Technology Basics: Types of Computers

by Sophia Tutorial

☰ WHAT'S COVERED

In this lesson, you will be introduced to computer basics and types of computers. You will explore ways you can use your technology skill as well.

Specifically, this lesson covers:

1. Computers and Data
2. Types of Computers
   a. Personal Computers
   b. Servers
3. Key Components
   a. Hardware
   b. Software

1. Computers and Data

Any device that relies on a computer to operate is a **digital device**. We are surrounded by these items every day. From the microwave you use to heat your breakfast to your phone to the computer you are using to take this course – they are all digital devices. Our lives have become dependent on computers, so it is important we understand a little about how they work.

Any computer is a tool that does a job. It can be programmed to perform different tasks. As shown below, all computers take input (in the form of information or data), that input is then processed, and output is generated that can be kept as digital data in the device's storage.

Processing

Input

Storage

Output
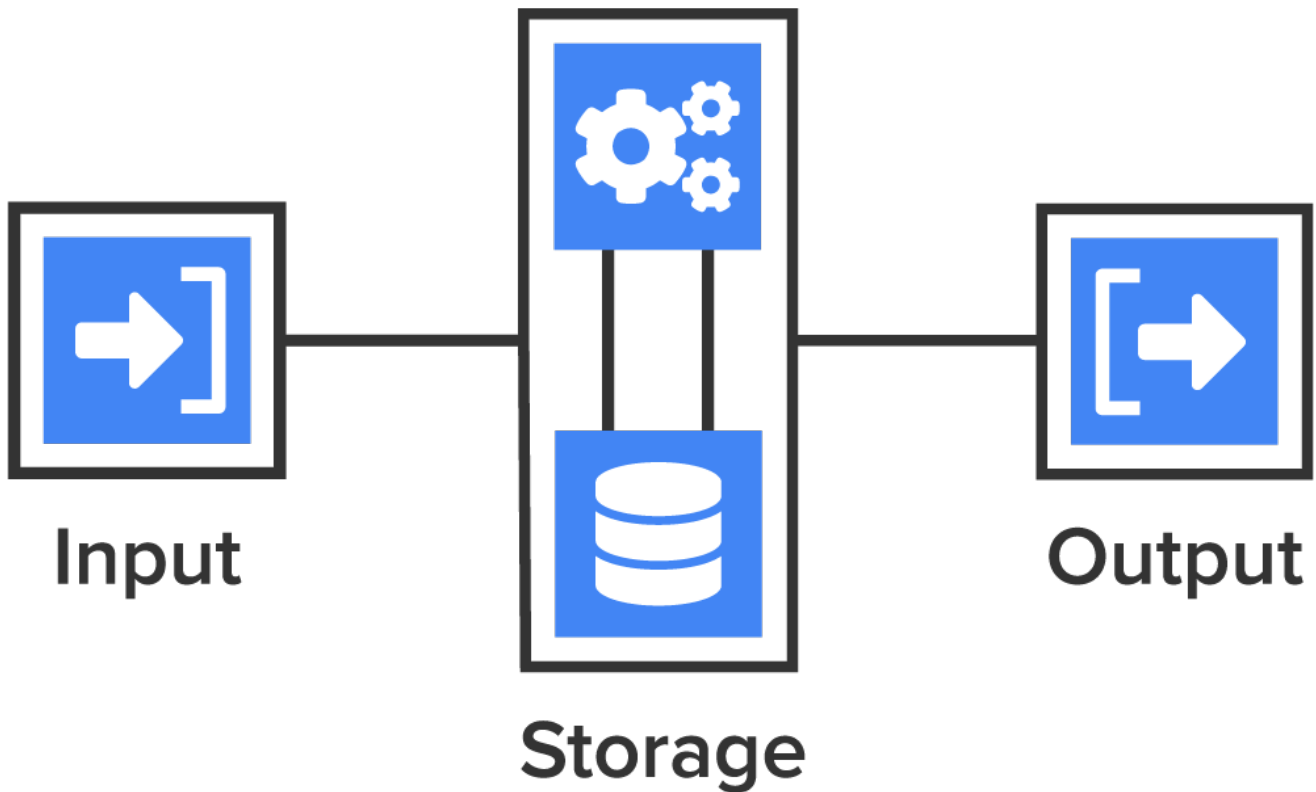
As an example, we can consider an ATM.

