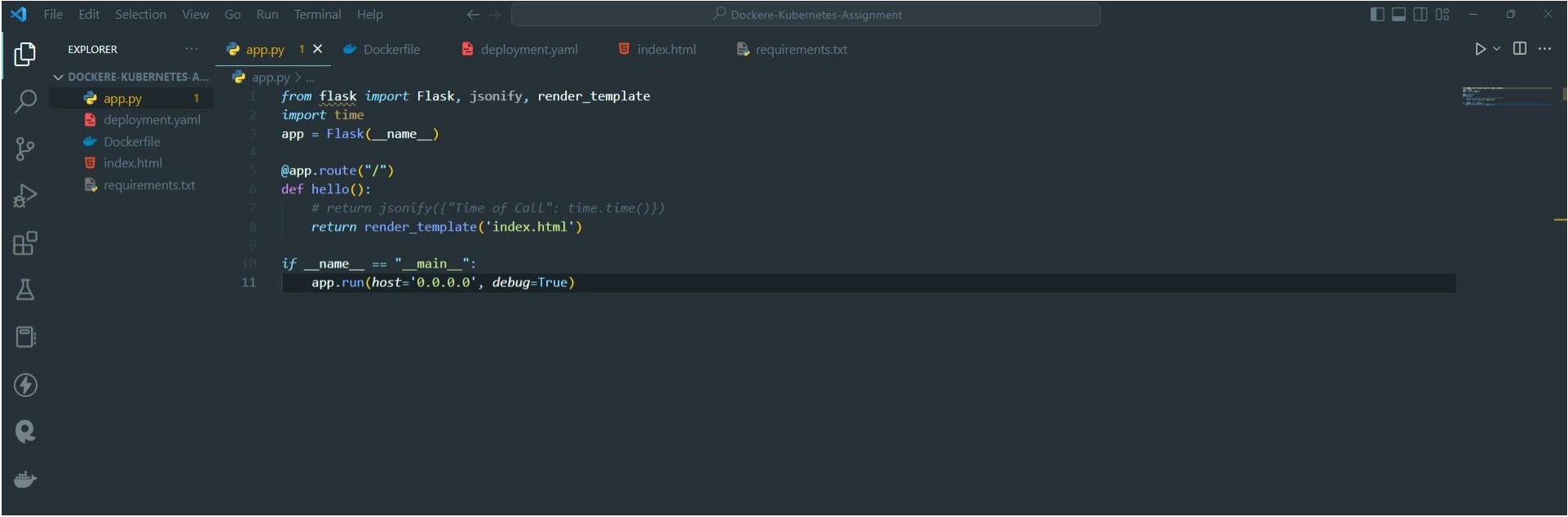


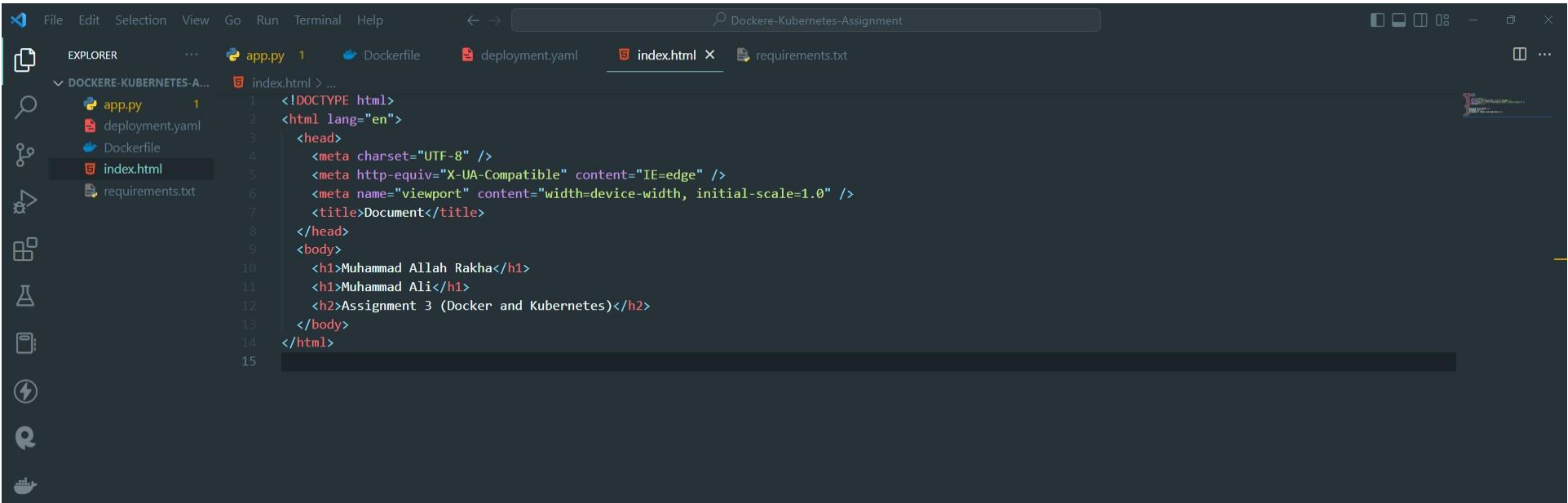
Assignment # 3 (Dockers and Kubernetes)

- First of all, we create the Python file to testing the Image of Docker for Container. This “app.py” contain the HTML file in which simple text displayed.
- After then, we make the “Dockerfile” extension in which setup of the Docker Image, Python IDE, and Flask API. Flask related details in “requirements.txt”
- For Kubernetes, we create “deployment.yaml” file in which two portion, first one is Service (Load Balancer) and second one is Deployment (Docker Image).
- Hence, we final develop setup of “Kubernetes (kubercli and minikube)”. We create Docker Image and Container, but we can’t deployment