



CSN-103: Fundamentals of Object Oriented Programming

Instructor: Dr. Rahul Thakur

Assistant Professor, Computer Science and Engineering, IIT Roorkee



Computer System

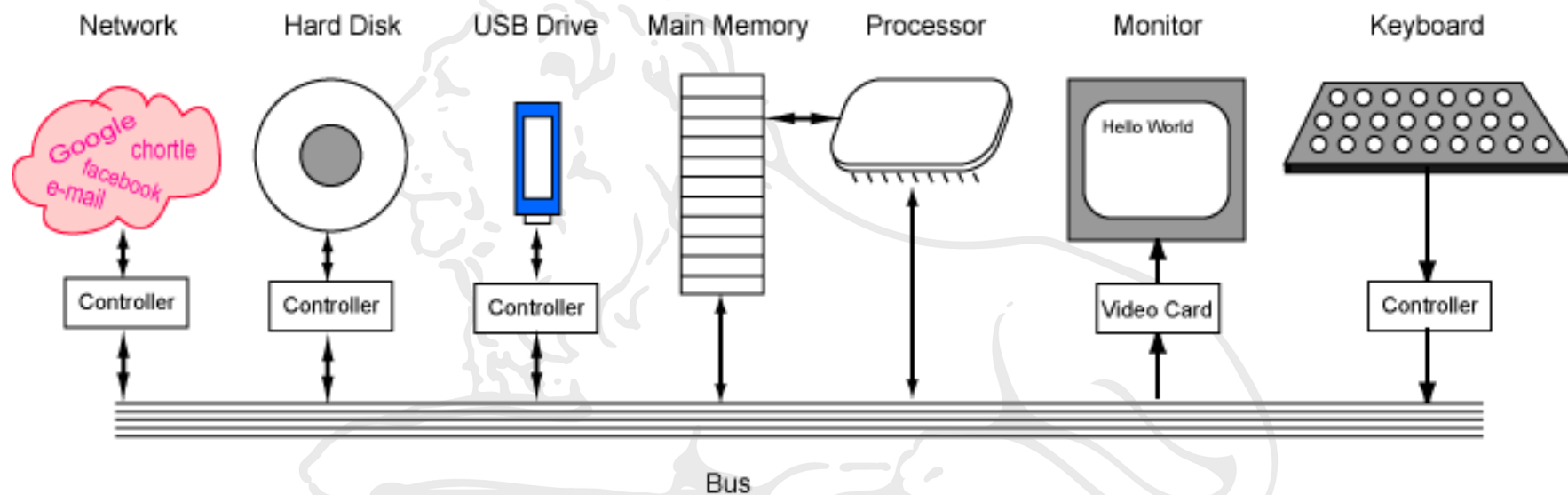
- Derived from the word **Compute**
- Initially, Super fast calculators → Solves Arithmetic and Scientific problems
- Currently, computers can solve
 - Sort, Search, Accept data
 - Move, Manipulate, and Compare data
 - Arithmetic and logical operations on alphabets, numeric, and other kind of data

A complex system consisting of hardware and software components used for storing and processing data based on the instructions provided by a program

Components of a Computer System

- A computer consists of
 - **Hardware components:** Electronic and mechanical parts. Visible components
 - Example: Monitor, Keyboard, Mouse, Processor, Memory, Hard Drive, Power Supply
 - **Software components:** Invisible components
 - Example: Data, programs..... even movies, songs, web pages,
- Major (must) hardware components
 - Processor
 - Main memory (RAM)
 - Secondary memory (usually a hard drive or Pen drive)
 - Input device (Keyboard/Mouse/Pointer)
 - Output device (Projector/Monitor/Printer)

Basic Computer Architecture



Main Components of a Computer System

Types of Computer Systems

- **Supercomputer:**

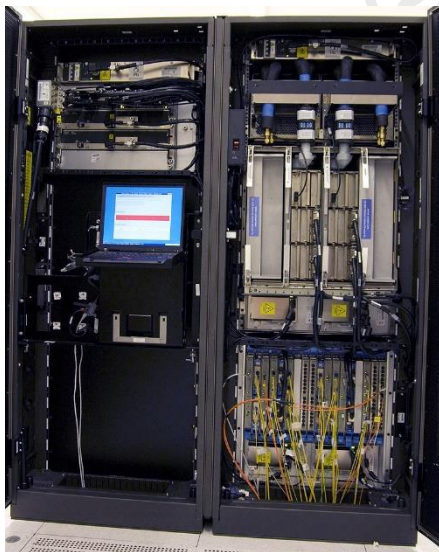
- A term used for the “Fastest” computers available
- Gigantic and expensive
- Used for specialized application
 - Extreme amount of mathematical calculations
- Used by various govt. agencies such as ISRO, NASA, DRDO etc.



Types of Computer Systems

- **Mainframe:**

- Not the “Fastest” but still “Fast Enough”
- Significantly expensive
- Used for critical application and high-speed bulk data processing
- Used by corporate and governmental organizations such as Banks, Insurance companies, airlines etc.
- ***Parallel Processing* → Client-Server Applications**



IBM Z Systems



Types of Computer Systems

- **Server:**

- Provides “service” to other devices/computers
- Client-Server Model, serves multiple clients
- Used for very specific applications
 - Database servers, file servers, mail servers, print servers, game servers
- Usually custom made and configured



Types of Computer Systems

- **Workstation**

- Primarily used by a single person
- Designed for technical and scientific applications
- Better Graphics, More Memory, Faster Processor(s) and Network Connectivity (than personal computers)



Types of Computer Systems

- **Personal Computer (PC)**

- Desktop and Laptop/Notebook
- Designed for “Personal” use only (Not exactly for computer expert)
- Speed, Size, and Prices depend on personal use and market
- Used for everyday tasks: Watching Movies, listening songs, web browsing, text and number processing



Types of Computer Systems

- **Single Board Computer**

- Can be used for everyday tasks: Watching Movies, listening songs, web browsing, text and number processing, programming
- Really small and inexpensive (1k-4k)
- Slow but energy efficient (24X7 Operation)



References

- Bradley Kjell, Central Connecticut State University, “Introduction to Computer Science using Java”, [Online] <https://chortle.ccsu.edu/java5/index.html#01>
- Harold L Rogler, “Introduction to Computer Systems”, Second Edition, August 2015



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