

Assignment 3: MongoDB and Local Deployment

Objective:

Integrate MongoDB into web application, manage user data with full CRUD operations, and implement additional features to enhance functionality and creativity.

Requirements:

1. MongoDB Integration:

- Use MongoDB to store user data.
- Implement the following CRUD operations:
 - **Create:** Add new users through a form or API endpoints.
 - **Read:** Display user data on a webpage.
 - **Update:** Allow users to edit their information.
 - **Delete:** Implement functionality to delete users.

2. Additional Features:

Choose **at least two** additional features to implement:

- **Search Functionality:** Allow users to search the database for specific records.
- **Data Filtering/Sorting:** Enable filtering or sorting based on specific fields (e.g., name, age).
- **Pagination:** Implement pagination to manage large datasets on the front-end.
- **Data Visualization:** Use a charting library to visualize data (e.g., number of users, age distribution).
- **Custom Feature:** Propose and implement a feature of your choice.

3. User Interface:

- Create a user-friendly HTML interface for interacting with the app:
 - A form to add users.
 - A table to display user data with Edit and Delete buttons.
 - Incorporate the additional features into the UI.

4. Error Handling:

- Ensure the application handles errors gracefully (e.g., database connection issues, invalid form inputs).

5. Documentation:

- Write a **README.md** file explaining:
 - How to install and run the app locally.
 - Instructions for CRUD operations and the additional features.
 - Steps to verify the functionality of the application.

Submission Requirements:

- Submit the following:
 - The project folder containing your code.
 - A **README.md** file with detailed instructions for running the application locally.
 - Screenshots demonstrating the app's functionality.
 - A description of the additional features implemented.

Evaluation Criteria:

Criteria	Description	Weight
MongoDB Integration	- Accurate setup and integration of MongoDB for database functionality.	20%
CRUD Operations Functionality	- Implementation of CRUD operations in the application.	20%
Styling	- Clean, responsive, and user-friendly design	10%
Additional Features	- Implementation of creative and enhanced features	20%
Presentation and Defense	- Clear demonstration and explanation of functionality	30%

Instructions for Local Deployment:

- 1. Setup MongoDB:**
 - Install MongoDB and run the MongoDB server.
 - Use MongoDB Compass to create a database named **assignment3**.
- 2. Run the Application:**
 - Start your server with **node server.js**.
 - Open **http://localhost:3000** in your browser to test the app.
- 3. Testing:**
 - Add at least five users through the form or API.
 - Verify CRUD operations by editing and deleting users.
 - Take screenshots to demonstrate the results.

Defense Guidelines:

- 1. Demonstrate the Application:**
 - Start by presenting the topic and purpose of your project.
 - Walk through all the assignment criteria step by step:
 - MongoDB integration.
 - CRUD operations functionality.
 - Additional features.
 - User interface design.
- 2. English-Only Defense:**
 - The entire defense must be conducted in English. Speaking in other languages will result in deductions.