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وزارة التعليم العالي والبحث العلمي
جامعة بغداد
كلية العلوم للبنات /قسم الفيزياء

Computer 1

(UOB103)

for First Year

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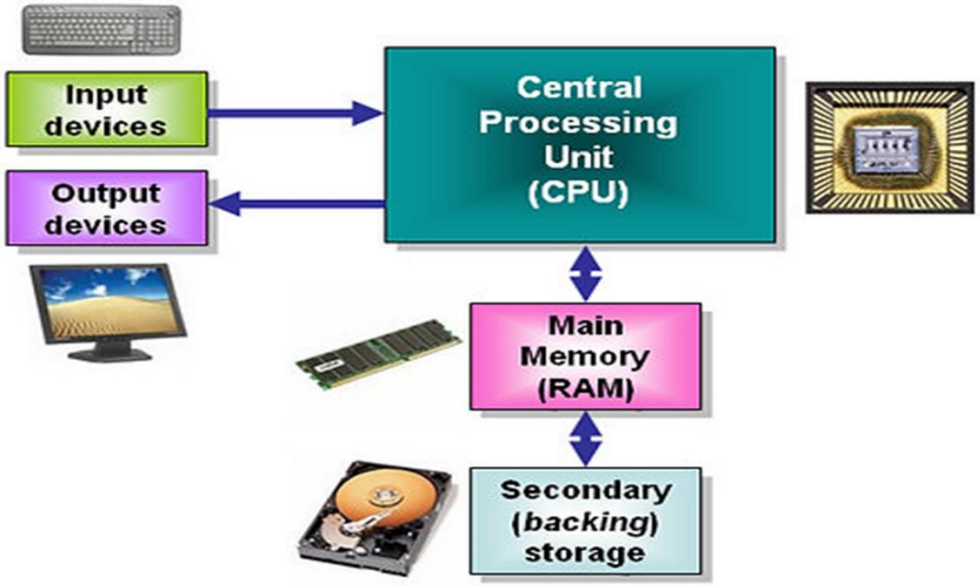

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Lecture 1

INTRODUCTION

Today, almost all of us in the world make use of computers in one way or the other. It finds applications in various fields of engineering, medicine, commercial, research and others. Not only in these sophisticated areas, but also in our daily lives, computers have become indispensable. They are present everywhere, in all the devices that we use daily like cars, games, washing machines, microwaves etc. and in day to day computations like banking, reservations, electronic mails, internet and many more.

The word **computer** is derived from the word **compute.** Compute means to calculate.

The computer was originally defined as *a super-fast calculator*. It had the capacity to solve complex arithmetic and scientific problems at very high speed.

But nowadays in addition to handling complex arithmetic computations, computers perform many other tasks like *accepting, sorting, selecting, moving, comparing* various types of information. They also perform *arithmetic* and *logical operations* on alphabetic, numeric and other types of information.

Computer Generations

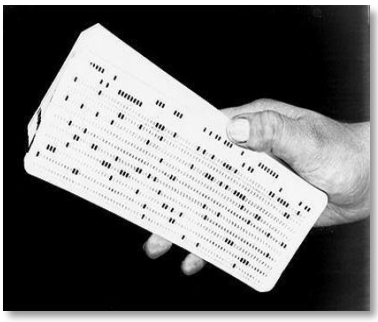
Generation in computer terminology **is a change in technology a computer is/was being used**.

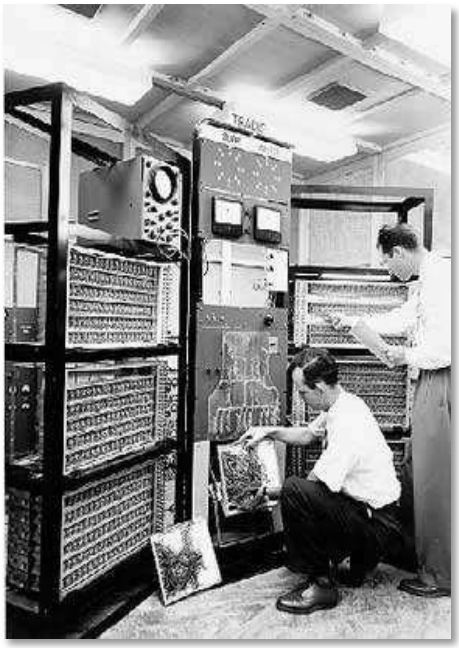
Initially, the generation term was used to distinguish between varying hardware technologies. Nowadays, generation includes both hardware and software, which together make up an entire computer system.

