DEVOPS ASSIGNMENT 2

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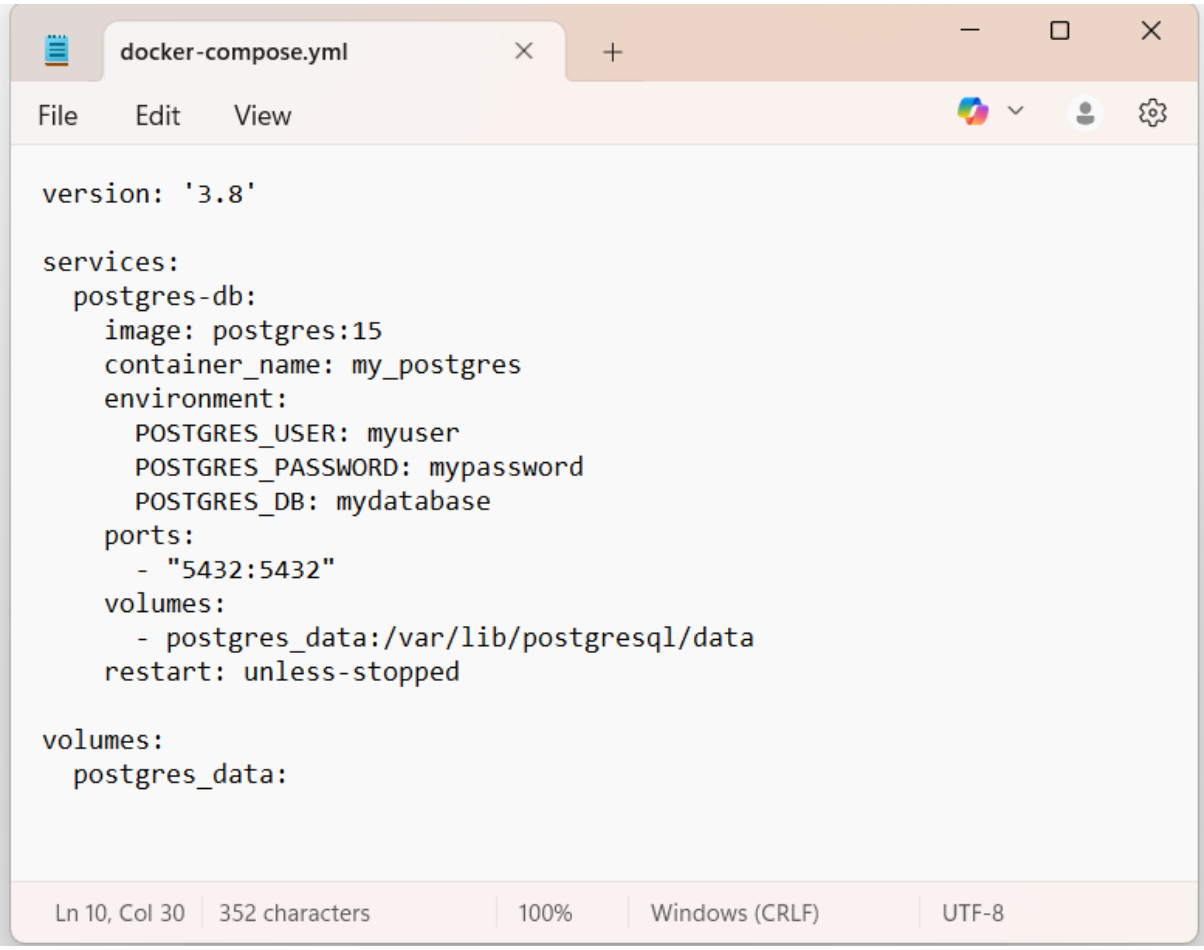
BRANCH:

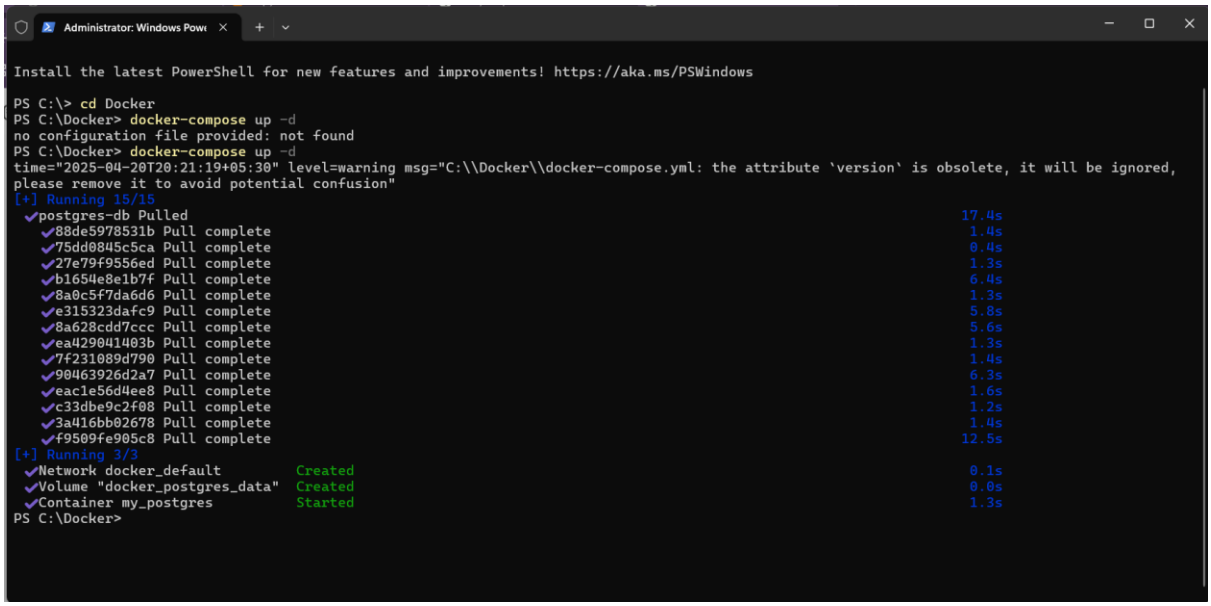
M.TECH DATA ANALYTICS

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

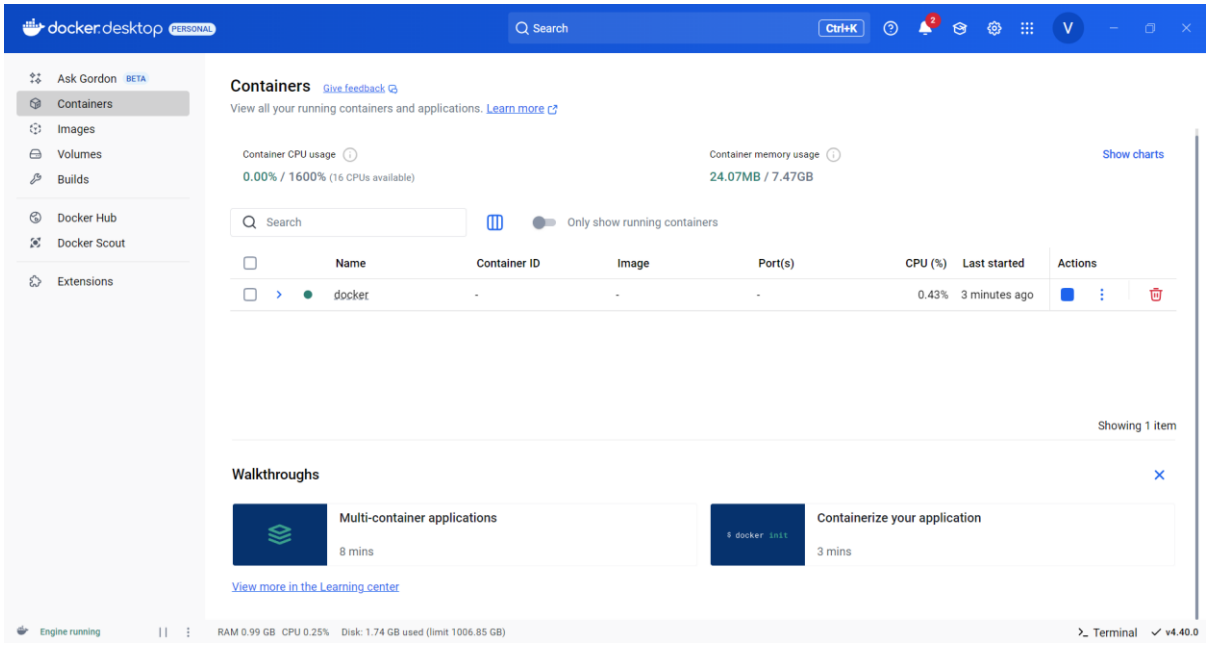
Step 1: We need to pull the docker image using the below command



2. running the command to create docker container in terminal



3. docker container is created

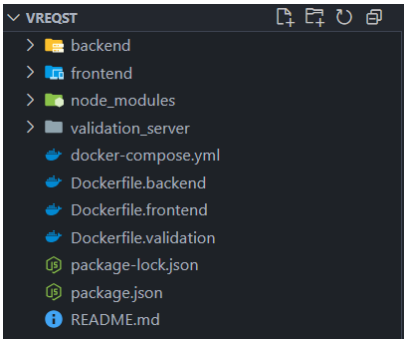


Q1 B) Deploy VReqST - A requirement specification tool in a container.

