# Parts Of A PC
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In this essay we will go in depth about the parts of a personal computer. We chose a PC because there are many interacting parts. We wrote about the main parts of a PC and what each part does and why it is important to the ecosystem of the PC. All images were used for educational purposes.

The monitor connection allows the GPU to connect to the monitor and send graphics information usually with HDMI, DVI, or DisplayPort.

The GPU consists of four main parts. The circuit board provides the power to the graphics card and gives the GPU data to help it render images. GPU's have hundreds of cores to do many complicated computations. Many cores allow the GPU to do computations faster and in parallel.
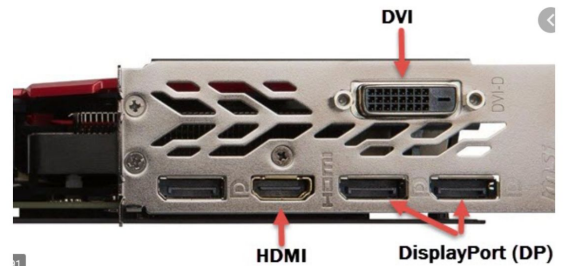
Finally, the memory. GPU's have their own memory so they don't have to use RAM and GPU's can access their own memory faster.
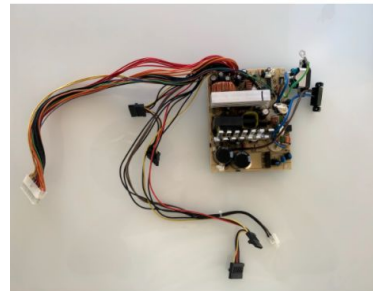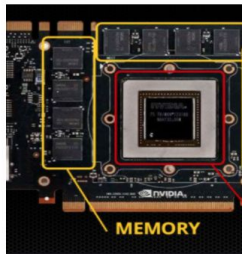
The power supply is arguably the most important part of the PC because without it the whole PC would not get power and not work

The power supply converts the AC (alternating currents) from the wall socket to DC (direct currents) which the PC uses for power. The power supply sends signals to the motherboard to help power the PC.
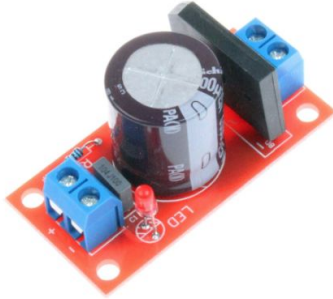
The rectifier changes the alternating currents to pulsing direct currents which the computer cannot use.

The transformer transfers the electrical energy from the primary to secondary winding, and that helps reduce the AC voltage.

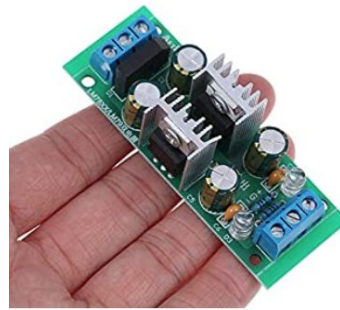The filter takes those pulsing direct currents and converts it into smooth direct currents.
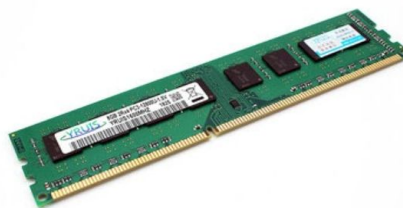

Lastly the voltage regulator makes sure all the direct currents that come out are steady which the computer can use.

The form of computer memory that can be read and changed in any manner.

RAM stands for Random Access Memory.

The heatsink is an essential part of the desktop. There are many heatsinks in a PC that do the same job around the whole PC. This one shown below is for the CPU. The CPU does many tasks which generates a lot of heat.

Heatsink:

This metal absorbs the heat from the chip. With its many grooves, it has a large amount of surface area for optimal heat absorption.

Fan:

On top of the heatsink, is a fan. This constantly cools the heatsink, so it keeps absorbing heat while the fan cools it down.