in Kubernetes, because we don’t have Kubernetes Environment in Desktop Docker. So, we didn’t proceed further procedure.



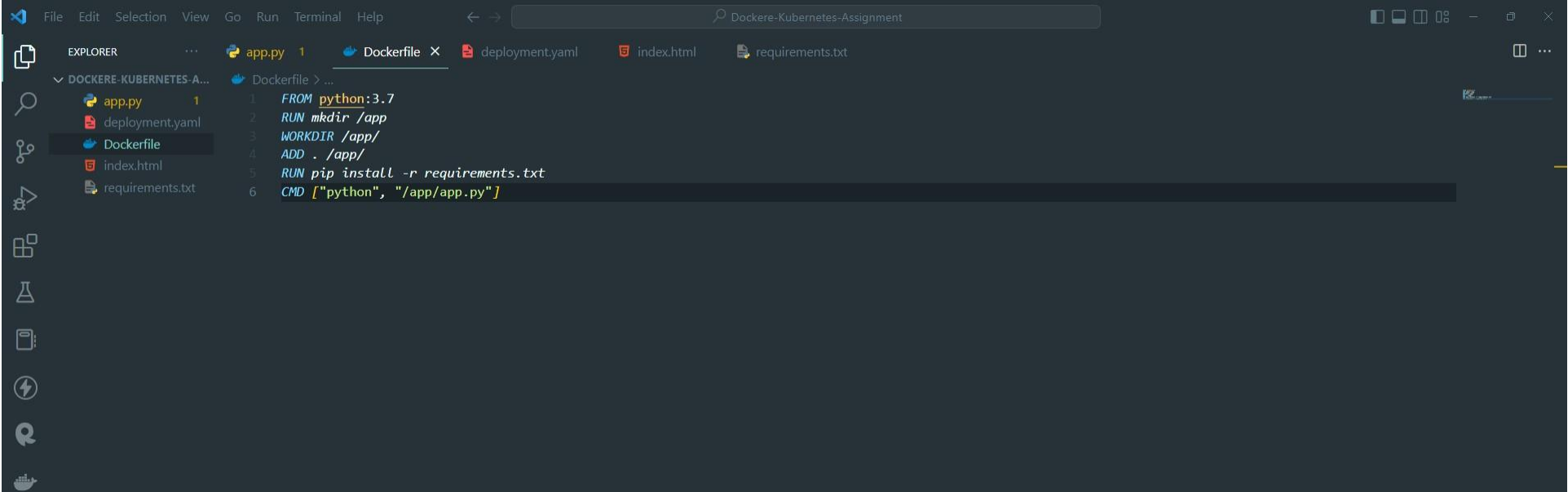
This screenshot shows the Visual Studio Code editor with the file explorer on the left displaying a project named 'DOCKERE-KUBERNETES-A...'. The file explorer lists 'app.py', 'deployment.yaml', 'Dockerfile', 'index.html', and 'requirements.txt'. The main editor window shows the content of 'app.py', which is a Python Flask application. The code imports Flask, jsonify, and render_template, sets up a Flask app, and defines a route for the root path that returns the content of 'index.html'. It also includes a main block to run the app on host 0.0.0.0.