Step 1: Input. When you use an ATM, you are first required to input your card and enter your PIN. You also enter what function you want the ATM to carry out, such as check your balance or withdraw funds.

Step 2: Processing. The ATM processes the information you have provided, including the account information from your debit card, as well as the function you want the ATM to carry out. At this point, the machine understands what it needs to do.

Step 3: Output. After processing the information, the ATM carries out its function. For instance, it may provide the cash you have requested, or a receipt with information.

Step 4: Storage. Finally, the information from this process is stored in the bank's computing system. Your balance will be changed if you withdrew money, and the computerized record system will show the new balance.

▣ TERM TO KNOW

Digital Device
Any device that relies on a computer to operate.

2. Types of Computers

Knowing that computers are everywhere, can we say that they are all the same? As you learned in the prior section, they are the same in that they all follow the same basic model. Two types of computers you are most likely very familiar with are personal computers and servers. Let's take a closer look at each.

2a. Personal Computers

Personal computers, commonly referred to as PCs, are designed for individual use. They are small and lightweight, and are designed to be easily portable. Here are the most common types of personal computers:

- **Laptops**: Laptops are computers that charge while plugged in, but can then run on battery when unplugged. This makes them easy to transport.
- **Tablets**: A tablet is a PC that is designed to be used with a touchscreen rather than a mouse. The most popular type of tablet is an iPad. Some tablets also have detachable keyboards that can be used rather than using the keyboard on the touchscreen.
- **Netbooks**: Netbooks are a hybrid between laptops and tablets. They are small computers which are mainly used to access the internet. A popular type of netbook is the Google Chromebook.
- **Smartphones**: Smartphones are cell phones that connect to the internet. Because of the internet connection, they're able to carry out a variety of functions, including downloading apps and accessing social media.

Computers that are not personal computers are desktop computers, also known as "desktops." Because they are designed to be used only at a desk, they are heavier than PCs, and they usually need to be plugged in when in use. Due to the convenience of PCs, they have become more popular in the United States than desktop computers.
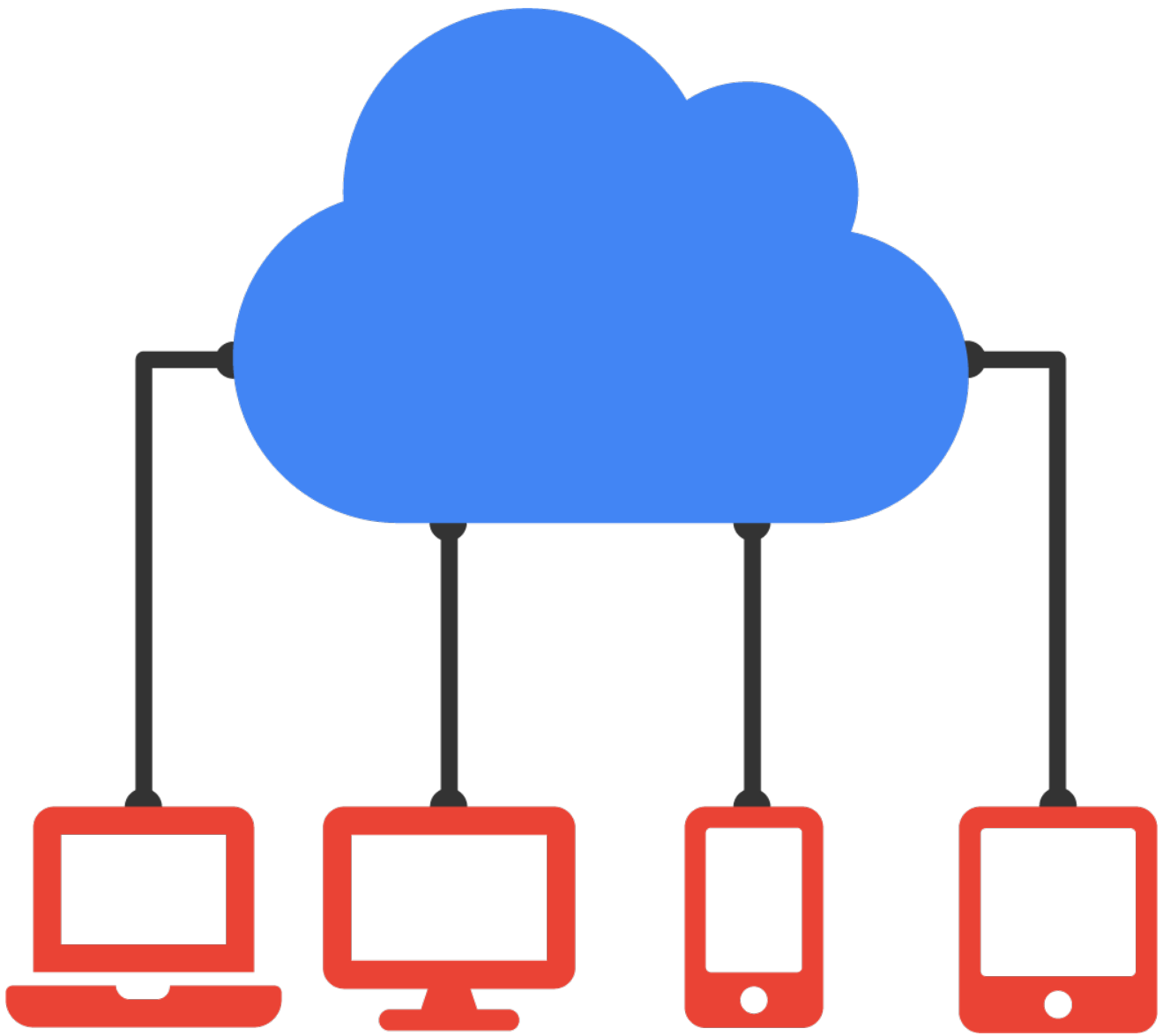
📄 **TERM TO KNOW**

