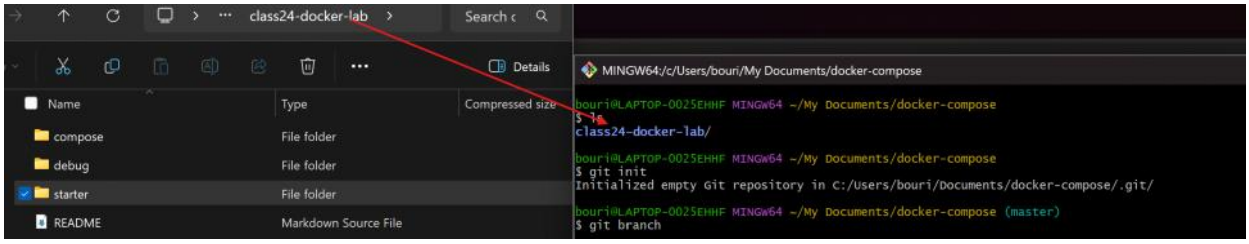
Docker&Docker-Compose Lab

Friday, September 5, 2025 8:16 PM

Push project from local to github




```
git init
git add class24-docker-lab/
git commit -m "class 24 devops docker and docker compose lab"
git push
git push --set-upstream origin master
```

Part A — Create the Dockerfile

In starter/, create a Dockerfile that:

```
FROM python:3.11-slim
WORKDIR /app
COPY requirements.txt /app/
RUN pip install --no-cache-dir -r /app/requirements.txt
COPY app/ /app/
EXPOSE 5000
CMD ["python", "app.py"]
```

Build and tag your image:

```
cd starter
sudo docker build -t amadou11/class24-docker-lab:v1 .0 .
```

Part B — Push to Your Registry

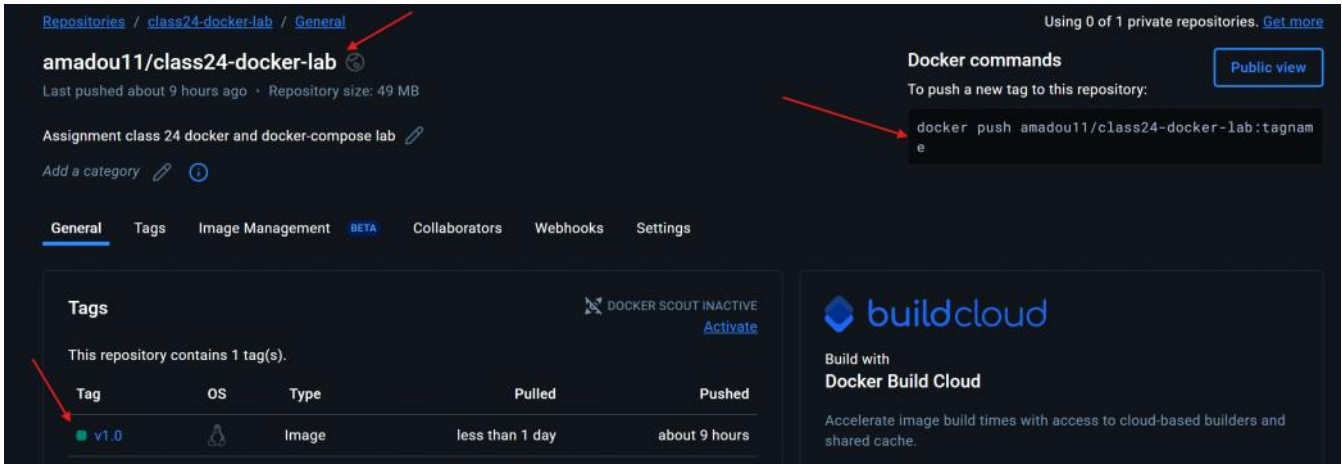
Authenticate and push:

```
#sudo docker login -u amadou11
```


```
#sudo docker push amadou11/class24-docker-lab:v1.0
```