```
1 from flask import Flask, jsonify, render_template
2 import time
3 app = Flask(__name__)
4
5 @app.route("/")
6 def hello():
7     # return jsonify({"Time of Call": time.time()})
8     return render_template('index.html')
9
10 if __name__ == "__main__":
11     app.run(host='0.0.0.0', debug=True)
```



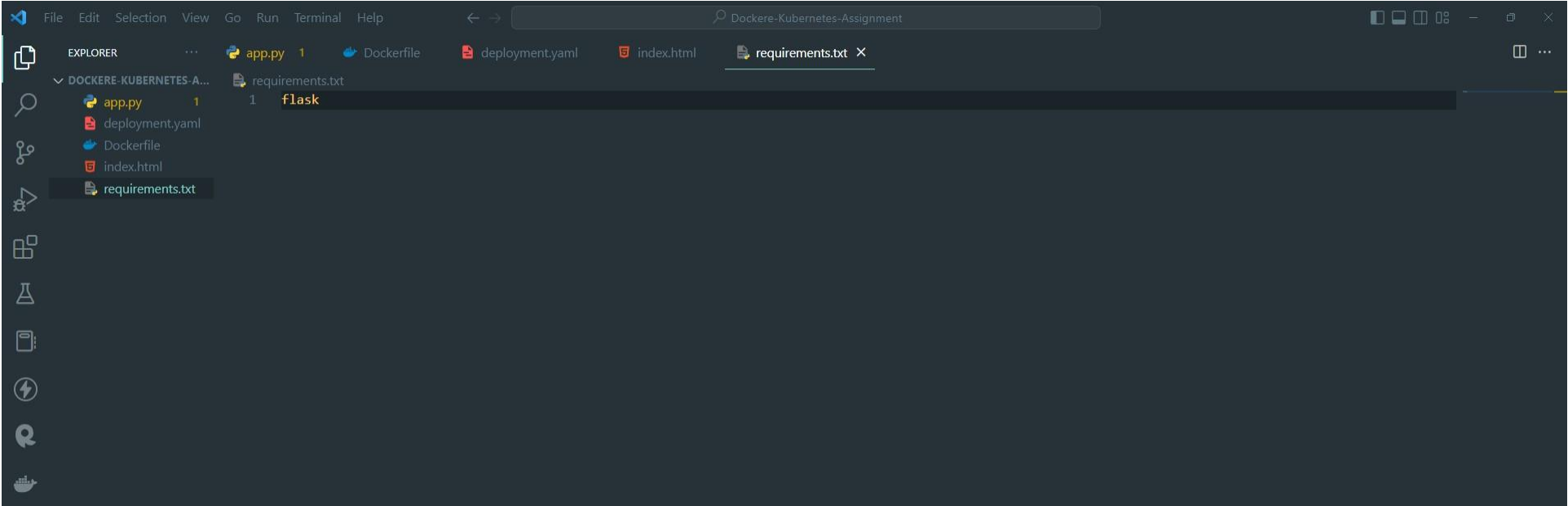
This screenshot shows the Visual Studio Code editor with the file explorer on the left. The main editor window displays the content of 'index.html', which is an HTML document. It includes a DOCTYPE declaration, a head section with meta tags for charset, http-equiv, and viewport, and a title 'Document'. The body contains three headings: 'Muhammad Allah Rakha', 'Muhammad Ali', and 'Assignment 3 (Docker and Kubernetes)'.

