

INTRODUCTION TO COMPUTER & MICROPROCESSOR

➤ ***What is a Computer?***

A computer is an electronic machine that accepts information, stores it until the information is needed, processes the information according to the instructions provided by the user, and finally returns the results to the user. The computer can store and manipulate large quantities of data at very high speed, but a computer cannot think. A computer makes decisions based on simple comparisons such as one number being larger than another. Although the computer can help solve a tremendous variety of problems, it is simply a machine. It cannot solve problems on its own.

➤ ***Types of Computers***

Computer now comes in a variety of shapes and sizes, which could be roughly classified according to their processing power into five sizes: super large, large, medium, small, and tiny.

1. ***Supercomputers - super large computers:*** *supercomputers* are high- capacity machines with hundreds of thousands of processors that can perform more than 1 trillion calculations per second.
2. ***Mainframe computers - large computers:*** The only type of computer available until the late 1960s, *mainframes* are water- or air-cooled computers that vary in size from small, to medium, to large, depending on their use.
3. ***Workstations - medium computer:*** Introduced in the early 1980s, *workstations*, are expensive, powerful computers usually used for complex scientific, mathematical, and engineering calculations and for computer-aided design and computer-aided manufacturing.
4. ***Microcomputer - small computers:*** *Microcomputers*, also called *personal computers (PC)*, can fit next to a desk or on a desktop, or can be carried around. They are either standalone machines or are connected to a computer network, such as a local area network. A *local area network (LAN)* connects, usually by special cable, a group of desktop PCs and other devices, such as printers, in an office or a building. Microcomputers are of several types:

- a. **Desktop PCs:** are those in which the case or main housing sits on a desk, with keyboard in front and monitor (screen) often on top.
- b. **Tower PCs:** are those Microcomputer in which the case sits as a "tower," often on the floor beside a desk, thus freeing up desk surface space.
- c. **Laptop computers** (also called *notebook computers*): are lightweight portable computers with built-in monitor, keyboard, hard-disk drive, battery, and AC adapter that can be plugged into an electrical outlet; they weigh anywhere from 1.8 to 9 pounds.
- d. **Personal digital assistants (PDAs)** (also called *handheld computers palmtops*) combine personal organization tools-schedule planners, address books, to-do lists. Some are able to send e-mail and faxes. Some

PDAs have touch-sensitive screens. Some also connect to desktop computers for sending or receiving information.

- e. **Microcontrollers-tiny computers:** Microcontrollers, also called embedded computers, are the tiny, specialized microprocessors installed in "smart" appliances and automobiles. These microcontrollers enable PDAs microwave ovens, for example, to store data about how long to cook your potatoes and at what temperature.