Computer Hardware

Class Five

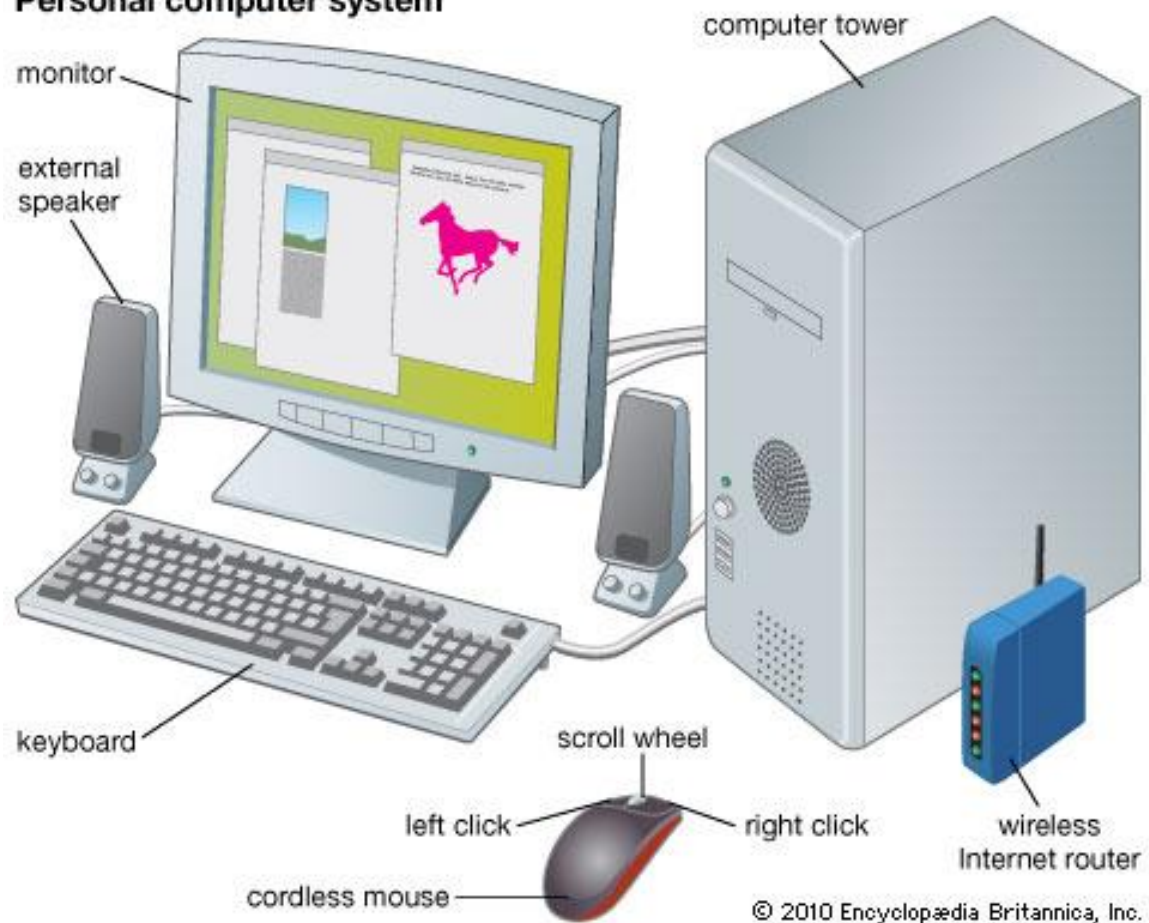Lab 1

Lab Objectives:

- **Processor – ALU**
- **Controller**
- **Register**
- **Motherboard**

Overview of a Computer:

