

**Batch:** B-2    **Roll No:-**16010122151

**Exp No:** 4

**Title:** Write in detail the implementation Process

**Objective:** To understand the implementation process of the project.

**Expected Outcome of Experiment:**

| Course Outcome | After successful completion of the course, students should be able to |
|----------------|---|
| CO 4           | Implement and test the design as per the mentioned specifications.    |

**Books/ Journals/ Websites referred:**

- 1.
- 2.
- 3.

**Introduction:**

**Describe the need of this stage in project:-**

The implementation stage is vital for translating plans into reality, testing feasibility, addressing technical challenges, and meeting stakeholder expectations. It involves turning abstract concepts into tangible products or systems, iteratively developing and refining the solution, and managing resources effectively. This phase ensures that the final product meets specified requirements, complies with regulations, and satisfies stakeholder needs. Overall, implementation is a critical step in the project lifecycle, laying the foundation for successful project delivery.

**Implementation details:-**

*“Students are supposed to write the backend and frontend all details about the database name and attributes, fields etc.”*

- **Backend Development:-**

- **Database Design:-** Define the structure of the database, including tables, fields, and relationships. Determine the database name and attributes to store data efficiently.
- **Backend Technology Stack:-** Choose a backend programming language and framework (e.g., Python with Django or Flask, Node.js with Express.js). Configure the development environment accordingly.
- **Business Logic:-** Implement the logic for processing data and performing CRUD operations (Create, Read, Update, Delete) on the database. Handle user requests and interactions.

- **Frontend Development:-**

- **UI/UX Design:-** Design the user interface (UI) to provide an intuitive user experience (UX). Determine the layout, components, and navigation flow.
- **Frontend Framework:-** Select a frontend framework (e.g., React.js, Angular, Vue.js) to build the UI components. Set up the project structure and configure dependencies.
- **Data Handling:-** Implement mechanisms to fetch data from the backend and display it on the frontend. Handle user input and interactions effectively.
- **State Management:-** Manage application state to ensure data consistency and facilitate communication between components.

- **Data Flow:-**

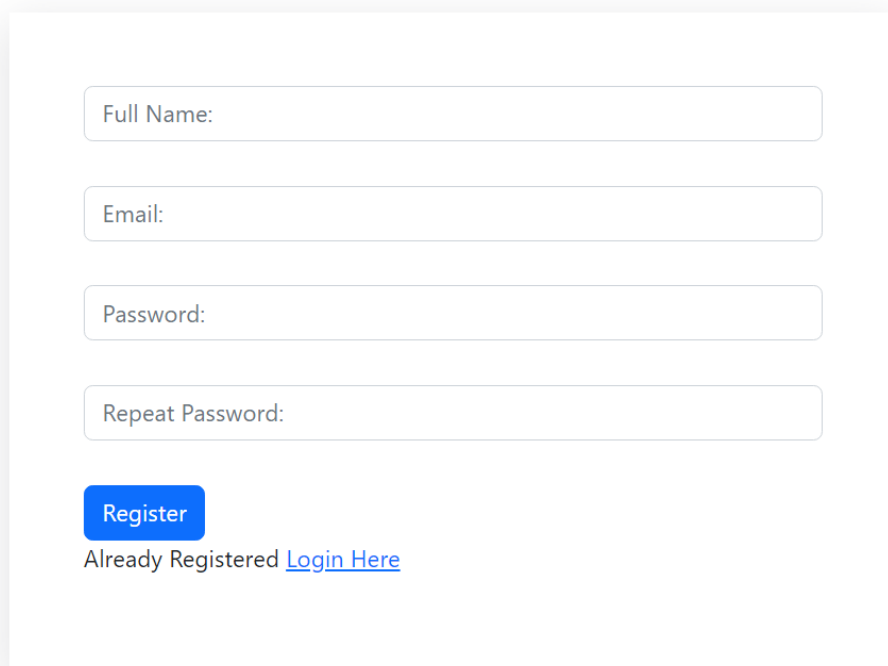
- **Backend-Database Interaction:-** Develop functions or methods to interact with the database directly from the backend code. Implement database queries and operations to store and retrieve data.
- **Communication:-** Establish communication between the frontend and backend without using explicit APIs. Use standard HTTP requests or WebSocket connections for data exchange.
- **Data Validation:-** Validate user input on both the frontend and backend to ensure data integrity and security.

### **Functions Implemented:-**

*Describe major and minor functions*

### **Major Functions:-**

**User Authentication and Authorization:-** Secure user login and role-based access control.



A user registration form with a light gray background and rounded corners. It contains four input fields: 'Full Name:', 'Email:', 'Password:', and 'Repeat Password:'. Below the fields is a blue 'Register' button. At the bottom, it says 'Already Registered' followed by a blue link 'Login Here'.

**Search and Retrieval:-** Fast and accurate document search functionality.

**Recommendation Engine:-** Personalized document recommendations for users.










**User Interaction and Feedback:-** Rating, commenting, and sharing features for documents.

### **Minor Functions:-**

**User Profile Management:-** Update profiles and manage preferences.

**Data Visualization:-** Present data insights visually.

**Security Enhancements:-** Additional measures to safeguard user data.

|                          |  |  |  | id | full_name | email                    | password |
|--------------------------|--|--|--|----|-----------|--------------------------|----------|
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 4  | Hyder     | hyderpresswala@gmail.com | 0        |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 5  | Hyder     | hyder.p@somaiya.edu      | 0        |
| <input type="checkbox"/> |  Edit |  Copy |  Delete | 6  | Hyder     | admin@gmail.com          | 0        |

Keeping the Password Encrypted

**Performance Optimization:-** Enhance system performance.

**Documentation and Help Features:-** Comprehensive user guides and contextual help.

**User interface:**

**Implementation method:** *Write the way you have implemented different modules and put the screenshots after implementation*

**Identify usage of Tools, library functions, APIs/packages, applicable to solve the problem**


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