What Happens Internally When You Visit a Website

1. URL Entry

You type a URL like https://www.example.com into your browser's address bar and press Enter.

2. URL Parsing

The browser breaks down the URL into components: protocol (https), domain (www.example.com), and path (/).

3. DNS Resolution

The browser checks its cache or queries a DNS server to resolve the domain to an IP address.

4. TCP Connection Setup

The browser initiates a TCP connection using a three-way handshake with the server's IP address.

5. TLS/SSL Handshake (for HTTPS)

If using HTTPS, the browser and server establish a secure connection via TLS/SSL by exchanging certificates and encryption keys.

6. HTTP Request

The browser sends an HTTP request to the server, typically a GET request to fetch the webpage content.

7. Server Processes Request

The web server receives the request, processes it (e.g., accesses database, runs backend code), and prepares a response.

8. HTTP Response

The server responds with an HTTP response containing HTML, CSS, JS, and other resources.

9. Browser Renders Page

The browser parses HTML, applies CSS, executes JavaScript, and renders the final page for the user.

10. Final Page Displayed

You see the fully rendered and interactive webpage in your browser.