FINAL REPORT

SGA2 – Software Development Practices

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Year: 2025

QUESTION 1 — GIT & GITHUB

2.1 (1a) Local Git Repository Setup

A simple static website was created with index.html, about.html, contact.html, and style.css.

Git was initialized using:

git init

2.2 (1b) Demonstration of Git Commands

Commands demonstrated:

git status

git add .

git commit -m "Initial commit"

git log --oneline -n 3

git branch feature/update-readme

git switch feature/update-readme

git switch main

2.3 (1c) GitHub Integration

The repository was created in GitHub and connected via:

git remote add origin <repo-url>

git push -u origin main

GitHub Repository Link:

https://github.com/ashfaaqkt/devops-assignment-starter

QUESTION 2 — DOCKER

1.1 (2a) Custom Docker Image

A Python Flask application was created to print:

Hello, World! 👋 (served from a Docker container)

Dockerfile used:

```
FROM python:3.12-slim

WORKDIR /app

RUN python -m pip install --upgrade pip && python -m pip install flask==3.0.3 --no-cache-dir

COPY app.py /app/app.py

EXPOSE 8080

CMD ["python", "app.py"]
```

1.2 (2b) Build the Docker Image

The Docker image was built using:

```
docker build --no-cache -t ashfaaqkt/hello-app:1.0 .
```

1.3 (2c) Push the Image to Docker Hub

Commands:

```
docker login
docker tag ashfaaqkt/hello-app:1.0 ashfaaqkt/hello-app:latest
docker push ashfaaqkt/hello-app:1.0
docker push ashfaaqkt/hello-app:latest
```

Docker Hub Link:

https://hub.docker.com/repository/docker/ashfaaqkt/hello-app

2.4 (2d) Run the Container Locally

Commands:

```
docker run -d -p 8080:8080 --name hello1 ashfaaqkt/hello-app:1.0
docker ps
```

Application accessed at:

http://localhost:8080

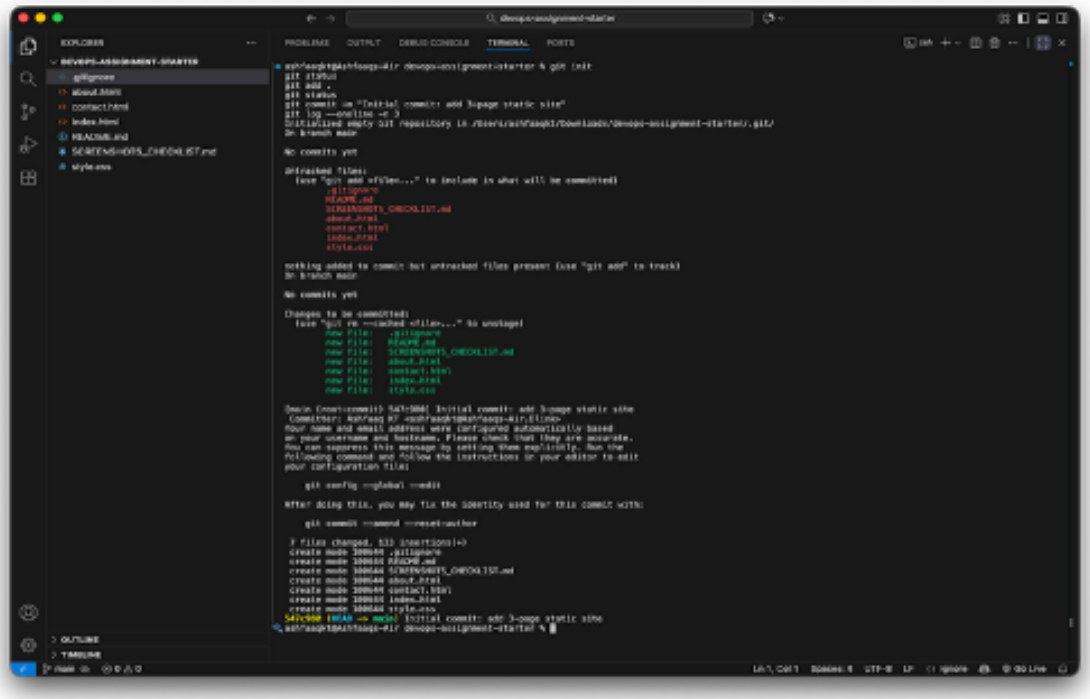
Conclusion

This assignment successfully demonstrates Git version control, GitHub integration, Docker image creation, containerization, and running a web application inside a Docker container. These are key DevOps principles used in modern CI/CD workflows.

