**What Are the Parts of a Laptop? (17 Parts)**

Laptops have become a staple of modern-day life in the past two decades.

As most of life moved to the digital space, a portable personal computer offered so much more value. The evolution of laptop computers has significantly shaped our digital lives, making them indispensable tools for work, education, and entertainment.

You can just shut it closed and take the laptop anywhere with you. **The complete ease and portability of laptops have allowed them to become the most common type of computers in existence today.**

Most people prefer to have portable computers, be it for work, entertainment, or school.

Let us look at the main components of a laptop to better understand this staple device of modern life.

**#1 Laptop Screen/Display Assembly**

A laptop screen or display is the main interactive component of a laptop.

A display screen shows all the information you need to have to use a laptop. Not all laptop screens are created equal.

Some laptops come with large screens and others with smaller ones.  In fact, it is a pretty common practice to use laptop screen dimensions to market the size of a laptop.

Display screens can range in size anywhere from 9 inches on smaller chrome book display screens to 17-inch display screens on a larger laptop.

These days there is almost too much variety in the type of display screen you can get on a laptop.

**Laptops nowadays also have different screen resolution display for a different laptop.**

Usually, resolutions start from 720p and go up to 4K.

You can even go for higher refresh rate displays that start from 60 Hz display and can go up to 300Hz.

A higher refresh rate screen is usually more common on gaming laptops since they allow the laptop to display higher frames per second.

For example, a 300hz refresh rate screen can change frames up to 300 times per second.

The display assembly usually also comes with either a plastic back for lower-end laptops or a metal back for more expensive ones.  Metal ones are usually sturdier, and hence they wiggle led.

**#2 Keyboard/Top Cover**

The top cover assembly usually holds the keyboard and covers all the parts underneath its surface.

The keyboard is designed in a way that all the components lie underneath the top cover surface, including the layout of the keyboard keys which are crucial for typing and navigating the laptop. The ergonomic design of the keyboard supports users as they operate keyboard keys, enhancing the overall user experience by providing a comfortable space for hand placement and ease of use.

In some detachable screen laptops, components are usually behind the display assembly.

But in others, you will find everything underneath the top cover.

The top cover acts as an enclosure for the motherboard of the laptop, protecting the laptop against dust and other elements.

The enclosure also helps direct the airflow from the laptop’s cooling solution, most commonly a simple fan.

Like the back lid, the top cover can come in plastic and metal depending on how much money you want to spend.

Usually, a metal top cover offers a much more premium experience. But this quality can vary from model to model.

Each company likes to try out its own different finishes on the top cover. Some can be really nice; others are known to be fingerprint magnets.

The keyboard is one of the two main input components on a laptop.

Like a keyboard on any other PC, they allow you to type stuff and buttons for dozens of other functions.

**Depending upon the size of the laptop and each model, the keyboard can be a full keyboard with the Numpad, or it could be TKL (TenKeyLess) keyboard that doesn’t come with a Numpad.**

This allows the keyboard to come in a smaller form factor.

What keyboard you want can be based on personal preference as both are common keyboards that you can see on a laptop.

Another main differentiating factor about the keyboard can be their switch type.

Two main types are membrane-based switches and mechanical switches. Membrane-based switches are usually a lot cheaper and more common on a laptop.

They are quieter as well, so you will get a lot less angry stares from your colleagues as you type frantically on your keyboard.

On the other hand, the mechanical keyboard is totally the opposite and might get you kicked out of the office based on the color of switches on that keyboard.

Mechanical keyboards are much louder. But many PC enthusiasts prefer mechanical switches on their keyboard because they like the tactical feedback they offer and the particular typing sound you can get from a mechanical keyboard.

**#3 Touchpad**

The laptop touchpad is the second most crucial input component on a laptop after the keyboard.

Touchpads are, put simply, pads you can touch.

Jokes aside, touch-sensitive surfaces are housed within the top cover and usually below the keyboard in a laptop assembly.  The touchpad functions as a mouse for the laptop.

Since Laptops these days need a way to pan and scroll around the display, a touchpad functions as the input component for that purpose.

**The touchpad idea was a way to get around needing a mouse whenever you used a laptop as that would require a separate device to be carried around.**

On the other hand, Touchpads are inbuilt and feed into the whole portability philosophy of the laptop.

Like everything else in life, all touchpads are not built equal.

They can come with different surface finishes like plastic or metal.

Depending on how well they are designed, touchpads can offer different user experiences.

