What is the Web?

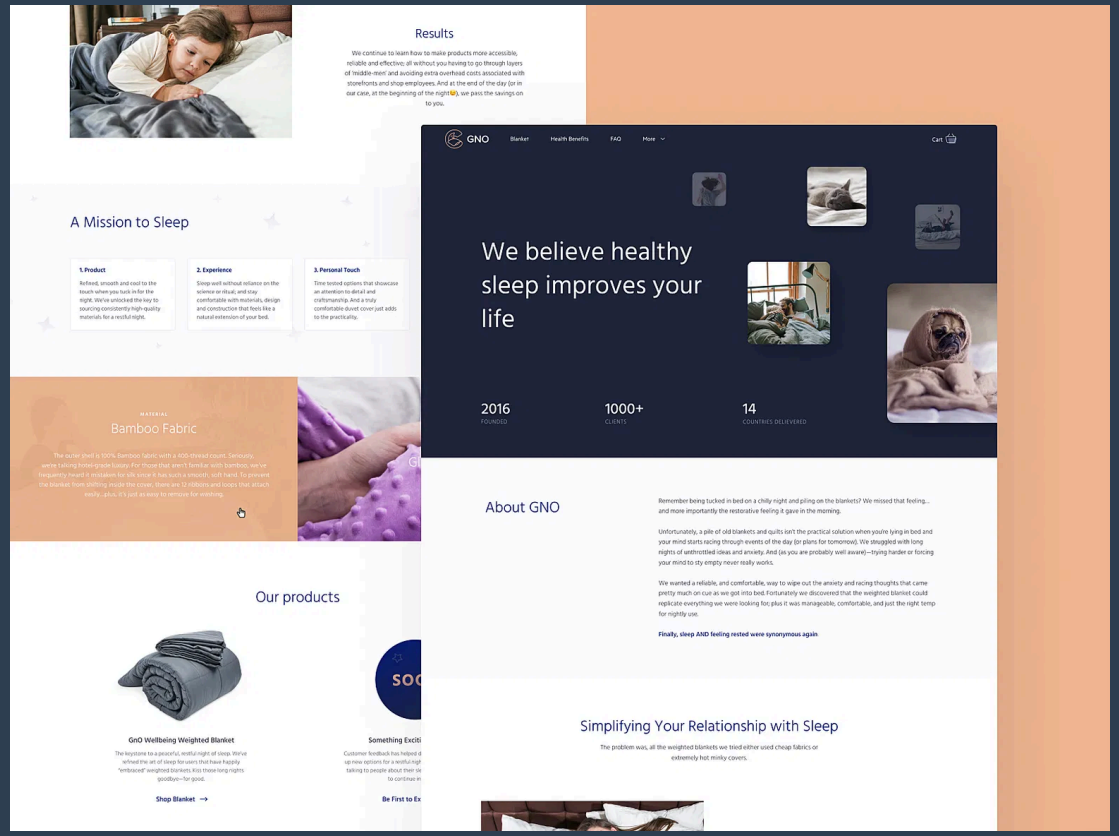
> The **World Wide Web (WWW)** is a global information system of resources that are accessible over the Internet, identified by URLs, and connected by hyperlinks.

Internet vs. Web: The Internet is the global network of connected computers, while the Web is an information-sharing model built on top of the Internet.

Key Components:

- **Web Pages:** Documents typically written in HTML
- **Websites:** Collections of related web pages
- **Web Browsers:** Applications that retrieve and display web pages
- **Web Servers:** Computers that store and deliver web pages

The Web was invented by **Tim Berners-Lee** in 1989 while working at CERN, revolutionizing how information is shared globally.



How Web Pages are Built

HTML (HyperText Markup Language)

The backbone of any webpage, providing structure and content using elements like headings, paragraphs, images, and links.

CSS (Cascading Style Sheets)

Controls the visual appearance of HTML elements, including colors, fonts, layouts, and responsive design for different screen sizes.

JavaScript (Optional)

Adds interactivity and dynamic behavior to web pages, but is not required for basic web pages.

