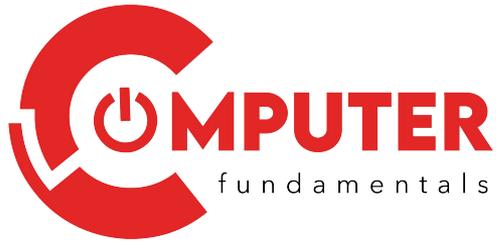


# Parts of a Computer and Their Functions

**2023-2024**

(HARDWARE)

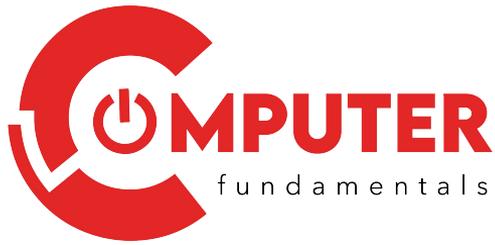


Going over the parts of a computer and their functions will help you understand all the vital components that make up a computer.

It's a great place to start if you want to begin learning about computers. Not only is it a good entry point, but it's also something good to know for curiosity's sake.

Knowing what the part is, is good, but we will explain each part's function, which will give you a firmer understanding of them.

Here is a complete list of all the common computer hardware components and common peripherals used with them.



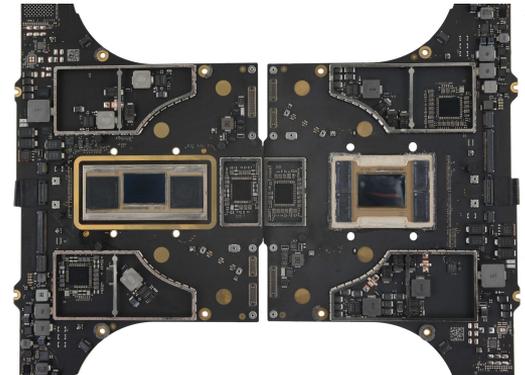
# 1. The computer case

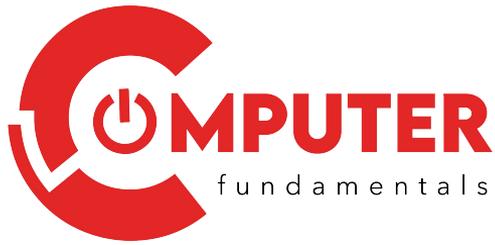
- This is the part that holds all of the internal components to make up the computer itself.
- It is usually designed in such a manner to make fitting a motherboard, wiring, and drives as easy as possible. Some are designed so well that it is easy to make everything look tidy and presentable too.
- Design elements can vary from being plain to extremely elaborate. You can get a plain grey case or one that has colored lighting everywhere to make it look spectacular.



## 2. Motherboard

- The motherboard is the main board that is screwed directly inside the computer case. All other cards and everything else plugs directly into the motherboard, hence its name.
- The CPU, RAM, drives, power supply, and more all get connected to it.
- Its function is to integrate all the components so they can communicate and operate together.



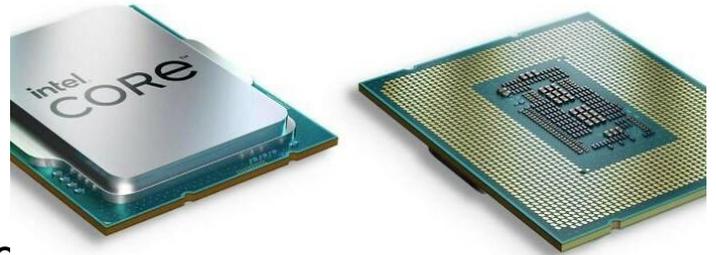


## Motherboards come in the following sizes:

<b>Motherboard</b>	<b>Dimensions</b>
Pico-ITX	3.9 inch x 2.9 inch   100mm x 72mm
Nano-ITX	4.7 inch x 4.7 inch   120mm x 120mm
Mini-ITX	6.7 inch x 6.7 inch   170mm x 170mm
Micro-ATX	9.6 inch x 9.6 inch   244mm x 244mm
Standard-ATX	12 inch x 9.6 inch   305mm x 244mm
XL-ATX	EVGA: 13.5 inch x 10.3 inch   343mm x 262mm Gigabyte: 13.58 inch x 10.31 inch   345mm x 262mm Micro-Star: 13.6 inch x 10.4 inch   345mm x 264mm

## 3. CPU: Central Processing Unit

- The CPU is basically like the brain of a computer. It processes all the information on a computational level.
- It takes information from the RAM and processes it to perform the tasks required from the computer.
- It is usually seated in a socket that utilizes a lever or a latch with a hinged plate with a cut out in the center to secure it onto the motherboard.



