1. What is a Website?

A website is a collection of web pages that users can access through the internet using a web browser. Websites are categorized into:

- **Static Websites:** Simple pages with fixed content (e.g., portfolio websites).
- **Dynamic Websites:** Websites that update content dynamically (e.g., social media platforms, e-commerce sites).

A website consists of three core parts:

A. Frontend (Client-Side)

- **HTML (HyperText Markup Language):** The structure of a webpage.
- **CSS (Cascading Style Sheets):** Styling and layout.
- **JavaScript:** Adds interactivity and dynamic behavior.

B. Backend (Server-Side)

- The logic and database management behind the website.
- Backend languages: **Node.js, Python, PHP, etc.**

C. Database

- Stores user data, transactions, and other content.
- Examples: **MongoDB, MySQL, PostgreSQL.**

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2. How a Website Loads: Step-by-Step Process

Step 1: User Requests a Web Page

- The user enters a URL (e.g., www.example.com) in their browser.
- The browser contacts the **DNS (Domain Name System)** to get the website's IP address.
- An **HTTP/HTTPS request** is sent to the web server.

Step 2: Server Processes the Request

- If it's a **static website**, the server sends back an HTML file.
- If it's a **dynamic website**, the server runs backend code, fetches data from the database, and then generates an HTML response.

Step 3: Browser Receives and Renders the Page

- The browser downloads the **HTML, CSS, and JavaScript** files.
- It processes them in the following order:
    1. **Parses HTML** and builds the **DOM (Document Object Model)**.

2. **Processes CSS** and creates the **CSSOM (CSS Object Model).**
3. **Combines DOM and CSSOM** to form the **Render Tree.**
4. **Executes JavaScript** to modify the page dynamically.
5. **Paints the final webpage** on the screen.
