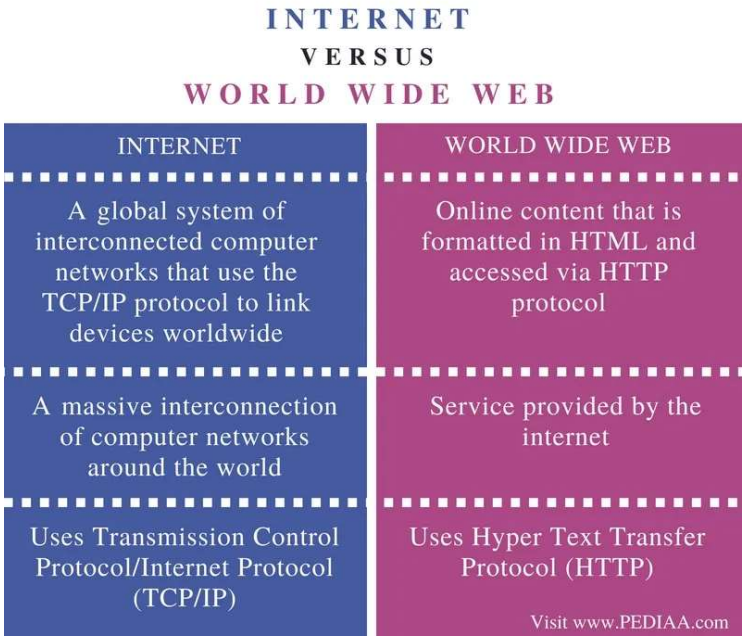
Module 1, Day 1 - Notes

Lesson 1: Introduction to Web Development

Web development involves creating, building, and maintaining websites. It involves aspects such as web design, web publishing, web programming, and database management.

The World Wide Web

The World Wide Web (WWW), often called the web, is an information system where documents and other web resources are identified by URLs. These resources may be inter-linked by hyperlinks and can be accessed via the internet. It was created in 1989 by British computer scientist Tim Berners-Lee.



How the Web Works

The web operates through a client-server model.

- **Client**: This is your computer or device that you use to access the web. The client makes a request for a webpage (resource) using a web browser.
- **Server**: This is a computer that hosts websites. When it receives a request from a client, it sends back the requested webpage.
- **Browsers**: These are software applications that clients use to access the web, such as Google Chrome, Safari, or Firefox. They interpret the code from web servers and display it as web pages for users.
- **Internet Service Provider (ISP)**: This is a company that provides access to the internet.

To access a web page:

1. You enter a URL into a browser.
2. The browser looks up the IP address for the domain name via DNS.
3. The browser sends an HTTP request to the server at that IP address.
4. The server sends back the requested resource, which the browser then renders to display the webpage.

How DO websites work?

A user connects to the internet and asks for an address

Yo! Gimme dat website.com

Umm, yeah okay. Hang on...

Their ISP (internet service provider) checks nameservers to find where the website is stored

'Scuse me! Where does website.com live?

Thanks!

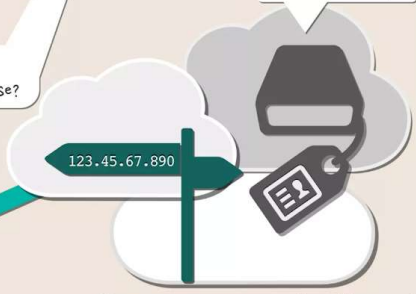
Ooh yeah, he's at... that.hostserver.com aka 123.45.67.890

Hey! Can we see website.com please?

The server processes anything it needs to (such as PHP) and returns the site in HTML

HTML

Here you go!



Nameservers store the alias and IP (internet protocol) address of the server with the website files

The user's browser (e.g., IE, Chrome, Safari) reads the HTML, and any accompanying stylesheets and scripts, and displays it accordingly.

The website files need to live on a computer & servers are computers, like your computer (but less pretty), designed to serve those files to the public.

Websites are made up of files including images, videos, and the website code itself, which might be static HTML, or a more dynamic web language, like PHP.

kristarella.com

Web Resources

Web resources can be any type of data that can be accessed via a unique URL, such as HTML documents, images, video files, stylesheets, JavaScript files etc.

