

Answer the following questions:

1. Who is known as father of Computers? Why?

Ans: Charles Babbage is known as father of Computers because his concepts and inventions laid the foundation of modern day computers.

2. Define the term IC.

Ans: An integrated circuit (IC) is a small semiconductor-based electronic device consisting of fabricated transistors, resistors and capacitors. Integrated circuits are the building blocks of most electronic devices and equipment.

3. Who introduced the concept of punched cards?

Ans: Joseph Marie Jacquard introduced the concept of punched cards.

4. Which generation of computers used LSI and VLSI technology?

Ans: Fourth generation of computers used LSI and VLSI technology as their chief component.

5. Which generation of computers used Vacuum tubes as their chief technology?

Ans: First generation of computers used Vacuum tubes as their chief technology.

6. Name some examples of first generation of computers.

Ans: UNIVAC, ENIAC and EDVAC are some of the examples of first generation of computers.

7. Write any three disadvantages of first generation of computers.

Ans: Those computers were computers were slow, huge and expensive.

8. Write any three advantages of fourth generation of computers.

Ans: Such computers are faster, powerful and affordable.

9. Write any three characteristics of a computer.

Ans: Three characteristics of a computer are as follows:

ACCURACY : Since Computer is programmed, so whatever input we give it gives result with accurately.

VERSATILITY : : We can use computer to perform completely different type of work at the same time.

RELIABILITY : Computers are devoid of emotions, they have no feelings and no instincts because they are machines. Computer can work for hours without any break and creating error.