

CPU Performance

The CPU processes data.

The more efficiently it does this, the better the **performance**.

Performance is partly down to speed. But it's not just how quick the machine is.

CPU Performance

3 factors impacting performance:

- clock speed
- number of processor cores
- cache size

Other factors can play a role - e.g. type of “slow memory”.

CPU Performance - clock

The clock sends out an electronic pulse on a regular basis.

- each clock pulse = 1 process
- a quicker clock = quicker processing

Measured in Hz.

My current computer has a 2.6GHz clock - so 2.6 GigaHertz = 2.6 billion processes per second

CPU Performance - cores

Modern processors often have more than one core.

A core is a separate part of the CPU which can do its own processing.

So, in theory, if you have 4 cores, each core can do one process per clock pulse = 4 times as much processing.

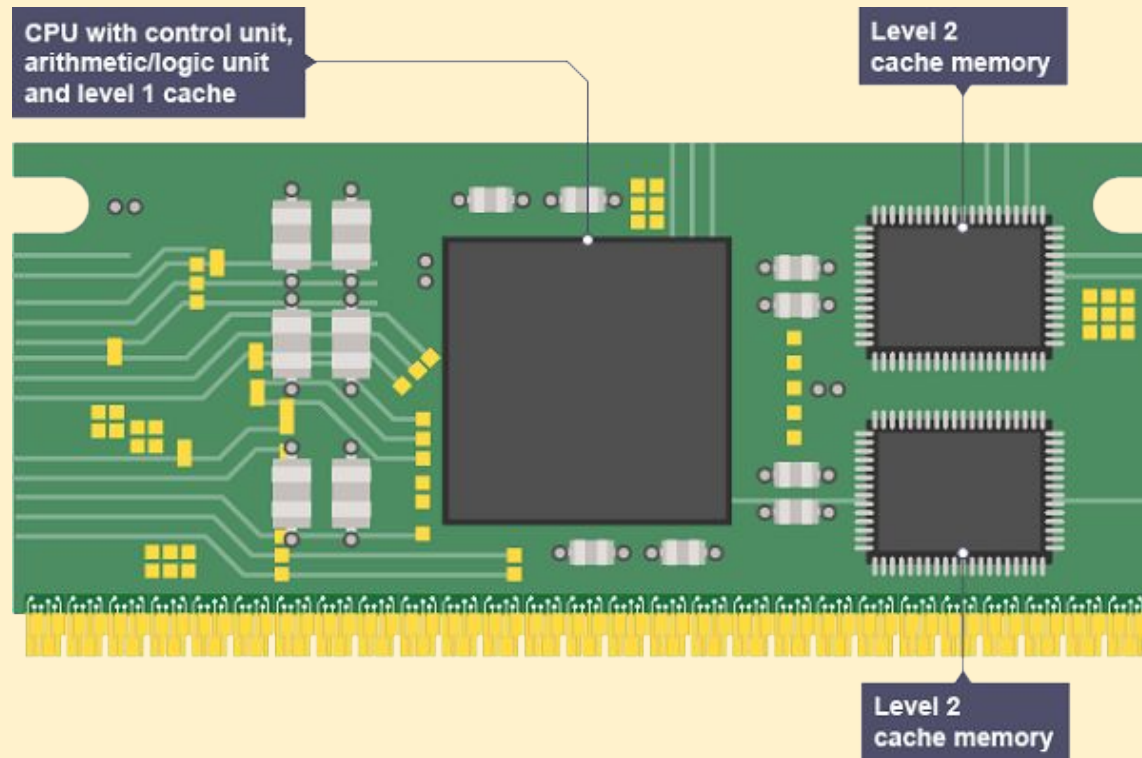
But not all programs can make use of cores.

CPU Performance - caches

The **cache** is an area of temporary memory close to the CPU

- quicker, more expensive memory than standard RAM
- quicker Bus
- allows data and instructions that would usually be in RAM to be stored temporarily - so that if they are reused frequently it will be quicker for the CPU to access them

CPU Performance - caches



The bigger the cache, the more data can be stored in it, so less time is wasted retrieving it from main memory