Backend Development Assignment: RESTful API with Authentication

Description

Develop a RESTful API with authentication capabilities for a simple task management application. The API should allow users to perform CRUD (Create, Read, Update, Delete) operations on tasks and should include user authentication and authorization features.

Technologies Used

- Node.js
- Express.js
- JWT (JSON Web Tokens)
- MongoDB (as an example for the persistence layer)

Requirements

1. **User Authentication**: Implement user authentication using JWT (JSON Web Tokens) or any other preferred authentication mechanism.
2. **Task Management API**: Design and develop API endpoints for the following operations:
   - Create a new task
   - Retrieve a list of tasks
   - Retrieve a single task by ID
   - Update an existing task
   - Delete a task
3. **Authorization**: Ensure that only authenticated users can perform CRUD operations on tasks, and users can only modify or delete tasks that they own.
4. **Validation**: Implement input validation to ensure data integrity and security.
5. **Persistence Layer**: Use a database (MongoDB or any SQL/NoSQL database) to store task data.
6. **Documentation**: Provide clear documentation on how to use the API, including endpoint descriptions, request and response formats, and authentication requirements.
7. **Error Handling**: Implement appropriate error handling and response codes for different scenarios.
8. **Unit Testing**: Write unit tests to ensure the functionality and reliability of the API endpoints.
9. **Security**: Implement security best practices to protect against common security threats (e.g., SQL injection, cross-site scripting).

Additional Considerations (Optional)

- Pagination for listing tasks
- Filtering and sorting options for task retrieval
- Integration with third-party authentication providers (e.g., OAuth, social login)
- Rate limiting and throttling to prevent abuse

Evaluation Criteria

- Completeness and correctness of the API implementation.
- Security measures implemented to protect the API.
- Clarity and thoroughness of the documentation.
- Quality and coverage of unit tests.
- Adherence to best practices in backend development.

Submission Instructions

- Create new repository in your github account with the name: "trt-backend-assignment"
- Complete the assignment following the requirements and considerations.
- Push your code to your GitHub repository.
- Send us the link to your GitHub repository for review.