

3-TIER ARCHITECTURE AND JAVASCRIPT

3-Tier Architecture Overview:

PHASES OF A WEB APPLICATION:

Frontend: User Interface.

Backend: Processing logic.

Database: Persistent storage.



1. Frontend (UI):

- Technologies: HTML, CSS, and JavaScript.
- Purpose: To create a dynamic and interactive interface for users.

2. Backend (Server):

- Responsible for processing requests and generating appropriate responses.
- Connected with APIs to handle communication between frontend and backend.

3. Database:

- Stores and manages the data required for the application.
- The backend interacts with the database to fetch, store, or modify data as needed.

Key Concept:

- The API acts as the "waiter" between the customer (frontend) and the kitchen (backend and database), handling requests and delivering responses.

Importance of JavaScript in Applications:

1. Making Applications Dynamic:

- JavaScript enables applications to be dynamic and responsive based on user input.

2. Form Validation:

- Ensures proper data is submitted through forms before being sent to the server.

3. ****Request Handling:****

- Facilitates communication between the frontend and backend.

4. ****Frontend Role:****

- Acts as a scripting language for creating interactive features in the browser.

5. Backend Role:

- Can act as a programming language (e.g., Node.js) for server-side scripting.

6. ****Browser Dependency:****

- JavaScript runs in browsers with the help of engines like V8 (Chrome), SpiderMonkey (Firefox), etc.

7. Running Outside Browsers:

- Node.js provides a runtime environment for JavaScript outside of browsers.

8. Application Architecture:

- Applications typically operate using a request-response model.
- JavaScript plays a crucial role in both frontend and backend, making it central to modern web applications