

Report

by Thais Luanger Isamar Da Silva Blanco

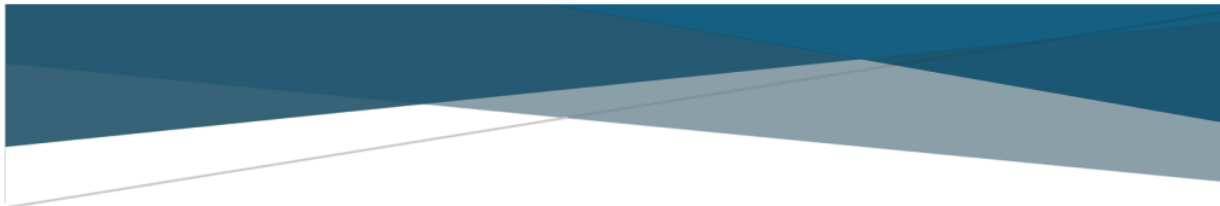
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TIMELINE OF COMPUTING

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Introduction

The evolution of the computer has undergone an impressive journey around the history. It has had to endure for many years of evolution, renovation, and advancements to become what is known today.

Ranges from simple large-scale machines to the present day, where it exists cloud computing and artificial intelligence.

Every change that it has had traversed over time (it started from 1940 till now), it has been an inerasable benchmark for the technology, and in the way people interact with the computing world nowadays.

On this investigation, it can be analysed from the first generation of computing to the latest one. it will display different features, trends and innovations that represents every generation and the process to become in the known current computing.

First generation of computers

the first generation of computing started in 1940 and it finished in 1950. It marked the start of computing development.

On those electronic machines had as main purpose to execute automatically perform calculations and process information.

It emerged in the first war and after the second one, it helped in those wars by data processing and automation tasks.

features:

1) It used vacuum tubes:

It allowed to execute fundamental logic and mathematics although it generated considerable heat

2)Weight and size:

The computers of this era were characterized by their substantial dimensions and weight. They filled entire rooms and necessitated specialized installations for their operation due to the requirements for cooling and power supply.

3)programming:

The programming was done physically by connecting cables or connections on control panels

4)performance

had low performance and were prone to failure, requiring continuous maintenance."

5) storage:

It had a limited storage. it was realized through magnetic tapes diapositives

6) price and access: it was a complex to develop those machines so, it was very costly.

basically, it was applied those machines just for big companies, universities, government institutions. as well. it was applied on the second war to analyse scientific data and business accounting.

main examples of computers

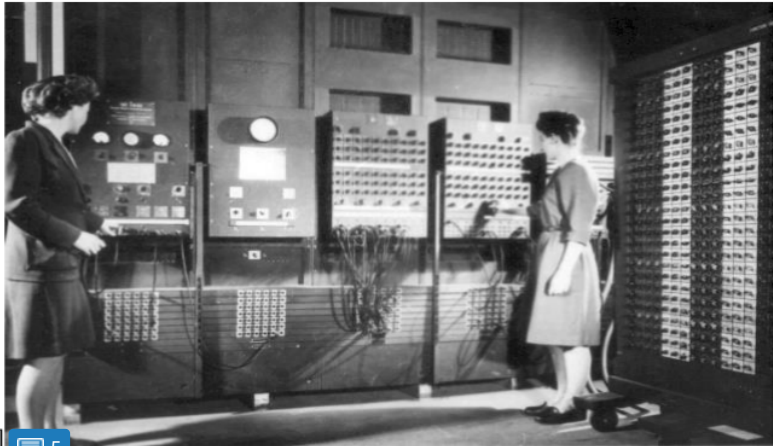
ENIAC (Electronic Numerical Integrator and Computer)

It considered as the first computer. As well it was an experimental machine created in 1946. It was created in The United states of America

by the UNIVAC I (Universal Automatic Computer).

First commercial computer

[1] [2]



[3]  5



[4]

second generation

During the 1950s to the early 1960s, researchers and scientists aimed to enhance the efficiency, reliability, and size of these machines. One of the most notable features of this generation was the adoption of transistors as the primary component. Transistors were smaller, more reliable, and consumed less energy, enabling the construction of more compact and efficient computers. During this period, several iconic computers emerged, such as the IBM 1401 and the UNIVAC 1107, which offered greater processing speed, improved storage capacity, and overall superior reliability compared to their predecessors. This marked the beginning of an era of smaller, faster, and more reliable computers.

