Introduction to Computers

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What is a computer?

What is a computer?

- Retrieve and store
- Process
- Input and output

Types of computers

- Microcomputer (personal)
- Minicomputer (server)
- Mainframe computer (server rack)
- Supercomputer (multiple racks)

https://en.wikipedia.org/wiki/Classes_of_computers

Hardware vs Software

Software Hierarchy

- User Applications (high-level)
- Operating System
- Device Drivers
- Hardware (lowest level)

Computer Hardware

Central Processing Unit (CPU)

Memory

- Read Only Memory (ROM)
- Random Access Memory (RAM)

Storage (e.g. Hard Disk, DVD)

Input (e.g. mouse, keyboard)

Output (e.g. display, printer)

Communication (e.g Wi-Fi devices)

Bus

Computer Hardware

Bus

Clock

Execution cycle

Computer Organization and Architecture

Computer architecture refers to those attributes of a system visible to a programmer or, put another way, those attributes that have a direct impact on the logical execution of a program.
(Also known as ISA)

Computer organization refers to operational units and their interconnections that realize the architectural specifications.

From page 2 of Computer Organization and Architecture by W. Stallings

Moore's Law

Relation to other courses

CSC 110 - basic programming skills

CSC230 - computer architecture at functionality level

CSC350 - how to design processors

CSC355 - how to design digital logic elements

CSC360 - how operating systems manage software execution