Personal computer system

Processor

A processor, or "microprocessor," is a small chip that resides in computers and other electronic devices.
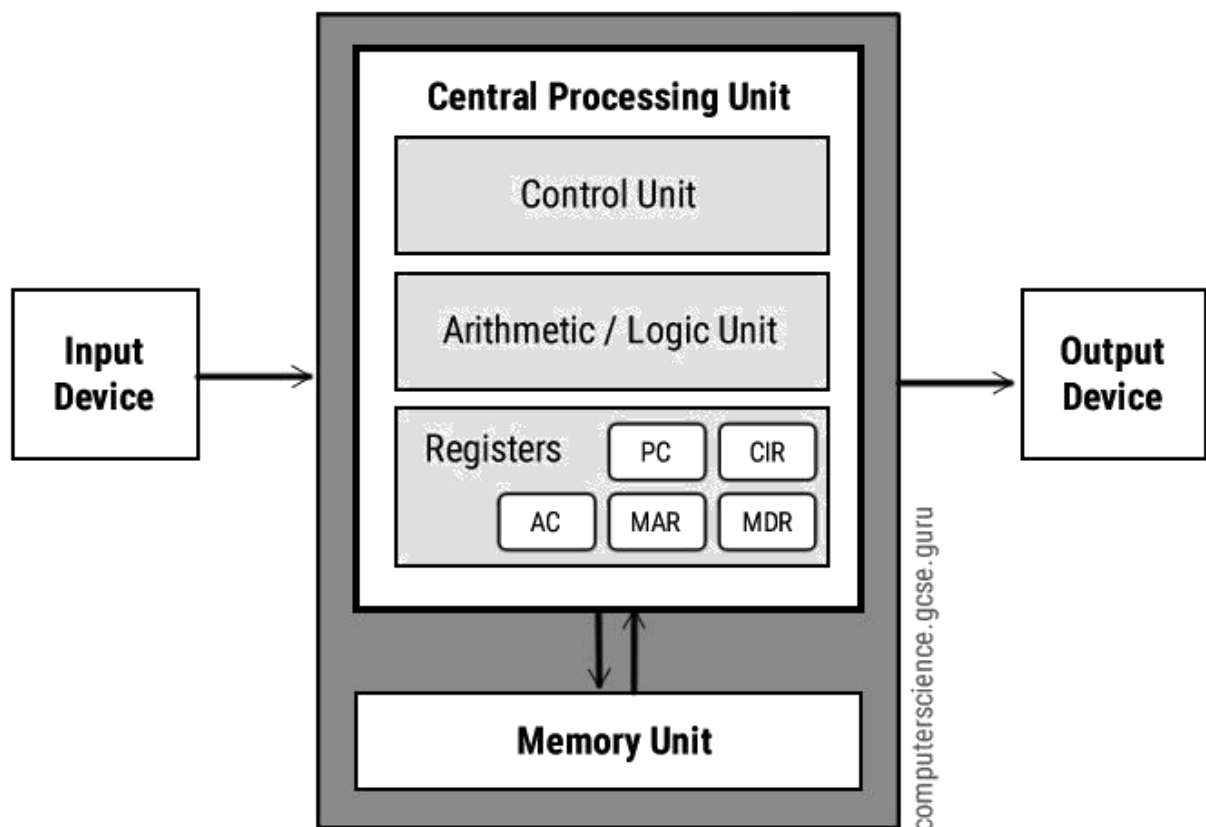
Its basic job is to receive input and provide the appropriate output. While this may seem like a simple task, modern processors can handle trillions of calculations per second.

Computer Architecture

Computer architecture is a specification detailing how a set of software and hardware technology standards interact to form a computer system or platform
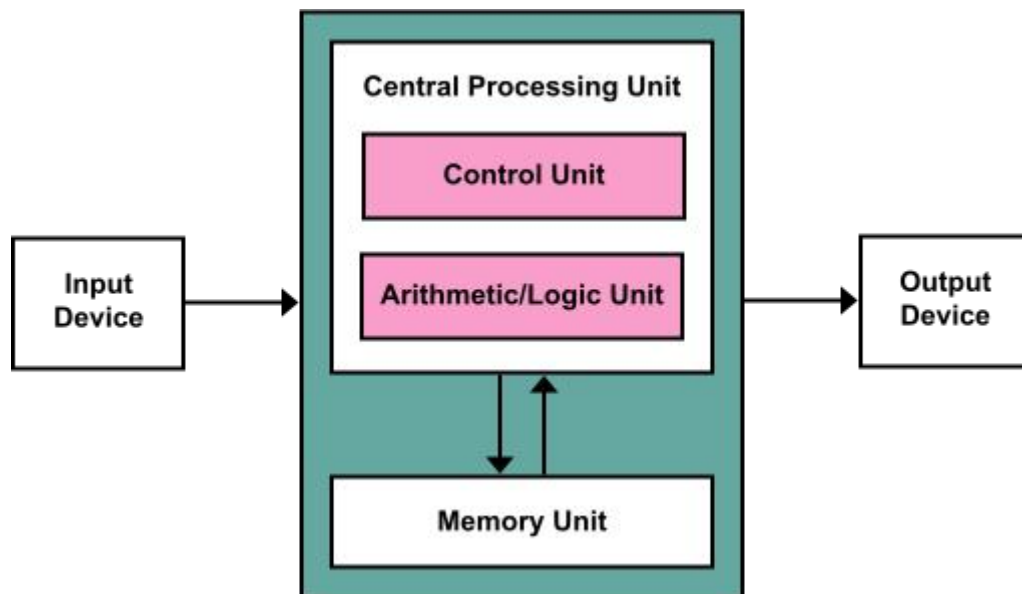

