

Fetch-Decode-Execute

The CPU carries out instructions - using:

- the Control Unit to control what happens next
- the ALU to do maths and logic
- registers to store data temporarily

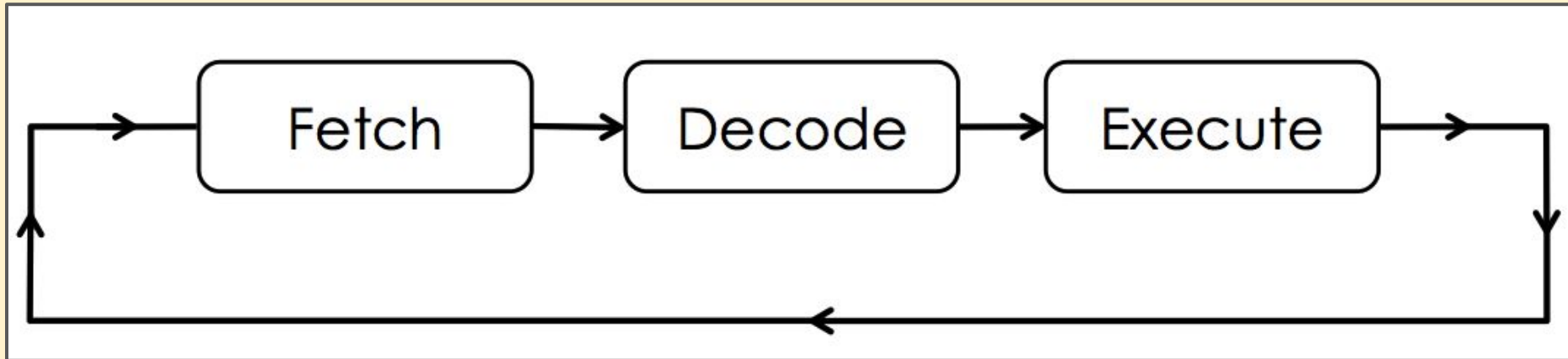
To do this it follows a loop...

Fetch-Decode-Execute

1. **Fetch** the next instruction
2. **Decode** the instruction
3. **Execute** it (do it)

The **fetch-decode-execute cycle** keeps running as a loop until all instructions have been executed

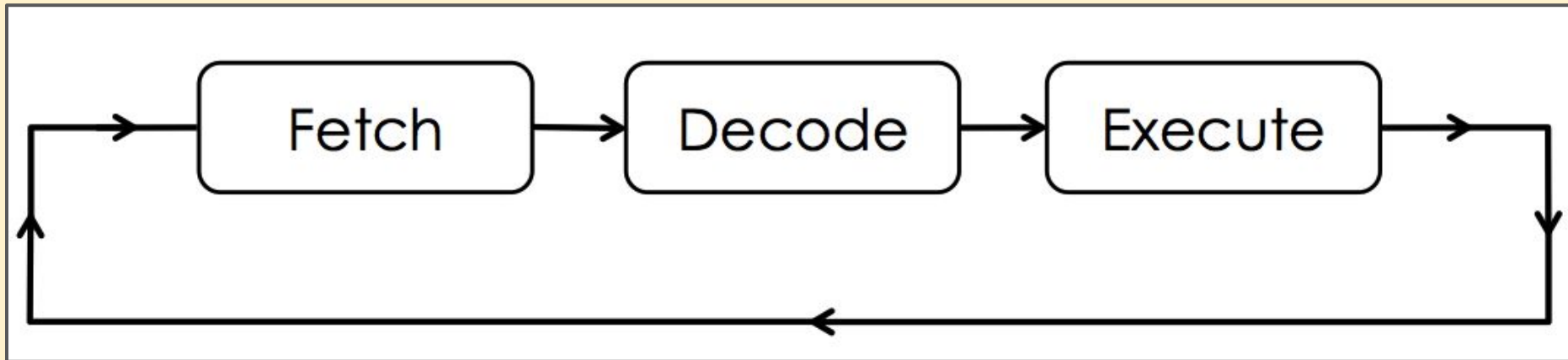
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Fetch-Decode-Execute

1. **Fetch** - copy the next instruction from main memory (RAM) into a register in the CPU
2. **Decode** - decode the instruction to work out what it is
3. **Execute** - do the instruction - this may involve reading data from main memory (copying it into a register), writing data back to main memory (if it has changed value, for example), or moving to the next instruction

Fetch-Decode-Execute



One FDE cycle happens each “tick” of the CPU’s clock