

Ministry of Higher Education and Scientific Research

University of Al-Hilla

Department of Artificial Intelligence

Computer Technology

Lecture Three: Generation of Computers & Computer hierarchy


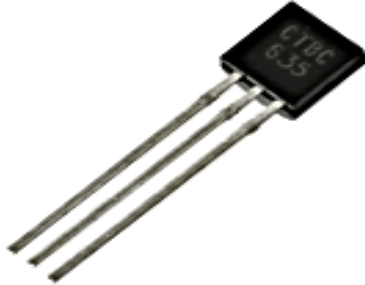

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First stage

2024 - 2025

Computer Generations

- The Generations of computer lie into five generations:
- **The First Generation (1940-1956):** Vacuum Tube
- **The Second Generation (1956-1963):** Transistors
- **The Third Generation (1964-1971):** Integrated Circuits
- **Fourth Generation (1971-Present):** Microprocessors
- **Fifth Generation (Present and Beyond):** Artificial Intelligence

Generation and Year	Hardware	Device	Examples
1st Generation (1940-1956)	Vacuum Tube		ABC, Z3, Colossus, ENIAC, EDVAC, UNIVAC, and IBM
2nd Generation (1956-1963)	Transistors		IBM1401, IBM1620, LARC, MCR300, Programming RCA301 and Honey-well-400
3rd Generation (1964-1971)	Integrated Circuits		Sperry, Burroughs, DEC, NRC and Honey-well IBM

**4th
Generation
(1971-
Present)**

Microprocessors



Microprocessor
till to date

**5th
Generation
(Present
and
Beyond)**

Artificial
Intelligence

AI Artificial
Intelligence



Quantum
Computer,
Molecular, and
Nanotechnology

Computer Types

- There are several types of computer; these types are classified according to size and capabilities of each type. They are as follows:
 - **Supercomputer**
 - **Mainframe**
 - **Workstation**
 - **Personal Computer**
 - **Server**
 - **Microcontroller**
 - **Wearable Computer**

Computer Types

- ❑ *supercomputer* : An extremely fast computer that can perform hundreds of millions of instructions per second.



Computer Types

- ❑ *minicomputer* : A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.



Computer Types

- ❑ *workstation* : A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.



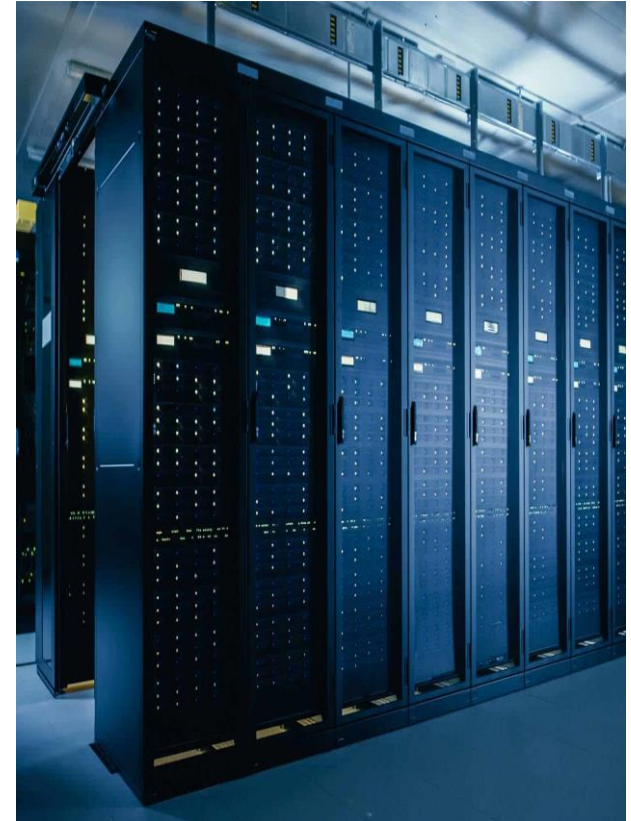
Computer Types

- ❑ **Personal computer:** A small, single-user computer based on a **microprocessor**. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.



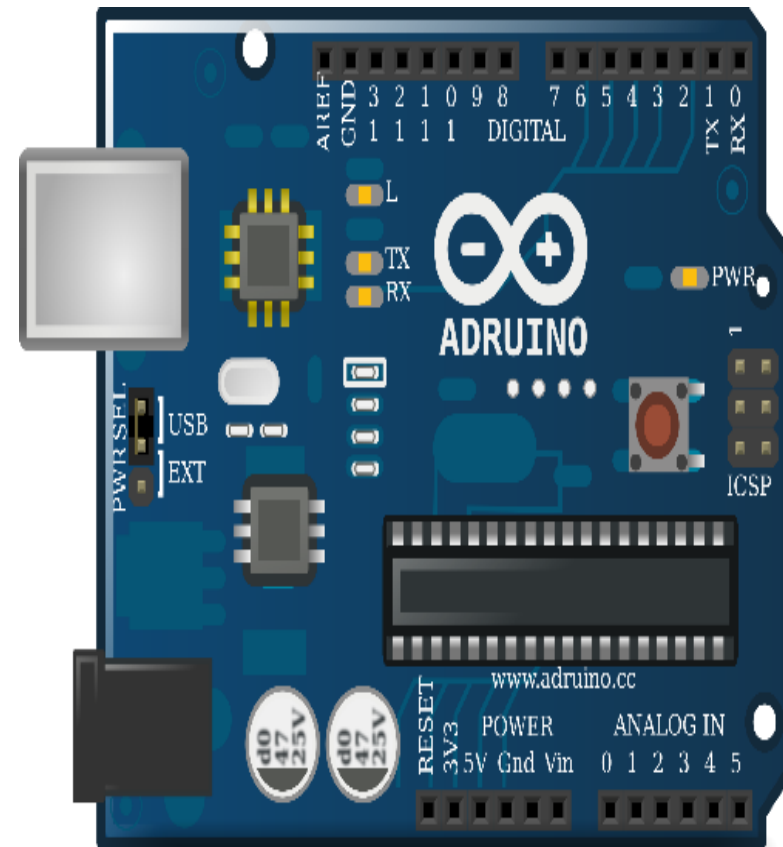
Computer Types

- ❑ *server computer* is a device or software that runs services to meet the needs of other computers, known as clients. Depending on the situation, a server program may operate on either a physical computer or a virtual machine.
- ❑ A server computer is a high-performance computer designed to handle, store, and manage network data, devices, and systems



Computer Types

- ❑ **Microcontroller** is a **tiny computer** on a single chip that can perform specific tasks in **embedded systems**, such as controlling a microwave or a remote.
- ❑ Microcontrollers are widely used in electronics, robotics, IoT, automotive, industrial, and medical applications, as they are **low-cost, low-power**, and versatile.



Computer Types

- ❑ A *wearable computer* is any small technological device capable of storing and processing data that can be worn on the body.
- ❑ It may be under ,over, or in clothing or may be itself clothes





Thank you