Personal Computer
A small, lightweight computer designed to be transported by the user.

2b. Servers

A **server** is a dedicated, electronic data center that has specialized power-management and cooling systems. Essentially, it stores all of the data that a computer user needs to access. Another term for data centers like these is "the cloud."

Data stored in the cloud can be accessed by multiple people at once from any device connected to the internet. For instance, Dropbox and Google Drive allow multiple users to access documents from multiple devices and see updates in real-time. This frees up space on a computer's server so that more data can be stored and accessed from multiple devices.

📄 **TERM TO KNOW**

Server
An electronic data center that stores documents, websites, and information.

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3. Key Components

There are several key components that a computer relies on to complete its work. You have most likely heard of hardware and software, but how much do you really know about them? You will now explore each in more depth to better understand how they work on their own and together.

3a. Hardware

Hardware is the term that refers to the physical, tangible components of a computer. Examples of hardware

include the computer's screen, the mouse, and the keyboard.

Another example of hardware is the computer's **processor**. This part of the computer completes the processing functions by collecting inputted data and performing a specific function for the output. For instance, some types of hardware, like the keyboard and mouse, generate input data when you type, tap, or click them. The processor takes the data it receives from your typing and clicking and turns it into output data. This data can then be sent to an output device, such as a screen for display or a hard drive for storage.

Processor
(CPU)

Input
(keyboard, mouse,...)