Usually, touchpads on expensive laptops are more accurate, and their clicks are more consistent as compared to the laptops on a more budget side of the spectrum.

**#4 Hard Drive**

The hard drive is the main storage device on a laptop.

Whenever you save something on your computer, this is the component where that information is stored.

The hard drives use magnetic storage to store information. It contains a spinning platter with a thin magnetic coating.

An arm called the head moves over the platter writing 0s and 1s on really tiny areas on the platter.

When you need to retrieve that same information, the head goes back to the same spot and gets that stored information back.

Even though hard drives are still the most common storage device, many new devices now ship with another storage solution called Solid State Drives or SSDs.

**SSDs are a much faster and more responsive storage solution.**

SSDs use electronic ways to store information like a USB instead of a mechanical disc system.

Many users prefer SSD if the pocket allows them since, like all the good things in life, they are more costly.

**#5 Hard Drive Connector Cable**

The hard drive connector cable connects the hard drive to the motherboard.

**These cables are usually SATA (Serial Advanced Technology Attachment) cables that transfer information at really high speeds from the hard drive to the motherboard.**

Whenever you pull something up on your laptop, the motherboard asks the hard drive for that information via these connections, and they receive that information via the same connection. The hard drive connector cable also powers the hard drive by drawing power from the motherboard.

**#6 Hard Drive Bracket**

The hard drive bracket houses the Hard drive in the laptop.

The bracket holds the hard drive in one place so you, as the user, can tumble it around as you see fit. A few years ago, the hard drive brackets didn’t have any more purpose than this: To support and hold the drive.

**#7 Fan**

The fan on a laptop is the main cooling solution of a laptop.

It allows the laptop to expel heat from the laptop using air cooling.

The largest generators of heat on a laptop are the CPU (Central Processing Unit) and the GPU (Graphics Processing Unit).

All of this generated heat needs to be lead outside the computer. This is done via a heatsink and using copper tubes.

Good old conduction transfers the heat and transports the heat via the copper tubes to the fan, usually located underneath the laptop or on the backside.

**The fan then expels all the heat via the vents.** High-end laptops usually have more elaborate cooling solutions like having multiple fans and vents.

This is because the higher the power draw of a laptop, consequentially, more heat is generated that needs to be expelled.

A lot of high-end laptops these days also come with things called vapor chambers that further improve cooling.

**#8 Heat Sink**

A heat sink is also part of the cooling solution on the laptop.

Heat sinks are usually made of copper or aluminum and act as passive heat exchangers.

When your CPU chip produces heat, that heat is absorbed by the heat sink via conduction as long as the heat sink, and the CPU is in contact.

Well, not exactly in contact since they have a medium in between called thermal gel.

The thermal gel is applied to the CPU before the heatsink is placed on top of it so that there is a better heat exchange between the chip and the heat sink.

**Once the heatsink has captured the heat, the heat travels towards the copper tubes towards the fans.**

This is because heat travels from the hotter place to the cooler place.

And the side with the fan is always cooler than the side with the CPU and the heatsink.

**#9 Power Connector Cable**

The power connector cable gives the path to the power coming from the outside power port to the motherboard.

The power connector cable directly connects to the motherboard of the laptop, and then the motherboard distributes the power to all the other components like CPU, keyboard, display, and I/O ports, etc.

The power connector cable can be rated for different wattages. A higher wattage power connector cable means that it can support more power if the laptop charger can give it.

**#10 Power Button/USB Board**

The power button on the laptop is the main on and off switch laptop.

The power button turns down the system.

If you just close the lid of a laptop, you haven’t actually turned the laptop.

The laptop has basically gone into standby mode.

The power button turns down all the components of a laptop.

The USB board or the I/O port deck on a laptop is where you can find all the different ports of the laptop.

You will have a few USB ports, the power port where the laptop charger plugs in, display ports like VGA/HDMI to plug external displays, an Ethernet port, and even an SD card reading port.

Now, these ports can vary vastly from one laptop to the other.  Usually, laptops with a smaller form factor have fewer ports than a much larger laptop.

This is because smaller laptops have less space for excessive ports.  And if the laptop is very slim, like ultrabooks, these days, it might not be thick enough to have much larger ports physically.

It is always important to look at the USB board selection on a laptop before buying since that particular model may not have a port that you might need.

**#11 System Board/ Motherboard**

The System board is the main brain behind the whole operation. This is also known as the motherboard on regular PCs. The system board contains most of the electronic components that make a computer a computer.

