

PROGRAM 1

Build a Docker Container from a Custom Dockerfile

Project Structure

```
program1/
    └── Dockerfile
    └── app.py
    └── requirements.txt
```

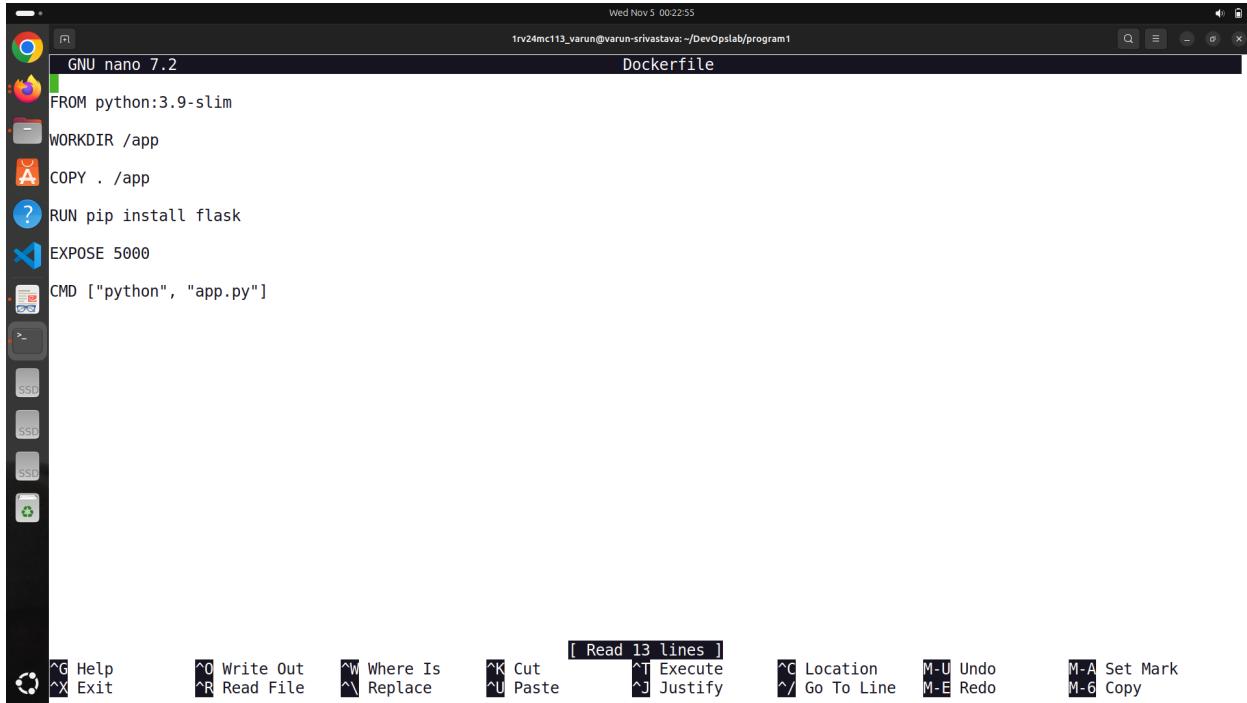
S1: Create Project Folder

```
mkdir program1
```

```
cd program1
```

S2: Create Dockerfile

```
sudo nano Dockerfile
```



The screenshot shows a terminal window titled "Dockerfile" with the command "GNU nano 7.2". The Dockerfile content is as follows:

```
FROM python:3.9-slim
WORKDIR /app
COPY . /app
RUN pip install flask
EXPOSE 5000
CMD ["python", "app.py"]
```

The terminal window has a dark theme and includes standard nano key bindings at the bottom.

S3: Create Python Application File

```
nano app.py
```

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

app = Flask(__name__)

@app.route('/')
def home():
    return "Hello, Docker Flask App!"

