

## Computer Science: System Architecture Cheat Sheet by [deleted] via cheatography.com/47335/cs/13600/

## The CPU

The Central Processing Unit (CPU) controls the operations of the computer, fetches and executes instructions to allow software to run.

| The Von Neumann Architecture |               |                |                |
|------------------------------|---------------|----------------|----------------|
| Memory                       | Memory        | Program        | Accumulator    |
| Address                      | Data          | Counter(PC)    |                |
| Register                     | Register-     |                |                |
| (MAR)                        | (MDR)         |                |                |
| Holds the                    | Holds data    | Contains the   | Where interm-  |
| memory                       | that is being | address of the | ediate         |
| location of                  | transferred   | next instru-   | arithmetic and |
| data that                    | to or from    | ction to be    | logic results  |
| needs to be                  | memory        | executed       | are stored     |
| accessed                     |               |                |                |

Von Neumann architecture was first published by John von Neumann in 1945.

His computer architecture design consists of a **Control Unit**, **Arithmetic** and **Logic Unit** (ALU), **Memory Unit**, **Registers** and **Inputs/Outputs**.

Von Neumann architecture is based on the stored-program computer concept, where instruction data and program data are stored in the same memory. This design is still used in most computers produced today.



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