> **How they work together:** HTML creates the structure, CSS styles that structure, and JavaScript (when used) adds interactivity. These technologies work in layers to create the complete web experience.

```css
.hero-image {
  padding-top: 250px;
  padding-bottom: 225px;
  background-image: url("public/img_hero.jpg");
  background-position: center;
  background-repeat: no-repeat;
  background-size: 100%;
  position: relative;
}

.hero-text {
  text-align: center;
  position: absolute;
  top: 50%;
  left: 50%;
  transform: translate(-50%, -50%);
  color: #4F4D53;
  font: 'Roboto';
  font-size: 50px;
}
```

How Web Pages are Accessed

URLs: Addresses on the Web

Uniform Resource Locators are the addresses used to locate resources on the web.

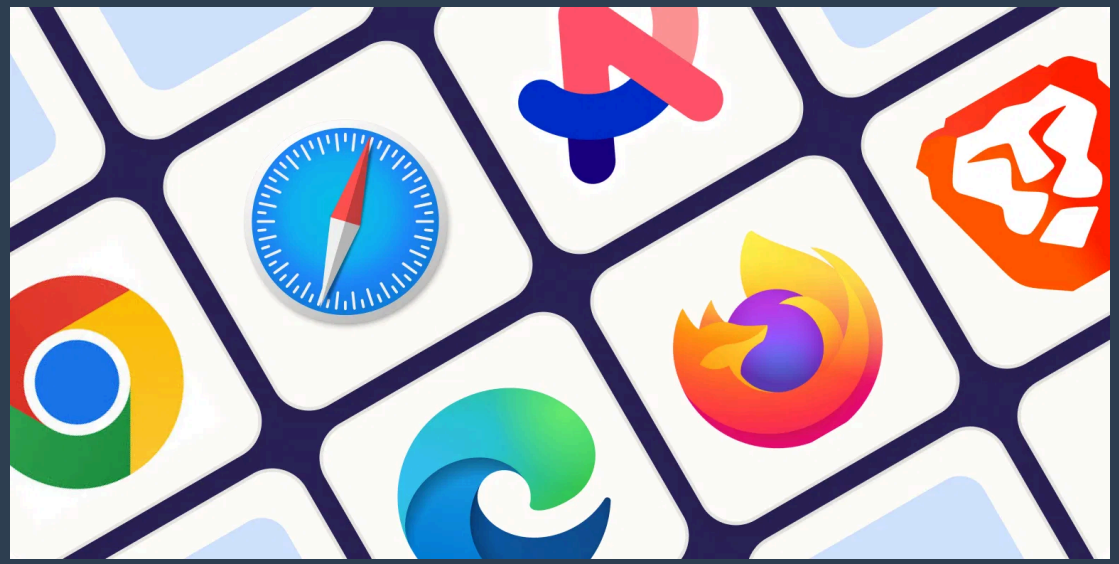
```
https://www.example.com/path/page.html
Protocol + Domain Name + Path to Resource
```

Web Browsers

Applications that retrieve, interpret, and display web content by sending requests to web servers and rendering the received HTML, CSS, and JavaScript.

DNS: Domain Name System

Translates human-readable domain names (like example.com) into IP addresses (like 93.184.216.34) that computers use to identify each other on the network.



Behind the Scenes: Client-Server Model

The **Client-Server Model** is the fundamental architecture that powers the web, where clients (browsers) request resources from servers that process and respond to these requests.

Client (Your Browser)

Sends requests for web pages and resources to servers.

