S.P.M College,Udantpuri

Bachelor Of Computer Application (BCA)

Part -1 – Hira Kumar

Computer Fundamentals

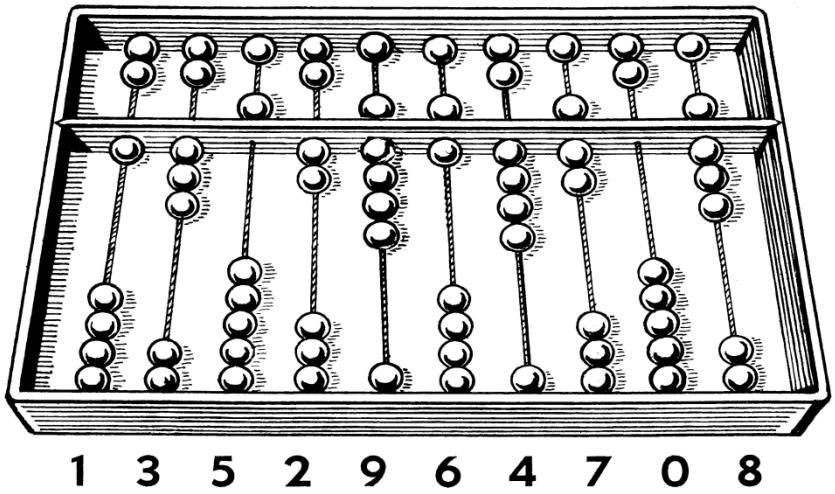
History Of Computer

1. Initial Development (प्रारंभिक विकास)

Many years ago, when there were no computers, it was very difficult to calculate numbers. Earlier people used to use their fingers or objects like wood or stone etc. to do calculations (addition, subtraction, multiplication, division...). Again gradually(step by) man started making calculating machines as per his requirement which are as follows –

i. ABACUS (अबेकस)

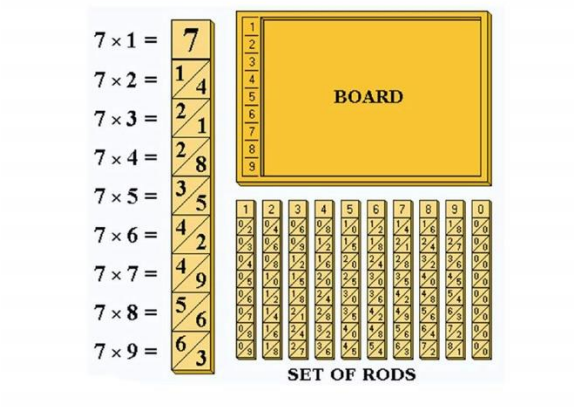
It took generations for early man to build mechanical devices for counting large numbers. The first calculating device called ABACUS, was developed by the Chinese people in 2nd Century. However, instruments such as the abacus are first attested to in ancient Mesopotamia around 3000 BC.



The word ABACUS means calculating board. In addition to calculating the basic operations of addition, subtraction, multiplication and division, the abacus can calculate roots up to cubic degrees.

ii. Napier's bones (नेपियर बोनस)

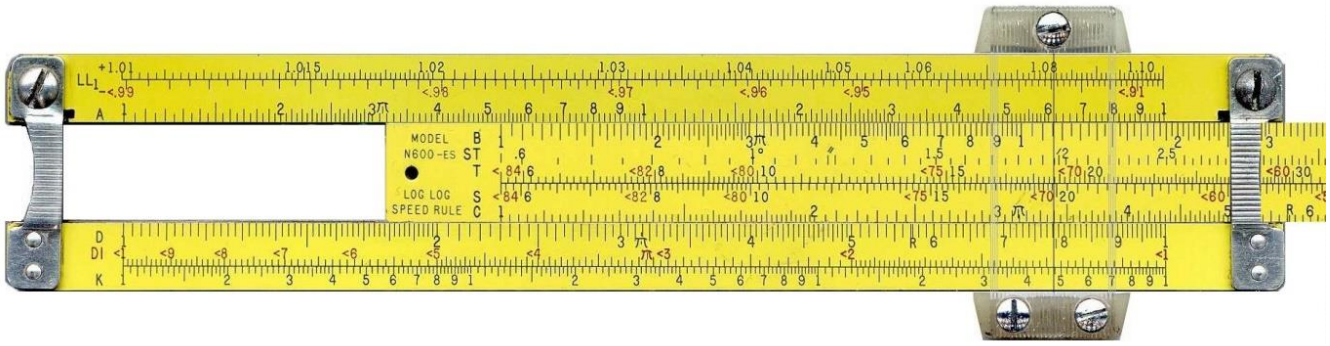
English mathematician **John Napier** built a mechanical device for the purpose of multiplication and division in 1617 AD. The device was known as **Napier"s bones.**



