

Lab Exercise 4

Find all the files used in the Lab Exercise below.

`app.py`

```
from flask import Flask
from redis import Redis
```

```
app = Flask(__name__)
redis = Redis(host='redis', port=6379)
```

```
@app.route('/')
def hello():
    count = redis.incr('hits')
    return 'Hello World! I have been seen {} times.\n'.format(count)
```

```
if __name__ == "__main__":
    app.run(host="0.0.0.0", port=8000, debug=True)
```

Dockerfile

```
FROM python:3.12-alpine
ADD requirements.txt /code/requirements.txt
ADD app.py /code/app.py
WORKDIR /code
RUN pip install -r requirements.txt
CMD ["python", "app.py"]
```

requirements.txt

```
flask
redis
```

docker-compose.yml

```
version: '3'

services:
  web:
    image: stackdemo24:latest
    build: .
    ports:
      - "96-100:8000"
  redis:
    image: redis:alpine
```

Install Docker: Follow below commands to install docker in the Linux machine.

```
sudo apt-get update
sudo install -m 0755 -d /etc/apt/keyrings
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o
/etc/apt/keyrings/docker.gpg
sudo chmod a+r /etc/apt/keyrings/docker.gpg
echo \
"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg]
https://download.docker.com/linux/ubuntu \
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

sudo apt-get install ca-certificates curl gnupg
sudo install -m 0755 -d /etc/apt/keyrings
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o
/etc/apt/keyrings/docker.gpg
sudo chmod a+r /etc/apt/keyrings/docker.gpg
echo \
"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg]
https://download.docker.com/linux/ubuntu \
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
```

Install docker-compose: Follow below steps to install docker-compose.

```
sudo curl -L "https://github.com/docker/compose/releases/download/v2.23.3/docker-compose-$(uname -s)-
$(uname -m)" -o /usr/local/bin/docker-compose
sudo chmod +x /usr/local/bin/docker-compose
sudo docker-compose --version
```

Start docker-compose: Follow below steps to start docker-compose.

```
cd DockerComposeTest/
sudo docker-compose up
```

Start docker-compose in detached mode: Follow below steps to install docker-compose.

```
sudo docker-compose up -d
```

Check the site: Check the site availability using the below steps.

```
curl localhost:95
```

Shutdown docker-compos: Shut down docker-compose using the below steps.

```
sudo docker-compose down
```

Scale up/down docker-compose: Scale up or scale down the docker instances using the below commands.

```
sudo docker-compose up --scale web=4 -d
```