Introduction to Web Development

What is Web ?

The Web is a **shared information space.**

History of Web :

- The concept of hypertext was first introduced by **Ted Nelson** in the **1960**s, and later popularized by **Douglas Engelbart** in the **1980**s.
- The first web page was launched by **Tim Berners-Lee** in **1991** at CERN. The primary goal in the development of the Web was to fulfill the automated information-sharing needs of academics affiliated with institutions and various global organizations.
- Consequently, **HTML** was developed in **1993**.

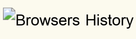
Basic Web System Architecture :

(1) The web Browser: display information content.
(2) The web Server: transfars information to client.

Web Browser :

A web browser is a software application for retrieving, presenting and traversing information resources on the World Wide Web.

History of web Browsers:



Web Server :

A web server is computer software and underlying hardware that **accepts requests via HTTP** (the network protocol created to distribute web content) or its secure variant HTTPS. A user agent, usually a web browser or web crawler, initiates communication by making a request for a web page or other resource using HTTP, and **the server responds** with the content of that resource or an error message. A web server can also **accept and store resources** sent from the user agent if configured to do so.

Basic Web System :

(1) HTML Documents

HTML stands for HyperText Markup Language. It is used to create web pages.

(2) URL

URL stands for Uniform Resource Locator. It is one of the key mechanisms used by browsers to retrieve published resources, such as HTML pages, CSS documents, images, and so on.

- **Protocol:** http://
- **Domain:** www.example.com
- **Path:** /index.html

(3) HTTP or HTTPS

HTTP stands for HyperText Transfer Protocol. It is the foundation of the World Wide Web, and is used to load webpages using hypertext links. HTTP is an application layer protocol designed to transfer information between networked devices and runs on top of other layers of the network protocol stack. A typical flow over HTTP involves a client machine making a request to a server, which then sends a response message.

Server-Side Processing :

Server-side processing is a technique used in web development where the server performs calculations, data manipulation, and other tasks, rather than the client's web browser. This approach is used to:

- Improve the performance, security, and scalability of web applications.
- Recieve the dynamic page request.
- Send the finished web pages.

Client-Side Processing :

Client-side processing is a some processing needs to be "excuted" by the browser. It is everything that drawn in your screen. Ex: HTML, CSS, JS

Static and Dynamic Websites :

- **Static Sites:** are websites that do not change once they are published. They are built using HTML, CSS, and JavaScript, and do not require a database or server-side processing. Static sites are fast, secure, and easy to maintain, but they can be less interactive than dynamic sites.
- **Dynamic Sites:** are websites that change frequently, often in response to user input or other events. They are built using a combination of HTML, CSS, JavaScript and a server-side programming language, such as PHP or Python. Dynamic sites are more interactive than static sites, but they can be slower and more difficult to maintain.