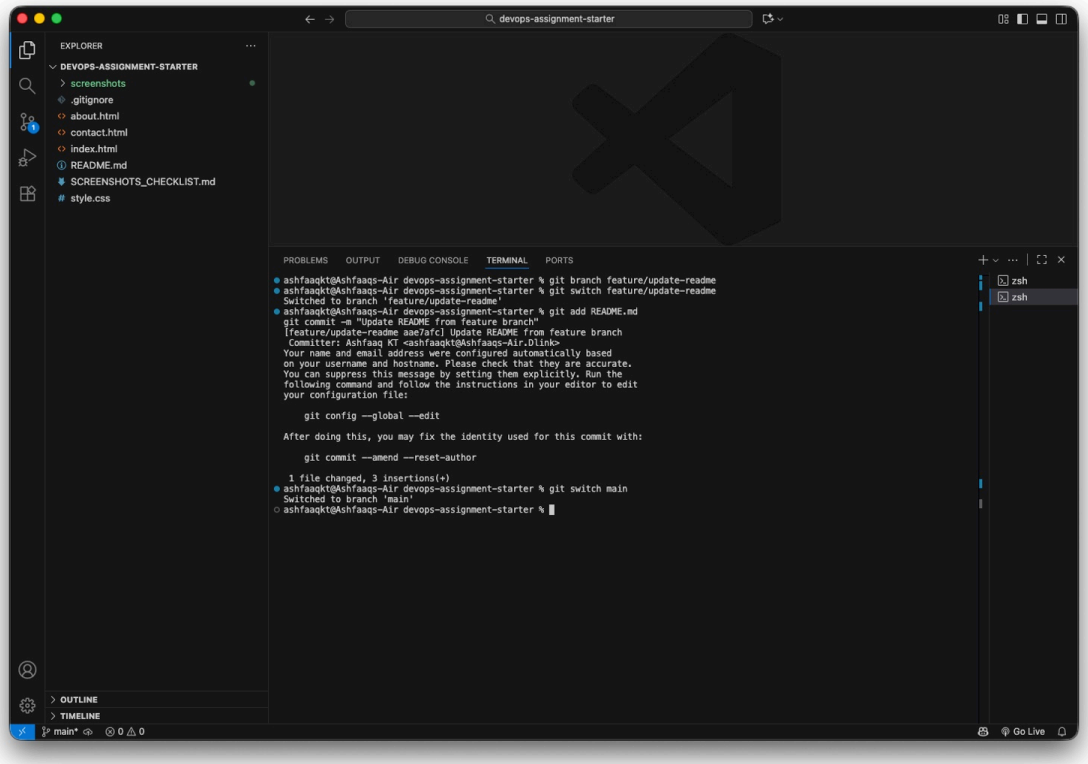
Screenshots

Screenshots is available in individual folder also for better view

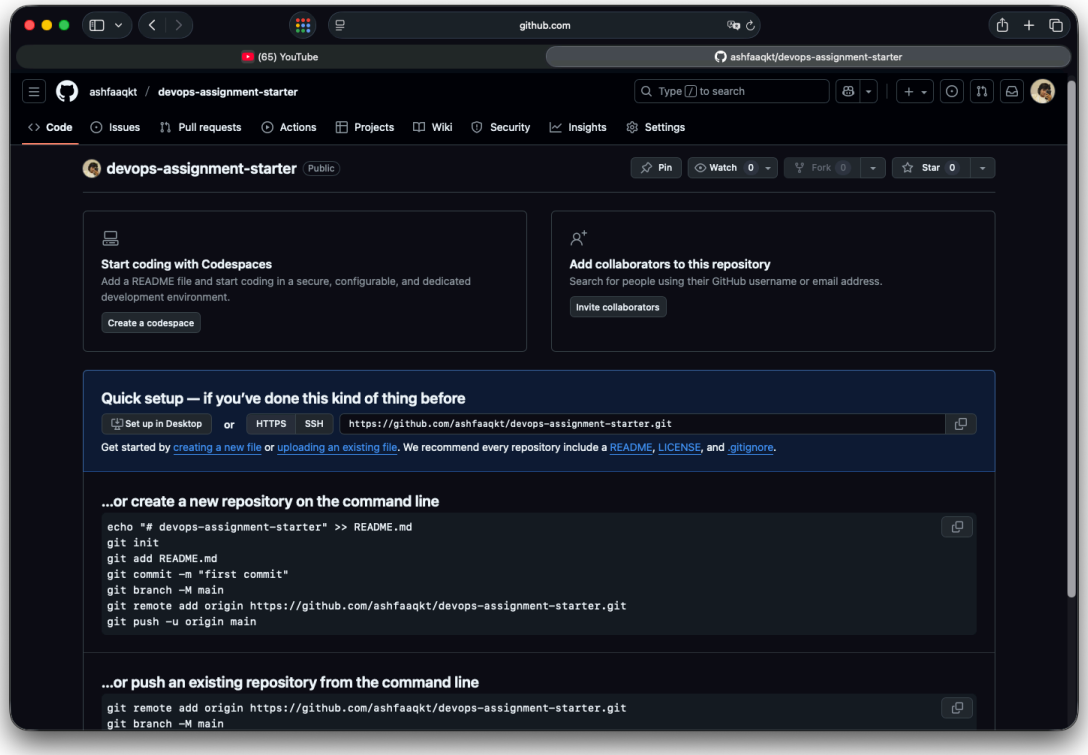