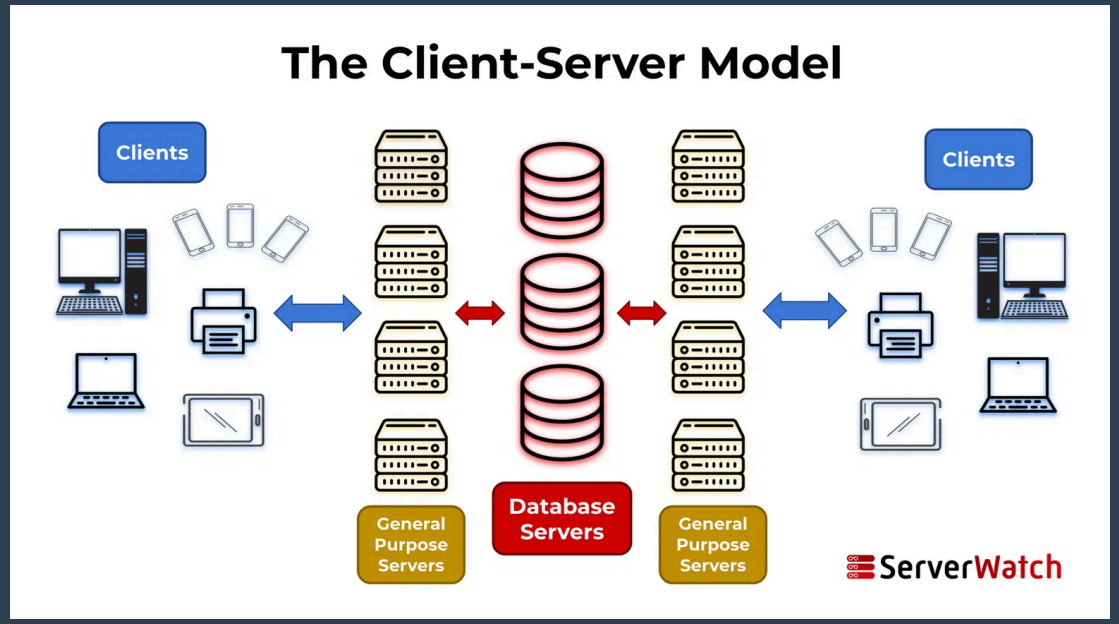
Server (Web Server)

Processes requests, retrieves or generates content, and sends responses back to clients.

HTTP/HTTPS Protocol

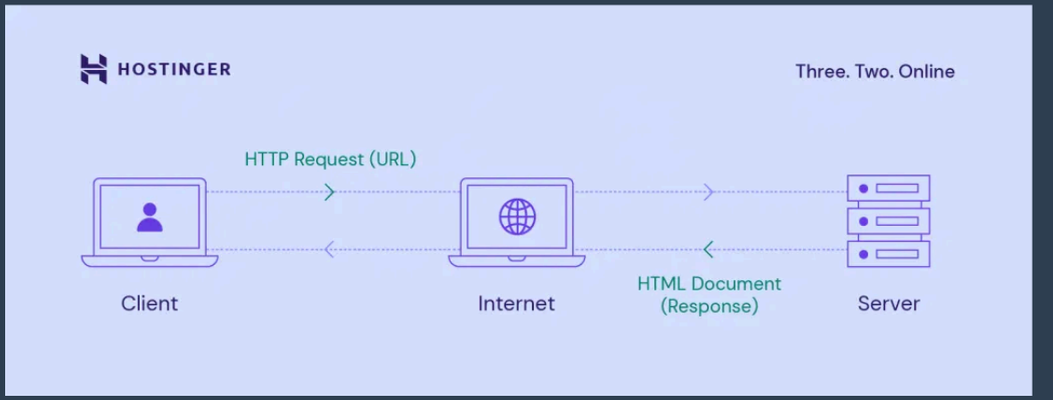
The communication language used between clients and servers. HTTPS adds encryption for security.

The Process: When you type a URL, your browser (client) sends an HTTP request to a server, which processes the request and returns an HTTP response containing the requested web page.



Web Hosting: Where Websites Live

Web hosting is a service that allows individuals and organizations to make their websites accessible on the internet by storing website files on specially configured computers called servers.



How Web Hosting Works

Web hosting companies maintain powerful computers (servers) connected to the internet 24/7. When you purchase hosting, you're renting space on these servers to store your website files.

Common Types of Web Hosting:

- **Shared Hosting:** Multiple websites on one server (affordable, good for beginners)
- **VPS Hosting:** Virtual Private Server - dedicated resources within a shared environment
- **Dedicated Hosting:** Entire server dedicated to one website (high performance)
- **Cloud Hosting:** Website hosted across multiple connected servers (scalable)

