

How the Web Works

So what is this magical Web? We use it every day, but we may not fully understand exactly what it is and how it works. As future awesome web developers and general humans who use the internet daily, it's important that we lay a concrete foundation. Simply put, the Internet is a large **network of computers that are connected** and can communicate together. The Web is made up of computers that we call **clients** and **servers**.



Clients are the typical Web user's Internet-connected devices (for example, the computer you are on right now connected to your Wi-Fi!) and web browsers on those devices (like Chrome or Firefox).

Servers are computers that store web pages or applications. They are computers, just like the machine you are on right now, without the keyboard, trackpad, or screen. When a **client** wants to access a web page (like Google or Facebook), a copy of the web page is downloaded from the server onto the client machine to be displayed in the user's web browser.

In simpler words, the client makes a **request** and the server answers back with a **response**. But we'll get into the request-response cycle in a little bit.

So What Actually Happens?

Let's say you want to learn more about clients and servers (because I'm sure you do!) so you open a browser and type into the address bar `www.google.com`.

1. Your browser goes to the Domain Name Server or DNS (think of this like an address book or phone book) and finds the *real* address of the Google server that the website lives on (the **IP address** which is a series of four period-separated numbers like 52.33.229.159).
2. The browser sends an **HTTP request** message to Google's servers asking it to send a copy of the website back to you, the client.
3. Provided that you are not violating any security protocols and you have the proper permissions, Google's servers approve the client's request and responds by sending the website's files back to the browser as a series of small chunks called data packets.
4. The browser assembles the small chunks into a complete website and displays the Google homepage to you.

And there you have it! Nothing magic to it!