Assignment - 2

Q1 : Using Docker Desktop or Docker Playground, perform the following:

a. Create a Container with PostgresDB or mySQL database installed (5 Marks)

Ans: Docker Desktop is used as the platform here.

1. **Pull The PostgreSQL image:**

   Command : docker pull

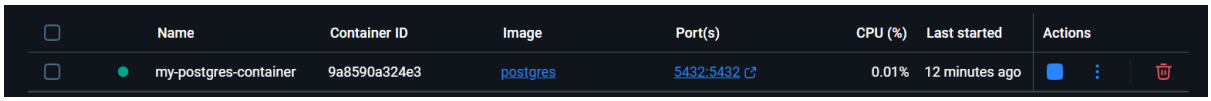
   Output : :

```
Using default tag: latest
latest: Pulling from library/postgres
6948dc7760c1: Pulling fs layer
97f28320a07a: Pulling fs layer
6948dc7760c1: Pull complete
3a6f8814136c: Pull complete
f15c43cffa70: Pull complete
8c63b71925de: Pull complete
0c942aac37b1: Pull complete
97cdd47d9131: Pull complete
6cea4d95608f: Pull complete
2a08aad74366: Pull complete
docker.io/library/postgres:latest
```

2. **Run a PostgreSQL container:**

   Command : docker run --name my-postgres-container -e POSTGRES_PASSWORD=mysecretpassword -p 5432:5432 -d postgres

   Output :



3. **Check running containers:**

   Command : docker ps

   Output :

```
CONTAINER ID   IMAGE      COMMAND                  CREATED          STATUS          PORTS                    NAMES
9a8590a324e3   postgres   "docker-entrypoint.s…"   55 seconds ago   Up 42 seconds   0.0.0.0:5432->5432/tcp   my-postgres-container
```

b: Deploy VReqST – A requirement specification tool in a container. All the artifacts required for the tool as listed here - https://docs.google.com/viewer?url=https://raw.githubusercontent.com/sai11101989/sai11101989.github.io/main/Course/DevOps_NIT_Spring2025/VReqST_ICSE2025_Artifacts.pdf (20 Marks)

1. **Clone the repository:**

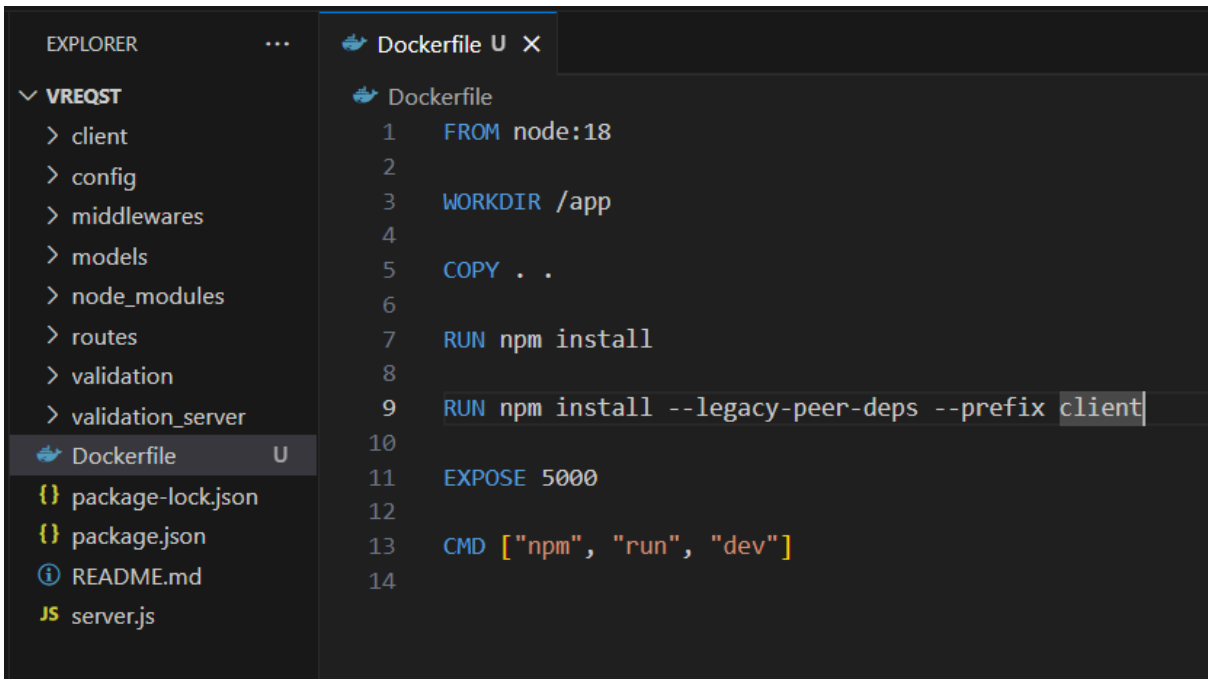
   Command : git clone https://github.com/sai11101989/VReqST.git

   cd VReqST/VReqST

   Output :

```
Cloning into 'VReqST'...
remote: Enumerating objects: 13861, done.
remote: Counting objects: 100% (13861/13861), done.
remote: Compressing objects: 100% (6643/6643), done.
remote: Total 13861 (delta 6008), reused 13671 (delta 5968), pack-reused 0 (from 0)
Receiving objects: 100% (13861/13861), 36.52 MiB | 6.48 MiB/s, done.
Resolving deltas: 100% (6008/6008), done.
Updating files: 100% (14609/14609), done.
```

2. **Create a Dockerfile:**



3. **Build the Docker image:**

   Command : docker build -t vreqst-app .

