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**THE HISTORY OF COMPUTERS**.

The history of computers goes back over 200 years. At first mathematicians and entrepreneurs during the 19th century mechanical machines were designed and built to solve the increasingly complex number crunching challenges. After the advancement became more large and powerful.

Today, computers are almost unrecognizable from designs of the 19th century, such as Charles Babbage’s Analytical Engine or even from the huge computers of the 20th century that occupied whole rooms such as the Electronic Numerical Integrator and calculator.

THE 19TH CENTURY

1801: Joseph Marie Jacquard invests a loom that uses punched wooden cards to automatically weave fabric designs.

1821; Charles Babbage conceives of a stream driven calculating machine that would be able to complete tables of numbers funded by the British government project “Difference engine but failed due to lack of funds according to university of Minnesota.

1848: Ada Lovelace and the daughter of Poet Lord Byron writes the description for computation program. He also adds a step by step description for computation of Bernoulli numbers which Babbage’s machine basically on algorithm makes her the world’s first computer programmer.

1853: Swedish inventor Per Georg Schertz and the first printing calculator. It’s significant for being the first to compute tabular differences and print the results, by Utah C .Merbach’s book, Georg Schertz and the first printing calculator.

1890: Herman Hollerith design a punch card system to help calculate the 1890 US Census according to Columbia University. It helped the US government so much for saving.

He later establishes a company that will eventually become International Business Machine Corporation (IBM).

20th CENTURY

1931: Vannevar Bush invests and built the Differential Analyzer according to Massachusetts Institute of Technology (MIT) by Stanford University.

1936: Alan Turing presents the principle of a university machine later called Turing machine that are capable of computing anything that is computable. It was later involved in the development of the Turing Welshman Bombe during the Word war 11 according to National Museum of computing.

1937: John Vincent Atanasoft submits a grant proposal to build the first electric only computer.

1941: German investor and engineer Konrad Zuse completes his Z3 machine the world’s earliest digital computer. According to Gerard O Regan’s book “a Brief History of Computing” (Springer, 2021) .But it was destroyed during the world War 11 (Berlin). Later released the first commercial digital computer, the Z4 in 1950 according to O’Regan.

1941: Still Antanasoft Clifford Berry design the first digital electronic computer in U.S called Antanasoft Berry computer (ABC) according to “Birthing the Computer” Cambridge Scholars Publishing, 2016.

1945: Two professors Mauchly and J. Presper Eckert, design and build the Electronic Numerical Inmtegrator and Calculator (ENIAC) and it’s the first automatic general purpose digital computer according to Edwin D. Reilly’s book “milestones in computer science and Information Technology(greenwood Press,2003).

1946: Mauchly and Presper build the UNIVAC for business and government application.

1947: William Shockley, John Bardeen and Walter Brattain of Bell laboratories invest the transistors.

1949; A team of university of Cambridge develops the EDSAC (Electronic Delay Storage Automatic Calculator) according to O’Regan.

THE LATE 20TH CENTURY

1953: Grace Hopper develops the first computer language COBOL. (Common Business oriented Language) according to the National museum of America History.

1958; JACK Kilby and Robert Noyce unveil the integrated circuit known as the computer Chip and awarded the Nobel Prize in Physics for his work.

1968: Douglas Engel Bart presentation cufled “a Research Centre for Augmenting Human Intellect” marks the development of the computer from a specialized mached for academics to a technology that is more accessible to the general public. This include mouse and Graphical User Interface (GUI).

1969: Ken Thompson, Dennis Ritchie and other group of developers produce UNIX at Bell Labs. According to Bell Labs, the team behind UNIX continued to develop the OS using the C programming language which they also optimized.

1970: The newly formed Intel unveils 1103, the first Dynamic Access memory (DRAM) chip.

1971: A team of IBM engineers invests the floppy disk.

1972: Ralph Baer releases Magnavox Odyssey, the world’s first home game console in September 1972 according to computer Museum of America. Later Pong was released by Nolan Bushnell and engineer AL Alcorn with Atari Video game.

1973: Robert Metcalfe a member of Xerox develops Ethernet.

1977: The Computer Personal Electronic Transistor (PET0) is released onto the home computer market according to O’Regan.

1976: Steve Jobs and Steve Wazniak found Apple computer on April fool’s Day.

1977: Jabs and Wozniak present Apple 11.

1978: VisiCalc, the first computerized spreadsheet program is introduced.

1981:”Acorn,”IBM’S first personal computer is released onto the market.

1984: The Apple Macintosh is announced to the world during the superbowl advertisement.

1985: Microsoft releases Windows in November 1985, the Guardian reported. Meanwhile Commode announces the Amiga 1000.

1996: The Pentium microprocessor advances the use of graphics and music on personal computers.

1996: Sergey Brin and Larry Page develop the google search Engine at Stanford University.

1999: Wi-Fi (Wireless Fidelity) is developed covering a distance of up to 300 feet (91 meters) Wired reported.

21st CENTURY

2001: Mac OS X, later named OSX is released by Apple.

2003: AMD’S Athlon 64, the first 64 bit processor for personal computer is released to customers.

2004: The Mozilla Cooperation launches Mozilla Firefox 10.

