Central Processing Unit (CPU)

- The **Central Processing Unit (CPU)** is the computer's "brain" responsible for processing instructions entered into the computer
- The CPU processes instructions and performs calculations in order to produce an output

CPU Functions

- Fetches instructions from memory
- Decodes the instructions to determine the required operation
- Executes the operation
- Stores the result back in memory or sends it to an output device

CPU Components

- The CPU is made up of 3 main components:
    - **Arithmetic Logic Unit (ALU)**
    - **Control Unit (CU)**
    - **Registers**

Memory

Memory is used to store data and instructions temporarily for the computer to process

Characteristics of ROM and RAM

	ROM	RAM
Volatility	Non-volatile (retains data when powered off)	Volatile (loses data when powered off)
Access	Read-only (data cannot be modified)	Read-write (data can be modified)
Main Purpose	Stores essential instructions (e.g., BIOS)	Stores data and instructions in use by CPU

Differences between ROM and RAM

- ROM is non-volatile, while RAM is volatile
- ROM is read-only, while RAM is read-write
- ROM stores essential instructions, while RAM stores data and instructions currently in use