

**AWS cloud deployment**



AWS ALB (  
HTTPS/TLS  
termination, Cross  
site scripting,SQL  
injection etc)

login/register

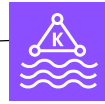
JWT token

JWT token

**kubernetes  
cluster(EKS)**

User Microservice  
Horizontal scaling  
multiple instances

RoboApp Microservice  
Horizontal scaling  
multiple instances



**observability**  
prmoetheus/grafana



**Data Store  
view**

user_profile
id
name
age

user_history
userId
question
answer

question_master
id
question
answer

Guide on Code/Design:

**Code : -**

The Robobob application is built using Spring Boot. Code is posted to github and here is the github link below.

For Any technical level details how to start and verify functionality README.cmd file is provided in the project. Curl commands are also provided to test the application.

**Design/Architecture : Architecture/deployment diagram provided.**

**Questions :**

- 1) How to scale the application : can easily scale up to 1000 RPS based on requirement.
  - Robobob microservice is deployed on Kubernetes on AWS via ( EKS service/packaged as docker container). The number of POD in kubernetes can be configured with min/max replica to handle scaling requirements.
  - User Microservice follows the same deployment pattern and allows users to register/login.
  - AWS application load balancer can accept any request and handle https/tls terminal and any common security threats like SQL ingestion and cross site scripting.
  - Once a user logs in He will be provided a JWT token in the response if authentication is successful.
  - Using this JWT token User can query the Robobob application to evaluate any arithmetic operation and get the answer of the question.
- 2) User history Management
  - As soon as a user queries for any question and Application is able to provide an answer the same is posted to kafka topic with data (userid,question,answer) same is stored in the backend DB ( for now oracle can think of NOSQL if data is more). Note : Code uses file not database.
  - One more endpoint /api/questions/history can provide all questions which user has visited previously.

For monitoring and observability prometheus/grafana can be used.