**Computer Architecture**

* Binary
  + Everyday life we use the decimal system (base 10)
  + Binary is base 2
* Data are the “operands” upon which instructions operate.
* Binary data must be resented to a computer in a specific format. This task is performed by the input unit.
* Memory Unit
  + Data is stored as a series of bits
  + Processor reads instructions and reads/writes to the memory during the execution of a program.
  + Groups of bits are fetched at a time
    - Referred to as “word”
* Processor read/writes from memory based on the memory address
  + RAM provides fixed access time independent of the location of the word.
* Memory and processor have to communicate with each other in order to read/write information.
* Primary storage of the computer of the Computer consists of RAM
* Secondary is stored on Magnetic disks, tapes, cds etc.
* Operations are executed in the Arithmetic and Logic Unit (ALU)
* Output units
  + Computer represents information in a specific binary form
    - Interface with output units
* Operation of a computer can be summarized as
  + Accepts information from the input units
  + Stores the information
  + Processes the information
  + Provides processed results through the output units.
* Everything is coordinated by the Control Unite (CPU)
* Units must be connected and communicate with each other
  + Unites may be connected by a group of parallel wires called a bus.
* Cache memory in the CPU is accessed faster because it is directly accessed by the CPU