HOMEWORK 3
BY
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Backend - RESTful web services, JPA, RDS

1. Created a Spring boot project with RDS, JPA, and Jersey dependencies.
   https://start.spring.io/
2. Created the necessary java classes.
3. Created the MySQL database in Amazon RDS by using the instruction provided by the professor.
4. Used MySQL workbench to connect with the server and create tables.
5. Created jar file by running following command

```
      mvn clean package
```

6. Created Dockerfile with the following content.

```
FROM tomcat:9-jdk8
COPY target/*.war /usr/local/tomcat/webapps/homework3.war
```

7. Build the docker image

```
docker build -t sruthimoothat/swe645hw3backend .
```

8. Run the docker image.

```
docker run --rm -it -p 9000:80 sruthimoothat/swe645hw3backend
```

9. Push the container to the docker hub.

```
docker push sruthimoothat/swe645hw3backend
```

10. To deploy the containerized application in google Kubernetes follow the instructions below.
https://cloud.google.com/kubernetes-engine/docs/quickstart

```
gcloud config set project project-id
gcloud config set compute/zone compute-zone
gcloud container clusters create cluster-name --num-nodes=1
gcloud container clusters get-credentials cluster-name
kubectl create deployment hello-server
--image=gcr.io/google-samples/hello-app:1.0
kubectl expose deployment hello-server --type LoadBalancer  --port 80
--target-port 8080
```

http://35.245.219.149/homework3/

11. Create Jenkin project for backend
12. Added the Git repository URL https://github.com/Assignment-645/backend
13. Build the commands

```
mvn clean package
docker build -t sruthimoothat/swe645hw3backend:$BUILD_NUMBER .
docker login -u <username> -p <password>
docker push sruthimoothat/swe645hw3backend:$BUILD_NUMBER
```

```
gcloud container clusters get-credentials swe645 --region us-east4

kubectl set image deployment/backend
swe645hw3backend=sruthimoothat/swe645hw3backend:$BUILD_NUMBER
--record
```

Frontend - Angular

1.Create a new deployment in the Kubernetes cluster for the frontend
2. Created Dockerfile with the following content.

```
FROM node:12.16.2-alpine3.9 AS build-step
WORKDIR /app
COPY package.json ./
RUN npm install
COPY . .
RUN npm run build

FROM nginx:1.16.1-alpine AS prod-stage
COPY --from=build-step /app/dist/angular8-frontend
/usr/share/nginx/html
```

3. Build the docker image

```
docker build -t sruthimoothat/swe645hw3frontend .
```

4. Run the docker image.

```
docker run --rm -it -p 9000:80 sruthimoothat/swe645hw3frontend
```

5. Push the container to the docker hub.

```
docker push sruthimoothat/swe645hw3frontend
```

6. To deploy the containerized application in google Kubernetes follow the instructions in the link below.
https://cloud.google.com/kubernetes-engine/docs/quickstart
7. http://35.245.10.248/home
8. Create Jenkin project for frontend
9. Added the Git repository URL https://github.com/Assignment-645/frontend
10. Build the commands

```
docker login -u <username> -p <password>
docker build -t sruthimoothat/swe645hw3frontend:$BUILD_NUMBER .
docker push sruthimoothat/swe645hw3frontend:$BUILD_NUMBER

gcloud container clusters get-credentials swe645 --region us-east4
```

```
kubectl set image deployment/frontend
swe645hw3frontend=sruthimoothat/swe645hw3frontend:$BUILD_NUMBER
--record
```