In short, computer architecture refers to how a computer system is designed and what technologies it is compatible with.
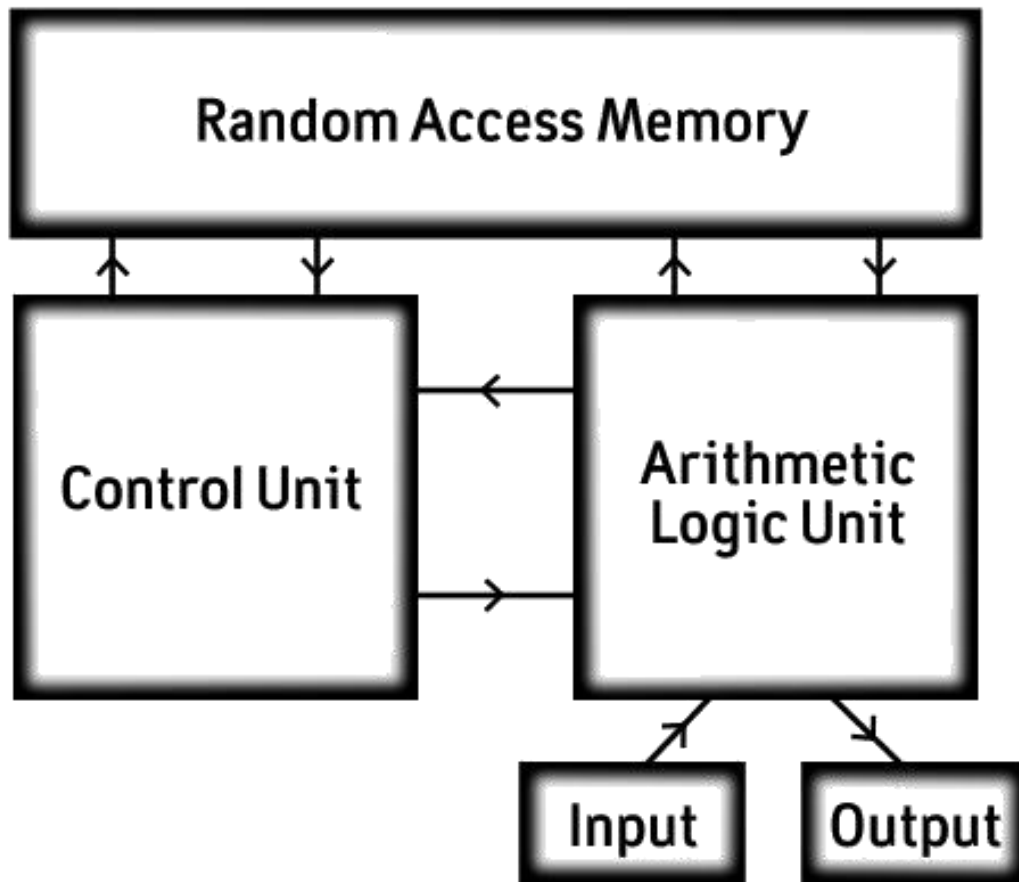
Arithmetic Logic Unit (ALU)

An arithmetic logic unit (ALU) is a major component of the central processing unit of a computer system.

It does all processes related to arithmetic and logic operations that need to be done on instruction words.

Control Unit

Control Unit is the part of the computer's central processing unit (CPU), which directs the operation of the processor.

Registers

Register is a very fast computer memory, used to store data/instruction in-execution.

Register may hold:

√ A computer instruction

√ A storage address

√ Or any kind of data

Symbol, Name and Function

Register symbol	Number of bits	Register name	Register Function
DR	16	Data register	Holds memory operands
AR	12	Address register	Holds address for memory
AC	16	Accumulator	Processor register
IR	16	Instruction register	Holds instruction code
PC	12	Program counter	Holds address of instruction
TR	16	Temporary register	Holds temporary data
INPR	8	Input register	Holds input character
OUTR	8	Output register	Holds output character

Motherboard

A motherboard is one of the most essential parts of a computer system.

It holds together many of the crucial components of a computer, including the central processing unit (CPU), memory and connectors for input and output devices

3rd Generation Intel® Core™ Processors Support

Dual Channel DDR3

mSATA connector

Onboard USB 3.0 Connectors

SATA3 6Gbps

D-Sub port

DVI-D port

HDMI port

USB 3.0 port

HD Audio

CrossFireX Support

Japanese Solid Caps

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