Q1a – Git Init & Status



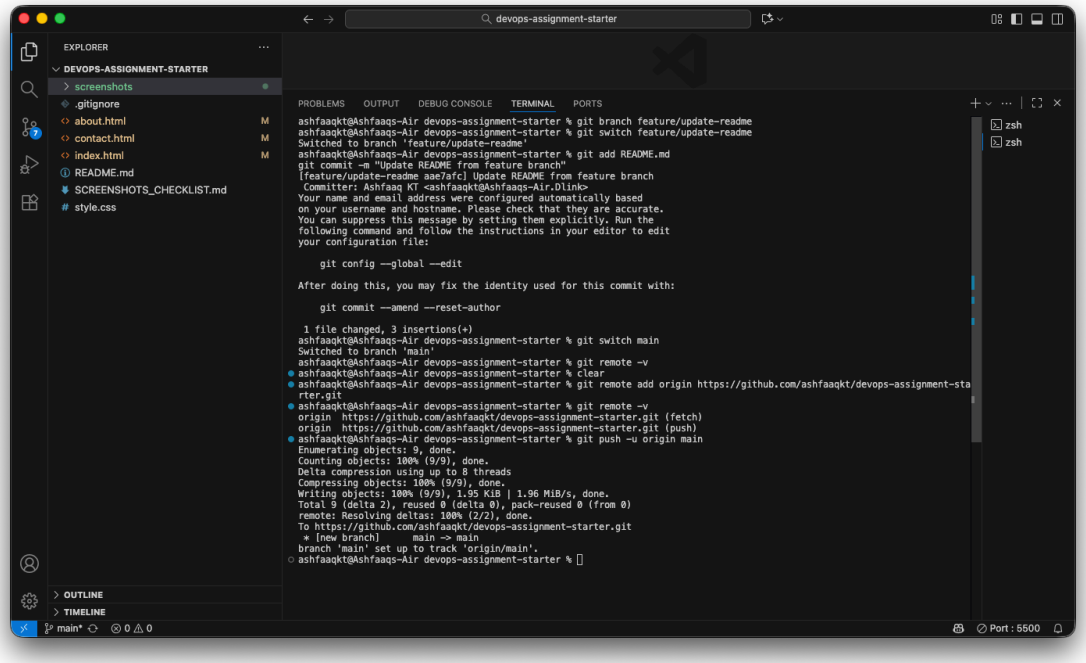
Q1b – Git Add & Commit



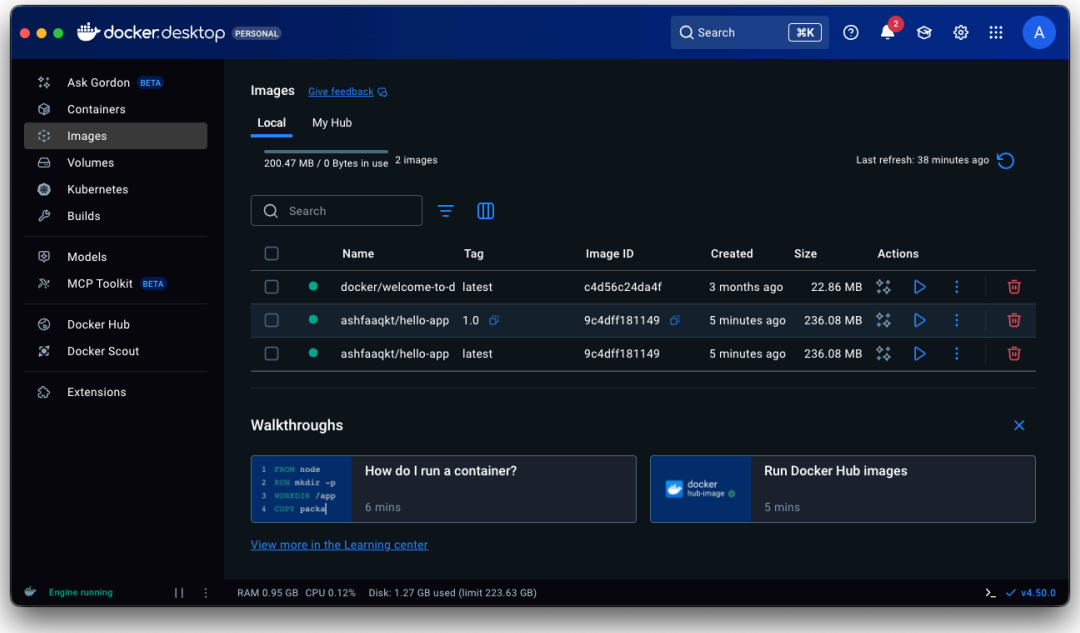
