



National Textile University
Department of Computer Science

Subject
Operating system

Submitted to:
Dr. Nasir Mehmood

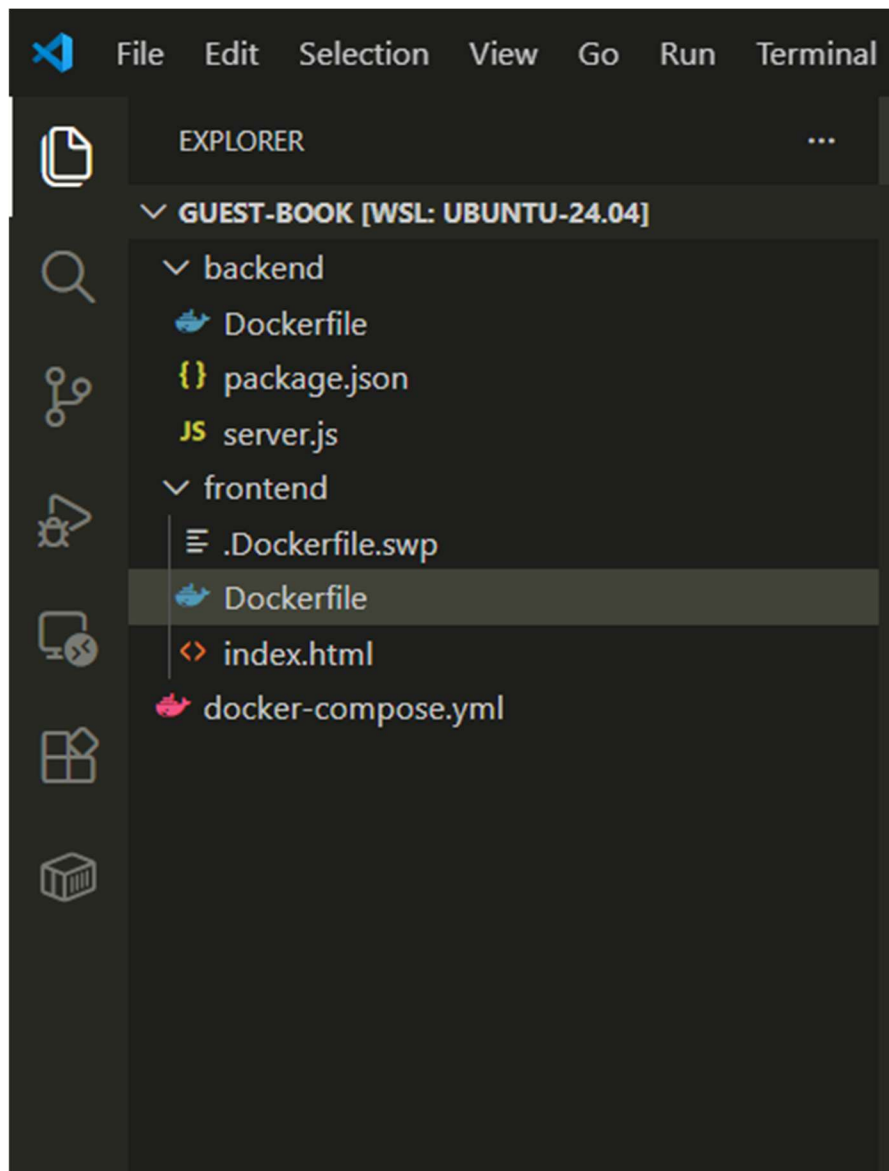
Submitted by:
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Registration Number
23-NTU-CS-1122

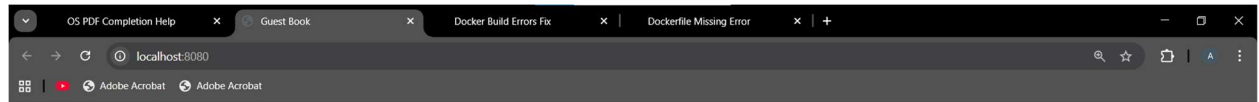
Docker Home Task

Semester
5th

Whole project structure:



