

Overview

Hardware makes up the physical components of the computer, and sometimes connect to the computer for added functionality. Different hardware components come in different varieties, and the more that consumers are aware of the purpose and difference between various types of hardware, the more informed decisions that they are able to be more informed technological consumers with regards to what type of computer to purchase, and what additional hardware (if any) to purchase.

Comparing Hardware in the Computer

While many computers (such as laptops) have built in screens, not all computers do. In those cases, computers will often require a **monitor**, or a screen that displays a computer-generated image, in order to display information. Monitors can vary in their resolution, which refers to the number of pixels (dots) that appear on the screen. They can also vary in their size, which is often measured in inches diagonally across the screen.

Recall that another important hardware component in the computer is Random Access Memory, or **RAM**. RAM is the short-term memory that software can use to store data quickly and temporarily. RAM is measured in terms of how much space is available to store information in memory, often in gigabytes. Also recall that a computer's Central Processing Unit, also called the **CPU** or processor, is responsible for performing computations. The speed of a CPU is determined by how many calculations it can perform per second, measured in gigahertz (**GHz**).

Computers also have specialized processing units that are meant predominantly for processing images and graphics. These units are known as Graphics Processing Units (**GPUs**), and they tend to be more efficient at performing calculations for computer graphics and images in comparison to a general-purpose CPU.

In contrast to RAM, which stores short-term memory, a **hard drive** stores memory more permanently. Many hard drives are hard disk drives (HDD), which have a rotating platter underneath a mechanical arm responsible for reading and writing data to the drive. Other drives, known as **solid state** drives (SSD) also store data like hard disk drives, but do so without moving parts, and are significantly faster at reading and writing data. However, such drives are often more expensive. Hard drives also vary in the amount of storage space they have, usually measured in gigabytes or terabytes. In addition to having a storage drive, some computers will also have an **optical drive** which can allow the computer to read and write to discs such as CDs and DVDs.

Laptop computers, which are not always connected to a power outlet, require a **battery** when not connected directly to a power source. Batteries can vary in how long they last on a single charge.

Peripherals

Not all hardware that's used in computing is inside of the computer. Often, devices that are not a part of the computer itself will connect to and work with computers. These devices are known as **peripherals**. Two of the most common peripherals are the keyboard and mouse, which connect to computers in order to allow users to provide input to the computer. Other peripherals include web cameras and external speakers.

Peripherals often connect to computers via physical ports located on the computer that allow peripherals to plug in. One common port is the Universal Serial Bus— or USB—port. The USB port is an industry standard developed in the 1990s, and many computers and peripherals made by different manufacturers all support connection via USB.

Another example of a peripheral is a **flash drive**, also referred to as thumb drives, jump drives, pen drives, and USB sticks. Flash drives often connect to computers via USB, and act as a portable storage device. Like solid state drives, flash drives contain no moving parts.

Key Terms

- hardware
- monitor
- RAM
- CPU
- GHz
- GPU
- hard drive
- solid state
- optical drive
- battery
- peripherals
- flash drive