Assignment (Backend - JAVA)

Project Title: Device Data Management

SystemProject Description:

The Device Data Management System is a Spring Boot application designed to retrieve device data from the external API at https://api.restful-api.dev/objects, store it in an H2 database, and provide CRUD (Create, Read, Update, Delete) APIs for managing this data. Additionally, the system includes a search API to efficiently query and retrieve specific device data.

Project Requirements:

Data Retrieval:
- Implement a scheduled task to periodically fetch device data from the external API (https://api.restful-api.dev/objects).
- Parse the retrieved data and store it in the H2 database.

Database Setup:
- Use the H2 database as the persistence layer for storing device data.
- Define an appropriate schema for the device data.

RESTful APIs:
- Implement CRUD APIs for managing device data.
    - Create API: Add new device data to the database.
    - Read API: Retrieve device data by device ID.
    - Update API: Modify existing device data in the database.
    - Delete API: Remove device data by device ID.

Search API:
- Implement an API for searching device data based on specified criteria.
- Allow searching by device attributes such as name, type, or any other relevant parameters.

Validation:
- Implement input validation for the APIs to ensure that the data being stored or retrieved is valid and meets the required criteria.

Error Handling:
- Implement appropriate error handling mechanisms for both external API calls and database operations.

- Provide meaningful error messages and status codes in API responses.

Logging:
- Implement logging to capture relevant information for debugging and monitoring purposes.

Technologies:

- Spring Boot
- Spring Data JPA
- RESTful API