Web browsers and web servers are two essential components of the World Wide Web that work together to enable the retrieval and display of web pages.

Here’s an overview of each:

Web Browser

- Client: Runs on your device (computer, phone, etc.) and acts as your gateway to the internet.
- Function: Requests and displays web pages, interprets HTML, CSS, and JavaScript to present content, interacts with forms, and handles user actions.
- Examples: Chrome, Firefox, Safari, Edge, Opera.

Web Server

- Server: Runs on a dedicated computer, often in a remote data center, and stores websites and their associated files.
- Function: Receives requests from web browsers, retrieves and processes resources (web pages, images, data), and delivers responses back to browsers.
- Examples: Apache, Nginx, IIS, Tomcat.

Synchronization Web browser and Web servers

1. Request: You enter a website URL in your browser.
2. DNS Lookup: Browser translates the URL into the server’s IP address.

3. Connection: Browser establishes a connection with the server.
4. HTTP Request: Browser sends an HTTP request specifying the desired resource (e.g., page, image).
5. Processing: Server retrieves the requested resource and processes any server-side code (e.g., PHP).
6. HTTP Response: Server sends an HTTP response containing the resource and status code (e.g., 200 OK).
7. Rendering: Browser receives the response, interprets the HTML, CSS, and JavaScript, and displays the web page.

Difference between Web browser and Web servers

Feature	Web Browser	Web Server
Location	Runs on user’s device	Runs on a remote computer
Role	Initiates requests	Fulfills requests
Software	User-facing application	Server-side software
Main Function	Displays web pages, interacts with user	Stores and delivers website resources
Examples	Chrome, Firefox, Safari	Apache, Nginx, IIS, Tomcat
Communication	Initiates HTTP requests, receives and interprets responses	Processes requests, delivers HTTP responses

Security	Can use HTTPS for secure communication	Implements security measures to protect server resources

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