   Output :

```
[+] Building 350.2s (10/10) FINISHED                                                                    docker:desktop-linux
 => [internal] load build definition from Dockerfile                                                                    0.5s
 => => transferring dockerfile: 198B                                                                                    0.1s
 => [internal] load metadata for docker.io/library/node:18                                                              3.5s
 => [1/5] FROM docker.io/library/node:18@sha256:df9fa4e0e39c9b97e30240b5bb1d99bdb861573a82002b2c52ac7d6b8d6d773e        0.5s
 => => resolve docker.io/library/node:18@sha256:df9fa4e0e39c9b97e30240b5bb1d99bdb861573a82002b2c52ac7d6b8d6d773e        0.4s
 => [internal] load build context                                                                                       3.2s
 => => transferring context: 1.14MB                                                                                     2.6s
 => CACHED [2/5] WORKDIR /app                                                                                           0.0s
 => [3/5] COPY . .                                                                                                     12.9s
 => [4/5] RUN npm install                                                                                              19.3s
 => [5/5] RUN npm install --legacy-peer-deps --prefix client                                                          137.9s
 => exporting to image                                                                                                111.6s
 => => exporting layers                                                                                                42.0s
 => => exporting manifest sha256:673323348d4ee5b4c0c2f47a5f56c3b3dcf122ebc0d0f0f5afd27c0c7943f767                       0.4s
 => => exporting config sha256:24297fbef7804205d6f15407a9a4a0842a12a4b93393eca43f90ab76dec06679                         0.3s
 => => exporting attestation manifest sha256:e7ffa037ccce553073990bb3a8c2757c4f9f749c96ad55e3fe62320e64705608           2.0s
 => => exporting manifest list sha256:e4768989d36913bdff63d1519c41bf0a7eedb097448235c4126784dbaa1436ed                  0.5s
```

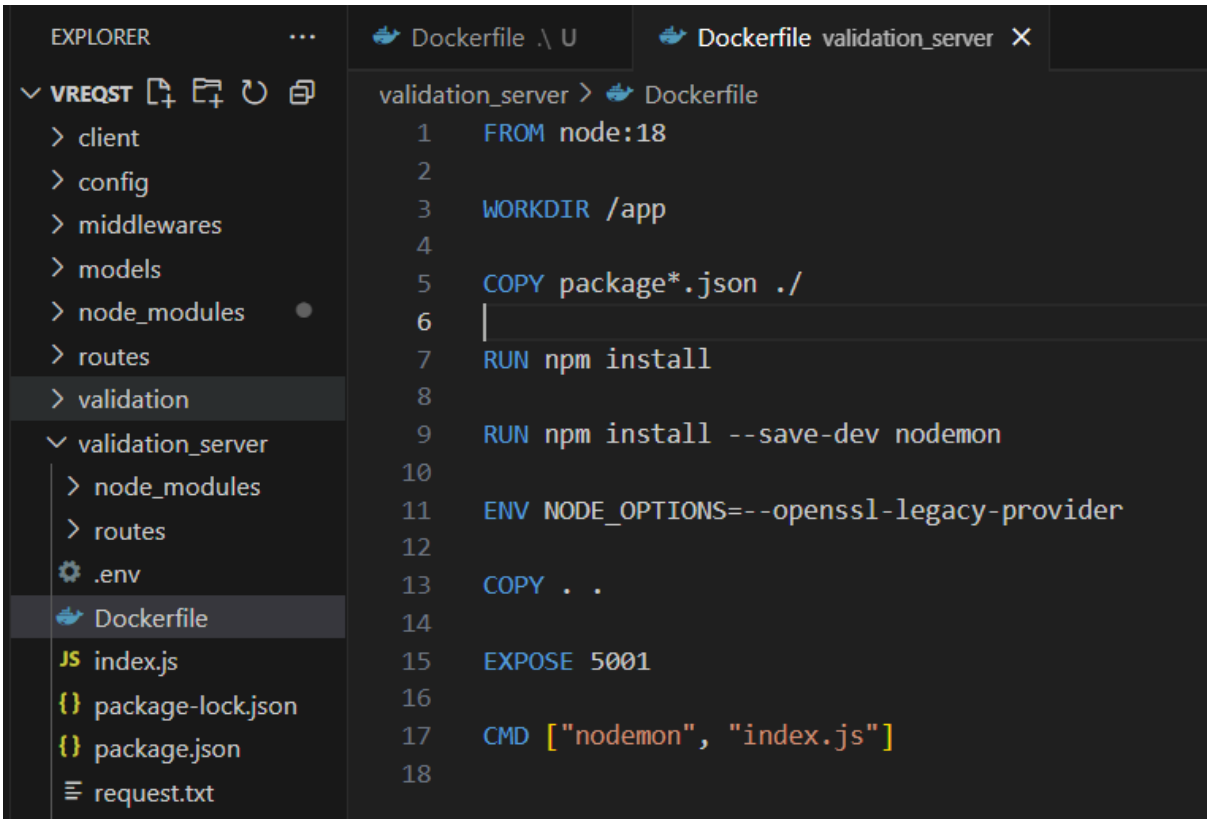
4. Run the container:

Command : docker run --name vreqst-container -p 5000:5000 vreqst-app

Output :

	Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
☐	my-postgres-container	9a8590a324e3	postgres	5432:5432	0%	2 hours ago	
☐	vreqst-container	35780b1e4a22	vreqst-app	5000:5000	225.04%	49 seconds ago	

5. Dockerfile for validation-server:



6. **Build the image for validation-server and run the container:**

   Command : docker build -t validation-server .

   docker run --name validation-server-container -p 5001:5001 validation-server