iii. Slide Rule

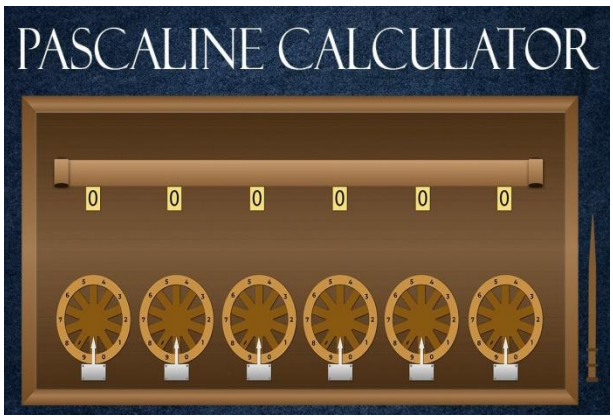
English mathematician Edmund Gunter(एडमंड गुंटर) based develop of the **slide rule**. But Inventor of Slide Rule is = William Oughtred (आउट्रेड). This machine could perform operations like addition, subtraction, multiplication, division, logarithms, trig. It was widely used in Europe in 1622.

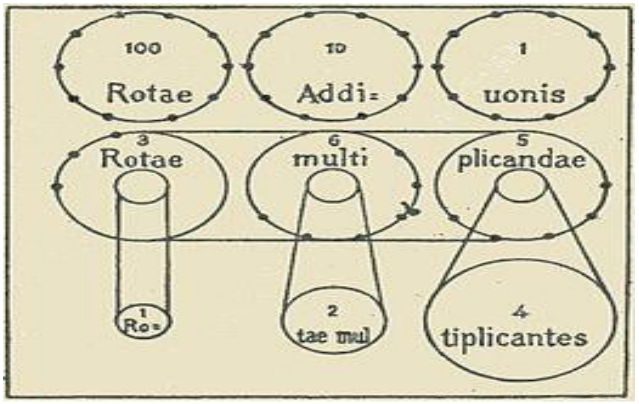
These tool used to mostly Engineers & scientists for computation .



iv. Pascaline (पास्कलाइन)

In 1642, French mathematician **Blaise Pascal(ब्लेज पास्कल)** invented the first mechanical calculating machine. He developed a machine at the age of 19 that could only add and subtract. The machine consisted of wheels, gears and cylinders. He is also called Pascal's Adding and Subtraction Machine.





In 1673 **Gottfried Leibniz(गोटरीड लेबनीज),** a German philosopher and mathematician, further improved Pascal's invention and included the operation of multiplication and division in it, so this improved device it is called Leibniz's Multiplication and Dividing Machine.

v. Analytical Engine (एनालिटिकल इंजन)