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4   <head>
5     <meta charset="UTF-8" />
6     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
7     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
8     <title>Document</title>
9   </head>
10  <body>
11    <h1>Muhammad Allah Rakha</h1>
12    <h1>Muhammad Ali</h1>
13    <h2>Assignment 3 (Docker and Kubernetes)</h2>
14  </body>
15 </html>
```



This screenshot shows the Visual Studio Code editor with the file explorer on the left. The main editor window displays the content of 'Dockerfile', which is a Dockerfile for building a container image. It starts with a FROM statement for python:3.7, creates a directory /app, sets the working directory to /app, adds the current directory's contents to /app, installs the requirements from requirements.txt, and sets the command to run python /app/app.py.

```
1 FROM python:3.7
2 RUN mkdir /app
3 WORKDIR /app/
4 ADD . /app/
5 RUN pip install -r requirements.txt
6 CMD ["python", "/app/app.py"]
```



This screenshot shows the Visual Studio Code editor with the file explorer on the left. The main editor window displays the content of 'requirements.txt', which is a text file containing the name of the package 'flask'.

```
1 flask
```

FileEditSelectionViewGoRunTerminalHelp

Dockere-Kubernetes-Assignment

EXPLORER

DOCKERE-KUBERNETES-A...

app.py1

deployment.yaml

Dockerfile

index.html

requirements.txt

deployment.yaml

1 apiVersion: v1

2 kind: Service

3 metadata:

4 name: flask-test-service

5 spec:

6 selector:

7 app: flask-test-app

8 ports:

9 - protocol: "TCP"

10 port: 6000

11 targetPort: 5000

12 type: LoadBalancer

13

14 ---

15 apiVersion: apps/v1

16 kind: Deployment

17 metadata:

18 name: flask-test-app

19 spec:

20 selector:

21 matchLabels:

22 app: flask-test-app

23 replicas: 5

24 template:

25 metadata:

26 labels:

27 app: flask-test-app

28 spec:

29 containers:

30 - name: flask-test-app

31 image: flask-kubernetes

32 imagePullPolicy: IfNotPresent

33 ports:

34 - containerPort: 5000

35

PROBLEMS1

OUTPUT

DEBUG CONSOLE

TERMINAL

PS G:\Semester_7\Dockere-Kubernetes-Assignment>

Ln 35, Col 1Spaces: 2UTF-8CRLFYAMIGo LivePrettier

FileEditSelectionViewGoRunTerminalHelp

Dockere-Kubernetes-Assignment

EXPLORER

DOCKERE-KUBERNETES-A...

app.py

deployment.yaml

Dockerfile

index.html

requirements.txt

requirements.txt

1 from flask import Flask, jsonify, render template

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

=> [internal] load build definition from Dockerfile

=> => transferring dockerfile: 167B

=> [internal] load .dockerignore

=> => transferring context: 2B

=> [internal] load metadata for docker.io/library/python:3.7

=> [internal] load build context

=> => transferring context: 1.66kB

=> [1/5] FROM docker.io/library/python:3.7@sha256:520bd41d196f37b077c3e586009785cc698a7afd11291209324cc267780c8657

=> => resolve docker.io/library/python:3.7@sha256:520bd41d196f37b077c3e586009785cc698a7afd11291209324cc267780c8657

=> => sha256:520bd41d196f37b077c3e586009785cc698a7afd11291209324cc267780c8657 1.86kB / 1.86kB

