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INTRODUCTION

• The computer, we talk of today, is the result of contribution made by many individuals and organizations in the past.
• The history of computer implies the gradual change in the concept over a long period of time.
• This lesson is basically about the history of computing devices from their early forms to the most modern high speed electronic computers.
• With the continuous development in this field, today we have a genius machine called the computer which can solve almost all our problems.
Abacus

- Abacus is known to be the first mechanical calculating device developed by Chinese people around 3000 B.C.
- Abacus is made of a wooden frame, metal rods, and wooden beads in which rod where fitted across with rounds beads sliding on the rod. It is dividing into two parts called ‘Heaven’ and ‘Earth’. Heaven was the upper part and Earth was the lower one. Thus any number can be represented by placing the beads at proper place.
- It is used to perform basic arithmetic operations.
Napier’s Bones

• Invented by John Napier in 1614.
• Allowed the operator to multiply, divide and calculate square and cube roots by moving the rods around and placing them in specially constructed boards.
Slide Rule

• Invented by William Oughtred in 1620.
• Based on Napier's idea about logarithms.
• It consisted of two graduated scales that could be slid over each other and their alignment helped in finding products and quotients.
• Not normally used for addition or subtraction.
Pascaline
• Invented by Blaise Pascal in 1642.
• The Pascaline is the first mechanical and automatic calculator.
• It consisted of ten toothed wheels. The calculation was performed by dialing the numbers on these wheels.
• It was limited to addition and subtraction.
• It was too expensive.
Stepped Reckoner
• Invented by Gottfried Wilhelm Leibnitz in 1673.
• The machine that can add, subtract, multiply and divide automatically.
• It was based on Pascal’s principle and was modified to produce higher efficiency.
• The numbers were entered with the help of handle to process the required data.
Jacquard‘s Loom

• The **Jacquard‘s Loom** is a mechanical loom, invented by Joseph-Marie Jacquard in 1801.

• It’s an automatic loom controlled by **punched cards**. The punched card could automate the loom for the weaving of intricate patterns.

• The concept used in this device led to the invention of punched card.
Difference Engine

The *difference engine* is a mechanical calculator first developed by Charles Babbage in 1822. It is capable of computing several sets of numbers and making a hard copies of the results. Due to a lack of funding, he was never able to complete a full-scale functional version of this machine. However, in June 1991, the London Science Museum completed the difference engine No 2 for the bicentennial year of Babbage's birth and later completed the printing mechanism in 2000. Below is a video from Wired magazine that gives a good overview of the difference engine No. 2 shown at the Computer History Museum.
In 1833, the Analytical was designed to consist of four components: the mill, the store, the reader, and the printer. These components are the essential components of every computer today. The mill was the calculating unit, analogous to the central CPU in a modern computer; the store was where data were held prior to processing, exactly analogous to memory and storage in today’s computers; and the reader and printer were the input and output device. Since the modern computer works on this concept which was conceived by Charles Babbage, he is also known as ‘Father of Computer science’.
• In 1840, Augusta Ada Byron suggests to Babbage that he use the binary system.
• She wrote programs for the Analytical Engine.
The **tabulating machine** was an electrical counting machine invented by Herman Hollerith in 1890.

Hollerith used the punch cards to store data, with the holes representing data values. This machine was used for US population census.

Hollerith went on to found the Tabulating Machine Company, which later merged to become a company called IBM.
Harvard Mark 1

- Also known as IBM Automatic Sequence Controlled Calculator (ASCC).
- Invented by Howard H. Aiken and installed in Harvard in 1944.
- The first electro-mechanical computer.
- It used paper tape for input and typewriters for output.
- Five tons and 51 feet of mechanical calculator, the Mark I could perform three calculations a second in 1944, and it could operate for hours without intervention.
Atanasoff-Berry Computer (ABC)

- It was the first electronic digital computing device.
- Invented by Professor John Atanasoff and graduate student Clifford Berry at Iowa State University between 1939 and 1942.
- It was designed to solve simultaneous equation
ENIAC

- ENIAC stands for **Electronic Numerical Integrator and Computer**.
- It was the first electronic general purpose computer.
- Completed in 1946.
- Developed by John Presper Eckert and John W. Mauchly.
- ENIAC occupied about 1,800 square feet and consisted of almost 20,000 **vacuum tubes**, 1,500 **relays**, 10,000 **capacitors**, and 70,000 **resistors**. It also used 200 kilowatts of electricity, weighed over 30 tons, and cost about $487,000.

John W. Mauchly and John Presper Eckert
EDSAC
Short for *Electronic Delay Storage Automatic Calculator*, EDSAC was an early computer dated around 1949 developed by Maurice Wilkes and his team.

- EDSAC performed its first calculation at the Cambridge University in England.
- It was one of the first stored program computers.
- Its input and output were provided by paper tape.
- The EDSAC could do about 700 additions per second and 200 multiplications per second.

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EDVAC

• (Electronic Discrete Variable Automatic Computer) The successor to ENIAC, EDVAC was developed by J. Presper Eckert and John Mauchly with the assistance of Von Neumann in 1952.
• It has a memory to hold both a stored program as well as data.
• Although it was the first stored program computer, it did not become operational until 1952, two years after EDVAC designs.
In 1951, Eckert and Mauchly designed another computer called the UNIVAC (UNIVersal Automatic Computer).

It was the first computer to be sold to businesses.

UNIVAC contained 5,400 vacuum tubes and used magnetic tapes to give instructions to the computer.

The UNIVAC was used to predict the presidential election of Dwight Eisenhower. No one believed the machines prediction at first, but it was very accurate.
The First Computer In Nepal

- Name: IBM 1401
- Type: 2nd Generation Computer
- Manufacturer: IBM
- Brought in: 1971 A.D. (2028 B.S.)
- Purpose: Census Counting
- Rent Rate: 1,25,000 Rs Per Month
- Time Taken: 1.7 years

PICTURE: IBM 1401 Being Operated

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The National Computer Training Center (NCC)

- Formerly Known As: यात्रिक सार्विक केन्द्र (Electronoc Data Processing)
- Renamed After 6 Years
- Objectives
  - Computer Training
  - National Data Processing
- Later The IBM 1401 was bought for National Bureau Of Stats. Which was kept at NCC.

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Present Of Computers In Nepal

- Nowadays, computers with faster processing and larger storage are found cheaply in Nepalese market.
- Students are given computer education from school level.
- At present Computer Association of Nepal (CAN) is the governing body of Nepal.