

DEVOPS ASSIGNMENT 2

Group Name:

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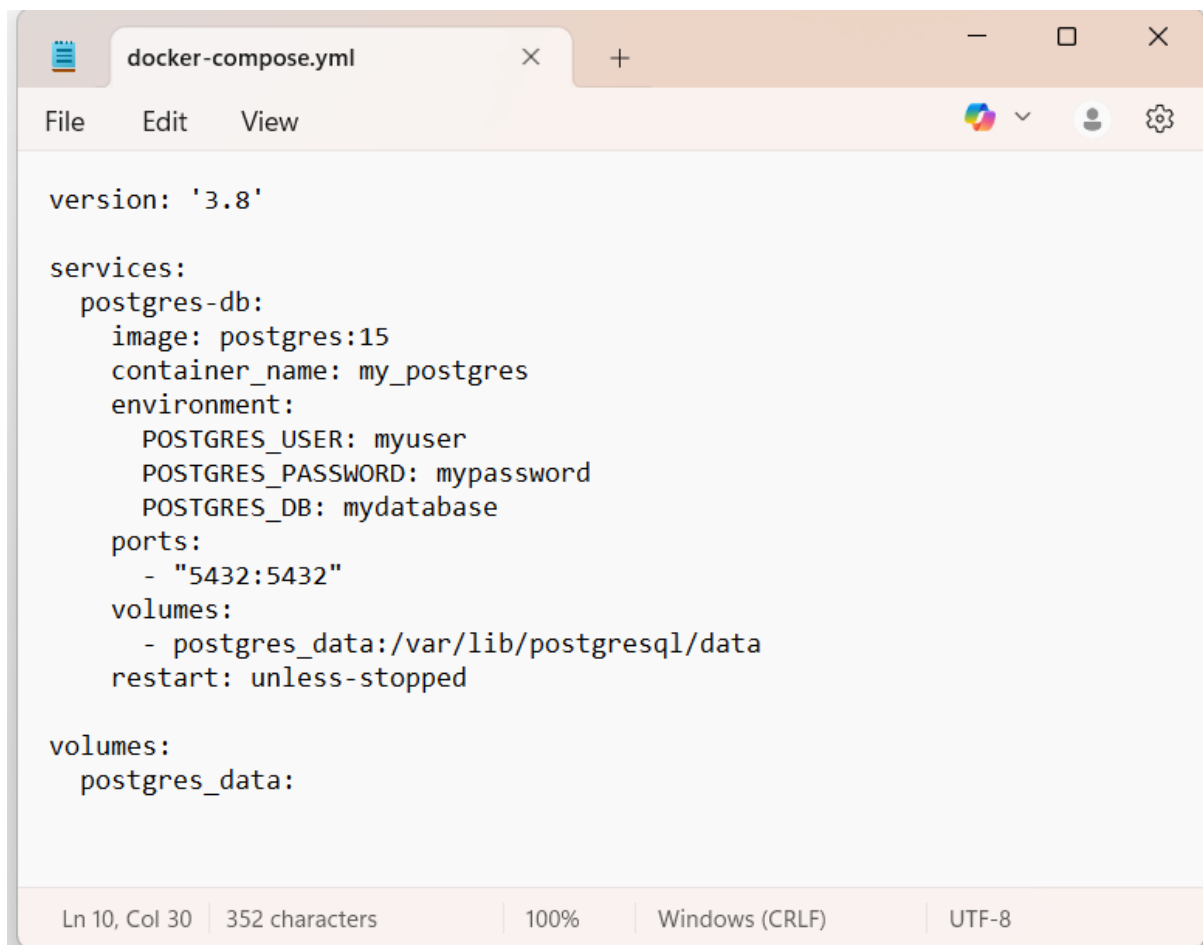
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BRANCH:

