DASS Assignment 2

Deadline: 14th February, 11:55 PM

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Post all doubts on Moodle or Teams (TA Discussions and Queries channel). Messenger requests WILL NOT BE entertained!

Dockerize and deploy your MERN web app. In this assignment, you will package and dockerize your assignment 1 web app.

Deployment is a must skill that any software engineer should know. Unless you can deploy your application, no one will ever be able to use your application, which renders your application useless.

Docker containers are easily deployable, and it gives it's developers the option to easily pack, ship, and run any application as a lightweight, portable, self-sufficient container, and deploy it virtually anywhere.

Dockerizing will help you down the line in not just personal skills, but also in the projects you are under. A containerized deployed project will be of much more benefit to the client than an undeployed project. With many of your clients not technically sound and not having a proficient technical team, it becomes an essential skill to learn packaging and deploying a live product on the cloud, so that the final product handed over to the client is modular and production ready.

Requirements

- You need to deploy your app (locally) on a url (say abc.com). Your backend should be hosted at **/api** and your frontend should be at **/**

- You need to create 4 docker containers with

  - One should host Backend

  - One with a static server hosting Frontend

  - One hosting **nginx**

  - One for Database (Optional, can also use any online service also like mongo-db atlas)

  Nginx is a load balancer, web server and reverse proxy engine. For this assignment you just need to use it as a routing service which will routes with /api to your backend container and / to your frontend container

- A docker-compose file that will boot up all these containers.

- While evaluation, we would test it on IIIT network. You will be asked to connect to LAN/VPN and run docker on your localhost. We should be able to view your app on our machines from your IPv4 address.

- Viva will be held to make sure you understand what you coded in those Dockerfile.

Marking Scheme

- 18 % dockerization and deployment of backend

- 17 % dockerization and deployment of frontend

- 30 % Combining with nginx and total deployment

- 35 % Viva

Deliverables

You need to code 4 files - Dockerfile for frontend, Dockerfile for backend, and configuration file for nginx server. This along with a docker-compose file to run it together.

Submission must be in the following format:

```
<roll_no>/
|--backend/
  |-- package.json
  |-- Dockerfile
  ... other files
|--frontend/
  |-- package.json
  |-- Dockerfile
  ... other files
|--nginx/
  |-- local.conf
|-- docker-compose.yml
|-- README.md
```