Identifying Resources on the Web

Resources on the web can be identified using Uniform Resource Locators (URLs). A URL has the following parts:

- **Protocol**: This is the set of rules for how data is transferred and could be HTTP, HTTPS, FTP, etc.
- **Domain**: This is the name of the server where the resource is located.
- **Path**: This is the location on the server where the resource is stored.

Source: https://sports.yahoo.com/url-heres-know-internet-tool-170655422.html

Hosting Services and Domain Registrars

Hosting services provide the technology and services needed for a website or webpage to be viewed on the Internet. Websites are hosted, or stored, on special computers called servers.

Domain registrars are companies that manage the reservation of internet domain names. A domain name is the address where users can access your website.

Career Opportunities

Web development opens up a variety of career paths:

- **Front-End Developer**: Works on user-facing code, responsible for the look and feel of a site.
- **Back-End Developer**: Works on server-side code, databases, and application logic.
- **Full Stack Developer**: Can handle both front-end and back-end tasks.
- **Web Designer**: Works on the visual layout and usability of a website.
- **UX Designer**: Focuses on user experience and ensures the website is easy to navigate.
- **SEO Specialist**: Ensures a website's visibility in search engine results.

Other opportunities include roles as a project manager, web content strategist, IT coordinator, and more.

Video: A Day in the Life of a Front End Web Developer

Vocabulary

- **Clients**: Computers or devices that request resources from servers.
- **Servers**: Computers that host websites and send resources to clients upon request.
- **Browsers**: Software applications that clients use to access the web.
- **IP**: Stands for Internet Protocol. It refers to the set of rules governing the format of data sent over the internet or other network.
- **ISP**: Stands for Internet Service Provider. This is a company that provides access to the internet.
- **URL**: Stands for Uniform Resource Locator. This is the address used to access web resources.
- **Protocol**: In terms of a URL, this is the set of rules for how data is transferred on the web.
- **Domain**: In terms of a URL, this is the name of the server where a web resource is located.
- **Path**: In terms of a URL, this is the specific location on a server where a resource is stored.

- **Webpage**: A document or resource suitable for the World Wide Web and accessible through a web browser.

Additional Resources

Below are some additional resources that will assist you in deepening your understanding of the topics we've discussed today:

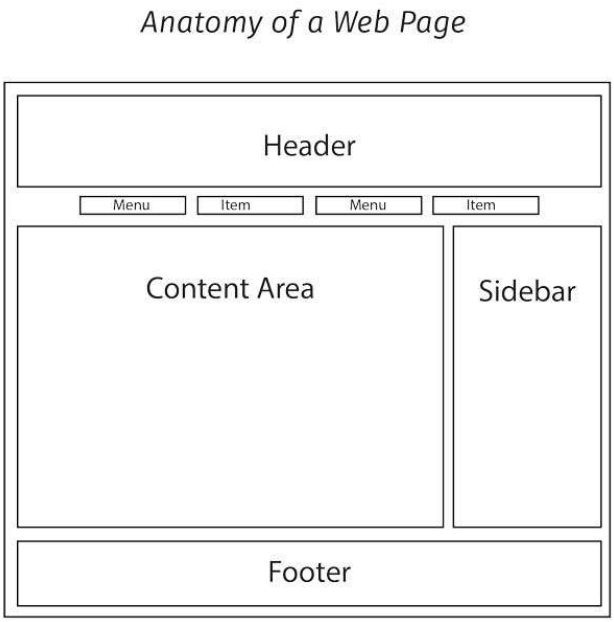
1. **Websites**
    - MDN Web Docs: Comprehensive resource for developers, with tutorials and detailed descriptions of web technologies.
    - W3Schools: Excellent beginner-friendly resource with lots of examples and exercises.
2. **Online Courses**
    - freeCodeCamp: Learn to code for free with hands-on projects and free certification opportunities.

Lesson 2: Understanding Webpages and Websites

Anatomy of a Webpage

A webpage typically has a structured layout that might include the following elements:

- **Header:** Located at the top of the webpage, typically contains the logo, site navigation, and sometimes a search bar.
- **Main Content Area:** This is where the primary content is displayed, which could be text, images, videos, etc. This area often changes from page to page.
- **Sidebar:** Typically located on the side of a page, it may contain additional navigation, secondary information, or advertisements.
- **Footer:** Located at the bottom of the page, typically includes links to important information like contact details, terms of service, social media accounts, etc.



Source: Just the Basics