Task Overview: Develop a RESTful API for an Institute Management System with Docker Support

Imagine you are building a backend service for an Institute Management System. Your task is to design and implement a RESTful API using Java and Spring Boot that allows for the management of institutes, including registration, modification, and retrieval of institute information. Additionally, provide a Docker solution for easy deployment.

Functional Requirements:

Institute Registration:

- Implement an endpoint for institute registration.
- Include fields for institute name, location, contact information, and any additional details you find relevant.
- Ensure that institute data is securely stored.

Institute Modification:

- Implement an endpoint for modifying institute information based on the institute's ID.
- Allow changes to fields such as institute name, location, and contact information.

Institute Information Retrieval:

- Implement an endpoint to retrieve information about a specific institute based on the institute's ID.

Docker Solution:

- Dockerize your Spring Boot application.
- Provide a `Dockerfile` for building the Docker image.
- Include necessary configuration for the Docker container.

Security Measures:

- Implement proper input validation and handle edge cases gracefully.
- Protect against common security threats (e.g., SQL injection, CSRF, XSS).
- Use HTTPS to secure communication.

Technical Requirements:

Technology Stack:

- Use Java and the Spring Boot framework for development.
- Choose a suitable database (e.g., H2, PostgreSQL) for storing institute information.

Docker Integration:

- Create a Docker solution for your Spring Boot application.
- Ensure that the application can be easily deployed using Docker.

Project Structure:

- Follow a clean project structure, separating concerns appropriately (e.g., controllers, services, repositories).

Testing:

- Write unit tests for critical components using JUnit and/or TestNG.
- Include integration tests for the API endpoints.

Documentation:

- Include clear and concise documentation for setting up and running the project.
- Provide details on the API endpoints, request/response formats, and Docker deployment.

Submission Guidelines:

- Submit your solution in a git repository with proper README.md file