Output
(screen, printer,...)
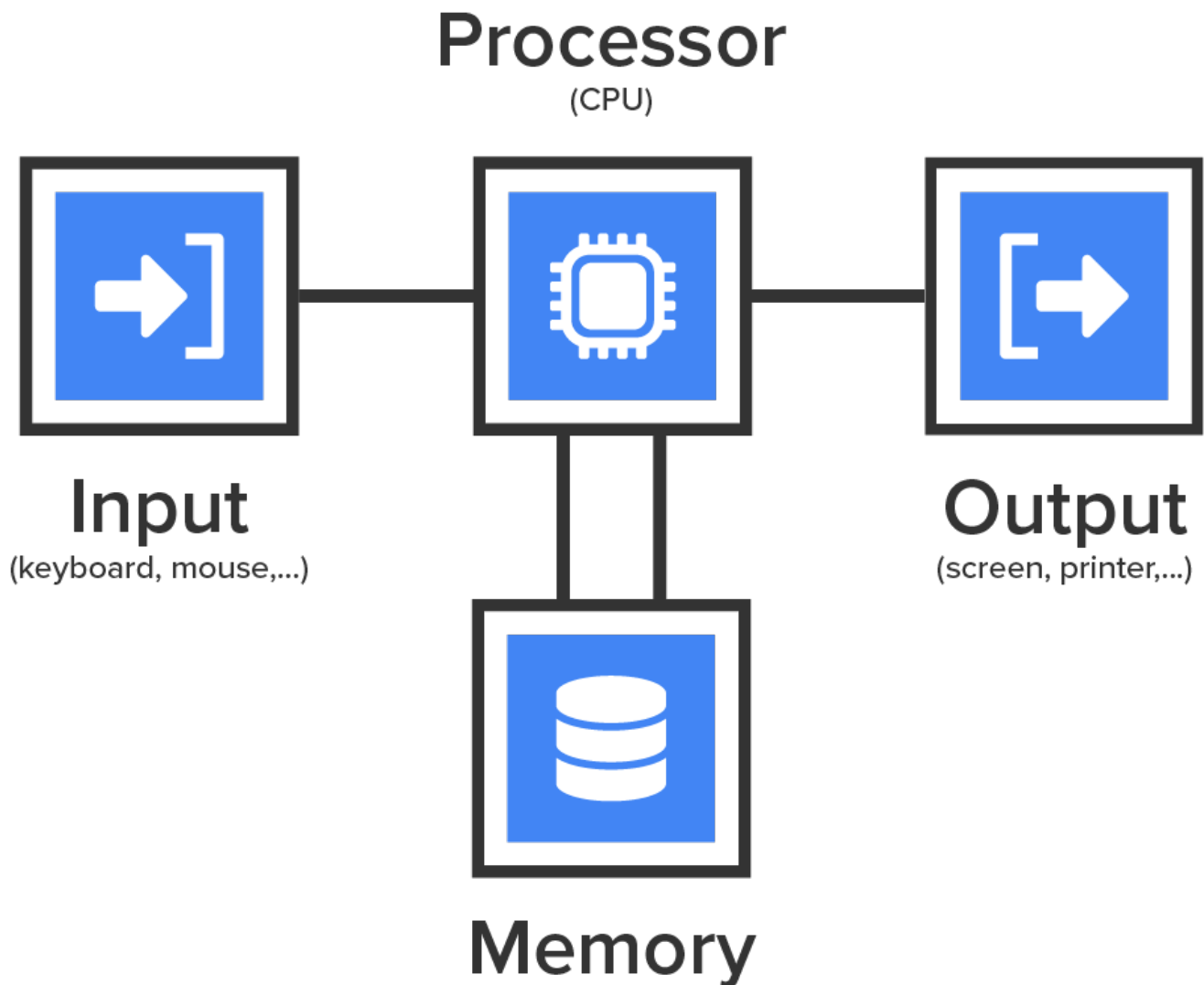
Memory

The **hard drive** is another component. This is the storage space for computer data. This is not cloud-based, and therefore this data is only stored on the device itself. The amount of data you can store will depend on the amount of memory it has. This is typically measured in a unit called **bytes**.

📄 TERMS TO KNOW

Hardware
The physical, tangible components of a computer.

Processor
The part of the computer that completes the processing functions by collecting inputted data and performing a specific function for the output.

Hard Drive
The storage space for computer data.

Bytes

Typical unit of measurement for computer memory.