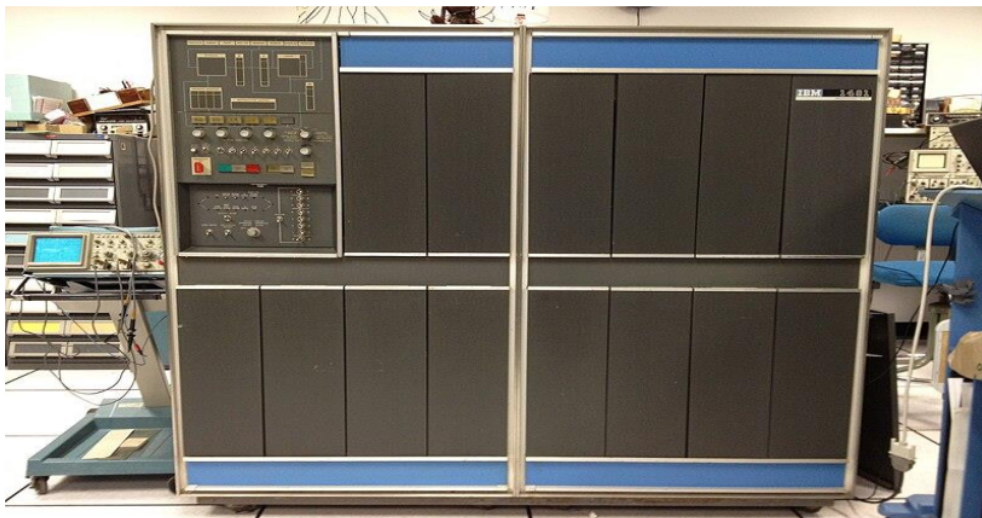
Features included:

- 1) transistors: It was an important decade because it changed vacuum tubes to transistors. those transistors consumed reduced energy than vacuum tubes, so it produces less heat. As well, transistors was smaller so it allowed to increase the efficiency and reduce the size.
- 2) size and weight: how it was mentioned before, the change it made those machines smaller and lightweight. additionally, this allowed the facilitate of maintenance and installation.
- 3) processing capacity: capacity to manage complex tasks and it had a faster process capacity
- 4) storage: It presented a change from magnetic tape to magnetic disks. it allowed an enhanced capacity and velocity
- 5) operative systems
this generation started to apply advanced operative systems. It enables to efficiency manage of computing resources. as well, it allowed to execute different tasks at the same time.
- 6) Price: it remained inaccessible to everyone, but the price was much lowest because it had a size reduction.
- 7) programming languages: there were many popular programming languages such as Cobol and Fortran. so, those languages made a simplification in the programming process.

Examples:

IBM 1401

[1]



[5]

IBM 7090



[6]

third generation

this generation undertake a significant change in the technology informatic history because it introduced integrated circuits, so it permitted the creation of lesser in size , more rapid and reliable computers. those computers had an increased capability.
this generation started approximately in 1960 .

features of computers

1) integrated circuits or chips: The integrated circuit is the most important feature of those computer because it allowed a faster efficiency than others computers on previous generations.

2) software and hardware compatibility: one of the computers on this generation introduced software and hardware compatibility, this produced facilities in migration systems

3) increased reliability: integrated circuits caused better impact than individual components applied in other generations, allowing a lower failure and enhanced stability in operations of this computer.

4) improvement in processing capacity: chips converted the processing data and manage capacity more quickly.

5) accessibility: their smaller size made them more accessible, so more companies, institutions and organisations could obtain them.

6) storage:

there were many types of memories but one of the most important in this generation it was magnetic rings. those magnetics ring could store information temporarily and they were faster.

in conclusion, the third generation ser the foundation for the progress of more advanced computing technologies in following generations.

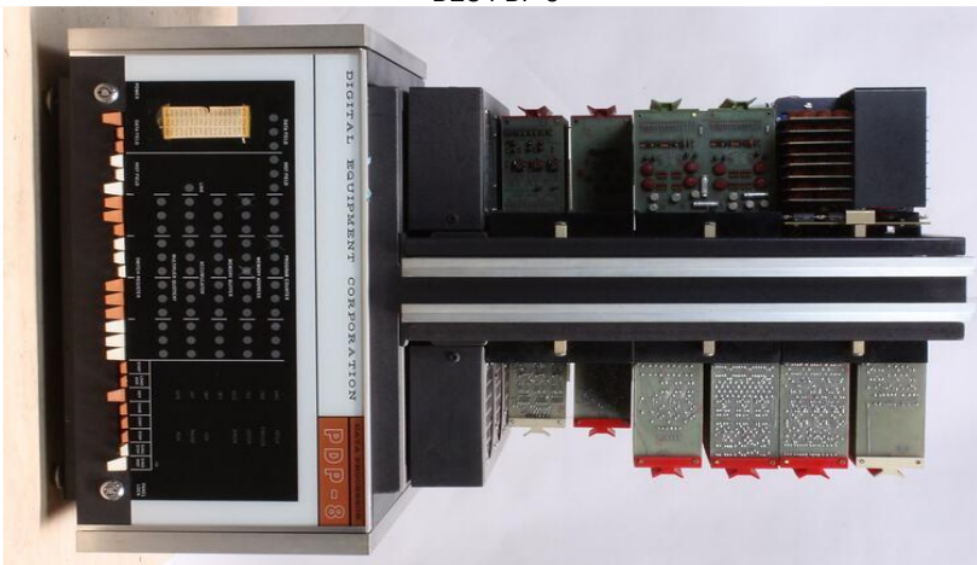
examples [1]

IBM System/360



[7]

DEC PDP-8



[8]

IBM 1401



[9]

Fourt generation

the technological advances that occurred in this generation were very important for the change in the computing landscape. with the creation of microprocessors, the size of computers decreased, making them the most accessible of all generations.

additionally, the construction of the first personal computers changed the way people interacted with technology.

this generation not only impact the development of computers but also, society as a whole.