M.TECH DATA ANALYTICS

Q1. A) Create a Container with PostgresDB or mySQL database installed

Step 1: We need to pull the docker image using the below command

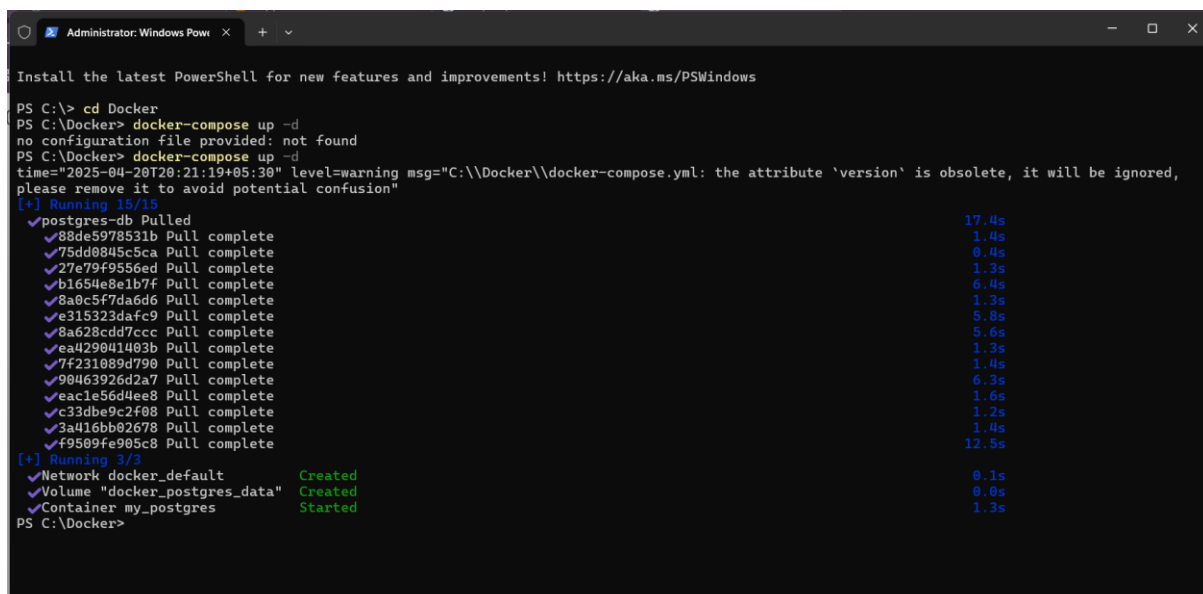
A screenshot of a code editor window titled 'docker-compose.yml'. The editor has a menu bar with 'File', 'Edit', and 'View'. The content of the file is a Docker Compose configuration for a PostgreSQL database. The status bar at the bottom shows 'Ln 10, Col 30', '352 characters', '100%', 'Windows (CRLF)', and 'UTF-8'.

```
version: '3.8'

services:
  postgres-db:
    image: postgres:15
    container_name: my_postgres
    environment:
      POSTGRES_USER: myuser
      POSTGRES_PASSWORD: mypassword
      POSTGRES_DB: mydatabase
    ports:
      - "5432:5432"
    volumes:
      - postgres_data:/var/lib/postgresql/data
    restart: unless-stopped

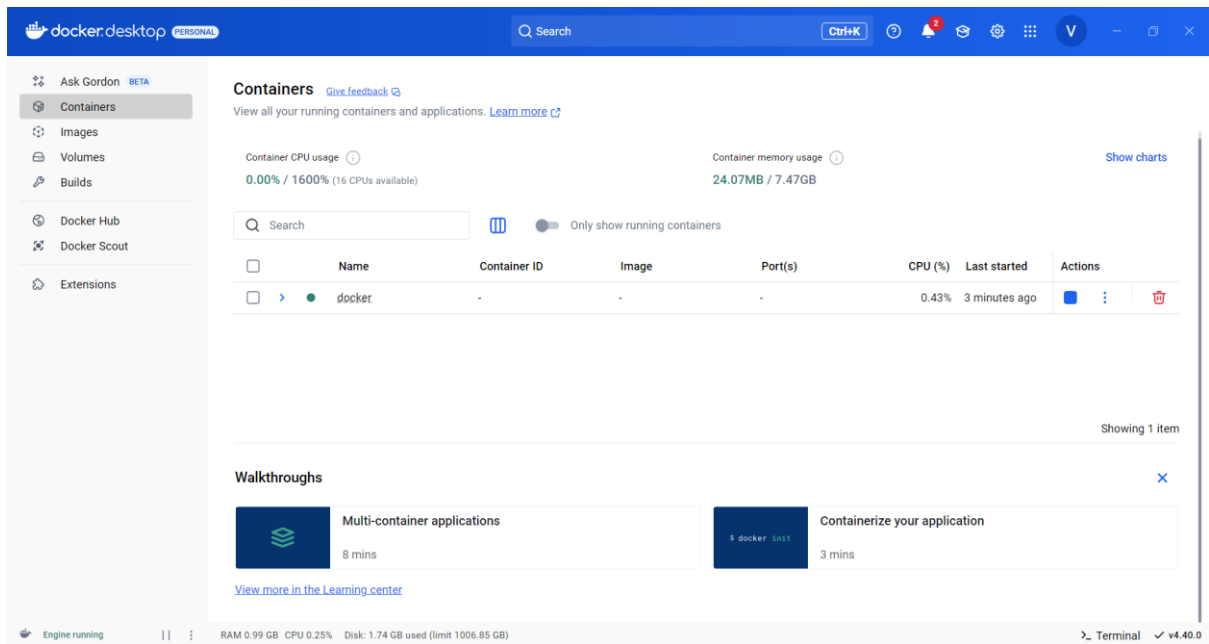
volumes:
  postgres_data:
```

