



**NATIONAL TEXTILE**

**UNIVERSITY**

DEPARTMENT OF COMPUTER SCIENCE

**SUBMITTED BY:**

Ayema

23-NTU-CS-1142

**SECTION SE: 5th(A)**

Lab - 14

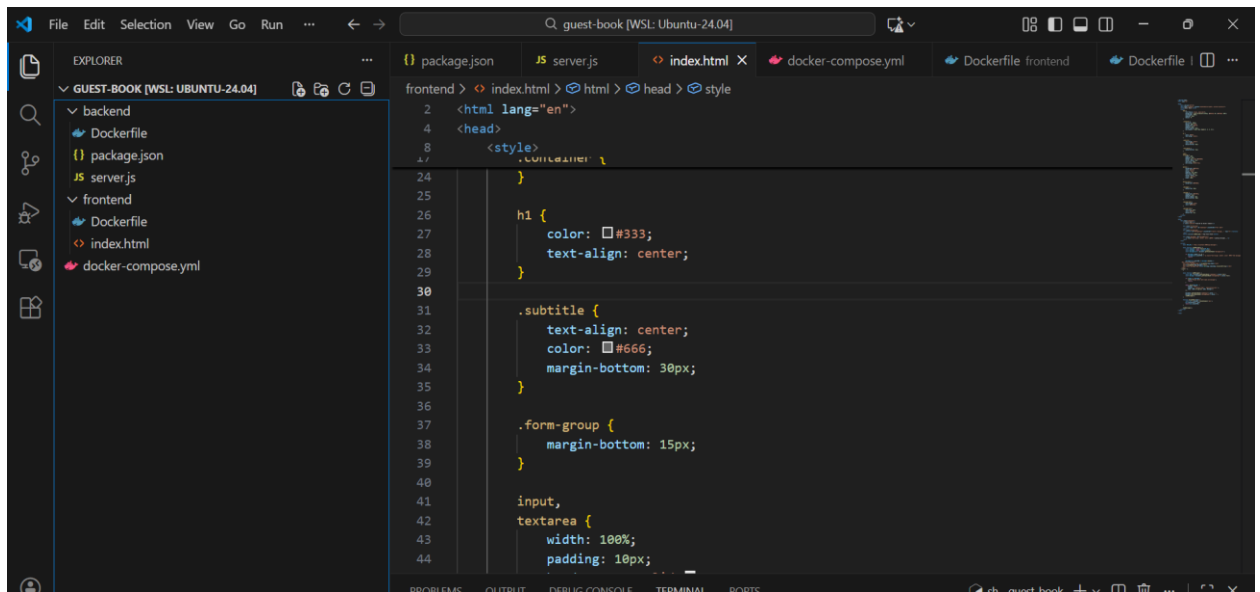
**SUBMITTED TO:**

Sir Nasir Mehmood

**SUBMISSION DATE:**

12-28-2025

## 1. Screenshot of Whole project structure:



## 2. Output of both image building commands e.g "docker build -t frontend ."



The screenshot shows a VS Code editor with a Dockerfile in the background. The Dockerfile contains the following content:

```
1142-docker3 > guest-book > frontend > Dockerfile
1 FROM nginx:trixie
2 COPY index.html /usr/share/nginx/html/
3 EXPOSE 80
```

The terminal output shows the build process for the 'frontend' service:

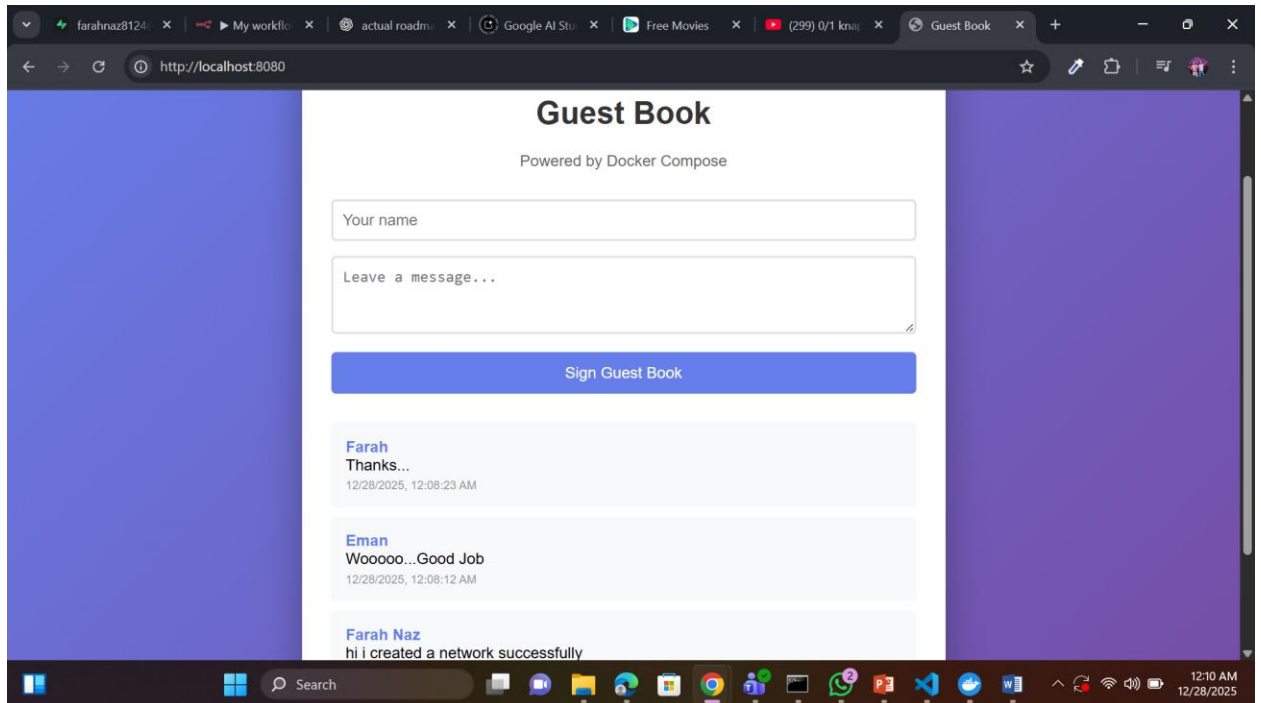
```
$ docker build -t frontend .
[+] Building 3.2s (7/7) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 103B
=> [internal] load metadata for docker.io/library/nginx:trixie
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load build context
=> => transferring context: 3.77kB
=> [1/2] FROM docker.io/library/nginx:trixie@sha256:fb01117203ff38c2f9af91db1a7409459182a37c87cced5cb442d1d8fcc66d19
=> => resolve docker.io/library/nginx:trixie@sha256:fb01117203ff38c2f9af91db1a7409459182a37c87cced5cb442d1d8fcc66d19
=> [2/2] COPY index.html /usr/share/nginx/html/
=> => exporting to image
=> => exporting layers
=> => exporting manifest sha256:2b976433d241f1ae00c1c7d263500cb3fb6e97afaf89a958dfce66b5d8fd3ce
=> => exporting config sha256:ef3586718cc785811a3fd30ae460c9677a59b85b21ef9a0352ef8712f3ae36b
=> => exporting attestation manifest sha256:f970ca28b9452735af8c6495abfab704a3d218d9d58423bb2ad96fcd50b5a36
=> => exporting manifest list sha256:6243e80bd1dc661a62b030d209eb3302ef12e4cd956118bd88fd9df87dbb70
=> => naming to docker.io/library/frontend:latest
=> => unpacking to docker.io/library/frontend:latest
ayema@DESKTOP-1VWHC56:~/1142-lab3/Operating-system/Operating-system/Operating-system-1/1142-docker3/guest-book/frontend
$ docker pull mongo:7-jammy
```

The status bar at the bottom indicates the workspace is disconnected from WSL: Ubuntu-24.04.

This screenshot is identical to the one above, showing the same VS Code editor with the Dockerfile and the terminal output of the build process.

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### 3. Webpage at localhost:8080:



#### 4. Copy contents of docker-compose and both Dockerfiles in the pdf.

Docker compose file:

```
services:
  # MongoDB Database
  mongodb:
    image: mongo:7-jammy
    container_name: guestbook-db
    networks:
      - guestbook-network
    volumes:
      - mongo_data:/data/db

  # Backend API
  api:
    build: ./backend
    # image: <image_name>
    container_name: guestbook-api
    environment:
      - MONGO_URL=mongodb://mongodb:27017
    ports:
      - "3000:3000"
    depends_on:
      - mongodb
```

```
    networks:
      - guestbook-network
# Frontend
web:
  build: ./frontend
  # image: <image_name>
  container_name: guestbook-web
  ports:
    - "8080:80"
  depends_on:
    - api
  networks:
    - guestbook-network
networks:
  guestbook-network:
volumes:
  mongo_data:
```

Docker file of backend:

```
FROM node:lts-alpine3.23
WORKDIR /app
COPY package*.json ./
RUN npm install
COPY server.js .
EXPOSE 3000
CMD ["npm", "start"]
```

Docker file of frontend:

```
FROM nginx:trixie
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```