2005: Google buys Android. A LINUX based mobile phone operating system.

2006: The MacBook Pro from Apple hits the Shelves.

2009: Microsoft launches Windows 7 on July 22.

2010: the IPad, Apple’s flagship handheld tablet is unveiled.

2011: Google releases the computer which runs on google Chrome operating system.

2016: The first reprogrammable quantum computer was created up to now.

2019: A team at Google became the first to determine quantum Supremacy.

2022: the first exascale supercomputer, and the world’s fastest, frontier, went online at the Oak Ridge Leadership computing facility (OLCF) in Tennessee. It is currently used as a tool to avoid scientific discovery.

IN conclusion, Timothy Williams provides a comprehensive overview of computer history, emphasizing its milestone, key contributors, and lasting impact on modern new life.

(B) **COMPUTER GENERATION**

A computer is an electronic device that inputs data, processes, stores and outputs information.

It has three basic function, input, process and output. The computer carries out the following functions.

Sep1: Takes data as input.

Step2: Stores the data in its memory and uses them as required.

Step3: Process the data and converts it into useful information.

Step 4: Generates the output.

Step 5: Controls all the above four steps.

Advantages of a computer.

High speed: A computer can perform millions in a few seconds as compared to a man who will spend months to perform the same tasks.

Storage capacity: It can store large amount of data.

A computer is an automatic machine.

Disadvantages of a computer.

It has no intelligence to perform any task.

Computers have no feelings or emotions.

Computers are at times harmful to people. For example, some robots kill people because of

Computers are used in various fields like Business, banks, Markets and hospitals to perform different tasks.

FIRST GENERATION COMPUTERS

The first generation computers used vacuum tubes consists of a glass bulb and wire, the wire that is used to carry data into electronic signal.

They were very large, expensive and required huge amount of electricity.

They were only used by large organizations.

The aniac and calculator was the first generation computer.

The computers in this generation used machine code as the programing language.

CHARACTERISTICS OF FIRST GENERATION COMPUTER

Vacuum technology

Unreliable

Very costly

Generates a lot of heat

Need of AI

Non portable

EXAMPLES OF TIRST GENERATION COMPUTEWRS

ENIAC

EDVA

UNIVAC

IBM-701

IBM-750

SECOND GENERATION COMPUTERS

They use transistors instead of vacuum tube. Since transistors are smaller so computers become smaller than first generation computers.

Transistors consume less power than the first generation computers.

They still consume a lot of heat and required frequent maintenance, used magnetic cores and magnetic tapes for inputting and storing data.

High level programing language such as COBOL and FORTRAN were introduced.

The computers used batch processing and multi programming operating system.

Main characteristics of a computer.

The computers use transistors

Smaller in size compared to first generation computers.

The computers are cheaper compared to first generation computers.

Generates less heat compared to first generation computers.

Consume less electricity compared to first generation computers.

EXAMPLES.

IBM-1620

IBM-7094

CDC 1604

UNIVAC 1108

THIRD GENERATION COMPUTERS (1965-1971)

The computers of this generation used integrated circuits (ICS) also known as microchips in place of transistors’

A single IC has many transistors and capacitors along with the associated circuitry. They use the keyboard as the main input device and the monitor.

They used high programing languages like Cobble, basic, Pascal and Fortran2, 3.and 4, ALGOL and others.

MAIN FEATURES

Used integrated circuits

They are faster compared to second generation computers.

They consume lesser electricity.

More reliable compared to first and second generation.

EXAMPLES OF THIRD GENERATION COMUTERS

IBM-360 series

Honeywell- 6000 series.

PDP (Personal data Processor).

TDC-316.

FOURTH GENERATION COMPUTERS (1971-1980)

They use microprocessor consist of a small silicon chip on which thousands of circuits are placed.

They are smaller, portable and cheaper. They use less electricity and produce less heat.

They used very large scale integrated (VLSI) circuits.

These circuits have about 5000 transistors and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generation.

They became more powerful, reliable and affordable and this gave rise to personal computer generation. In this generation, time sharing, real time networks, distributed operating system were used. All high level language like C, Ctt, DBASE, and others were used.

FEATURES OF FOURTH GENERATION COMPUTERS

They are portable and reliable.

They have a great development in the field of network.

No AC required.

The concept of internet was introduced.

VLSI technology is used.

EXAMPLES

DEC 10

STAR 1000

PDP 11

CRAY-1 (Super computer)

CRAY-X-MP (SUPER COPMUTER)

FIFTH GENERATION COMPUTERS (1980-till date

This the generation is still in progress, they are portable, can be carried easily from one place to another. Use Ultra scale integration circuits as the main electronic component. Also use AI which refers to as the science of developing machines which interprets the means of making the computers think like human being. All the high level languages like C and Ctt, Java, .Net and others are used in the generation.

FEATURES OF FIFTH GENERATION COMPUTERS

ULSI technology

Development of artificial intelligence

Advancement in superconductor technology

Availability of very powerful and compact computers at cheaper rates

Computer types of this generation include: Desktop, Laptop, Notebook, Ultra book, Chrome book and others.

**In conclusion**; Walter lsaacson’s exploration of computer generations reveals a rich tapestry of innovation that not only defines technology but also reshapes human experience.

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