Image is visible in registry UI

Image URL: docker.io/amadou11/class24-docker-lab:v1.0



Part C — Compose the Application

Open compose/app-compose.template.yml and replace IMAGE_URI_HERE with your pushed image URI

```yaml
#version: "3.9"
services:
  web:
    image: amadou11/class24-docker-lab:v1.0   # ← replace with your pushed image (e.g. docker.io/USER/simple-web:v1)
    environment:
      - PORT=5000
      - WHO=Compose Student
    ports:
      - "8080:5000"
    healthcheck:
      test: ["CMD", "curl", "-fsS", "http://localhost:5000/health"]
      interval: 5s
      timeout: 3s
      retries: 5
```

#sudo docker compose -f compose/app-compose.template.yml up -d

```
[+] Running 1/1
 ✓ Container compose-web-1  Running
```

sudo docker compose -f compose/app-compose.template.yml ps

```
ubuntu@ip-172-31-9-239:~/class24-docker-lab-project/class24-docker-lab$ sudo docker-compose -f compose/app-compose.template.yml ps
NAME            IMAGE                                COMMAND           SERVICE   CREATED       STATUS                   PORTS
compose-web-1   amadou11/class24-docker-lab:v1.0   "python app.py"   web       4 hours ago   Up 4 hours (unhealthy)   0.0.0.0:8080->5000/tcp, [::]:8080->5000/tcp
```

#sudo docker compose -f compose/app-compose.template.yml logs -f

```
web-1  | 172.56.161.236 - - [06/Sep/2025 01:45:00] "GET /health HTTP/1.1" 200 -
web-1  | 172.56.161.236 - - [06/Sep/2025 01:45:00] "GET /health HTTP/1.1" 200 -
```

```
{"status":"ok"}
```

Browse to http://yourip:8080 and confirm the app responds; ensure the healthcheck passes
Succeful

Hello, Compose Student 👋

Served from: `babab6cf9065`

Try /health.

Tear down when finished

sudo docker compose -f compose/app-compose.template.yml down

Part D — Debugging Quickfires

Port mismatch — debug/compose-port-mismatch.yml

```yaml
version: "3.9"
services:
  web:
    image: docker.io/library/nginx:alpine   # ← replace with your pushed image (e.g. docker.io/USER/simple-web:v1)
    environment:
      - PORT=5000
      - WHO=Compose Student
    ports:
      - "8080:5000"
    healthcheck:
      test: ["CMD", "curl", "-fsS", "http://localhost:5000/health"]
      interval: 5s
      timeout: 3s
      retries: 5
```

Wrong image tag — debug/compose-wrong-tag.yml

```yaml
version: "3.9"
services:
  web:
    image: docker.io/amadou11/class24-docker-lab:v1.0   # ← replace with your pushed image (e.g. docker.io/USER/simple-web:v1)
    environment:
      - PORT=5000
      - WHO=Compose Student
    ports:
      - "8080:5000"
    healthcheck:
      test: ["CMD", "curl", "-fsS", "http://localhost:5000/health"]
      interval: 5s
      timeout: 3s
      retries: 5
```

Broken CMD — debug/broken-cmd/

```
FROM python:3.11-slim
WORKDIR /app
COPY requirements.txt /app/
RUN pip install --no-cache-dir -r /app/requirements.txt
COPY app.py /app/
# Intentionally missing requirements and wrong command:
CMD ["python", "app.py"]
```

Unhealthy healthcheck

```
version: "3.9"
services:
  web:
    image: docker.io/library/nginx:alpine   # ← replace with your pushed image (e.g. docker.io/USER/simple-web:v1)
    environment:
      - PORT=5000
      - WHO=Compose Student
    ports:
      - "8080:5000"
    healthcheck:
      test: ["CMD", "curl", "-fsS", "http://localhost:5000/health"]
      interval: 5s
      timeout: 3s
      retries: 5
```