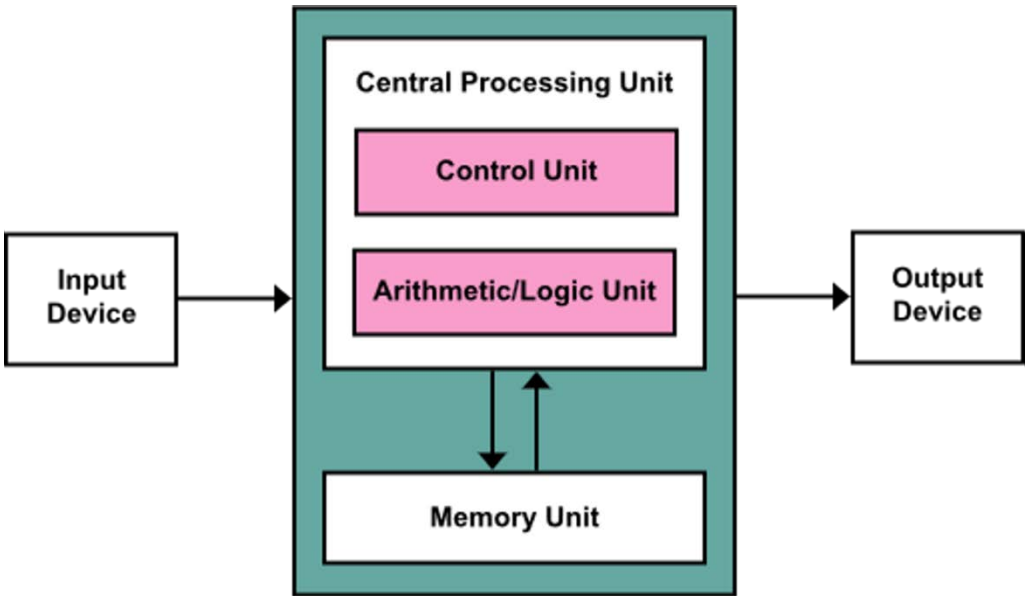
Unit 1b: Von Neumann Architecture

1 Introduction

The von Neumann architecture is the basis for digital computers. This architecture was described in a report on the EDVAC (Electronic Discrete Variable Automatic Computer) in 1945 and identifies the common components of modern computers:

- a processing unit with an arithmentic logic unit and registers
- a control unit
- memory storing data and instructions
- secondary storage (external)
- IO facilities



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This involves programs as list of instructions which record and amend the values of variables (data) in memory as the statements are executed essentially in a sequence. Thus the state of the program i.e. the data values, moves from an initial state through changes to a final state which represents the required result.

This is the basis of the imperative approach to solving problems:

'First do this and next do that'