## 4. RAM: Random Access Memory

- RAM is a data storage device that can provide fast read and write access. RAM is also volatile, which means that it loses all the stored data when power is lost.
- The RAM keeps data ready for the CPU to process. The speed of the RAM is a big contributor to the overall speed of a computer.
- It, too, has a clock speed, just like a processor. So, it can also be overclocked to deliver increased performance beyond the intended specification.



## 5. Graphics Card

- A graphics card processes the data from the motherboard and sends the appropriate information to the monitor for it to be displayed.
- A graphics card can also be referred to as a video card or a display card.
- It takes the burden of all the video processing from the main CPU. This gives a computer a big boost in performance.



## 6. Sound Card

- Most of the time, the sound chip built into the motherboard is used for audio output.
- But, if you are a sound enthusiast or prefer higher detailed audio while playing a game, you might be inclined to use a sound card.
- Sound cards plug into a computer in multiple ways. It can be through USB, PCI slot, or PCI Express x 1 slot.
- A sound processing chip on the card does all of the audio processing and is usually not a very powerful processor.



## 7. Hard Drive (HDD)

- A hard drive is found in most computers. It's usually a mechanical drive that stores all the data.
- Apart from storing data, it can also be used as a boot drive to run the operating system from it.
- An operating system is a software program that makes a computer useable like Microsoft Windows, for example. The biggest vulnerability of a mechanical drive is its physically fragile nature.
- One bump the wrong way can destroy a whole drive. A mechanical hard drive contains one or more platters that spin anywhere between 5200 to 10000 RPM (revolutions per minute).



## 8. Hard Drive (SSD)

- An SSD is also a type of hard drive, but it doesn't have any moving parts. It consists of a bank of flash memory that can hold a reasonable amount of data.
- While SSD's are increasing in size all the time, they aren't cost-effective for storing large amounts of data.
- A mechanical drive has a cheaper gigabyte to dollar ratio.
- However, the SSD is a high-performance drive. It's fast and cannot be as easily damaged by dropping it or taking a few knocks.



## 9. PSU: Power Supply Unit

- A power supply mounts inside the computer case. This converts the AC mains supply from the wall socket and supplies the correct DC voltages to all the components inside the computer.
- A computer power supply supplies the following voltages:
  - +3.3v: This voltage is supplied to the motherboard.
  - +5V: This voltage is supplied to the motherboard and other internal components.
  - +12V: This voltage is supplied to the motherboard and other internal components.
  - -12V: This voltage is supplied to the motherboard.



## 10. Monitor or Visual Display Unit (VDU)

- A monitor is what you use to visualize the graphics data sent from the computer's graphics card.
- There are various types of monitors on the market. The most commonly used is a LED-backlit LCD monitor.
- There are also a variety of different sizes with different aspect ratios. The aspect ratio is simply the ratio between height and width.



## 11. KEYBOARD

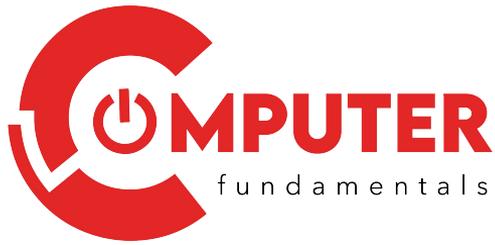
- A keyboard is one of the ways to communicate with a computer. Typing a key from the keyboard sends a small portion of data to tell the computer which key was pressed.
- The computer can use this information in many ways. An example could be a command or a character that can be used in a document.
- There are two main different types of keyboards. Mechanical and membrane types.



## 12. MOUSE

- A mouse allows the user to move a pointer displayed on the monitor and experience a more intuitive interaction with the computer.
- These days mice have more buttons than the common three.
- However, the three main buttons allow the user to select, grab, scroll and access extra menus and options.





## Conclusion

That covers the basic components of a computer. All of these parts play a vital function for a computer to work.