2. running the command to create docker container in terminal

A screenshot of a Windows PowerShell terminal window titled 'Administrator: Windows PowerShell'. The terminal shows the execution of 'docker-compose up -d' in the 'C:\Docker' directory. It displays a warning about the 'version' attribute in the docker-compose.yml file and then shows the progress of pulling the postgres:15 image and creating the container. The output indicates that the container 'my_postgres' has been successfully created and started.

```
PS C:\> cd Docker
PS C:\Docker> docker-compose up -d
no configuration file provided: not found
PS C:\Docker> docker-compose up -d
time="2025-04-20T20:21:19+05:30" level=warning msg="C:\\Docker\\docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 15/15
  ✓ postgres-db Pulled                                17.4s
  ✓ 88de5978531b Pull complete                        1.4s
  ✓ 75dd8845c5ca Pull complete                        0.4s
  ✓ 27e79f9556ed Pull complete                        1.3s
  ✓ b1654e81b7f Pull complete                        6.4s
  ✓ 8a0c5f7da6d6 Pull complete                        1.3s
  ✓ e315323dafc9 Pull complete                        5.8s
  ✓ 8a628cdd7ccc Pull complete                        5.6s
  ✓ ea429041403b Pull complete                        1.3s
  ✓ 7f231089d790 Pull complete                        1.4s
  ✓ 90463926d2a7 Pull complete                        6.3s
  ✓ eac1e56d4ee8 Pull complete                        1.6s
  ✓ c33dbe9c2f08 Pull complete                        1.2s
  ✓ 3a416bb02678 Pull complete                        1.4s
  ✓ f9509fe905c8 Pull complete                        12.5s
[+] Running 3/3
  ✓ Network docker_default Created                    0.1s
  ✓ Volume "docker_postgres_data" Created             0.0s
  ✓ Container my_postgres Started                     1.3s
PS C:\Docker>
```

3. docker container is created

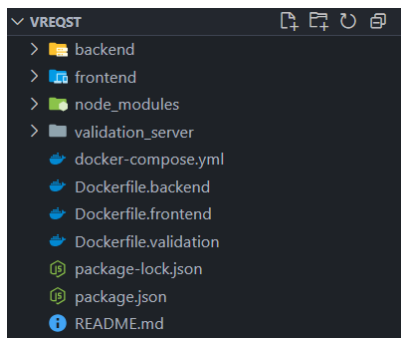


Q1 B) Deploy VReqST - A requirement specification tool in a container.

