

Internet Basics

by Sophia Tutorial



WHAT'S COVERED

In this lesson, you will gain a better understanding of how the internet works. You will also examine how this knowledge can strengthen your technology skill. Specifically, this lesson will cover:

1. Internet Protocols
 - a. IP Addresses
 - b. Domain Names
 - c. URL's

1. Internet Protocols

Computers and devices on a network use various protocols to facilitate communication between them. A protocol is a format or rule for transmitting data between devices. This is similar to how we need a set of rules to organize physical locations like buildings by using things like street names and zip codes. Consider the different types of online addresses below.

1a. IP Addresses

Individual computers and networks have a unique, numerical code: an **internet protocol address**, or **IP address**. An IP address is a set of identifying numbers assigned to devices and networks that connect to the internet. When you're online, websites you visit need to be able to detect your IP address in order to send you information and allow you to interact with their content. An example of an IP address is 12.34.567.89.

When your device is connected to the internet, there is actually more than one IP address associated with you. One is for your computer and its connection to your modem or wireless router. The other is for your modem's or router's connection to your internet service provider (ISP).



TRY IT

You can find out your computer's IP address by opening Settings from the Start menu, clicking Network & Internet, and then selecting "View your network properties." To find out the IP address for your connection to your ISP, you can go to websites offering IP address lookup, like [dnschecker.org](https://www.dnschecker.org).



TERM TO KNOW

Internet Protocol (IP) Address

A set of identifying numbers assigned to devices and networks that connect to the internet and allows

devices to find and communicate with one another.

1b. Domain Names

While individual computers and networks have numerical codes, websites have text-based names because they are easier to navigate. Websites also have corresponding text addresses, called a **domain name**. For example, the domain name for your school is Sophia.org. When you type sophia.org into a web browser, one of the internet's domain name system (DNS) servers directs you to the IP address associated with that domain name. The content for the Sophia website is then sent back to your IP address so it can be displayed on your screen. You could have accessed it by typing in an IP address, but Sophia.org is easier to remember. You've probably noticed that there are several different endings to domain names. These are called **top-level domains (TLD)**, and they often indicate the type or purpose of a website. Common TLDs are .com, .edu, .gov, .net, and .org. Websites with a TLD of .com, .net, or .org are generally organizations such as companies, initiatives, or non-profit organizations. Websites with a TLD of .edu are reserved for designated educational institutions and websites with a TLD of .gov are designated for government organizations.



TERMS TO KNOW

Domain Name

Text-based internet addresses that combine with other elements to create a URL, or universal resource locator.

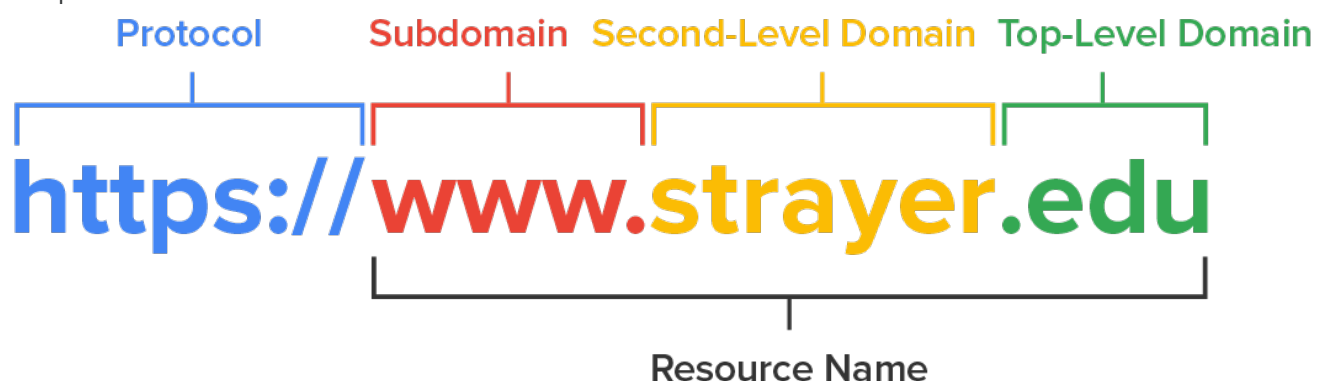
Top-Level Domains (TLDs)

The last part of a domain name, such as .com, .org, .edu, or .gov.

1c. URLs

Universal resource locators (URLs) are internet addresses that identify specific webpages. They follow a certain protocol, which outlines specific information, including the web server hosting the webpage, the name of any folders on the web server in which the page is stored, and the webpage's filename, if applicable.

Domain name system (DNS) servers translate domain names (one component of a URL) into IP addresses that machines and devices can read and understand. In the same way that your mailing address has a house number, street name, city, state, and zip code that can be used to send mail directly to you, the URL breaks out essential information needed to direct users to a particular website. The graphic below identifies the components of a URL.



Technology: Why Employers Care

Employers want to hire employees who can efficiently find and communicate information. Careers that

haven't traditionally relied on strong technology skills now require them to be successful. Teachers need to learn programs such as Google Classroom and FlipGrid. Nurses now chart medical information electronically rather than through paper records. This trend will only continue in the future.



TERMS TO KNOW

Universal Resource Locators (URLs)

Internet addresses that identify specific webpages.

Domain Name System (DNS)

Servers that translate domain names (one component of a URL) into IP addresses that machines and devices can read and understand.



SUMMARY

In this lesson, you learned more about **internet protocols** and how they allow you to search the internet. You reviewed the key items of **IP addresses**, **domain names** and **URLs**. You also learned that employers appreciate employees who are able to use the internet effectively.

Hope you are enjoying the course!



TERMS TO KNOW

Domain Name

Text-based internet addresses that combine with other elements to create a URL, or universal resource locator.

Domain Name System (DNS)

Servers that translate domain names (one component of a URL) into IP addresses that machines and devices can read and understand.

Internet Protocol (IP) Address

A set of identifying numbers assigned to devices and networks that connect to the internet and allows devices to find and communicate with one another.

Top-Level Domains (TLDs)

The last part of a domain name, such as .com, .org, .edu, or .gov.

Universal Resource Locators (URLs)

Internet addresses that identify specific webpages.