

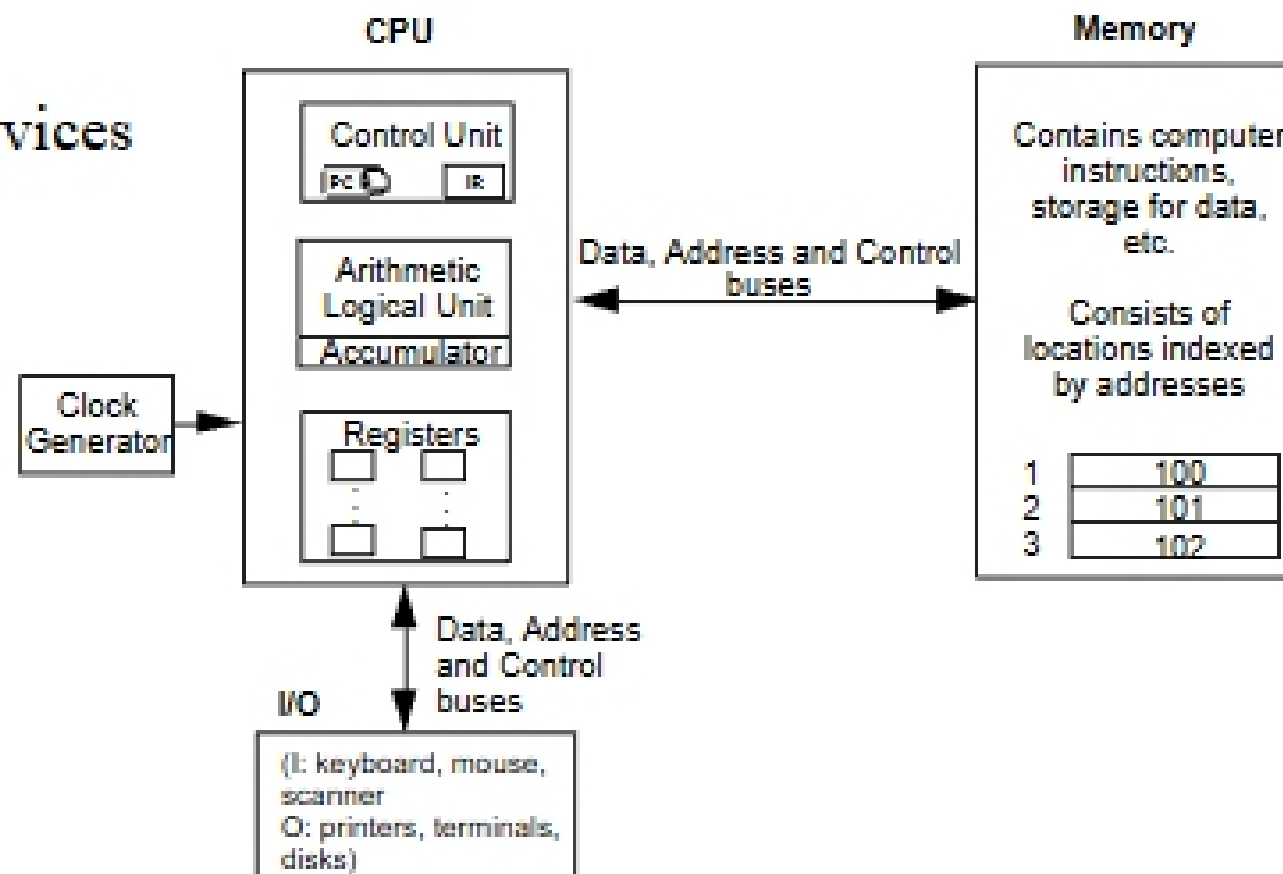
Computer Architecture

2/26/01 Lecture #9 16.070

- On a previous lecture, we discussed the software development process and in particular, the development of a software architecture
- Recall the output of the Conceive phase: **functions**, **concept** and high level **partition** which collectively are known as the architecture
- Today's lecture discusses the architecture of the hardware underlying the software

Computer Architecture

- An overview of how computers are organized
- A digital computer consists of an interconnected system of processors, memories and input/output devices
- A digital computer consists of three basic components
 - Central Processing Unit - "brain" to coordinate activities
 - Memory Unit
 - Input/Output Devices



- **Central Processing Unit**

- The Central Processing Unit (CPU) is the "brain" of the computer

- CPU consists of

- Control unit which fetches instructions from main memory and determines type

- Arithmetic and logical unit (ALU) which executes instructions

- Registers which are high-speed memory to store temporary results

- Function: Execute programs stored in main memory

- Fetch instructions

- Examine instructions -- decode

- Execute instructions