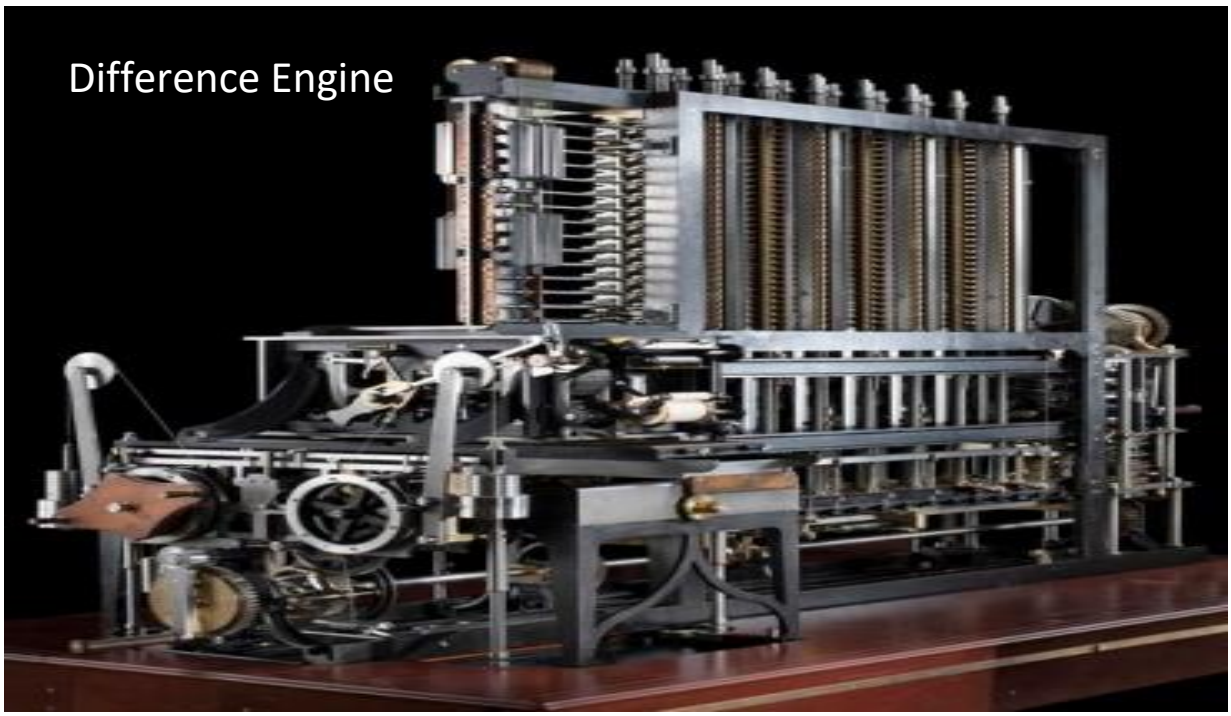
In 1822, Charles Babbage(चार्ल्स बैबेज) built a mechanical machine to do complex mathematical calculations. It was called **difference engine** It was powered by steam and could do complex calculations and could also print.

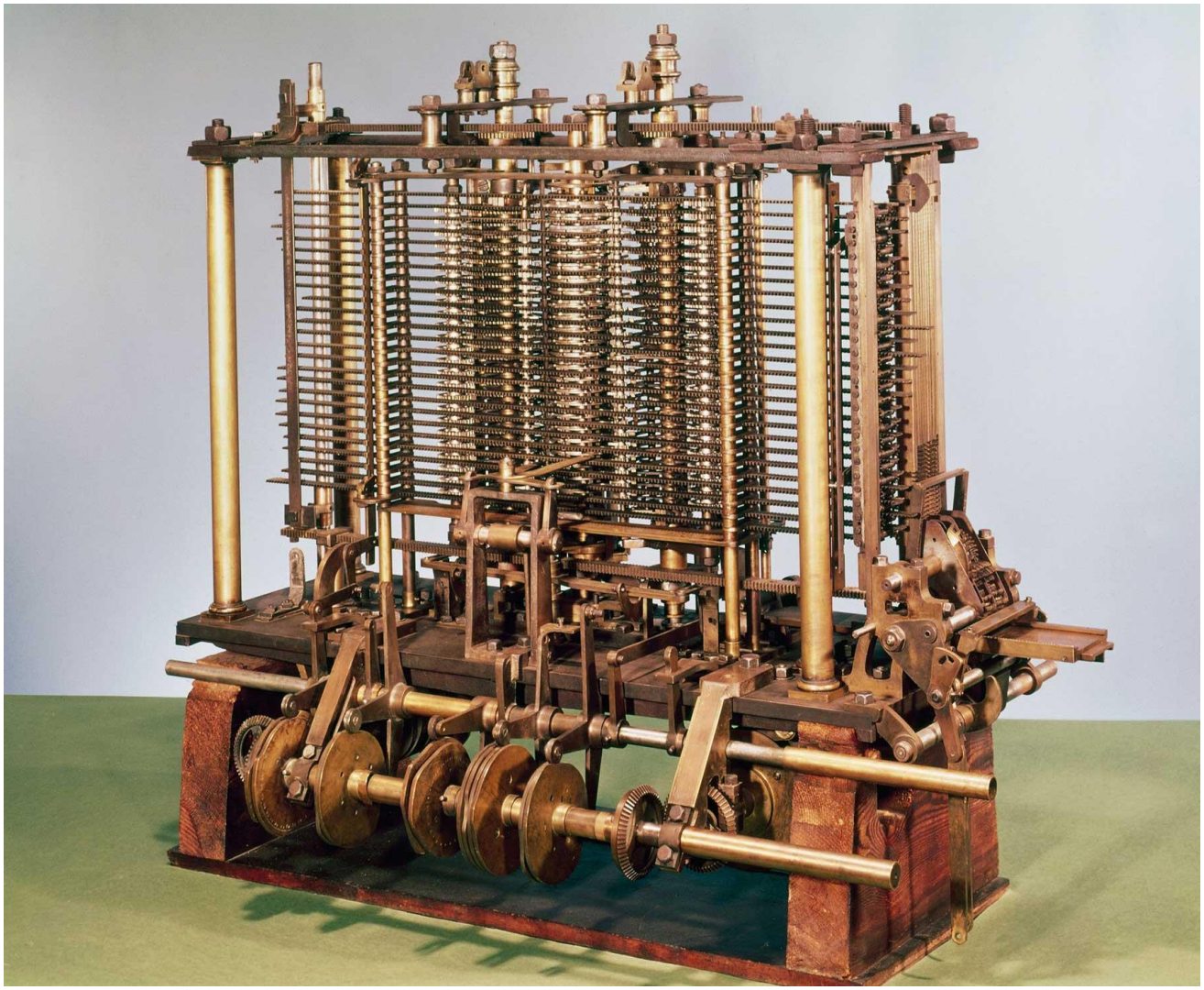
In 1837, Charles Babbage invented the general purpose calculating machine called Analytical Engine. It worked on punch card guidelines.

