CPU - Components

# Main memory

Main memory, which is also known as primary storage, refers to the DRAM in a computer. It is used by programs to quickly access key information while it is being executed. RAM is usually measured in gigabytes. However, RAM is a volatile storage solution, and anything saved to Main Memory will be lost when the computer is shut down or if it loses power.

# Arithmetic logic unit

The Arithmetic Logic Unit (ALU) is a component of the CPU that handles logic gates and other operations. The inputs to an ALU are called operands. Most ALUs have two data buses that can take an operand each, with a singular output as a result. There are multiple types of status’ an output can have. *Zero* is where an output has 0 bits of data. *Negative*, where the output is a negative value. *Overflow* is where a result exceeds the extreme maximum value of the output.

# Control Unit

The Control Unit is the main part of a CPU, as it tells each part of the CPU and the computer’s memory how to respond to a programmes instructions. A control unit is almost always hardwired, but it can be used as a microprogram in rare cases.

# Clock

The CPU clock refers to a part of the CPU that is responsible for keeping the CPU in sync and keeping timings for the tasks the CPU has to carry out. This is also responsible for speed. These average around 1 billion instructions per second.

# Bus

A bus is a communication system that is used to transfer data between different computer components, such as the ALU and control unit. This term covers fibre optics and wires, etc. These used to be primarily parallel connections, but they now use bit serial.