Q1c – GitHub Repo Page



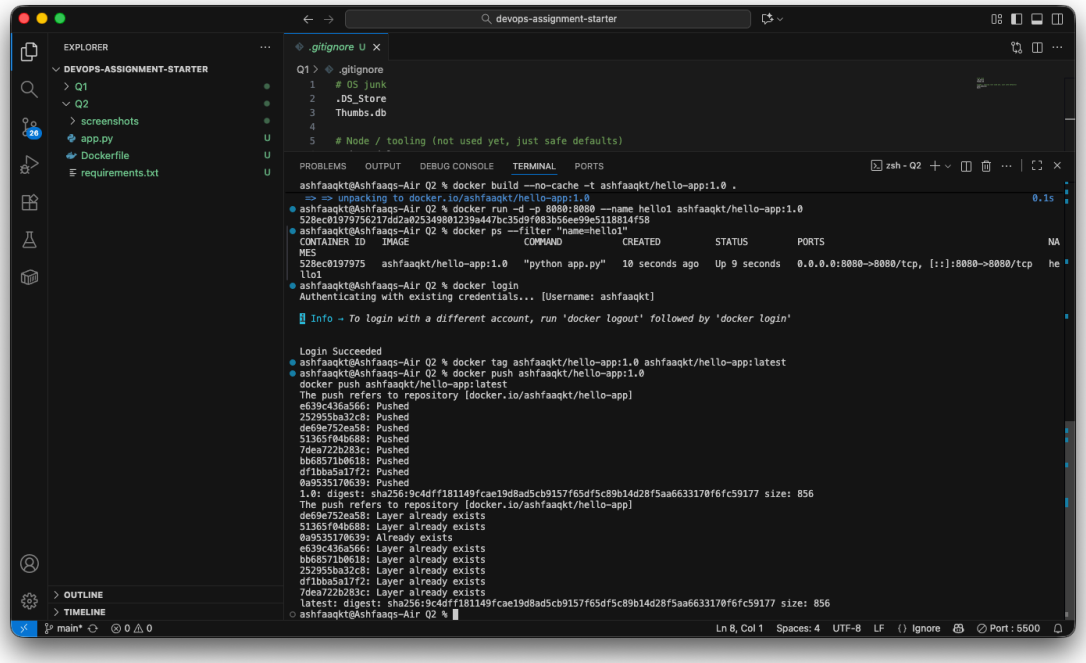
Q1c – Remote Verification



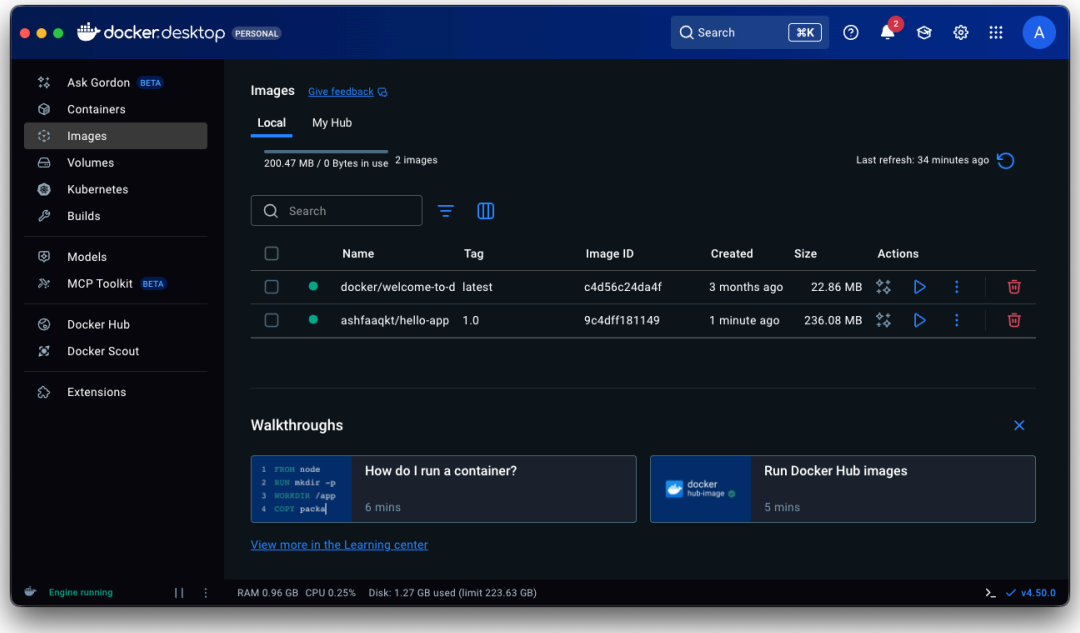
