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COMPUTER SCIENCE

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FUNCTIONS OF THE CPU

A central processing unit (CPU) is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logic, controlling, and input/output (I/O) operations specified by the instructions.

The CPU, or Central Processing Unit, is both the heart and brains of every computer. Many of us do not know how important this unit is to the performance of a computer. How many of you have wondered about the basic functions of CPU? This article will answer that question, plus others including:

- Why it is important to have a good cooling system to keep the CPU at the right temperatures.
- Why it is so important to keep the CPU from overheating.

The Four Primary Functions of the CPU

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.