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**CSC202 ASSIGNMENT**

**FUNCTIONS OF THE CPU**

The CPU is the “brain” of the computer. It does the “thinking” for your hardware and software. The reason it is called a computer is because it does just that, it computes. The CPU is where the processing is being done, hence it is called the **C**entral **P**rocessing **U**nit. If you have ever looked at your task manager on a Windows machine, you can see what applications take up the most of your CPU’s time and attention. Multi-core processors can divide their attention to various requests so applications and hardware can run smoother.

To be more specific, a CPU **fetches** program instructions from RAM (input), **decodes**/interprets and processes it (**execution**) and then sends back the computed results so that it can be **stored** and the relevant components can carry out the instructions.

Further explained are the specific 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