Program 3 : Code a Dockerized python flask or Node.js application.

Step 1 : Create a folder program3

>mkdir program3

> cd program3

Step 2 : Create a file requirements.txt

>nano requirements.txt

```
 GNU nano 7.2                                          requirements.txt
Flask==2.3.3
```

Step 3 : Create a file app.py

>nano app.py

```
 GNU nano 7.2                                                  app.py
from flask import Flask
app = Flask(__name__)
@app.route("/")
def home():
        return "Hello from simple docker!"
if  __name__ == "__main__":
        app.run(host = "0.0.0.0", port=5000)
```

Step 4 : Create a Dockerfile

>nano Dockerfile

```
  GNU nano 7.2                                                  Dockerfile
#use python image
FROM python:latest

#working directory
WORKDIR /app

#copy files and install dependencies
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt

#copy the application code
COPY . .

#export the port
EXPOSE 5000

#run command
CMD ["python", "app.py"]
```

Step 5 : Execute the dockerfile build command

> docker build -t program3 .

```
1rv24mc101_shreya@shreya-Lenovo-IdeaPad-S145-15IWL:~/Deveops/program3$ docker build -t program3 .
[+] Building 19.4s (10/10) FINISHED                                                                    docker:default
 => [internal] load build definition from Dockerfile                                                          0.2s
 => => transferring dockerfile: 328B                                                                          0.0s
 => [internal] load metadata for docker.io/library/python:latest                                             17.9s
 => [internal] load .dockerignore                                                                             0.1s
 => => transferring context: 2B                                                                               0.0s
 => [1/5] FROM docker.io/library/python:latest@sha256:1ad1a43b5e2478e62056bbc28028afd858185d73bf4d6a439cbb058b6800a96d  0.2s
 => => resolve docker.io/library/python:latest@sha256:1ad1a43b5e2478e62056bbc28028afd858185d73bf4d6a439cbb058b6800a96d  0.2s
 => [internal] load build context                                                                             0.1s
 => => transferring context: 93B                                                                              0.0s
 => CACHED [2/5] WORKDIR /app                                                                                 0.0s
 => CACHED [3/5] COPY requirements.txt .                                                                      0.0s
 => CACHED [4/5] RUN pip install --no-cache-dir -r requirements.txt                                           0.0s
 => CACHED [5/5] COPY . .                                                                                     0.0s
 => exporting to image                                                                                        0.1s
 => => exporting layers                                                                                       0.0s
 => => writing image sha256:43ebf11271b1a96c150831095d5cc20b29b618bc64e4d6fc526d224ce0b7cc20                  0.0s
 => => naming to docker.io/library/program3                                                                   0.0s
1rv24mc101_shreya@shreya-Lenovo-IdeaPad-S145-15IWL:~/Deveops/program3$
```

Step 6: run the docker run command specifying the port number

>docker run -p 5000:5000 program3