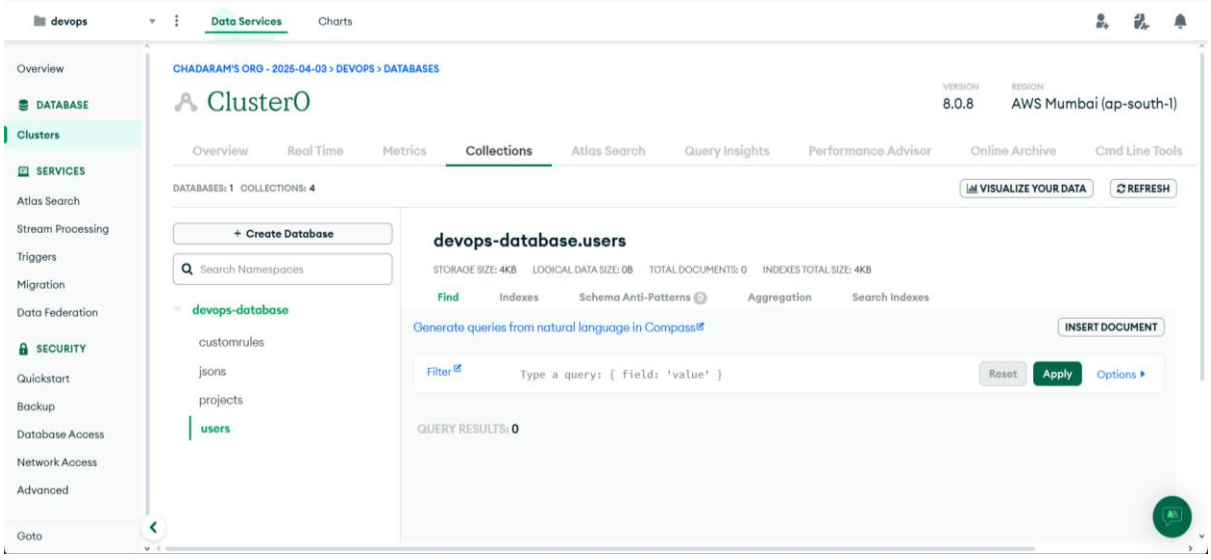
Step 1 : Clone the Repository using the commands

```
git clone https://github.com/<your-repository>/VReqST-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`

```yaml
version: '3.8'

services:
  backend:
    build:
      context: .
      dockerfile: Dockerfile.backend
    ports:
      - "5002:5002"
    environment:
      - <MONGODB_URI>

  validation:
    build:
      context: .
      dockerfile: Dockerfile.validation
    ports:
      - "5001:5001"
    environment:
      - <MONGODB_URI>

  frontend:
    build:
      context: .
      dockerfile: Dockerfile.frontend
    ports:
      - "3000:3000"
    depends_on:
      - backend
      - validation
```

d. **Build and Start Container**

```
docker-compose build
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
VReqST-main\\VReqST\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove i
 avoid potential confusion"
[+] Running 4/4
 ✓ Network vreqst_default          Created                                                                    0
 ✓ Container vreqst-backend-1      Started                                                                    3
 ✓ Container vreqst-validation-1   Started                                                                    3
 ✓ Container vreqst-frontend-1     Started                                                                    2
```

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 sha256:054f0155f3a3378988bbb8a442d1b686e32e8f2052deebecee896cec402ce587         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 sha256:25d3061c140fb874e71d76009238eeeec972e7437de7cce4db936ad66f562193         0.0s
 => => exporting config sha256:00413a90cc6393cfac6ab26a6665f5d79e1368a46754e1a20d739e9019c950a3           0.0s
 => => exporting attestation manifest sha256:ba87c8f2edb3299ed013c51304019001bc46aa6302e5e2d3f20e1acc866eecf5  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                                                                    0.0s
 ✓ frontend                      Built                                                                    0.0s
 ✓ validation                    Built                                                                    0.0s
 ✓ Network vreqst_default        Created                                                                  0.1s
 ✓ Container vreqst-backend-1    Started                                                                  4.2s
 ✓ Container vreqst-validation-1 Started                                                                  4.2s
 ✓ Container vreqst-frontend-1   Started                                                                  2.9s
```

Step 4: Access the Application

Open your browser and go to: **http://localhost:3000**