Now, Modern Computer works on this principal and design. So we **Charles Babbage(चार्ल्स बैबेज) is called the Father of computer**.

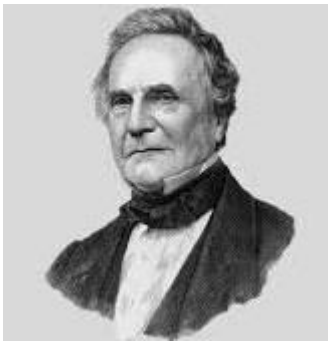
- 1st Mechanical computer develop by Charles Babbage = Difference Engine.

- 1st General purpose computer develop by Charles babbge = Analytical Engine (in machine include CPU,Input-output, memory).

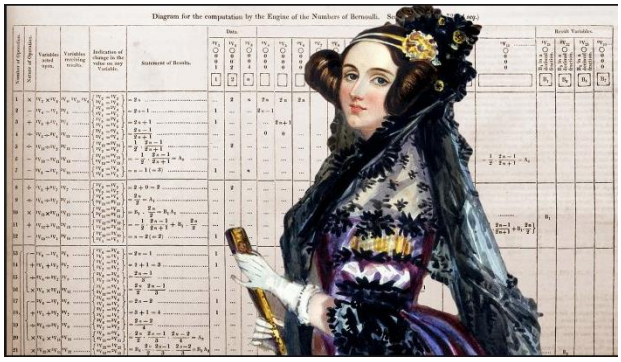




Analytical Engine



Charles Babbage



Ada Lovelace – Ledy Byron

- Father or Computer – Charles Babbage
- The world's first Programmer developed by – **Ada Lovelace (ऐडा लवलेस)** in 1842.
- Mother of Programming = Ada Lovelace.

vi. Electromechanical Computer

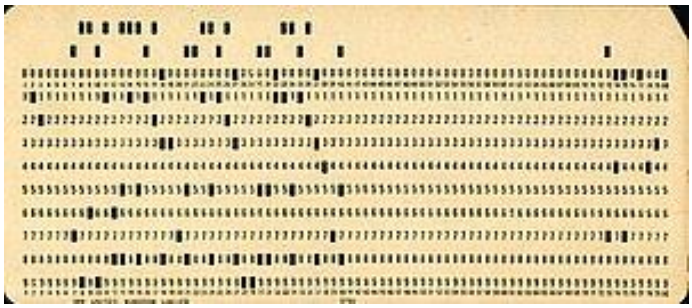
In 1938 **Konrad Zuse**, Germany invented Electro mechanical and binary programmable device name = **Z1**. The main purpose of this device is calculate mathematical operations.

