

Program 1

Step 1: Create a directory

`mkdir program1`

Step 2: requirements.txt

`nano requirements.txt`

Step 3: Dockerfile

`nano Dockerfile`

```
FROM python:3.9-slim
WORKDIR /app
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt
COPY . .
EXPOSE 5000
CMD ["python", "app.py"]
```

Step 4: app.py

`nano app.py`

```
from flask import Flask

app = Flask(__name__)

@app.route("/")
def hello():
    return "Hello, Docker"

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

Step 5: Build the image

```
sudo docker build -t program1 .
```

```

Mon Nov 3 22:01
lr24nc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Programs1
lr24nc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Programs1$ sudo docker build -t program1 .
[sudo] password for lr24nc046_jamuna:
[+] Building 28.5s (10/18) FINISHED
=> [internal] load build definition from Dockerfile
=> >> transferring dockerfile: 194B
=> [internal] load metadata for docker.io/library/python:3.9-slim
=> transferring context: 2B
[1/5] FROM docker.io/library/python:3.9-slim@sha256:d297f6910b16bd338d3060f261f53f144965f755599a0aacade13cf1731b1b
=> resolve docker.io/library/python:3.9-slim@sha256:d297f6910b16bd338d3060f261f53f144965f755599a0aacade13cf1731b1b
=> sha256:d297f6910b16bd338d3060f261f53f144965f755599a0aacade13cf1731b1b 10.36kB / 10.36kB
=> sha256:d297f6910b16bd338d3060f261f53f144965f755599a0aacade13cf1731b1b 1.74kB / 1.74kB
=> sha256:085dc330a1ba4d951cf4d3f750ab37fe441b050fcad8c7e5722071f497 5.40kB / 5.40kB
=> sha256:b3c239b36e083a3e09954ed4eaa08381dfed849da0f75048c2e3df3881d 1.29MB / 1.29MB
=> sha256:f7c4430849022d13b0d44b0969a553f842f59c6e9d1a0c2b3d710affa286c08 13.88MB / 13.88MB
=> sha256:ae56f68540ad4bf1600322f152d2cfec62115b30dda481c2c450078315be5908 251B / 251B
=> extracting sha256:b3c239b36e083a3e09954ed4eaa08381dfed849da0f75048c2e3df3881d 0.01s
=> extracting sha256:f7c4430849022d13b0d44b0969a553f842f59c6e9d1a0c2b3d710affa286c08 0.03s
=> extracting sha256:ae56f68540ad4bf1600322f152d2cfec62115b30dda481c2c450078315be5908 0.01s
[internal] load build context
=> transferring context: 454B
[2/5] WORKDIR /app
[3/5] COPY requirements.txt .
[4/5] RUN pip install --no-cache-dir -r requirements.txt
[5/5] COPY . .
=> exporting to image
=> exporting layers
=> writing image sha256:588be2cf776d245955f6d928f47ca21f49bcac37ce0004dc15cd74e763783b6
=> naming to docker.io/library/program1
lr24nc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Programs1$ cat Dockerfile
FROM python:3.9-slim
WORKDIR /app
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt
COPY . .
EXPOSE 5000
CMD ["python", "app.py"]
lr24nc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Programs1$ sudo docker run -d 5000:5000 --name containerflask program1
Unable to find image '5000:5000' locally
docker: Error response from daemon: Get "https://registry-1.docker.io/v2/": dial tcp: lookup registry-1.docker.io on 127.0.0.1:53:53: read udp 127.0.0.1:53:53: i/o timeout
Run 'docker run --help' for more information
lr24nc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Programs1$ sudo docker run -d -p 5000:5000 --name containerflask program1
c5fe25a899defc42-908be7922b6d7950e739056e301c1fe7a09d60
docker: Error response from daemon: failed to set up container networking: driver failed programming external connectivity on endpoint containerflask (60f1fb45c6c275cd3538b84b7195c0a

```

Step 6: Run the container

```
sudo docker run -d -p 5000:5000 program-one
```

Also check for the running containers

```
docker ps
```

```

Mon Nov 3 22:02
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1
=> extracting sha256:c7443884922d13bbd44b8969a953f842f59c6e9d1a8c2c8d3718ffa286c88 0.3s
=> extracting sha256:eae6f685404adF81680322f152d2cfec62115b3dd4a81c2c450878135eb508 0.0s
[Internal] Load build context 0.0s
=> transferring context: 454B 0.1s
[2/5] WORKDIR /app 0.1s
[3/5] COPY requirements.txt . 0.1s
[4/5] RUN pip install --no-cache-dir -r requirements.txt 6.5s
[5/5] COPY . . 0.1s
=> exporting image 0.1s
=> exporting layers 0.1s
=> writing image sha256:588bec27f0842555f64928f47ca21f49bc37ce9804d15cd74e767373b36 0.0s
=> naming to docker.io/jamuna/program1 0.0s
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ cat Dockerfile
FROM python:3.9-slim
WORKDIR /app
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt
COPY . .
EXPOSE 5000
CMD ["python", "app.py"]
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker run -d 5000:5000 --name containerflask program1
Unable to find image '5000:5000' locally
Error: Error response from daemon: Get "https://registry-1.docker.io/v2/": dial tcp: lookup registry-1.docker.io on 127.0.0.53:53: read udp 127.0.0.1:54907->127.0.0.53:53: I/o timeout
Run 'docker run --help' for more information
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker run -d -p 5000:5000 --name containerflask program1
5f625a899dedfd52c988b67922dbd66795a9e739b56be301c17ea700b060
Error: Error response from daemon: failed to set up networking: driver failed programming external connectivity on endpoint containerflask (60bf1f450c62753d5388b4a7195c8fd7c4463a6085f607708c54c7650c8f91): Bind for 0.0.0.0:5000 failed: port is already allocated
Run 'docker run --help' for more information
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker ps

```

CONTAINER ID	IMAGE	COMMAND	STATUS	PORTS	NAMES
c185c795f92	registry:2	"/entrypoint.sh {etc...}"	Up 15 minutes	0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp	lucid_wescoff
49238dfbaf7d	nmlms/apache:php5	"/my_init"	Up 19 minutes	0.0.0.0:80->80/tcp, [::]:80->80/tcp	apache2
ac7908643f956	mysql/mysql-server:5.6	"/entrypoint.sh mysq..."	Up 19 minutes (healthy)	0.0.0.0:3306->3306/tcp, [::]:3306->3306/tcp	container2
47e5783d649	firstfile:latest	"bash"	Up 33 minutes		container2
3dbf72d63e9	firstfile:latest	"bash"	Up 33 minutes		container1

```

triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker container stop cc18
cc18
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker container rm cc18
cc18
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$ sudo docker run -d -p 5000:5000 --name containerflask1 program1
60d80853b42c30f6f6316c2c3b378c374ad50efecf723336a81f7da374
triv24mc046_jamuna@jamuna-HP-Pavilion-Laptop-14-dv2xxx:~/Documents/Deveops/Program1$

```

Step 7: Get the output in the browser using the URL

<http://localhost:5000/>

OR

Use CURL to get the output in the terminal

curl <http://localhost:5000/>

