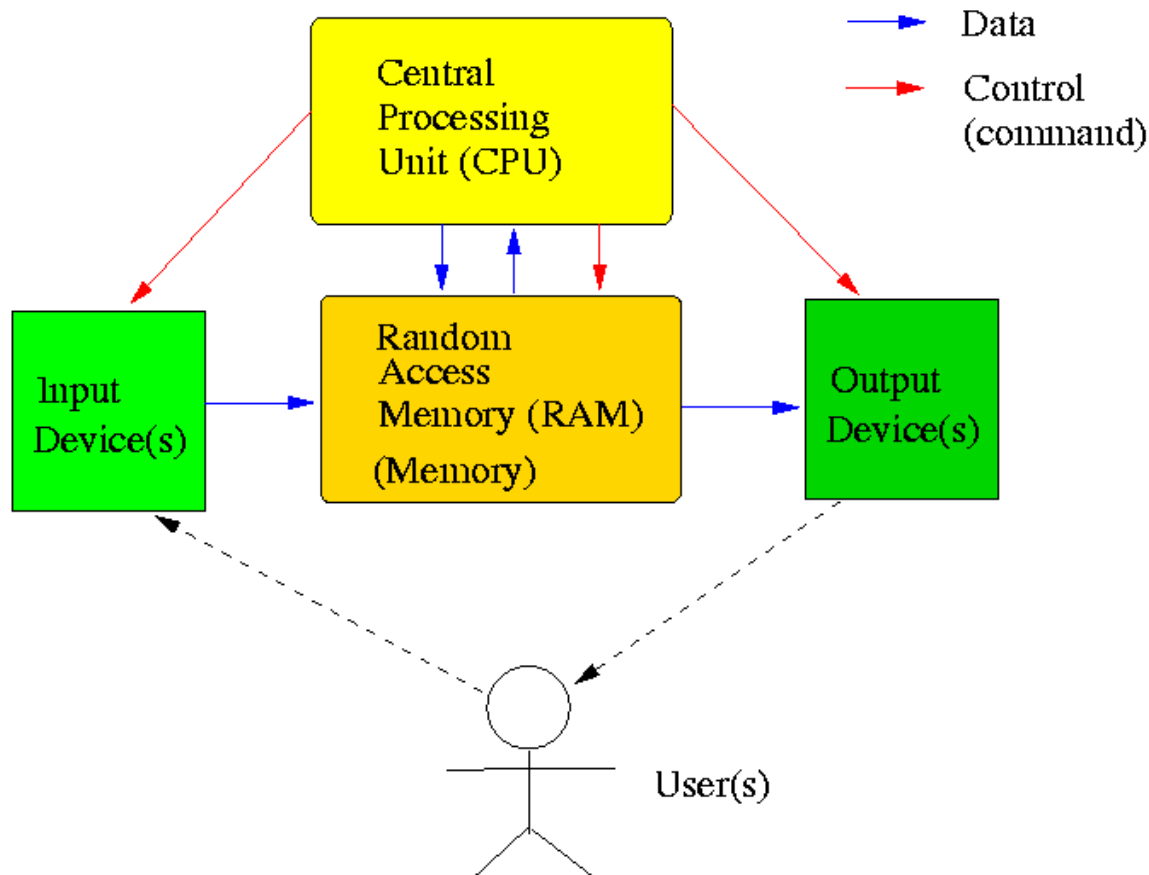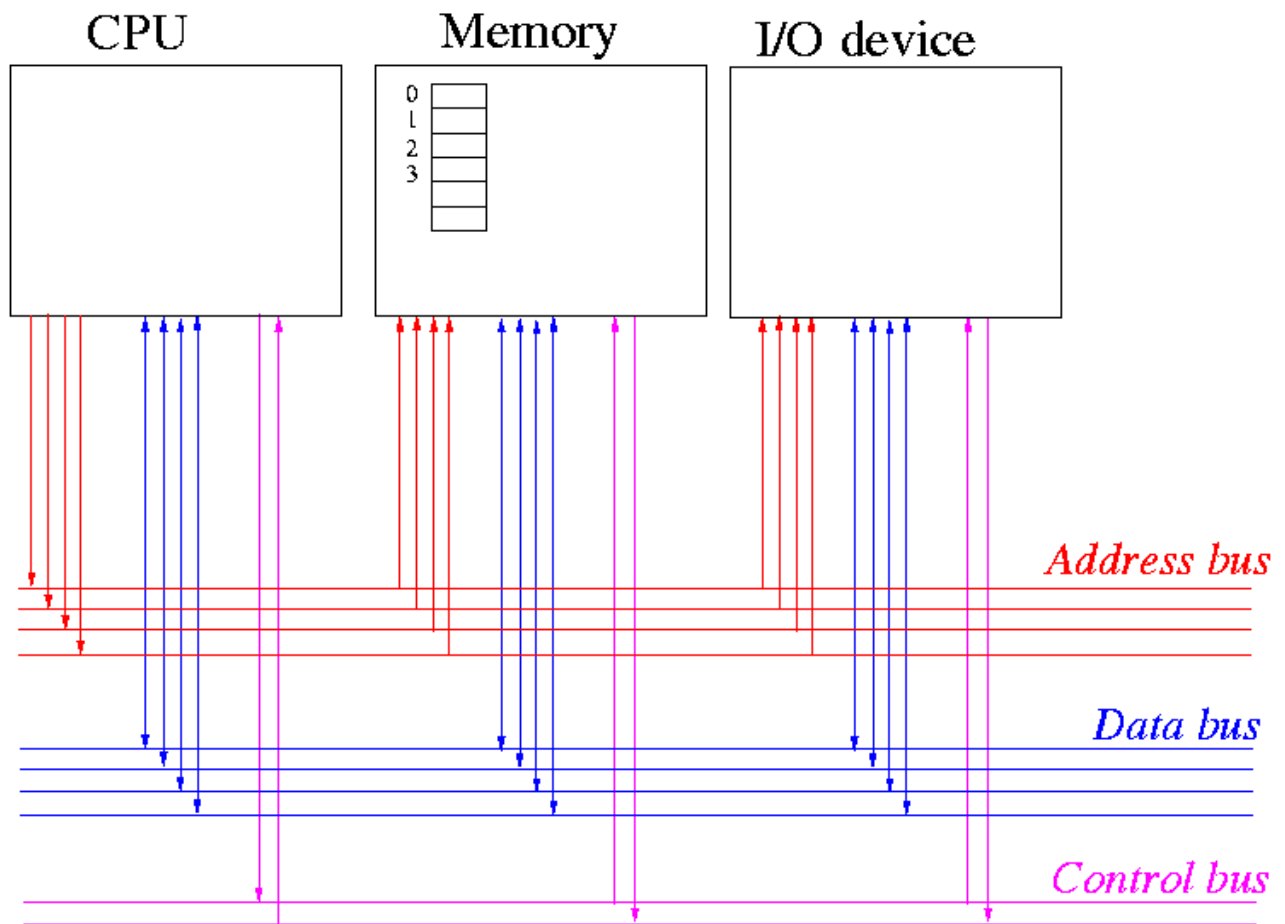# A high level look at the computer

- High level view of a computer:

- Computer system consists of **CPU** and **Memory**. (input and output devices are "peripherals").

- Function of the CPU:
  - consists of highly complex circuitry to execute instructions (computations)
  - contains a small amount of high speed memory to store result of computations.

- Function of the Memory of computer:
  - Warehouse, storage... it contains **everything** needed by the CPU:
    - Stores instructions that the CPU executes
    - Stores data (operands) needed in the instructions (the constants and variables used in a computer program, including users input & output data)

- Input device:
  - enables users to enter data into the computer
  - many different forms of inputs: keyboard, mouse, scanner, disk files, etc.

- Output device:
  - enables computer to show user outcome of a program
  - many different forms of outputs: terminal, audio beep, graphics, etc.

- Connection between components in computer:

- ○ Copper wires (edged on the "mother board") make connections between components in the computer
- ○ Wires can be divided into 3 groups according to function:
    - Wires used to transmit the ID of a device (address)
    - Wires used to transmit data between devices (data)
    - Wires used to transmit control (commands) information
- ○ Wires grouped into "buses" according to their function:
    - computer bus = group of wires having similar function
    - address bus
    - data bus
    - control bus
    - system bus = address, data and control bus (together)