Following are the main five generations of computers:

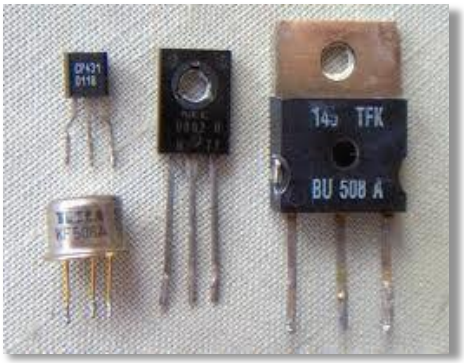
❖ **First Generation (**1946-1959):

- Relied on machine language to perform operations.
- They could only solve one problem at a time.
- Input was based on punched cards and paper tape, and output was displayed on printouts.





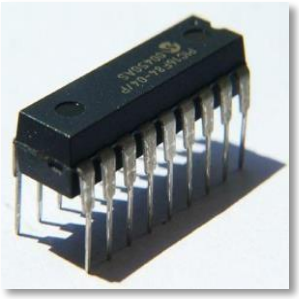
Second Generation (1959-1965):



- The transistor was created, allowing computers to become smaller, faster, cheaper, more energy-efficient and more reliable.

- Assembly languages and High-level programming languages were also being developed at this time.
- It is the first computers that stored their instructions in their memory.

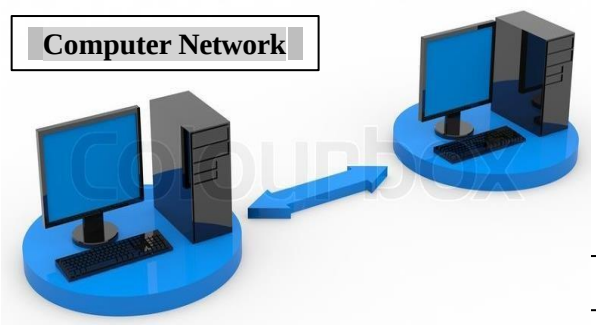
❖ Third Generation (1965-1971):



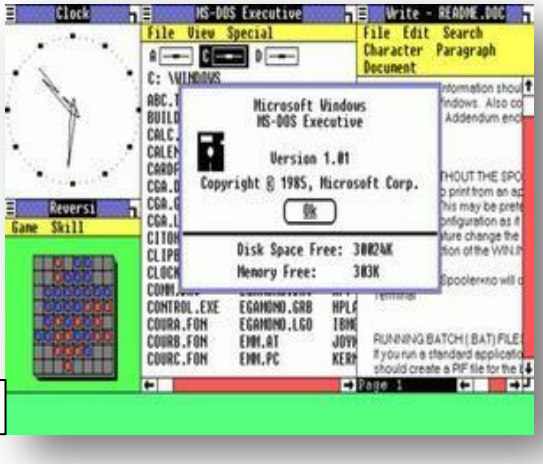
- Integrated Circuit based.
- Users interacted with third generation computers through keyboards and monitors.
- Interfaced with an operating system which allowed the device to run many different applications at one time with a central program that monitored the memory.

❖ Fourth Generation (1971-1980):

- VLSI microprocessor based. In 1981 IBM introduced its first computer for the home user, and in 1984 Apple introduced the Macintosh.
- Those computers could be linked together to form networks, which eventually led to the development of the Internet.
- It also saw the development of GUIs (Windows OS), the mouse and handheld devices.



Computer Network



Windows OS Ver. 1.0

❖ **Fifth Generation (**1980-onwards):

- ULSI microprocessor based.
- The goal of fifth-generation computing is to develop devices that respond to natural language input and are capable of learning and self- organization (Artificial Intelligent).