Input/Output

The interfaces are located at the side of a motherboard, there are different types.

Ethernet Input

Sound Output

USB Input

Integrated Video Output

The processor makes the data on these cards accessible on the desktop. These cards can hold image files, video files, documents, spreadsheets, and many more.

The north bridge lets upper parts of the motherboard communicate. The south bridge lets lower parts of the motherboard communicate
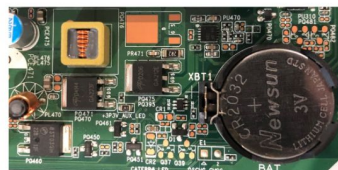
CHIPSET
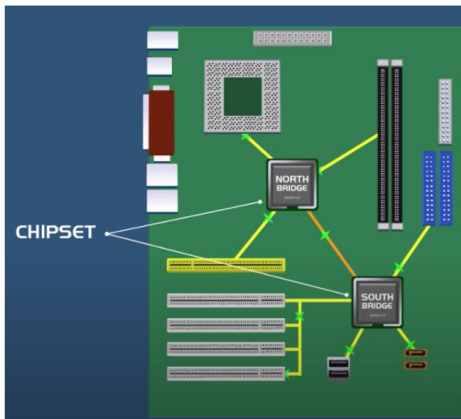
The motherboard has memory slots to hold RAM. There are bus slots to add video/audio cards to the computer. There are the north and south bridges. The connection between the bridges lets everything attached to the motherboard communicate.
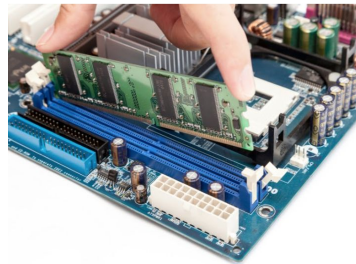
It has memory slots to hold the RAM.

CMOS chip is where the configurations are stored.

There is a CPU socket for the CPU.

The CD drive in this desktop is a part that allows data like music/videos, to be accessible on the desktop. It works because the actual CD has a "spiral track" meaning it has miniscule bumps on it that go all around the CD like a spiral. Above these bumps is a plastic like film that reflects light.

The CD goes into a slot where it is read. When you start the disk drive, the disk drive motor starts spinning the CD.

The laser reader starts shining light on the disk, however, when the light hits a bump, the reflection is different to when there's no bump.

Here, there is a optical sensor that senses a change in light, then its output is either a 1 or 0

This binary gets translated into a picture/video or sound through other parts of the computer. Eventually, the laser shines the light, the optical sensor reads it. Then it translates into binary, which goes through other parts of the computer. And becomes sound/video/picture.

There are 5 main parts of a CPU. The control unit directs the operation of the processor. It tells the computer's memory, ALU and input/output devices how to respond to the instructions that have been sent to the processor. An arithmetic logic unit (ALU), enables computers to do mathematical operations with binary numbers. A processor register (CPU register) is one of a small set of data holding places that are part of the computer processor. A register can contain any kind of data like a bit sequence or individual characters. The clock is what determines the number of cycles a CPU can execute per second. During each cycle the CPU can perform a basic operation.
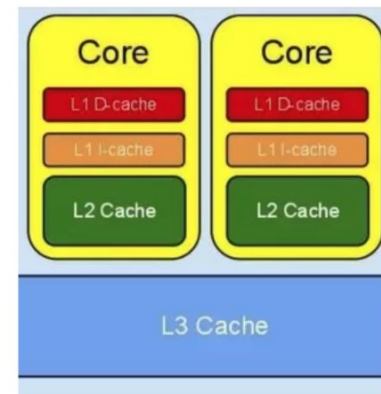
Cache:
A cache is a small amount of memory. It is used to temporarily hold instructions and data that the CPU is likely to reuse.

In conclusion, we learned that every part of the computer relies on each other. Through our work we have learned about the basic functionalities of a PC. We are content with our research and result of our project.