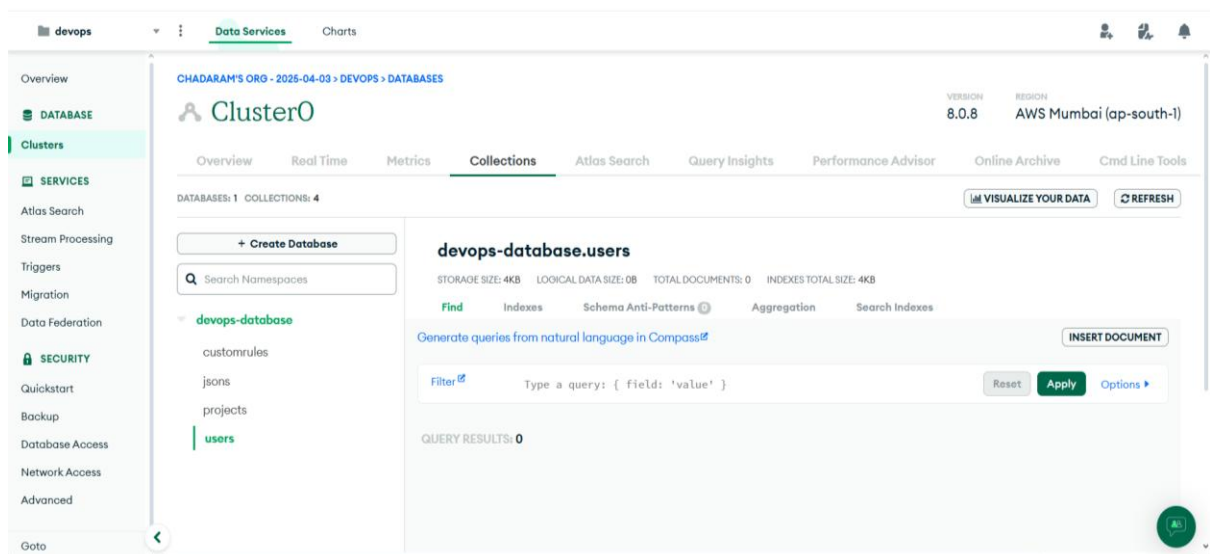
Step 1 : Clone the Repository using the commands

```
1 git clone https://github.com/<your-repository>/VReqST-2
2 cd VReqST-2/VReqST-main/VReqST
```

Step 2: Verify the folder structure



Step 4: Create Collections in MongoDB Atlas and use MONGO_URI to link to the application (the link is given in docker-composer file)



Step 3: Setup Docker

- a. **Install Docker & Docker Compose** – Ensure both Docker and Docker Compose are installed and working.
- b. **Create docker file `docker-compose.yml`** – Used to run the docker containers
- c. **Create subfolders for different services** – Configure
`Dockerfile.frontend`, `Dockerfile.backend`, `Dockerfile.validation`

```
1  version: '3.8'
2
3  services:
4    backend:
5      build:
6        context: .
7        dockerfile: Dockerfile.backend
8      ports:
9        - "5002:5002"
10     environment:
11       - <MONGODB_URI>
12
13   validation:
14     build:
15       context: .
16       dockerfile: Dockerfile.validation
17     ports:
18       - "5001:5001"
19     environment:
20       - <MONGODB_URI>
21
22   frontend:
23     build:
24       context: .
25       dockerfile: Dockerfile.frontend
26     ports:
27       - "3000:3000"
28     depends_on:
29       - backend
30       - validation
```

- d. **Build and Start Container**

```
1  docker-compose build
2  docker-compose up -d
```

Outputs:

```
D:\M.Tech\2nd Sem\Devops\Assignments\devops_tool\VReqST-2\VReqST-main\VReqST>docker-compose up -d
time="2025-04-19T21:23:15+05:30" level=warning msg="D:\M.Tech\2nd Sem\Devops\Assignments\devops_tool\VReqST-2\VReqST-main\VReqST\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 4/4
  ✓ Network vreqst_default          Created
  ✓ Container vreqst-backend-1      Started
  ✓ Container vreqst-validation-1   Started
  ✓ Container vreqst-frontend-1     Started
```

