Introduction to Computer Hardware

Let's face it, computers are everywhere.

You come into contact with them at home, work, the airport, the grocery store. You're using some type of computer to take this course. You know what? There's probably one in your pocket right now. While computers are complex and can seem daunting to learn, they ultimately just calculate, process and store data. In this lesson, we're going to take a peek at what's inside of a computer. We'll spend the next few lessons explaining how each of these components work. But for now, let's check out a typical desktop setup. Desktops are just computers that can fit on or under our desks. Here we have a monitor, a keyboard, a mouse, and a desktop. Sometimes we might even add a webcam, speakers or printer setup. We'll call these physical components hardware. Let's take a look at the back of the computer.

You can see common connectors here, the power outlet here, and the common ports here. Ports are connection points that we can connect devices to that extend the functionality of our computer. We'll go into detail about the ports you see here in a later lesson, but here's a quick rundown. We have a port here to connect to a monitor and a few ports here to plug your keyboard and mouse. There's another important one here for our network connection. With just these ports we're able to have the basic functionality to browse the web and much more. Things look pretty similar on a laptop. Here are some of the same ports, a built-in monitor, and a keyboard. There are also physical components inside the laptop case that are hidden for portability. Once you figure out how one computer works, you can figure out how any other computer works. This is my favorite part. Let's open up this desktop and take a deeper look. Let me first clean up my desk. Get ready for it.

It looks pretty complicated, but that's okay. We'll take you through it. Let's start with a quick tour. Then we'll dive deeper into each of these parts in the next lesson. Right here, this component is a CPU or central processing unit, which is covered by this heat sink. You can think of the CPU as the brain of our computer. The CPU does all the calculations and data processing. It communicates pretty heavily with this component right here, RAM or Random Access Memory. Ram is our computer's short-term memory. We use this component when we want to store data temporarily. Let's say you're typing something to a chat or a piece of text in a word processor, this information is stored in the RAM. Don't worry, we'll cram in more details on RAM in a later lesson. When we want to store anything in long-term memory, we use this component here, the hard drive. The hard drive holds all our data, which can include music, pictures, applications. Let me show you something else interesting. Have you noticed this large slab here? This is our motherboard. It holds everything in place and let's our components communicate with each other. It's the foundation of our computer. You can think of the motherboard as the body or secretory system of the computer that connects all the pieces together. The last component we'll talk about is our power supply, which converts the electricity from our wall outlet onto a format that our computer can use. You know what's interesting? All these components make up most computers, even a mobile phone.

While it might look very different from your laptop, a mobile phone, just uses a smaller version of the hardware that we saw in the desktop and laptop today. Understanding how computer hardware works is a really helpful skill set in IT support. Since an IT department maintains the hardware that a company uses, a solid understanding of these computer internals will come in handy when troubleshooting hardware related problems and taking things apart to see how they work, it's just super fine.

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