3b. Software

Computers cannot function solely on hardware; they also require **software**, which is the set of internal instructions that tell the hardware what to do. Understanding what different software does and how to use it is essential to completing tasks accurately and efficiently.
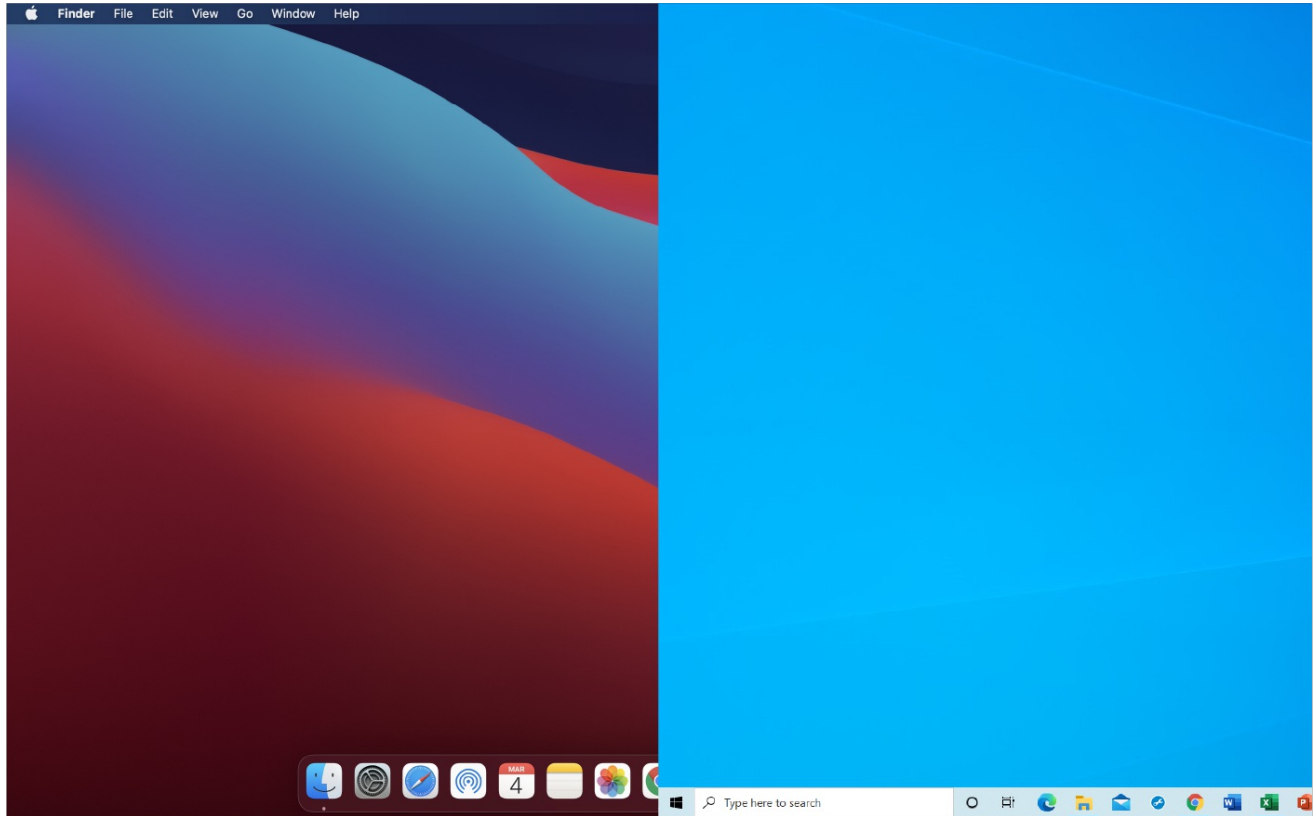
There are two main types of software: **system software**, which includes operating systems such as Microsoft Windows and macOS, and **application software**, which includes programs like Microsoft Word, Excel, and PowerPoint.

Both types of software help transform input data into output data, enabling users to interact with the computer to accomplish a variety of tasks. We'll be looking at different kinds of application software throughout this course.

In this video, you'll learn how DJ Mannie Fresh uses the cloud to stay organized and succeed in his career.

Add video: Strayer Week 9

📄 TERMS TO KNOW

Software
The set of internal instructions that tell the hardware what to do.

System Software
Includes operating systems such as Microsoft Windows and macOS.

Application Software
Includes programs such as Microsoft Word, Excel, and PowerPoint.

Technology: Skill Reflect

Now that you know more about types of computers, consider what you would do in the following situation to practice your technology skill:

You have just started a new job and your supervisor asks which types of input and output devices you prefer for your computer. How would you respond to this question?

⌗ SUMMARY

In this lesson, you were introduced to how **computers and data** work. You also learned about two **types of computers (personal computers and servers)**. You then looked at the **key components** of any computer. You learned that **hardware** includes the tangible parts of a computer while **software** is a set of internal instructions. You also reviewed the model of how input leads to output and you considered how your own technology skills can impact your selection of digital tools.

Enjoy the next lesson!

📄 TERMS TO KNOW

Application Software
Includes programs such as Microsoft Word, Excel, and PowerPoint.

Bytes
Typical unit of measurement for computer memory.

Digital Device
Any device that relies on a computer to operate.

Hard Drive
The storage space for computer data.

Hardware
The physical, tangible components of a computer.

Personal Computer
A small, lightweight computer designed to be transported by the user.

Processor
The part of the computer that completes the processing functions by collecting inputted data and performing a specific function for the output.

Server
An electronic data center that stores documents, websites, and information.

Software
The set of internal instructions that tell the hardware what to do.

System Software
Includes operating systems such as Microsoft Windows and macOS.