DevOps Lab Program- 1

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Project Structure:

program-1/
→ Dockerfile
→ requirements.txt
→ app.py

Steps for execution:

Step 1: Create a **Dockerfile**

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

LABEL version="1.0"

LABEL maintainer="aditin.mca24@rvce.edu.in"

WORKDIR /app

COPY requirements.txt .

RUN pip install --no-cache-dir -r requirements.txt

COPY . .

ENV FLASK_APP=app.py
ENV FLASK_RUN_HOST=0.0.0.0
ENV FLASK_RUN_PORT=5000

EXPOSE 5000
CMD ["flask","run", "--port=5000","--host=0.0.0.0"]
```

Step 2: Create a python file called **app.py**

```
  GNU nano 7.2                                                    app.py
from flask import Flask

app = Flask(__name__)

@app.route("/")

def hello():
        return "Hi, docker!"

if __name__ == "__main__":
        app.run(port=5000,host="0.0.0.0")
```

Step 3: Create a file called **requirements.txt** with the following content

```
  GNU nano 7.2                                                requirements.txt
flask
```

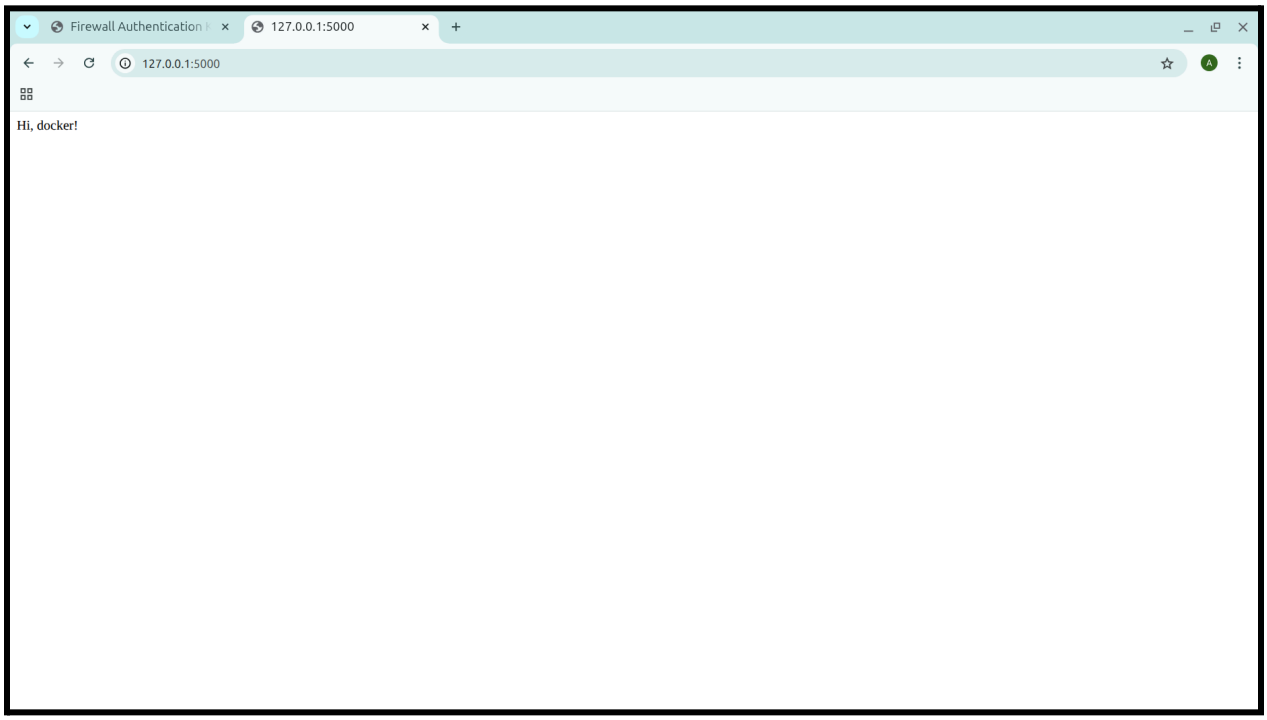
Step 4: Execute the docker build command on the terminal. Verify that the image is present once it has been built

