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CS205 – Lab Final

Question # 01

(A)

1 . Change the Permissions of a file :

 - Creating a file named *permission.txt*

```
pc-21@pc-21:~/lab_final$ nano permission.txt
pc-21@pc-21:~/lab_final$ S
```

- Changing the permissions

```
pc-21@pc-21:~/lab_final$ chmod u=rw permission.txt
pc-21@pc-21:~/lab_final$ chmod g=r permission.txt
pc-21@pc-21:~/lab_final$ chmod o=w permission.txt
pc-21@pc-21:~/lab_final$
```

- Verifying permissions (Before)

```
pc-21@pc-21:~/lab_final$ ls -l permission.txt
-rw-r---w- 1 pc-21 pc-21 30 May 14 09:35 permission.txt
pc-21@pc-21:~/lab_final$
```

- Resetting Permissions

```
pc-21@pc-21:~/lab_final$ chmod u=rw,g=r,o=w permission.txt
pc-21@pc-21:~/lab_final$
```

- After

```
pc-21@pc-21:~/lab_final$ ls -l permission.txt
-rw-r---w- 1 pc-21 pc-21 30 May 14 09:35 permission.txt
pc-21@pc-21:~/lab_final$
```

2 . Matched & Mismatched Words :

- Creating File

- Displaying all lines

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(B)

</div>

Debugging :

- Cloning Repository

```
pc-21@pc-21:~/lab_final$ git clone https://github.com/Marwa-Khan/CS205L_Final.git
Cloning into 'CS205L_Final'...
remote: Enumerating objects: 24, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (19/19), done.
remote: Total 24 (delta 1), reused 17 (delta 0), pack-reused 0
Receiving objects: 100% (24/24), 5.10 KiB | 5.10 MiB/s, done.
Resolving deltas: 100% (1/1), done.
pc-21@pc-21:~/lab_final$
```

Question # 02

- Creating a Server Directory & inside it an App Directory

```
pc-21@pc-21:~$ mkdir server
pc-21@pc-21:~$ cd server
pc-21@pc-21:~/server$ mkdir app
pc-21@pc-21:~/server$ cd app
pc-21@pc-21:~/server/app$ nano dockerfile
pc-21@pc-21:~/server/app$ 
```

- Content of file stored inside the App Directory of server

```python
from flask import Flask, request
import math

app = Flask(__name__)

@app.route('/', methods=['GET'])
def square_root():
    n = int(request.args.get('n'))
    return f'The Square root of n is: {math.sqrt(n)}'

if __name__ == '__main__':
    app.run(port=5000)
```

- Moving back to server directory & creating requirements file

```
pc-21@pc-21:~/server$ nano requirements.txt
pc-21@pc-21:~/server$ 
```

- Content of requirement.txt file

```
  GNU nano 7.2
flask
```

- Creating Docker file in server directory

```
pc-21@pc-21:~/server$ nano Dockerfile
```

- Content of Server Directory

```
FROM python:3.9-slim

WORKDIR /app

COPY requirements.txt .

RUN pip install -r requirements.txt

COPY . .

CMD ["python", "app/(Dockerfile)"]
```

- Making Client Directory & inside it creating App Directory

```
pc-21@pc-21:~$ mkdir client
pc-21@pc-21:~$ cd client
pc-21@pc-21:~/client$ mkdir app
pc-21@pc-21:~/client$ cd app
pc-21@pc-21:~/client/app$ nano dockerfile
pc-21@pc-21:~/client/app$
```

- Content of file stored in APP directory of client

```
import requests

response = requests.get('http://localhost:5000/?n=16')
print(response.text)
```

- Moving back to client directory and creating requirements file

```
pc-21@pc-21:~/client/app$ cd ..
pc-21@pc-21:~/client$ nano requirements.txt
pc-21@pc-21:~/client$
```

- Content of requirements.txt file

```
  GNU nano 7.2
requests
```

- Creating Docker file for Client

```
pc-21@pc-21:~/client$ nano Dockerfile
pc-21@pc-21:~/client$
```

- Content of Docker file

```
  GNU nano 7.2
FROM python:3.9-slim

WORKDIR /app

COPY requirements.txt .

RUN pip install -r requirements.txt

COPY . .

CMD ["python", "app/(Dockerfile)"]
```

- Creating Docker Compose Directory & creating YML file

```
pc-21@pc-21:~/client$ cd ..
pc-21@pc-21:~$ mkdir dockerCompose
pc-21@pc-21:~$ cd dockerCompose
pc-21@pc-21:~/dockerCompose$ nano docker-compose.yml
pc-21@pc-21:~/dockerCompose$
```

- Content of YML file

```
  GNU nano 7.2
version: '3'
services:
  server:
    build: ./server
    ports:
      - "5000:5000"
  client:
    build: ./client
    depends_on:
      - server
```

- Creating README file


```
pc-21@pc-21:~/dockerCompose$ nano README.txt
pc-21@pc-21:~/dockerCompose$
```

- Content of README file


```
To run the application, navigate to the dockerCompose folder and run the command:
docker-compose up
```

- Giving Docker-compose up command


```
pc-21@pc-21:~/dockerCompose$ docker-compose up
ERROR: build path /home/pc-21/dockerCompose/server either does not exist, is not accessible, or is not a valid URL.
pc-21@pc-21:~/dockerCompose$ sudo docker-compose up
ERROR: build path /home/pc-21/dockerCompose/server either does not exist, is not accessible, or is not a valid URL.
```

Question # 03