In 1944 **Howard Aiken** , USA invent General pupose calculations machine name = **Harvard Mark -1 OR Mark-1**.

Tabulating Machine (टेबूलेटिंग मशीन)

In the 1890s, American scientist Herman Hollerith (हरमैन होलेरिथ) created the punchcard(पंचकार्ड). This is an input device. It was used in the US census(जनगणना). He also invented the tabulator machine which is used in census.

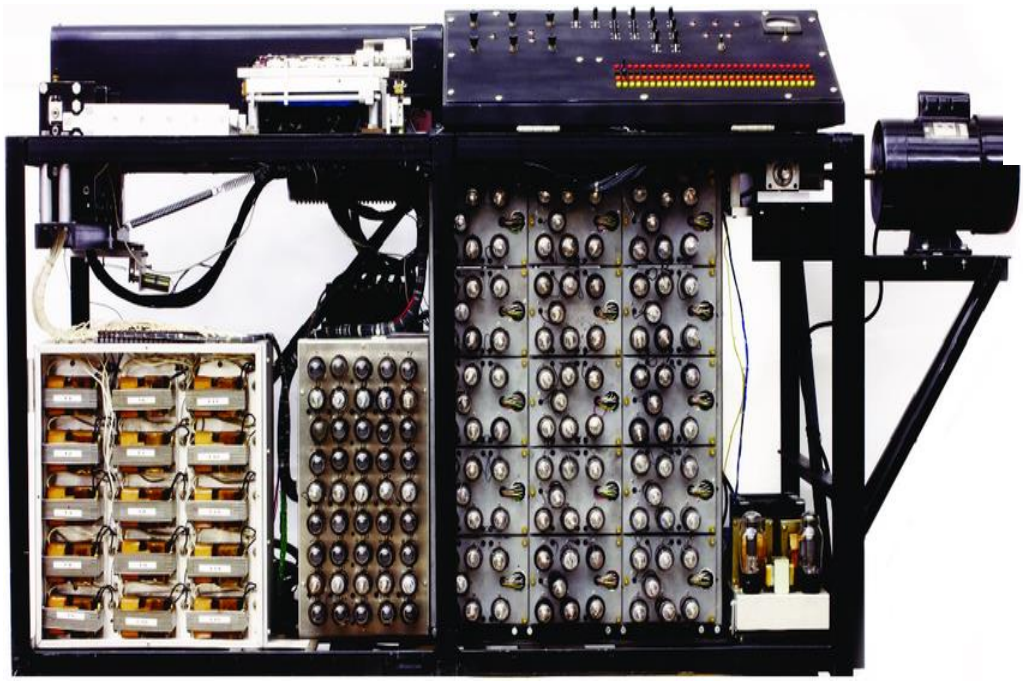
Tabulator



Punch Card

vii. Atanasoff-Berry Computer (ABC)

In 1939, John Atanasoff (एटनासौफ) and Clifford Berry (किलफोर्ड बेरी) together created the world's first special purpose Electronic Digital Computer = ABC. Only work of Linear equations solve, not programmable.



