Task

Hosting 3-tier studentapp via docker compose

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1. Create EC2 instance with ubuntu image and connect it.
2. Install docker in the instance terminal using root user (sudo -i) and after installing docker start the docker using
   systemctl start docker

   Link - https://docs.docker.com/engine/install/ubuntu/

3. Firstly create data base in MySQL for this use command.
   # docker run -d -p 3306:3306 -e MYSQL_ROOT_PASSWORD=1234 mysql:latest
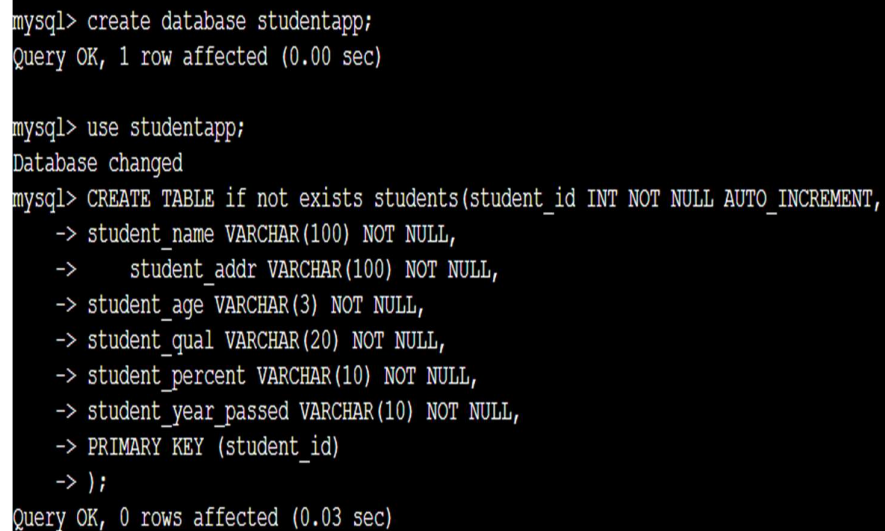   # docker ps


```
root@ip-172-31-18-203:~# docker run -d -p 3306:3306 -e MYSQL_ROOT_PASSWORD=1234 mysql:latest
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
9a5c778f631f: Pull complete
9e77c3a95bf2: Pull complete
8b279a2086e0: Pull complete
c8bfbcde7882: Pull complete
d35b074b68ec: Pull complete
beea5014e6af: Pull complete
dc3791a61558: Pull complete
52f9323b9f0e: Pull complete
7f7391eab49b: Pull complete
8d2f04b287ee: Pull complete
Digest: sha256:9d1c923e5f66a89607285ee2641f8a53430a1ccd5e4a62b35eb8a48b74b9ff48
Status: Downloaded newer image for mysql:latest
ba77ad53be96aca5ebb3b9fe9f3c628291653d7524e409a2f7c81c206b8281f0
root@ip-172-31-18-203:~# docker ps
CONTAINER ID   IMAGE          COMMAND                CREATED         STATUS        PORTS                                                          NAMES
ba77ad53be96   mysql:latest   "docker-entrypoint.s…"   9 seconds ago   Up 7 seconds  0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060/tcp  hardcore_snyder
```

docker exec -it <container-id> mysql -u root -p1234

4. After entering this command you enter into the mysql use commands to create database.

   create database studentapp;
   use studentapp;
   CREATE TABLE if not exists students(student_id INT NOT NULL AUTO_INCREMENT,
         student_name VARCHAR(100) NOT NULL,
       student_addr VARCHAR(100) NOT NULL,
         student_age VARCHAR(3) NOT NULL,
         student_qual VARCHAR(20) NOT NULL,
         student_percent VARCHAR(10) NOT NULL,
         student_year_passed VARCHAR(10) NOT NULL,
         PRIMARY KEY (student_id)
   );
   desc students;
   exit

```
mysql> create database studentapp;
Query OK, 1 row affected (0.00 sec)

mysql> use studentapp;
Database changed
mysql> CREATE TABLE if not exists students(student_id INT NOT NULL AUTO_INCREMENT,
    -> student_name VARCHAR(100) NOT NULL,
    ->     student_addr VARCHAR(100) NOT NULL,
    -> student_age VARCHAR(3) NOT NULL,
    -> student_qual VARCHAR(20) NOT NULL,
    -> student_percent VARCHAR(10) NOT NULL,
    -> student_year_passed VARCHAR(10) NOT NULL,
    -> PRIMARY KEY (student_id)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

5. To see image ip. (mysql ip)
   docker inspect <container-id> |grep "IP"
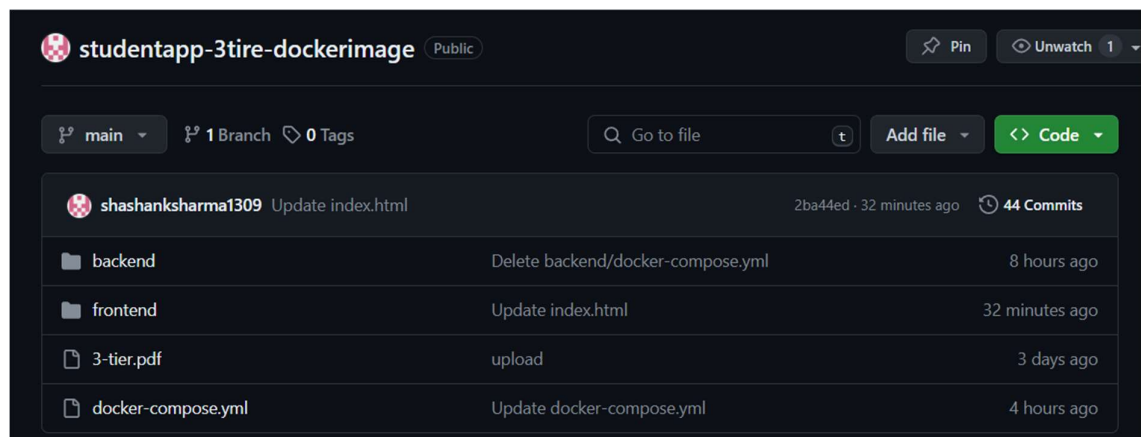
6. Copy mysql ip for the further use.

❖ Backend

1. Create repo in git or use existing and make two folder in the repo.
   1.frontend
   2.backend
2. In backend create three files.
   1.Dockerfile -> your image
   2.context.xml -> add mysql IP
   3.studnet.war ->

3. Make git clone and build docker image.
   docker build .
   docker images
   Assign ip to image -> docker run -d -p 8080:8080 <image-id>
   docker ps
4. Hit ip to see hosting.

❖ Frontend

1. Create two files in frontend folder.
   1.Dockerfile -> your image
   2.index.html -> paste your EC2 instance IP

❖ Create docker compose file with extension yaml (docker-compose.yml)
❖ The docker-compose.yml file must be separate as shown in photo.

