# Processors

## 1 Introduction

A processor, or central processing unit (CPU), is the primary component responsible for executing instructions in a computer system.

## 2 Processor Components

Key components include the arithmetic logic unit (ALU), control unit, registers, and cache memory.

## 3 Instruction Execution

Processors operate using the fetch-decode-execute cycle, repeatedly retrieving instructions from memory, decoding them, and executing them.

## 4 Modern Features

Modern processors support pipelining, parallelism, and multi-core execution to improve performance.