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

[Read 11 lines] [Read 1 line]

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify

^C Location M-U Undo M-A Set Mark
^/ Go To Line M-E Redo M-6 Copy

S4: Create requirements.txt File

nano requirements.txt

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

[Read 1 line]

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify

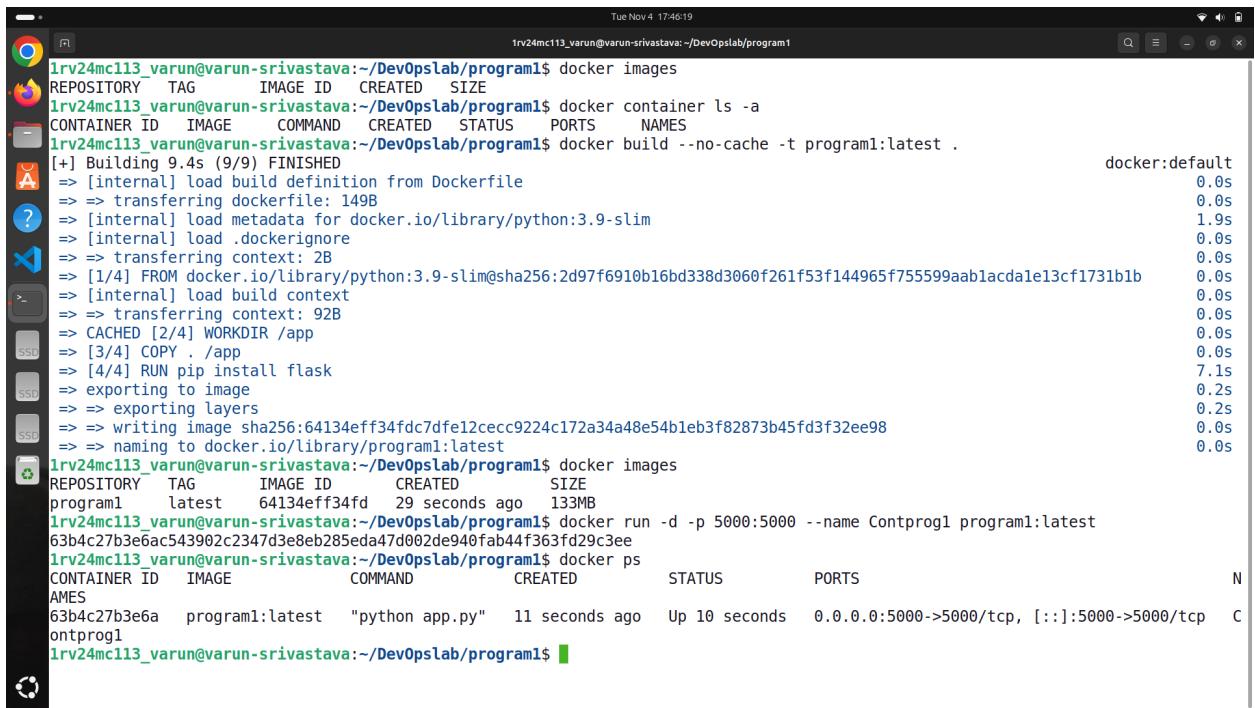
^C Location M-U Undo M-A Set Mark
^/ Go To Line M-E Redo M-6 Copy

S5: Build the Docker Image

Sudo docker build -t program1 .

