Title : Coding Challenge: High-Performance Microservices in Java

Description : Design a coding challenge that assesses the candidate's proficiency in developing high-performance microservices in Java, utilizing a range of technologies and best practices. The challenge should focus on building scalable and efficient microservices architecture with multi-threading capabilities, integrated with AWS services, and emphasizing CI/CD principles for automated testing and deployment. Candidates should demonstrate their expertise in Java 11, Spring Boot, MongoDB, Docker, AWS, Kubernetes, and other related technologies.

Duration of the Interview : 2 hours

Subtasks:

Backend Requirements

- Create a set of microservices in Java using Spring Boot framework. Implement REST APIs for the microservices to interact with each other.
- Example: Implement a user service and an order service that communicate with each other through REST APIs.
- Tools: Java 11, Spring Boot, REST API, Postman

Backend Requirements

- Implement multi-threading functionalities within the microservices to handle concurrent requests efficiently and optimize performance.
- Example: Use Java Executors framework to manage multiple threads in the microservices.
- Tools: Java 11, Multithreading, Executors framework

Backend Requirements

- Set up the microservices deployment on AWS using Docker containers, ECS, or EKS. Configure SQS and SNS for event-driven communication between the services.
- Example: Deploy the microservices on ECS cluster and configure SNS to notify users about order updates.
- Tools: AWS, Docker, ECS, EKS, SQS, SNS