=> => sha256:19675f873997771853c774be3f9c29a2aed309bb6614408c04514996163aac7b 2.22kB / 2.22kB

=> => sha256:5cda39795abb5d66254c474fdd58f880141a593de54e292f2610e7757ae98aef 9.20kB / 9.20kB

=> => sha256:5c8cfbf51e6e6869f1af2a1e7067b07fd6733036a333c9d29f743b0285e26037 5.16MB / 5.16MB

=> => sha256:aa3a609d15798d35c1484072876b7d22a316e98de6a097de33b9dade6a689cd1 10.88MB / 10.88MB

=> => sha256:f2f58072e9ed1aa1b0143341c5ee83815c00ce47548309fa240155067ab0e698 55.04MB / 55.04MB

=> => sha256:094e7d9bb04ebf214ea8dc5a488995449684104ae8ad9603bf061cac0d18eb54 54.59MB / 54.59MB

=> => sha256:2cbfd734f3824a4390fe4be45f6a11a5543bca1023e4814d72460eaebc2eef89 196.87MB / 196.87MB

=> => sha256:aa86ac293d0fa66515f0a670445969ba98dd8d6a114a7f6aea934aad44084d0 6.29MB / 6.29MB

=> => sha256:e8aea10b41a0a7606151f26f7590f539bf99da2d82c6d1cfe13623a8d8b453e3 15.49MB / 15.49MB

=> => extracting sha256:f2f58072e9ed1aa1b0143341c5ee83815c00ce47548309fa240155067ab0e698 3.0s

=> => extracting sha256:5c8cfbf51e6e6869f1af2a1e7067b07fd6733036a333c9d29f743b0285e26037 0.4s

=> => extracting sha256:aa3a609d15798d35c1484072876b7d22a316e98de6a097de33b9dade6a689cd1 0.4s

=> => extracting sha256:094e7d9bb04ebf214ea8dc5a488995449684104ae8ad9603bf061cac0d18eb54 2.8s

=> => sha256:3f1c4dc605dc72fd0aec6d66733fee7732cd6b82e96a04279e0907cb97f4f5ed 233B / 233B

=> => sha256:ee7d24a3adf39850d5fe6d4525837db7ef1c36681e74e1057bf6a8bcfa5ce842 2.89MB / 2.89MB

=> => extracting sha256:2cbfd734f3824a4390fe4be45f6a11a5543bca1023e4814d72460eaebc2eef89 12.3s

=> => extracting sha256:aa86ac293d0fa66515f0a670445969ba98dd8d6a114a7f6aea934aad44084d0 0.4s

=> => extracting sha256:e8aea10b41a0a7606151f26f7590f539bf99da2d82c6d1cfe13623a8d8b453e3 1.1s

=> => extracting sha256:3f1c4dc605dc72fd0aec6d66733fee7732cd6b82e96a04279e0907cb97f4f5ed 0.0s

=> => extracting sha256:ee7d24a3adf39850d5fe6d4525837db7ef1c36681e74e1057bf6a8bcfa5ce842 0.5s

=> [2/5] RUN mkdir ./app

=> [3/5] WORKDIR /app/

=> [4/5] ADD . /app/

=> [5/5] RUN pip install -r requirements.txt

=> exporting to image

=> => exporting layers

=> => writing image sha256:e0785271457aedic694fc718dd94b9720e140e62165b3d74bf23e2dbc3301926a

=> => naming to docker.io/library/flask-kubernetes 0.1s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

PS G:\Semester_7\Dockere-Kubernetes-Assignment> docker build -t flask-kubernetes .

Ln 4, Col 1Spaces: 4UTF-8CRLFMagicPythonSelect InterpreterGo LivePrettier

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PS G:\Semester_7\Dockere-Kubernetes-Assignment> docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
flask-kubernetes	latest	e0785271457a	30 minutes ago	918MB
docker-assignment-php	latest	fcbdd81dc176	5 days ago	453MB
my-php-app	latest	b14180fb6783	5 days ago	474MB
<none>	<none>	9d2ddebc4e91	5 days ago	474MB
mysql	latest	7484689f290f	6 days ago	538MB
php	7.4-apache	20a3732f422b	4 weeks ago	453MB
adminer	latest	ef63a68bb1a5	4 weeks ago	91.3MB
php	7.2-apache	c61d277263e1	2 years ago	410MB

PS G:\Semester_7\Dockere-Kubernetes-Assignment>