During this time, the easiest operating systems of the moment were created, allowing computers to become easy to manage, with a great processing and storage capacity.

the fourth generation started in 1970

Main features of the fourth generation

1) Microprocessors: the microprocessors made start personal computers. it contained thousands of transistors in only one integrated circuit this permitted to created smaller and fasters systems.

2) personal computers (PC) : it was the starter of personal computers on this generation, reverting to accessible and popular computers for consumers.

3) Operative systems: there were new systems such as MS-DOS de Microsoft and Unix. those systems allowed a superior software compatibility.

4) graphical user interfaces (GUIs); it permit to users have a visual interaction with computers. some of them were Windows by Microsoft and Macintosh system by Apple.

5) storage: they develop new storage dispositive such as hard drive. it offered more storage capacity and quicker data access.

computer networks: it allowed the connection between multiples computers to share data in an efficient way. [1]

examples

IBM Personal Computer (IBM PC): it was created in 1981, it was the first available personal computer for domestic and commercial use.



[10]

Apple Macintosh: It was created 1984, it was used like a creative and designer tool.



[11]

Commodore 64: it was created in 1982. It was a popular personal computer, and it had a greater process and capacity graphics for this time. as well, it was a popular computer like a platform to play games. [1]



[12]

Fifth generation

This generation started from the 1920s to the present day it Produced radical change in that period of time with respect to the interaction with the technology users had. Basically, Previously, there was no facility for obtaining, using, or quoting this type of technological machines or technological devices

In this generation, several factors were highlighted such as the ability to simulate human thinking By Using a automatic machine learning algorithms. They were also able to perform different tasks in the same time

With these advances, they were able to understand human language, which facilitated user-computer interaction

It also transformed the way we live, communicate, and speak

Additionally, they could be used in many fields of work such as medicine, business management and engineering

In medicine, they were able to detect diseases by means of experimental systems [1]

The present

in the present, there are many type of computers that it exist a different types for your needs such as if you need a computer to study, entrainment, work or communication . also, many options of prices, sizes, capacity, storage, design, colour. nowadays, they are a powerful tool that represent significant role in our lives. mostly o people they know how to use them, and they have a technologic dispositive. it offers an internet access, wireless capabilities that allows instant communication. people can use them for many things like communication, research information, safe information.

key features:

1) processing power: Furnished with multi-core processors. computers can effectively run programs and execute complex tasks.

2) storage:

From ultra-fast solid-state drives (SSD) to high-capacity hard drives, contemporary computers systems offer a Diverse array of storage options to store files, data

3) connectivity

it offers many types of connectivity options like Bluetooth, USB ports, internet, Wi-Fi and others.

4) high-resolution displays

it provides clear images, providing a high quality in a visual experience with computer. for example, watching videos, designing, playing games.

5) portability: how it was mentioned before, there a variety in the range of electronic devices like laptops, tables, mobile that it can offer a great portability.

6) security: there are many programs that can protect users security and privacy like antivirus software.

The most prominent computers of t present.

1. Apple Macbook pro

It provides a potent hardware, modern design and MacOS system. It is notable for sharp retina display, rapid processor and other things such as touch ID. [13]

2. Microsoft Surface Studio

It tailored for creative professional, provides great resolution screen. It has a touch screen to allowed professionals to feel more comfortable to create designers. It allows to the users connect tools such as surface pen [14]

3. Dell XPS 13

It is designer for professionals and consumers. It has a good quality battery life and great quality construction. [15]

4. Lenovo TinkPad X1

It supplies a blend of performance, mobility, and security. Paired with amenities like great definition screen and illuminated keyboard. [16]

5. Rasberry Pi 4

It is popular for the low price. It considered perfect for DIY projects and computer education.

As well, This device is a great option for creating home servers, domestic automation systems and internet of tings devices [17]

conclusion

overall in the different era of computers, it has been seen an amazing change in information technology, from the first big machines till the easy and advanced designs of computers of this new generations. every era had brought a remarkable importance that have convert the method of life, connection and living style.

every generation it based something innovative, for example ³ the first generation of computers used vacuum tubes, second generation introduced transients, in the third generation invented integrated circuit. the fourth generation, it was the start for personal computers because it invented the microprocessors. And the fifth generation allowed a better interaction between computers and users through Artificial intelligence and natural language.

in conclusion, every generation built what we know about computers nowadays. the development of computers still in constant evolution allowing to the users be more connected with the technology.

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Title page: yes

A table of contents : yes

using words navigation headers: no

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A conclusion: yes

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Appendix if required: n/a

Any pictures used captioned appropriately: nearly, see comment

Breakdown

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Comment

Great work

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PAGE 5



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