PROGRAM -1

Build a docker container from a custom Docker-file

Structure of the program:

Program-1:

Dockerfile

requirements.txt

app.py

Step-1: create a Dockerfile

```
1RV24MC018_Ananya_h@user-ThinkPad-E480:~$ mkdir Program-1
1RV24MC018_Ananya_h@user-ThinkPad-E480:~$ cd Program-1
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ nano Dockerfile
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ nano requirements.txt
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ nano app.py
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ nano dockerfile
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ ls
app.py  Dockerfile  requirements.txt
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ nano Dockerfile
```

```
#use slim as python base image
FROM python:3.9-slim
#set up workind directory
WORKDIR /app
#copy the requirements
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt

#copy the source application
COPY . .
#set up environement
ENV FLASK_APP=app.py
ENV FLASK_RUN_HOST=0.0.0.0
ENV FLASK_RUN_PORT=5000

#Expose the port
EXPOSE 5000

CMD ["flask","run"]
```

Step-2: create a app.py

```
from flask import Flask
app=Flask(__name__)
@app.route('/')
def home():
    return "hello from docker"
if __name__=='__main__':
    app.run(host='0.0.0.0',port=5000)
```

Step-3: create a requirements.txt

Flask

Step-4: create a Docker images

- Sudo docker build -t program1-image .

```
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ sudo docker build -t program1-image .
[+] Building 2.1s (10/10) FINISHED                                                                                                  docker:default
 => [internal] load build definition from Dockerfile                                                                                          0.0s
 => => transferring dockerfile: 411B                                                                                                          0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim                                                                            2.0s
 => [internal] load .dockerignore                                                                                                             0.0s
 => => transferring context: 2B                                                                                                               0.0s
 => [1/5] FROM docker.io/library/python:3.9-slim@sha256:545badebace9a958b98d3e272f0f0d46c0a1a389ac77e24c33f2e7b548ce1b6b                      0.0s
 => [internal] load build context                                                                                                             0.0s
 => => 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                                                                                                                        0.0s
 => => exporting layers                                                                                                                       0.0s
 => => writing image sha256:80e1235b9aa3f2d7917ff0f01ee2615ef00821488389b465ff0447ba57dc6403                                                  0.0s
 => => naming to docker.io/library/program1-image                                                                                             0.0s

 ----
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ sudo docker run -d -p 5000:5000 --name prg1-container program1-image
70f6dd33d9a254045d145915aae0a0c8063d5a14b373e924f0c5fc4df392b8c1
1RV24MC018_Ananya_h@user-ThinkPad-E480:~/Program-1$ sudo docker container ls
CONTAINER ID   IMAGE            COMMAND                  CREATED          STATUS         PORTS                                       NAMES
70f6dd33d9a2   program1-image   "flask run"              10 seconds ago   Up 9 seconds   0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp   prg1-co
ntainer
```

Step-6: Check in your browser and go to http://localhost:5000