Central Processing Unit

2 min

A Central Processing Unit (CPU) is the electronic circuitry that executes instructions based on an input of

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binary

data (0's and 1's).

The

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CPU

consists of three main components:

- Control Unit (CU)
- Arithmetic and Logic Unit (ALU)
- Registers (Immediate Access Store)

The *Control Unit (CU)* is the overseer of the CPU, responsible for controlling and monitoring the input and output of data from the computer's hardware.

The *Arithmetic and Logic Unit (ALU)* is where all the processing on your computer takes place. Even as you scroll this text box, the ALU is calculating pixel changes on the screen and sending that output to the monitor.

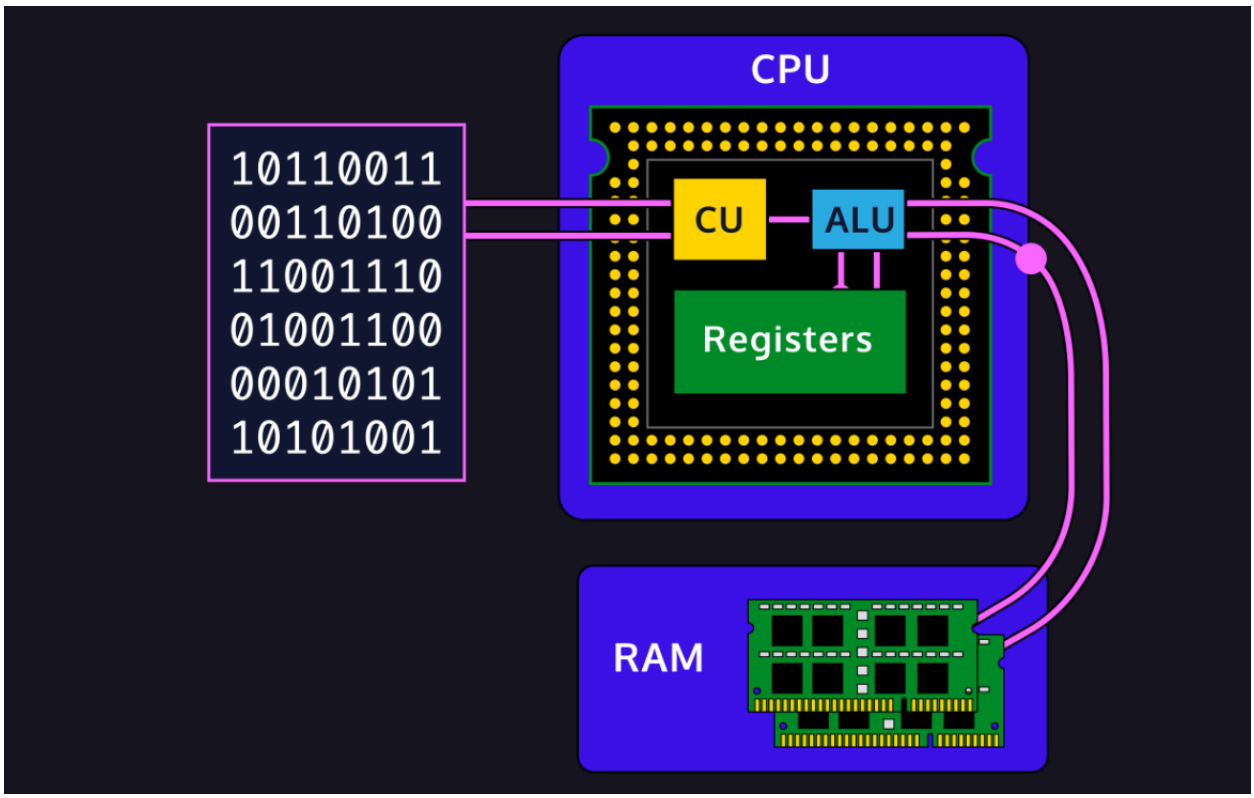
The *register*, or immediate access store, is limited space, high-speed memory that the CPU can use for quick processing.

These components are all wired in very specific ways in order to process data. It is important here to remember that data, to our hardware, is a series of binary, on and off, electrical pulses. These pulses are run through different wires, semiconductors, and components as a means to process and return data that is usable by the software.

The list of instructions that a CPU can support, the way the electrical pulses are sent, is what makes the foundation of the Instruction Set Architecture.

Instructions

Click Next when you're ready to go to the next exercise.


CPU
10110011
00110100
11001110
01001100
00010101
10101001
CU
ALU
Registers
RAM