

How the Web Works - Summary

The web is a system of interlinked hypertext documents and resources accessed via the Internet.

Here's a simplified explanation of how the web works:

1. Client-Server Model:

- The web operates on a client-server architecture.
- The client (usually a web browser) sends a request to a server.
- The server processes the request and sends back a response.

2. DNS (Domain Name System):

- Converts human-friendly domain names (like `www.example.com`) into IP addresses.
- This allows browsers to locate the correct server.

3. HTTP/HTTPS Protocol:

- HTTP (HyperText Transfer Protocol) is used for communication between client and server.
- HTTPS is the secure version, encrypting the data for safe transmission.

4. Request-Response Cycle:

- You enter a URL in the browser.
- The browser sends an HTTP request to the server.
- The server responds with HTML, CSS, JS files, images, etc.
- The browser renders these files to display the webpage.

5. Web Servers:

- Servers like Apache, Nginx, etc., host the website files.
- They handle incoming HTTP requests and serve the appropriate resources.

6. Frontend vs Backend:

- Frontend: What the user sees (HTML, CSS, JS).
- Backend: Server-side logic, databases, APIs (Node.js, Python, etc.).

7. Rendering the Page:

- The browser interprets HTML, applies CSS styles, and runs JS for interactivity.
- Content is displayed on the screen.

This entire process happens in milliseconds, creating a seamless experience for the user.