

Machine Test

Task Overview: API CRUD operations for student data with normalized tables, and implementing pagination logic using Node.js and PostgreSQL, with React.js frontend

Task 1 : Database Schema Design

- Provide a normalized database schema for storing student information and their marks. Ensure that the schema follows best practices for normalization.
- Include tables for students and marks.
- Specify the relationships between these tables using foreign key constraints.

Task 2 : API CRUD Operations

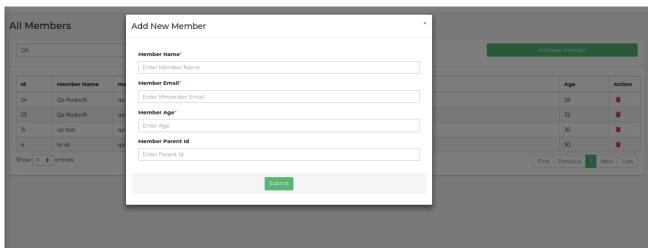
- Implement RESTful API endpoints using Node.js for CRUD operations on student data.
- Create endpoints for:
 - Creating a new student record
 - Retrieving a list of all students
 - Retrieving a single student by ID with marks
 - Updating a student's information
 - · Deleting a student record
- Use Postman or any other application to test API endpoints and ensure they function correctly.

Task 3: API Pagination Logic

- Extend the API created in Task 2 to support pagination for retrieving lists of students.
- Implement pagination logic using query parameters such as page and limit.
- Ensure that the API returns paginated results along with metadata like total count of records.

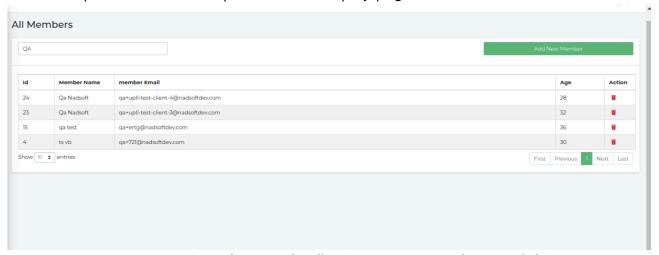
Task 4: React.js Frontend Integration to interact with NodeJs APIs

· Design Bootstrap forms using React.js to interact with CRUD operations on

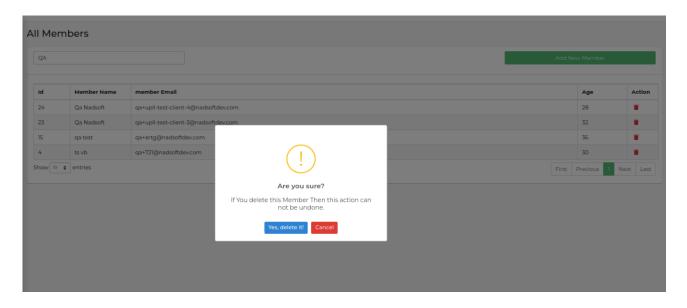


student data.

• Implement a Bootstrap list view to display paginated student records.



• Integrate SweetAlerts for user feedback on create, update, and delete operations.



Additional Deliverables:

- Code Zip: Provide a zip file containing the Node.js project code, including all necessary files and dependencies.
- **Database Schema SQL Script**: Include SQL scripts to create the necessary tables and relationships in the PostgreSQL database.
- API Collection: Export the Postman collection containing requests for testing the API endpoints. This collection should include sample requests for each CRUD operation and pagination logic.