# Chapter5
# Processor Fundamental

## 5.01
## The Von Neumann model

1.a processor, a central processing unit.
2.processor has direct access to a memory.
3.memory contains a 'stored program' and the data required by the program
4.the stored program consists of individual instructions
5. the processor executes instructions sequentially

## 5.02
## Central processor unit (CPU)

- arithmetic and logic unit(ALU)
  - any arithmetic or logic processing
- control unit
  - controlling the flow of data
  - ensuring that program instructions are handled correctly
  - clock: synchronise processes
    - activities outside the processor
    - internal clock: cycles of activity within the processor
- registor
  proximity to the ALU
  allow very short access times
  - general-purpose
    - only one--->accumulator:
      a general-purpose register that stores a value
      before and after the execution of an instruction by the ALU
  - special pupose
    - current instruction(CIR)--stores the current instruction while it is being decoded and executed
      index(IX)--stores a value; only used for indexed addressing
      memory address(MAR)--stores the address of a memory location which is about to have a value read from or written to
      memory data register(MDR)/MBR stores data that has just been read from memory or is just about to be written to memory