SUBJECTIVE TEST : CASE STUDY

VIRTUAL LEARNING SYSTEM

TECHNOLOGY STACK: SPRINGBOOT MICROSERVICES

You are required to develop the software solution for a Virtual Learning System

The system simplifies and simulates a virtual learning system (like LinkedIn Learning, Coursera).

The Primary module is the Course Module which has to be implemented first on a priority basis.

The application has to be implemented using

- Collections and/or MySQL database to store the data.
- Spring Boot Rest, and Microservices with Spring Cloud.
- This application stores details of various courses and their authors.
- The spring cloud modules to be used are Eureka Server, Feign Client with Ribbon.

This software module to be released initially needs to have the following features**:**

The course moderator who uses the system on behalf of the user should perform the following operations, mandatory functionality.

A. Display the details of all the courses available.
B. Display the details of authors available.

Requirements:

A. Course Model with Course Id, Course Name, Duration in hours, Availability.
B. Author Model with AutorId, Author Name and EmailId
C. Two microservices need to be created
    a. The CourseMicroservice and
    b. The AuthorMicroservice.
D. The CourseMicroservice should invoke the AuthorMicroservice with AuthorId to fetch Author Name and EmailId.
E. The CourseMicroservice should return the Course Id, Course Name, Duration in hours, Availability including the Author Name and EmailId.
F. The CourseMicroservice and AuthorMicroservice should be registered in Eureka Server
G. The CourseMicroservice should invoke the AuthorMicroservice using FeignClient and use Ribbon for LoadBalancing.
H. AuthorMicroservice should have 3 instances to manage the load.
I. The application should use layered architecture.
J. Readable code with appropriate comment line entries.

Great to Have Features:

The course moderator who uses the system on behalf of the user should perform the following operations using Mysql Database.

A. Database named VLSDB.
B. Course Table with Course Id, Course Name, Duration in hours, Availability.
C. Author Table with AutorId, Author Name and EmailId
D. Add course to the course catalogue.
E. Update courses in the course catalogue.
F. Delete courses from the course catalogue.
G. Connect to MySQL backend.

H. Create a LoginMicroservice and get authenticated to access the CourseMicroservice.
I. Use RestTemplate in the CourseMicroservice to invoke the AuthorMicroservice.
J. Configure different profiles for the Author
    a. Three profiles are required to be stored in a git repository for authors based on technologies.
    b. - DEFAULT profile where the subjects as Java, Spring and MySql
    c. - FRONTEND profile where the subjects are HTML, Angular and React
    d. - BACKEND profile where the subjects are SpringBoot, WebServices and Microservices.
K. Use Spring Cloud config server to manage the above profiles.

Evaluation Parameters:

The following parameters are to be met effectively in the developed solutions.

- Execution
- Completeness
- Logic Building
- Code Quality
- Best Practices (efficiency)

Project Presentation Requirements:

A. The solutions should be presented with execution.
B. Explain the details of API used, processes involved, workflows and frameworks (if any) utilized.

Submission Requirements:

A. Submit a single archive containing all the artefacts
B. The artefacts are Project Source Code and SQL scripts

C. The postman collection with the tested URL's and results returned.