Things like processors, GPUs, RAMs are all on the motherboard. Even storage devices like M.2 SSDs are also connected directly to the motherboard.

The main function of the motherboard is to connect all the different components of the laptop and act as a central power distribution point. Additionally, the operating system plays a crucial role in managing these hardware components, ensuring they work together efficiently on the system board.

**#12 Solid State Drives (M.2)**

We talked about the hard drive bracket previously.

Nowadays, with the advent of the SSDs, many drive brackets are on the motherboard itself with inbuilt slots where a smaller SSD drive can directly be inserted.

The M.2 slot is a pretty common slot for this.

These slots offer faster drive speeds and eliminate the need for a connector cable as the storage device is directly connected to the PC.

**#13 Memory Modules**

Memory Modules or RAM modules are the temporary storage space of a laptop.

RAM stands for random access memory and serves as temporary storage space while you work on your computer.

Let’s say you have a few files and a few internet tabs open. For faster response, your laptop stores this information on the RAM.

Because it is faster than storing these on your drives.  The information leaves the RAM once you close the file or turn down the computer.

The memory module is a temporary resting place for information. Memory modules can come with various specs and capacities.

A single memory stick could be a 4 GB stick, an 8 GB stick, a 16 GB stick, or even a 32 GB stick.  DDR4 and DDR3 are the most common memory generation being used in laptops these days.

DDR5 has technically been released for a year, but laptops and PCs supporting DDR5 have yet to come out.

DDR5 will offer one stick to support up to 64 GB per stick.  **Also, it is important to note how many memory slots your laptop supports and if the RAM is upgradable.**

A lot of laptops have two upgradable memory slots. But sometimes, one memory slot is soldered to the motherboard, and there is only one slot to upgrade. Whenever upgrading memory, always remember that a dual-channel is always better.

So 2×8 GB sticks will perform optimally as compared to 1×8 GB and 1×16 GB.

**#14 WLAN Module**

The wireless LAN module is the main connection hub of the laptop. It houses the Wi-Fi card and the Bluetooth card to cater to the whole wireless connectivity of the laptop.

**A good WLAN module can be the difference between a fast Wi-Fi experience and an inconsistent one.** A lot of laptops these days do come with WLAN modules that can be swapped out and upgraded.

But most older laptops will have this directly soldered to the motherboard.

**#15 Laptop Battery**

The laptop battery is a crucial portable power storage device, enabling laptops to operate without being connected to a power outlet.

This is what powers the laptop when you don’t have it connected to a power source.

Like everything else we have talked about in a laptop, batteries can come in various shapes, sizes, and capacities.

Usually, a battery’s capacity is measured in milliamp hours. A typical battery can range between 2000 mAh and 6000 mAh. The battery timing on each laptop will vary vastly, even if they have the exact same battery.

**This is because the battery life on a laptop is dependent upon power consumption and optimization.**

The more power-hungry your system, the faster your laptop will drain. Laptops with higher resolution screens and higher refresh rates drain faster.

Laptops with higher-end CPU and GPUs also consume more power and drain faster.

But a decently optimized laptop can squeeze more out of the same battery even if both devices have similar components to power.

**#16 Speakers**

The speakers on a laptop are usually located on the bottom.

But some laptops do offer top-firing speakers as well. The speakers on a laptop are the main audio solution on the laptop.

**Due to space constraints on a laptop, the laptop speakers will never be as good as dedicated audio solutions.**A lot of people prefer to use headphones anyways when using laptops.

But if you don’t have headphones, then they can offer a really good alternative. In fact, some laptops even market speaker solutions on their laptop by top companies like bose, etc.

**#17 Bottom Cover/ Back Plate**

The bottom cover is the final line of defense between your laptop and all the nasty things in your environment, including external dust and other environmental factors that could harm the motherboard and internal components.

The bottom covers seal up all the contents from below, offering protection against external particles such as dust and liquid, ensuring the functionality and longevity of the electronic components.

The bottom cover can be taken off by unscrewing a few screws and taking it out.

This will expose the battery and all the other parts on a laptop.

**Depending upon the laptop, some of these components may be upgradeable while others will be permanent and fixed.**

Bottom covers are really diverse in a laptop these days.

Most of them come with rubber feet to lift the laptop from the surface a little bit.

This is useful if your laptop has a fan and vent at the bottom laptop.

**What Are the Parts of a Laptop Charger?**

Here are the parts of a laptop charger:

* **Power plug**
* **Transformer**
* **Rectifier**
* **Filters and regulators**
* **Ferrite bead**
* **Charger connector**