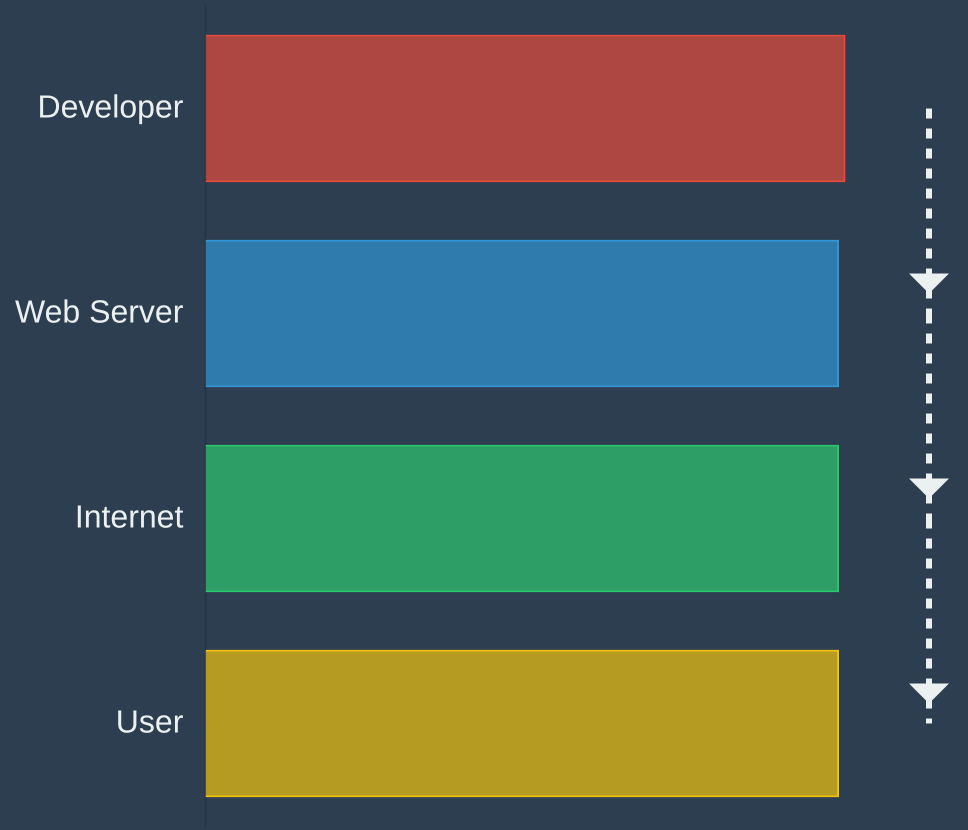
Domain Names and Hosting

Your domain name (e.g., example.com) points to your hosting server's IP address, connecting visitors to your website files.

From Files to a Live Website

The **deployment process** is how your HTML, CSS, and other files move from your computer to a web server where they become accessible to users worldwide.

1. **Development:** Create HTML, CSS, and other files on your local computer using a text editor or IDE.
2. **Testing:** Test your website locally to ensure everything works as expected.
3. **Deployment:** Upload your files to a web server using FTP, Git, or a hosting platform's dashboard.
4. **Access:** Users type your domain name in their browsers, which connects to your web server and displays your website.



Conclusion

Key Concepts Recap

- ✓ The **Web** is an information system built on top of the **Internet**
- ✓ Web pages are built with **HTML** (structure) and **CSS** (styling)
- ✓ **URLs** are addresses that locate resources on the web
- ✓ **DNS** translates domain names to IP addresses
- ✓ The **client-server model** is the foundation of web communication
- ✓ **Web hosting** makes websites accessible to users

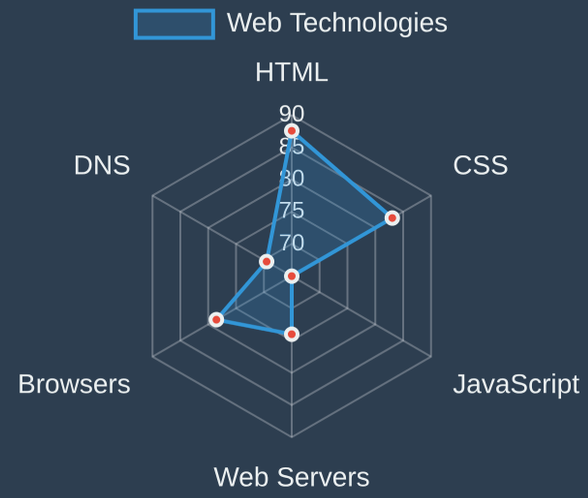
What's Next: HTML & CSS Course

Now that you understand how the web works, you're ready to start building your own web pages!

In our upcoming HTML and CSS course, you'll learn how to:

- Create structured HTML documents
- Style your pages with CSS
- Build responsive layouts
- Deploy your websites to the web

Web Technologies Overview



Ready to start your web development journey?

Let's build something amazing together!