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Assignment

Functions of the CPU

The purpose of every computer is some form of data processing. The CPU supports data processing by performing the functions of fetch, decode and execute on programmed instructions. Taken together, these functions are frequently referred to as the instruction cycle. In addition to the instruction cycle functions, the CPU performs fetch and write functions on data.

The CPU processes instructions it receives in the process of decoding data. In processing this data, the CPU performs four basic steps:

1. **Fetch:**Each instruction is stored in memory and has its own address. The processor takes this address number from the program counter, which is responsible for tracking which instructions the CPU should execute next.
2. **Decode:**All programs to be executed are translated to into Assembly instructions. Assembly code must be decoded into binary instructions, which are understandable to your CPU. This step is called decoding.
3. **Execute:**While executing instructions the CPU can do one of three things: Do calculations with its ALU, move data from one memory location to another, or jump to a different address.
4. **Store:**The CPU must give feedback after executing an instruction, and the output data is written to the memory.