Running the Application

```
D:\M.Tech\2nd Sem\Devops\Assignments\devops_tool\VReqST-2\VReqST-main\VReqST>docker-compose up --build -d
time="2025-04-19T21:30:42+05:30" level=warning msg="D:\M.Tech\2nd Sem\Devops\Assignments\devops_tool\VReqST-2\VReqST-main\VReqST\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[+] Building 226.9s (26/26) FINISHED                                docker:desktop-linux
=> [validation internal] load build definition from Dockerfile.validation 0.0s
=> => transferring dockerfile: 154B 0.0s
=> [backend internal] load build definition from Dockerfile.backend 0.1s
=> => transferring dockerfile: 280B 0.0s
=> [frontend internal] load metadata for docker.io/library/node:14 2.2s
=> [backend internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [validation internal] load .dockerignore 0.1s
=> => transferring context: 2B 0.0s
=> [backend internal] load build context 17.3s
=> => transferring context: 32.59MB 17.1s
=> [frontend 1/5] FROM docker.io/library/node:14@sha256:a158d3b9b4e3fa813fa6c8c590b8f0a860e015ad4e59bbce5744d 0.2s
=> => resolve docker.io/library/node:14@sha256:a158d3b9b4e3fa813fa6c8c590b8f0a860e015ad4e59bbce5744d2f6fd8461 0.0s
=> [validation internal] load build context 1.1s
=> => transferring context: 67.22kB 0.9s
=> CACHED [frontend 2/5] WORKDIR /app 0.0s
=> CACHED [validation 3/4] COPY validation_server/ . 0.0s
=> CACHED [validation 4/4] RUN npm install 0.0s
=> [validation] exporting to image 0.6s
=> => exporting layers 0.0s
=> => exporting manifest sha256:054f0155f3a3378988bbb8a442d1b686e32e8f2052deebecce896cecc402ce587 0.0s
```

```
=> [backend] resolving provenance for metadata file 0.1s
=> [frontend internal] load build definition from Dockerfile.frontend 0.0s
=> => transferring dockerfile: 177B 0.0s
=> [frontend internal] load .dockerignore 0.1s
=> => transferring context: 2B 0.0s
=> [frontend internal] load build context 201.8s
=> => transferring context: 664.95MB 200.6s
=> CACHED [frontend 3/5] COPY frontend/ . 0.0s
=> CACHED [frontend 4/5] RUN npm install 0.0s
=> CACHED [frontend 5/5] RUN ls -la /app/client # Add this line 0.0s
=> [frontend] exporting to image 0.4s
=> => exporting layers 0.0s
=> => exporting manifest sha256:25d3061c140fb874e71d76009238eeec972e7437de7cce4db936ad66f562193 0.0s
=> => exporting config sha256:00413a90cc6393cfac6ab26a6665f5d79e1368a46754e1a20d739e9019c950a3 0.0s
=> => exporting attestation manifest sha256:ba87c8f2edb3299ed013c51304019001bc46aa6302e5e2d3f20e1acc866eefc5 0.1s
=> => exporting manifest list sha256:3100cf308e74f287d2b670743cfa1993cd21145778fe7368091658cda829af30 0.1s
=> => naming to docker.io/library/vreqst-frontend:latest 0.0s
=> => unpacking to docker.io/library/vreqst-frontend:latest 0.0s
=> [frontend] resolving provenance for metadata file 0.0s
[+] Running 7/7
  ✓ backend          Built
  ✓ frontend         Built
  ✓ validation       Built
  ✓ Network vreqst_default Created
  ✓ Container vreqst-backend-1 Started
  ✓ Container vreqst-validation-1 Started
  ✓ Container vreqst-frontend-1 Started
```

Step 4: Access the Application

Open your browser and go to: <http://localhost:3000>