Parallelisation

Generally, computer = processing power & memory

Since most distributed systems consist of interconnected computers, we have distributed system = lots of processing power & memory. We have seen how to distribute storage, what about distributing processing power.

Parallel executions:

* Executing two programs Prog1 and prog2 in parallel (or concurrently) means that the instructions in prog1 may be interleaved with the instructions of prog2
* A diagram of a diagram

  Description automatically generated
* A screenshot of a computer code

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* A screenshot of a computer program

  Description automatically generated

Accessing memory

* Before parallelising programs, we need to think of the way they access memory:
  + Read: load/copy something from memory
  + Write: write something to memory
* Here memory can be anything
* We will think of variables for simplicity

Performance vs correctness

* Performance. The main purpose of distributing computation across several computers is to save time
* Correctness. It is important that faster software still produces the expected result. It is preferable to have a slow but correct program, rather than a fast but broken program.