```
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker images
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker build -t program-1 .
[+] Building 90.2s (10/10) FINISHED                                                                                    docker:default
 => [internal] load build definition from Dockerfile                                                                             0.0s
 => => transferring dockerfile: 367B                                                                                             0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim                                                               2.1s
 => [internal] load .dockerignore                                                                                                0.0s
 => => transferring context: 2B                                                                                                  0.0s
 => [internal] load build context                                                                                                0.1s
 => => transferring context: 93B                                                                                                 0.0s
 => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aab1acda1e13cf1731b1b        61.8s
 => => resolve docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aab1acda1e13cf1731b1b          0.1s
 => => sha256:b3ec39b36ae8c03a3e09854de4ec4aa08381dfed84a9daa075048c2e3df3881d 1.29MB / 1.29MB                                  49.5s
 => => sha256:fc74430849022d13b0d44b8969a953f842f59c6e9d1a0c2c83d710affa286c08 13.88MB / 13.88MB                                60.7s
 => => sha256:ea56f685404adf81680322f152d2cfec62115b30dda481c2c450078315beb508 251B / 251B                                       4.9s
 => => sha256:2d97f6910b16bd338d3060f261f53f144965f755599aab1acda1e13cf1731b1b 10.36kB / 10.36kB                                 0.0s
 => => sha256:dad5b29e3506c35e0fd222736f4d4ef25d21b219acdd73f7bb41d59996ca8e0d 1.74kB / 1.74kB                                   0.0s
 => => sha256:085da638e1b8a449514c3fda83ff50a3bffae4418b050cfacd87e5722071f497 5.40kB / 5.40kB                                   0.0s
 => => extracting sha256:b3ec39b36ae8c03a3e09854de4ec4aa08381dfed84a9daa075048c2e3df3881d                                        0.2s
 => => extracting sha256:fc74430849022d13b0d44b8969a953f842f59c6e9d1a0c2c83d710affa286c08                                        0.8s
 => => extracting sha256:ea56f685404adf81680322f152d2cfec62115b30dda481c2c450078315beb508                                        0.0s
 => [2/5] WORKDIR /app                                                                                                           0.4s
 => [3/5] COPY requirements.txt .                                                                                                0.1s
 => [4/5] RUN pip install --no-cache-dir -r requirements.txt                                                                    25.1s
 => [5/5] COPY . .                                                                                                               0.1s
 => exporting to image                                                                                                           0.5s
 => => exporting layers                                                                                                          0.4s
 => => writing image sha256:215b5f32d1e7ce56618d61b47934b40924708bdd45552fccebaececc0b77d05e                                     0.0s
 => => naming to docker.io/library/program-1                                                                                     0.0s
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
program-1    latest    215b5f32d1e7   23 seconds ago   133MB
```

Step 5: Run the Docker Run command specifying the port number and give a name for the container

```
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker run -d -p 5000:5000 --name flask-container program-1
2e6c49e30fd09e177f8fea2a942cedd7736db8cfb7a4373b9bf3c32f74e072a9
```

Step 6: Test the container by verifying the localhost details on the web browser. The text “Hi from docker!” will be displayed.



Step 7: Stop the container using its container name

Step 8: Remove the container using the container name

```
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker container ls
CONTAINER ID   IMAGE       COMMAND                  CREATED              STATUS              PORTS                                       NAMES
2e6c49e30fd0   program-1   "flask run --port=50…"   About a minute ago   Up About a minute   0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp   flask-containe
r
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker container stop flask-container
flask-container
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker container ls
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker container rm flask-container
flask-container
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker container ls -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
```

Step 9: Delete the docker image using its name

```
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker rmi program-1
Untagged: program-1:latest
Deleted: sha256:215b5f32d1e7ce56618d61b47934b40924708bdd45552fccebaecec0b77d05e
1rv24mc005_aditi@aditi-Inspiron-3584:~/program-1$ docker images
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
```