1st Digital Computer

ABC

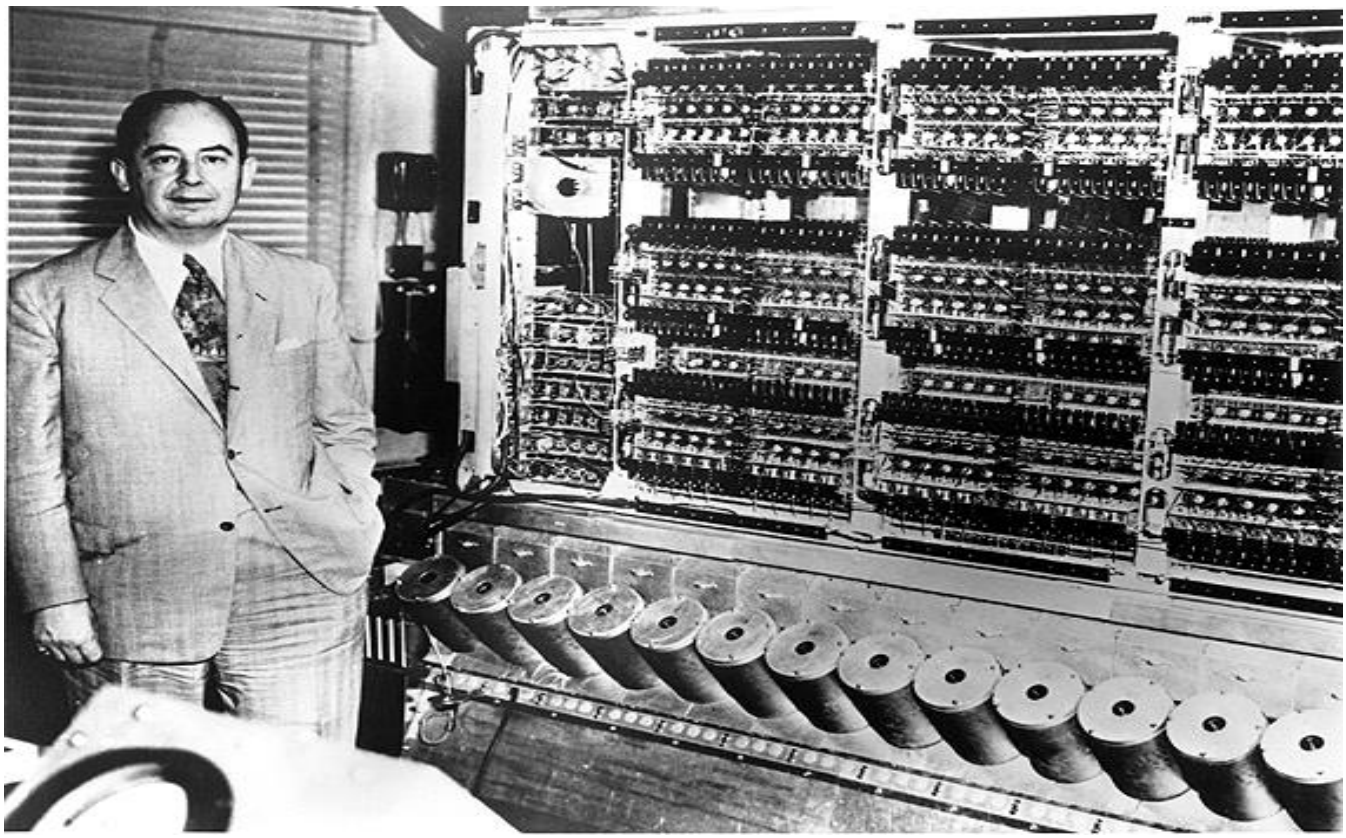
viii. ENIAC (Electronic Numerical Integrated and Calculator)-एनीयाक

John Mauchly and **J. Presper Eckert** created the **first fully electronic computer called ENIAC in**1946**. This is a first General purpose electronic digital computer.**

ix. EDVAC (Electronic Discrete Variable Automatic Computer)

British scientist Van Neumann(वान न्यूमेन) developed EDVAC because ENIAC was difficult to convert in computer program.

- 1st stored program(instructions) computer = EDVAC.
- This machine could store the given data or instructions by converting them in binary system.
- Van Neumenn was credited with storing the data and instructions.



x. UNIVAC (Universal Automatic Computer)- यूनीवैक

- This computer was used for business institutions and other general tasks.
- The first UNIVAC-1 computer was manufactured by the American company Remington Rand in 1954.

xi. Micro Processor (माइक्रो प्रोसेसर) & Personal Computer

- In 1970's, scientists of Intel Corporation created the smallest processor or first micro processor "Intel-4004".
- Due to which it became possible to build small computers which are known as microcomputers.

xii. Modern Computer

In 1990’s to present all computer is also called modern computer, Example – Laptops, Smartphones, tablets, cloud computing, AI. All device is very fast, portable, networked, AI-enabled**.**

==========Hira Kumar==========