Backend image creation:



Guest Book

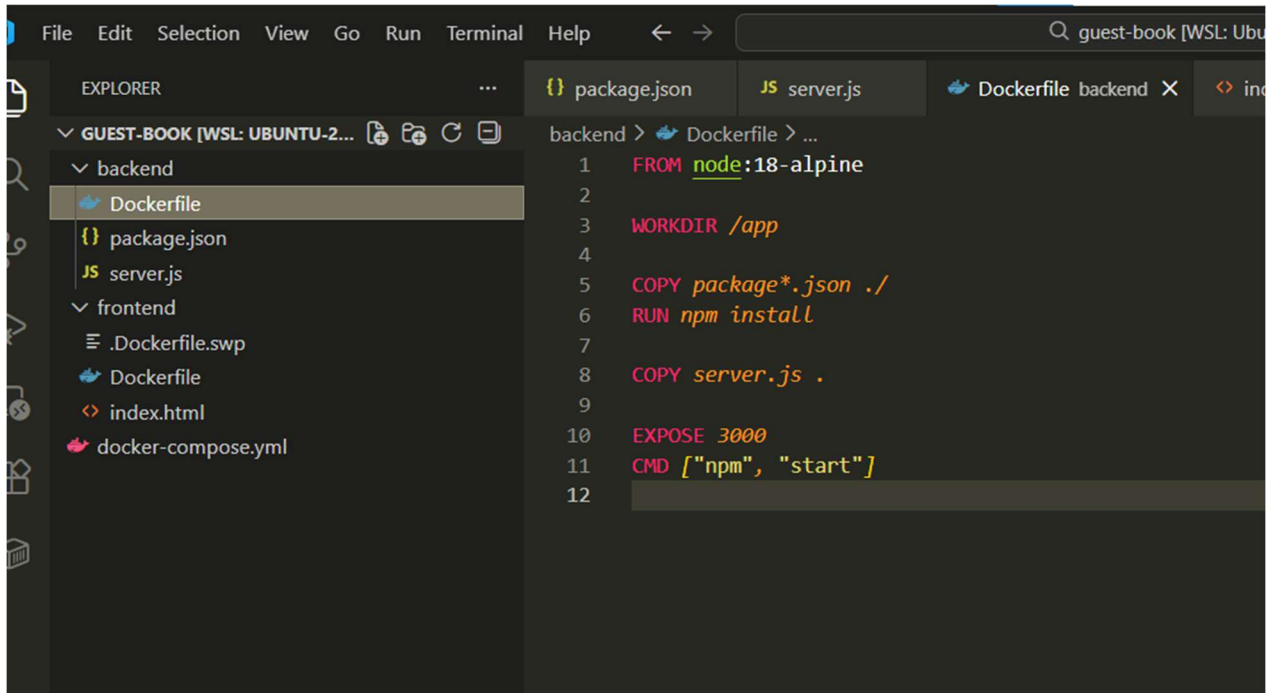


[docker-compose.yml File Code:](#)



```
1  version: "3.8"
2
3  services:
4    mongodb:
5      image: mongo:7
6      container_name: guestbook-db
7      volumes:
8        - mongo_data:/data/db
9      networks:
10       - guestbook-net
11
12    api:
13      build: ./backend
14      container_name: guestbook-api
15      environment:
16        - MONGO_URL=mongodb://mongodb:27017/guestbook
17      ports:
18        - "3000:3000"
19      depends_on:
20        - mongodb
21      networks:
22        - guestbook-net
23
24    web:
25      build: ./frontend
26      container_name: guestbook-web
27      ports:
28        - "8080:80"
29      depends_on:
30        - api
31      networks:
32        - guestbook-net
33
34  networks:
35    guestbook-net:
36
37  volumes:
38    mongo_data:
39
```