Docker Hub Repository



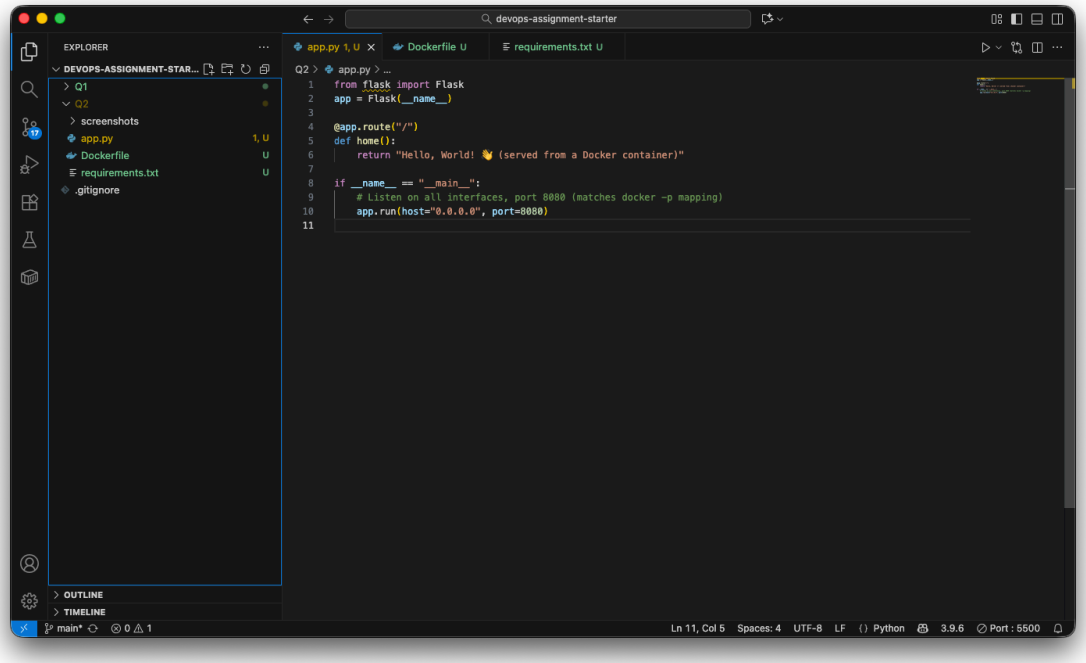
Docker Login Confirmation



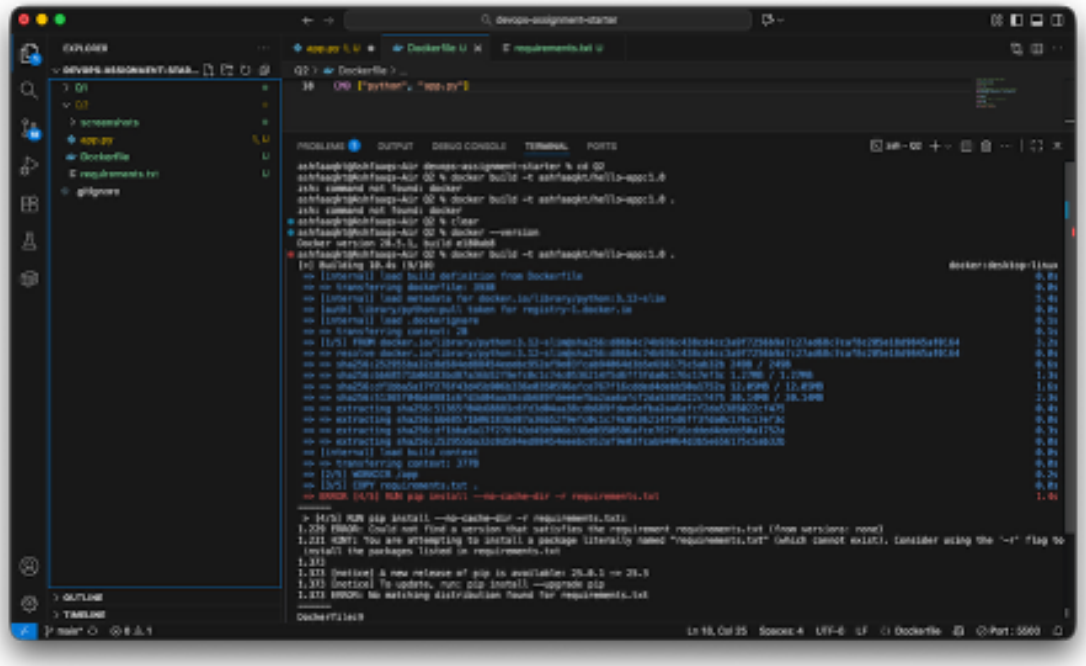
