Training Evaluation

Assignment

In this Assignment, you must write separate applications to each Question and use Spring Boot and framework related to Spring wherever possible. You could use MySQL or PostgreSQL as your database and APIs should accept JSON messages only. You could use IDE as you preferred, and Eclipse or IntelliJ Idea is recommended.

Question 1

Build a Spring Boot Rest CRUD APIs with Maven and accept JSON messages that use Spring Data JPA to interact with MySQL/PostgreSQL database.

a) Rest API 1: should be able to create a User in the database with following information
Id, first name, Last name, email, contact no, username, password, age
b) Rest API 2: Should be able to view User by id.
c) Rest API 3: Should be able to get User List match with given age
d) Rest API 4: Should be able to update user information based on id or email
e) Rest API 5: Should be able to delete user by user id

Tips
You can add more table fields as appropriate.
You can design JSON message format for each API as appropriate

Question 2

Improve the above implementation to have another table called Permission which contains permission name and Id and links users into the Permission table where One user can have multiple permissions and one Permission can have multiple users. And add another APIs to do the following operations

a) Rest API 1: Should be able to create permissions.
b) Rest API 2: Should be able to assign permissions to user

Tips
You can add more table fields as appropriate.
You can design JSON message format for each API as appropriate

Question 3

In this question, you will be developing a back end for RSS feed reader to store news into the news database with the following features. Please use Spring Boot, Spring Data JPA with MySQL, or PostgreSQL.

a) Schedule to execute each night at 11.59 PM so that system should extract the feeds and update the database with new news.
b) Develop a Rest API to keyword search by news title or news description.
c) Develop a Rest API to get the latest 10 news in Descending order.

Tips
Use This link as RSS feed source http://www.adaderana.lk/rss.php

You can design JSON message format for each API as appropriate.
You could use any third-party libraries as appropriate.

Question 4

a) Refer this web site https://openweathermap.org/ and develop a Rest API to get weather details to the given longitude and latitude of a location.
b) You need to write Unit test (Junit) for the methods you developed to get weather details.

Question 5

a) Design and create a rest API to upload and save an image file. Image can be uploaded as a form-data. File should be accepted by the back-end service and save it to a local directory.

   Each and every API request detail should be recorded into a Database table (as an audit reference) Ex: file name, timestamp

b) Implement a scheduler service that runs every 2 minutes (this value should be configurable) and upload the file created on step 1 to a remote FTP location. You can use a Virtual Machine (Linux preferable) running in your local machine as the remote host, for the FTP location.

Note – Only the newly created files should be uploaded to the FTP location. You can have a database table to keep a track on each and every file uploaded. In each time the scheduler runs, you can check this table and identify whether there are new files to be uploaded or not.

Deliverables

1) Completed source code for each question.
2) Postman collection (https://www.postman.com/) that you have tested developed APIs.

Evaluation
1) Overall approach to completing these tasks and projects with the outcome.
2) Demo the functionality through Postman.
3) Source code go through.
4) Few technical questions.
5) Understanding the level of technology used.
6) Real-time code modification to add extra functionality to a question.