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1. Difference between Frontend, Backend, and Full Stack Development

Frontend handles the design and looks of a website using HTML, CSS, and JavaScript.

Example: The layout and buttons you see on a login page.

Backend works on the logic and data handling of a website.

Example: Checking username and password from the database.

Full Stack does both frontend and backend work.

Example: Making the complete login system from design to database.

2. Client-Server Model Diagram

Client (Browser)

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| Request

↓

Server (Web Server)

|

| Response

↓

Client (Displays Web Page)

3. How a Browser Requests and Displays a Web Page

When a user types a website URL, the browser sends a request to the server. The server sends back HTML, CSS, and JavaScript, which the browser shows as a web page.

4. Tools for Web Development

VS Code – to write and edit code.

Browser – to open and test web pages.

Node.js – to run JavaScript outside the browser.

Git & GitHub – to manage and share code.

Live Server – to see changes instantly.

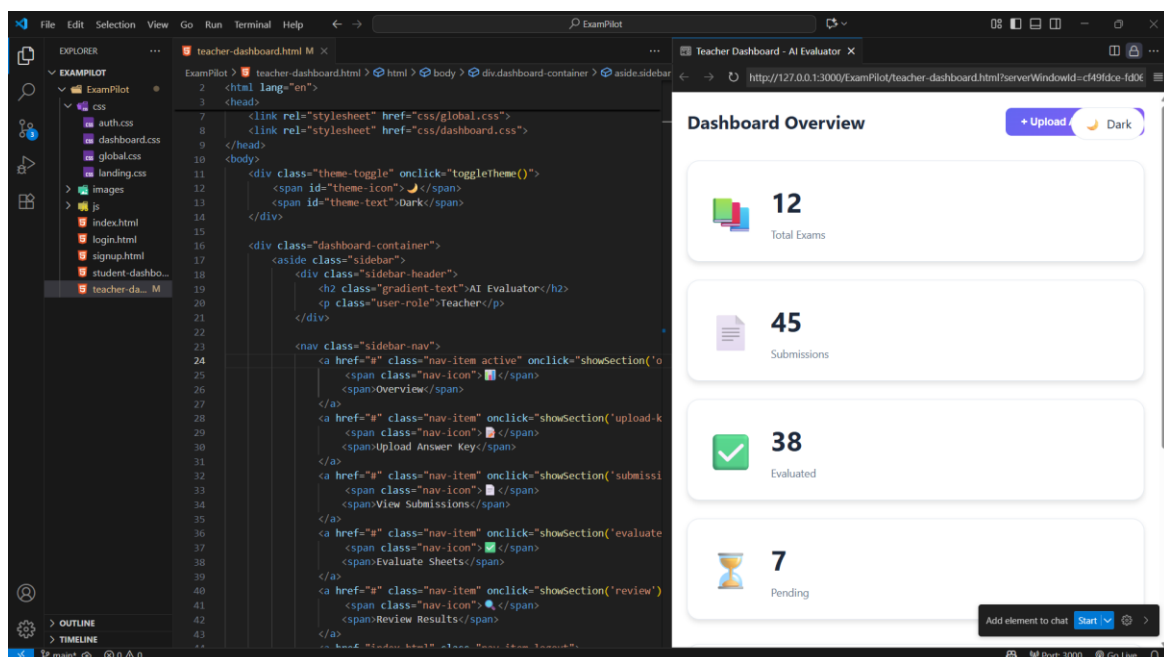
5. What is a Web Server

A web server stores and delivers web pages to users when they are requested.
Examples: Apache, Nginx, Microsoft IIS.

6. Roles in a Project

Frontend Developer designs the website layout and visuals.
Backend Developer handles the logic and database connection.
Database Administrator manages and secures the stored data.

7. VS Code Setup



8. Static and Dynamic Websites

Static websites show the same content to all users.
Example: A personal portfolio site.

Dynamic websites change content based on users or data.
Example: Facebook or YouTube.

9. Web Browsers and Rendering Engines

Google Chrome – Blink
Mozilla Firefox – Gecko
Microsoft Edge – Blink
Safari – WebKit
Opera – Blink

Rendering engines display HTML, CSS, and JS as a web page.

10. Basic Web Architecture Diagram

Client (Browser)

|

| Sends Request

↓

Server (Processes)

|

| Uses APIs

↓

Database (Stores Data)

