**Parts of a Digital Computer System**

A working computer requires both hardware and software. Hardware is the computer's physical electronic and mechanical parts. Software consists of the programs that instruct the hardware to perform tasks.

**a) Hardware**

A digital computer's hardware is a complex system of four functionally different elements—a central processing unit, input devices, memory-storage devices, and output devices.

**The central processing unit**

The heart of a computer is the central processing unit (CPU). Mainframe and supercomputer CPUs sometimes consist of several linked microchips, called microprocessors, each of which performs a separate task, but most other computers require only a single microprocessor as a CPU.

Most CPUs have three functional sections:

(1) the arithmetic/logic unit (ALU), which performs arithmetic operations (as addition and subtraction) and logic operations.

(2) temporary storage locations, called registers, which hold data and instructions

(3) the control section, which times and regulates all elements of the computer system.

A very fast clock times and regulates a CPU. The clock speed is measured in cycles per second, or hertz (Hz). Today's desktop computers have CPUs with 1 to 4 GHz (gigahertz) clocks. The fastest desktop computers therefore have CPU clocks that tick 4 billion times per second. A CPU can perform a very simple operation, such as copying a value from one register to another.