## DevOps { PW Assignment }

Assignment 2: Docker Compose and run multi-container applications

### **❖** <u>Docker Fundamanetals</u>

1. Use Docker Compose to define and run multi-container applications?

**Docker Compose** is a tool for defining and running multi-container Docker applications. You configure your application's services in a YAML file called docker-compose.yml.

Multi-container applications: Describe multiple services (like a web server, database, cache, etc.) that work together, using a single configuration file (docker-compose.yml) so Docker Compose can build and run them all at once.

```
myapp/
                app.py
                 requirements.txt
                 Dockerfile
                 docker-compose.yml
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                                                                                                                        United States (N. Virginia) ▼
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                                                                                                                                                      (3)
ubuntu@ip-172-31-83-9:~$ mkdir myapp
ubuntu@ip-172-31-83-9:~$ ls
ubuntu@ip-172-31-83-9:~$ cd myapp
ubuntu@ip-172-31-83-9:~/myapp$ ls
ubuntu@ip-172-31-83-9:~/myapp$
ubuntu@ip-172-31-83-9:~/myapp$ ls
ubuntu@ip-172-31-83-9:~/myapp$ app.py
app.py: command not found
ubuntu@ip-172-31-83-9:~/myapp$ vi app.py
ubuntu@ip-172-31-83-9:~/myapp$ vi requirements.txt
ubuntu@ip-172-31-83-9:~/myapp$ vi Dockerfile
ubuntu@ip-172-31-83-9:~/myapp$ vi docker-compose.yml
ubuntu@ip-172-31-83-9:~/myapp$ sudo apt install docker-compose
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
 python3-compose python3-docker python3-dockerpty python3-docopt python3-dotenv python3-texttable python3-websocket
   ommended packages:
 docker.io
The following NEW packages will be installed:
 i-0d484405ad1af418d (Bash Scripting)
  PublicIPs: 54.235.236.105 PrivateIPs: 172.31.83.9
app.py
from flask import Flask
app = Flask(__name__)
app.route("/")
 ef home():
   return "Hello from Flask and MySQL!"
    name
   app.run(host="0.0.0.0", port=5000)
"app.py" 10L, 184B
```

# 

All

3,0-1

### **Dockerfile**

```
# Use official Python image
PROM python:3.9

WORKDIR /app

# Install dependencies
COPY requirements.txt .

RUN pip install -r requirements.txt

# Copy app code
COPY . .

# Run the app
CMD ["python", "app.py"]
```

#### **Docker-compose.yml**

```
version: '3.8'
services:
  web:
    build: .
    ports:
      - "5000:5000"
    depends_on:
      - db
    image: mysql:5.7
    environment:
      MYSQL ROOT PASSWORD: rootpass
      MYSQL DATABASE: mydb
MYSQL USER: user
MYSQL PASSWORD: userpass
    ports:
      - "3306:3306"
                                                                                                                                                          20,0-1
                                                                                                                                                                           All
```