Docker Images List



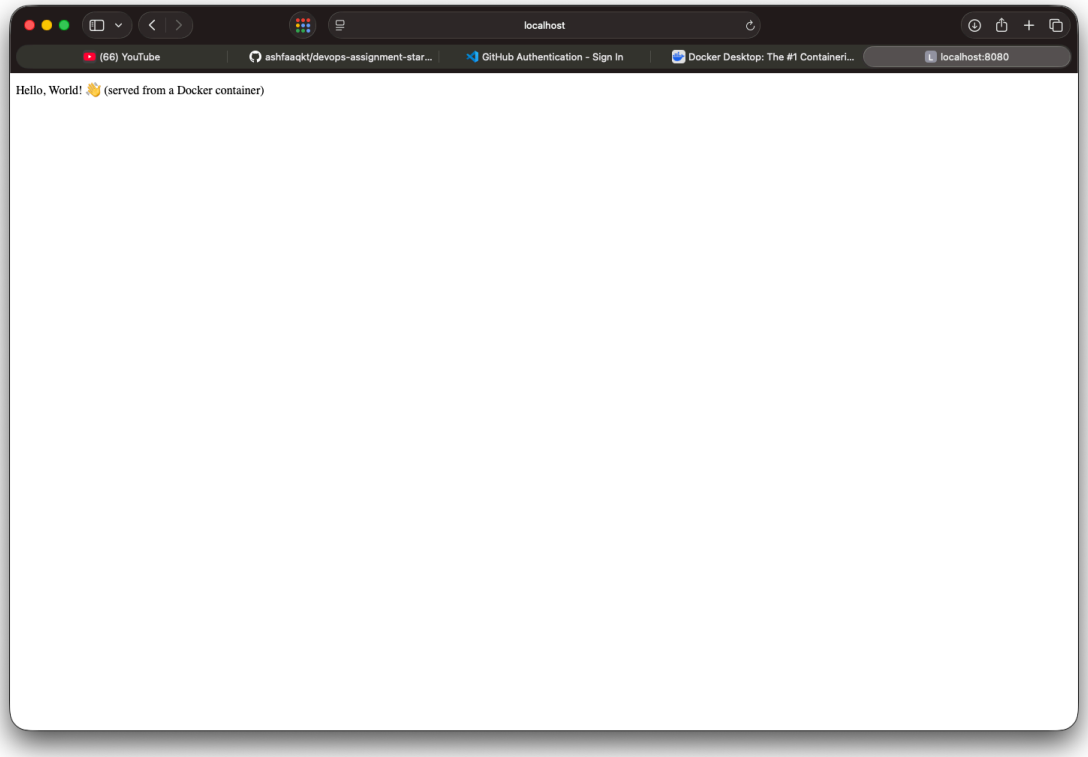
Q2a – Flask App Code



Q2b – Dockerfile Build



Application Running in Browser



The END