S6: Run the Docker Container

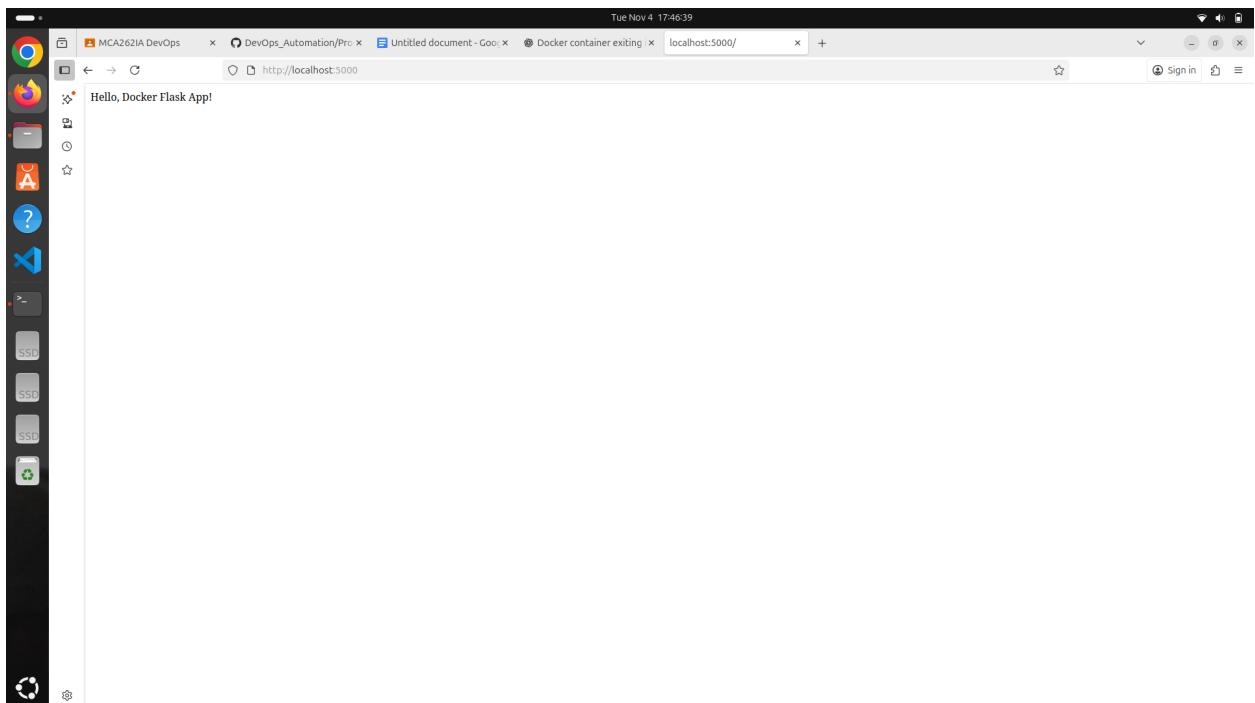
```
docker run -d -p 5000:5000 program_1
```



```
Tue Nov 4 17:46:19
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker container ls -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker build --no-cache -t program1:latest .
[+] Building 9.4s (9/9) FINISHED
   => [internal] load build definition from Dockerfile
   => => transferring dockerfile: 149B
   => [internal] load metadata for docker.io/library/python:3.9-slim
   => [internal] load .dockerrcignore
   => => transferring context: 2B
   => [1/4] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aab1acdale13cf1731b1b
   => [internal] load build context
   => => transferring context: 92B
   => CACHED [2/4] WORKDIR /app
   => [3/4] COPY . /app
   => [4/4] RUN pip install flask
   => exporting to image
   => exporting layers
   => => writing image sha256:64134eff34fdc7dfe12cecc9224c172a34a48e54b1eb3f82873b45fd3f32ee98
   => => naming to docker.io/library/program1:latest
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
program1 latest 64134eff34fd 29 seconds ago 133MB
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker run -d -p 5000:5000 --name Contprog1 program1:latest
63b4c27b3e6ac543902c2347d3e8eb285eda47d002de940fab44f363fd29c3ee
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS N
AMES
63b4c27b3e6a program1:latest "python app.py" 11 seconds ago Up 10 seconds 0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp C
ontprog1
1rv24mc113_varun@varun-srivastava:~/DevOpslab/program1$
```

S7: Verify the Application

Open your browser and go to: <http://localhost:5000>



S8: Verify Running Container docker ps