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The CPU is similar to the human brain. Every single operation that you do with your computer is processed in the CPU. The performance of your computer is based on simple mathematical operations, and the CPU is the device that controls all of those operations. Let's say we are using a calculator to add two numbers. You enter the numbers using your keyboard. The keyboard controller turns all of that

information into binary code. Binary code consists of sequences of 0 and 1. This information is then sent to the registry and then transferred to the CPU. The CPU has an integrated ALU (Arithmetical Logical Unit). The ALU is responsible for all mathematical and logical operations.

Your request to add two numbers comes to the CPU and is transferred to the ALU. The ALU adds the binary numbers and returns the answer to the CPU, which transfers the answer to an output

device.

Adding two numbers is a very simple example, but it illustrates the basic functions of the CPU. Every single step you perform on your computer is in one way or another connected to this central unit, so it is very important to keep your processor in good form. Overheating, especially, can lead your CPU to fail.

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.