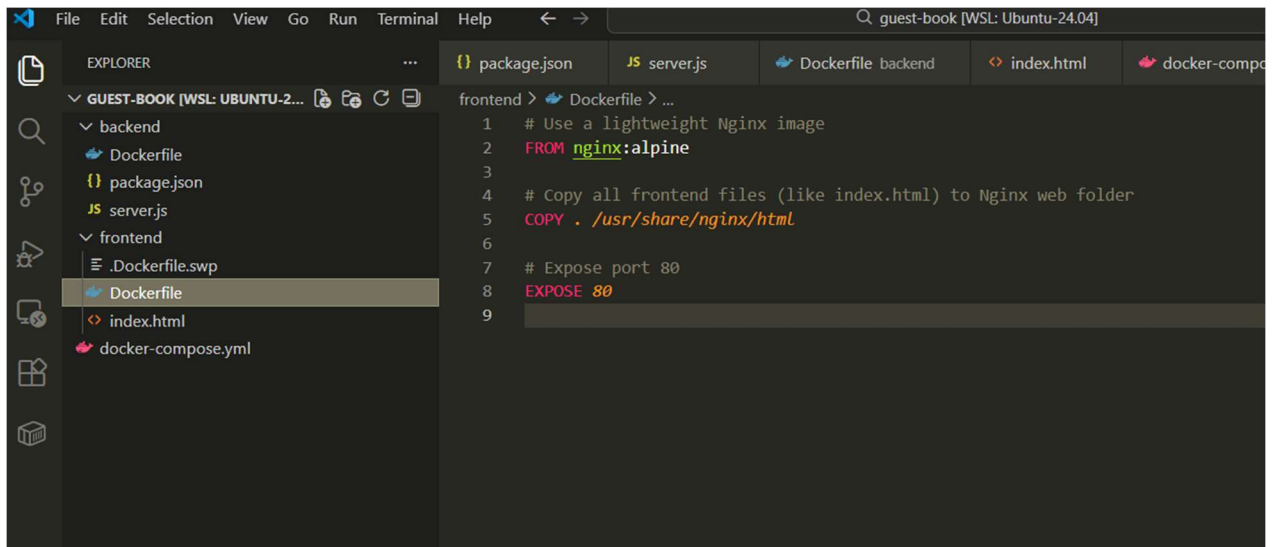
Backend/Dockerfile:



The screenshot shows the Visual Studio Code interface with the Explorer sidebar on the left. The 'GUEST-BOOK [WSL: UBUNTU-2...]' workspace is open. The Explorer shows a 'backend' folder containing 'Dockerfile', 'package.json', and 'server.js'. The 'frontend' folder contains '.Dockerfile.swp', 'Dockerfile', 'index.html', and 'docker-compose.yml'. The main editor displays the 'backend > Dockerfile > ...' file with the following content:

```
1 FROM node:18-alpine
2
3 WORKDIR /app
4
5 COPY package*.json ./
6 RUN npm install
7
8 COPY server.js .
9
10 EXPOSE 3000
11 CMD ["npm", "start"]
12
```

Frontend/Dockerfile:



The screenshot shows the Visual Studio Code interface with the Explorer sidebar on the left. The 'GUEST-BOOK [WSL: UBUNTU-2...]' workspace is open. The Explorer shows a 'backend' folder containing 'Dockerfile', 'package.json', and 'server.js'. The 'frontend' folder contains '.Dockerfile.swp', 'Dockerfile', 'index.html', and 'docker-compose.yml'. The main editor displays the 'frontend > Dockerfile > ...' file with the following content:

```
1 # Use a lightweight Nginx image
2 FROM nginx:alpine
3
4 # Copy all frontend files (like index.html) to Nginx web folder
5 COPY . /usr/share/nginx/html
6
7 # Expose port 80
8 EXPOSE 80
9
```