

Frontend Assignment Set

Module 1 -Foundation

- **What is a HTTP?**

➤ **HTTP** stands for **HyperText Transfer Protocol**. It's the foundational protocol used by the **World Wide Web** to enable communication between clients (like web browsers) and servers (where websites are stored).

- **What is a Browsers? How they works?**

What is a Browser?

A **web browser** is a **software application** used to access and interact with content on the **World Wide Web**. Examples include:

- Google Chrome
- Mozilla Firefox
- Safari
- Microsoft Edge
- Opera

How Do Browsers Work?

Browsers follow a series of steps to **fetch**, **process**, and **display** web content:

1. User Requests a Web Page

- You type a URL (like <https://example.com>) or click a link.
- The browser interprets the URL and starts the process.

2. DNS Lookup

- The browser asks the **DNS (Domain Name System)** to convert the domain (example.com) into an **IP address** so it knows where to send the request.
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3. Send HTTP/HTTPS Request

- The browser sends a request (usually GET) to the server at the resolved IP address using the **HTTP or HTTPS** protocol.
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4. Receive Response

- The server responds with:
 - **HTML** (structure of the page)
 - **CSS** (styling)
 - **JavaScript** (interactivity)
 - Media (images, videos, etc.)
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5. Rendering Process

The browser processes the content through the following steps:

a. HTML Parsing → DOM (Document Object Model)

- HTML is parsed and turned into a tree-like structure (DOM).

b. CSS Parsing → CSSOM

- CSS is parsed to determine how things should look.

c. Rendering Tree Construction

- Combines the DOM and CSSOM to determine what will actually appear on the screen.

d. Layout & Painting

- The browser calculates the size and position of elements (layout).
- Then it draws (paints) the content on the screen.

e. JavaScript Execution

- If there are scripts, the browser runs them (using its JavaScript engine, like V8 in Chrome).
 - Scripts can manipulate the DOM dynamically.
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6. Repainting & Reflowing

- As users scroll or interact, or if JavaScript modifies the page, the browser may **repaint** or **re-layout** parts of the page.

• What is Domain Name?

- A domain name is the human-readable address of a website on the Internet.

It's what you type into your web browser's address bar to visit a website — like:

www.google.com

facebook.com

openai.com

• What is hosting?

- **Hosting** (short for **web hosting**) is a service that stores and serves the **files, data, and content** of your website so that it can be **accessed on the Internet**.

Think of **hosting** as **renting space on a computer (server)** that's always connected to the internet.

Module 2 – Fundamentals of World Wide Web

- Difference between Web Designer and Web Developer

Web Designer vs. Web Developer

Here's a clear breakdown of the **difference** between a **web designer** and a **web developer**:

Feature	Web Designer	Web Developer
Focus Area	Looks & layout (how the website looks)	Functionality (how the website works)
Role	Creates visual design , UI/UX	Writes code to build and run the site
Tools Used	Figma, Adobe XD, Photoshop, Sketch, Canva - Graphic design - Color theory - Layouts - User experience	HTML, CSS, JavaScript, PHP, Python, databases - Programming - Logic - Databases - APIs
Key Skills		
Output	Design mockups, wireframes, or layouts	Fully functional website or app
Collaboration	Works with developers to implement the design	Works with designers to build their vision
Example Titles	UI/UX Designer, Graphic Designer, Visual Designer	Frontend Developer, Backend Developer, Full-Stack Developer

In Simple Terms:

- **Web Designer:** "This is how the website should *look* and *feel*."
- **Web Developer:** "I'll make that website *work* and be accessible online."

- **What is a W3C?**

- **W3C** stands for the **World Wide Web Consortium**.
- It is the **main international organization** that develops **standards** for the **World Wide Web**.

- **What is Domain?**

- A **domain** (or domain name) is the **unique address** people use to access a website on the internet.
- It's what you type into your browser's address bar to go to a website.

Example:

- google.com
- wikipedia.org
- yourname.in

Structure of a Domain Name

- Let's break down the domain:
- **www.example.com**

Part	Meaning
www	Subdomain (optional part)
example	Second-level domain (your site name)
.com	Top-level domain (TLD)

• **What SEO?**

- SEO stands for Search Engine Optimization.
It is the process of improving a website to increase its visibility on search engines like Google, Bing, or Yahoo.

• **What is SDLC life cycle?**

SDLC stands for **Software Development Life Cycle**.
It is a **step-by-step process** used by software developers to **design, develop, test, and maintain** software systems.

Why Use SDLC?

It helps ensure that software is:

- **Well-planned**
- **Efficiently developed**
- **Bug-free**
- **Delivered on time and budget**