```yaml
version: '3.8'

services:
  frontendimg:
    build: /root/studentapp-3tire-dockerimage/frontend
    container_name: frontend
    ports:
      - 80:80
    network_mode: bridge


  backendimg:
    build: /root/studentapp-3tire-dockerimage/backend
    container_name: backend
    ports:
      - 8080:8080
    network_mode: bridge
    depends_on :
      - "frontendimg"
```

2. Git push or pull
3. docker compose up -d -> use command

4. Hit your instance IP.

Welcome to Student Application on AWS.

Enter to Student Application
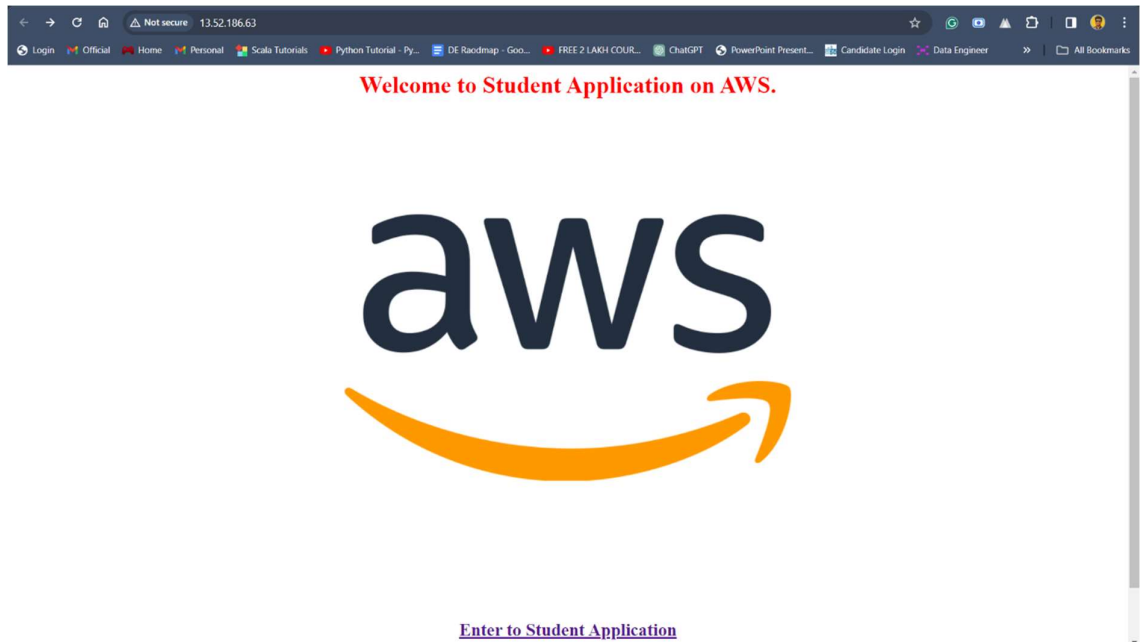
Student Registration Form

Student Name	
Student Address	
Student Age	
Student Qualification	
Student Percentage	
Year Passed	
register	

Register Student

Students List

Student ID	StudentName	Student Addrs	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
1	shashank	Pune	23	BE	7.95	2	edit	delete

Register Student

Students List

Student ID	StudentName	Student Addrs	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
1	shashank	Pune	23	BE	7.95	2023	edit	delete
2	Omkar	Pune	23	BE	8.65	2023	edit	delete
3	chinu	Pune	22	BCS	8.99	2023	edit	delete

❖ If you want to push files to the dockerhub provide tags to your images and then login into the dockerhub using command.
docker login
docker push <dockerhub-usrname>/<dockerhub-repo>:[<tag>]