

Assignment - 4

| | |
|---------------------|-------------|
| Student Name | KEERTHANA S |
| Student Roll Number | 73151913045 |

Question-1:

Pull an Image from docker hub and run it in docker playground.

Solution:

- Pull an image uifd/ui-for-docker from the docker hub
- This image is used for viewing and managing the docker engine
- Use docker pull image_name and docker run -it image_name commands to
- run the above image in the Docker Playground

The screenshot displays the Docker Playground interface in a web browser. The top bar shows the URL `labs.play-with-docker.com/p/cdmuqov91rrg009jdp10#cdmuqov9_cdmuqpv91rrg009jdp1g`. The left sidebar contains a clock showing 03:58:11, a 'CLOSE SESSION' button, and a list of instances with one instance named '192.168.0.8 node1'. The main panel shows the instance details for 'cdmuqov9_cdmuqpv91rrg009jdp1g', including IP (192.168.0.8), memory usage (1.57% / 62.97MiB / 3.906GiB), CPU usage (0.86%), and an SSH command. Below this, a terminal window shows the following commands and output:

```
# This is a sandbox environment. Using personal credentials #
# is HIGHLY discouraged. Any consequences of doing so are #
# completely the user's responsibilities. #
#
# The PWD team. #
#####
[node1] (local) root@192.168.0.8 ~
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
[node1] (local) root@192.168.0.8 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
Unable to find image 'uifd/ui-for-docker:latest' locally
latest: Pulling from uifd/ui-for-docker
041194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
079a3d708e31c90dd6d551833fa13816a6b1c4bbff759d5c720ca7afd8c50888
[node1] (local) root@192.168.0.8 ~
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
uifd/ui-for-docker latest 965940f98fa5 6 years ago 8.1MB
[node1] (local) root@192.168.0.8 ~
$
```

The bottom of the interface shows a Windows taskbar with various application icons and system tray icons, including the date and time (12:08 PM 11-11-2022).

Question-2

Create a docker file for the jobportal application and deploy it in Docker desktop application.

Solution:

- Create a docker file for build and deploy flask app.
- Use docker build -t image_name . in the current directory to start building the
- docker image and deploy in our local docker
- Use docker run -p 5000:5000 image_name to run in local system

CODE

```
FROM ubuntu/apache2
```

```
FROM python
```

```
COPY ./requirements.txt /flaskApp/requirements.txt
```

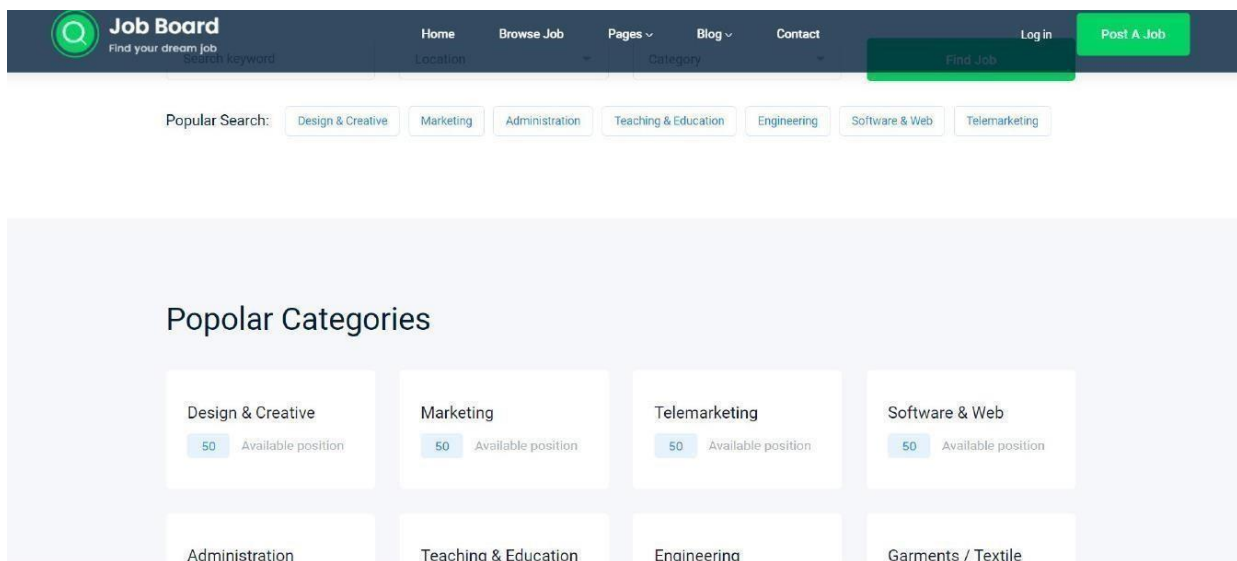
```
WORKDIR /flaskApp
```

```
RUN pip install -r requirements.txt
```

```
COPY . /flaskApp
```

```
ENTRYPOINT [ "python" ]
```

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

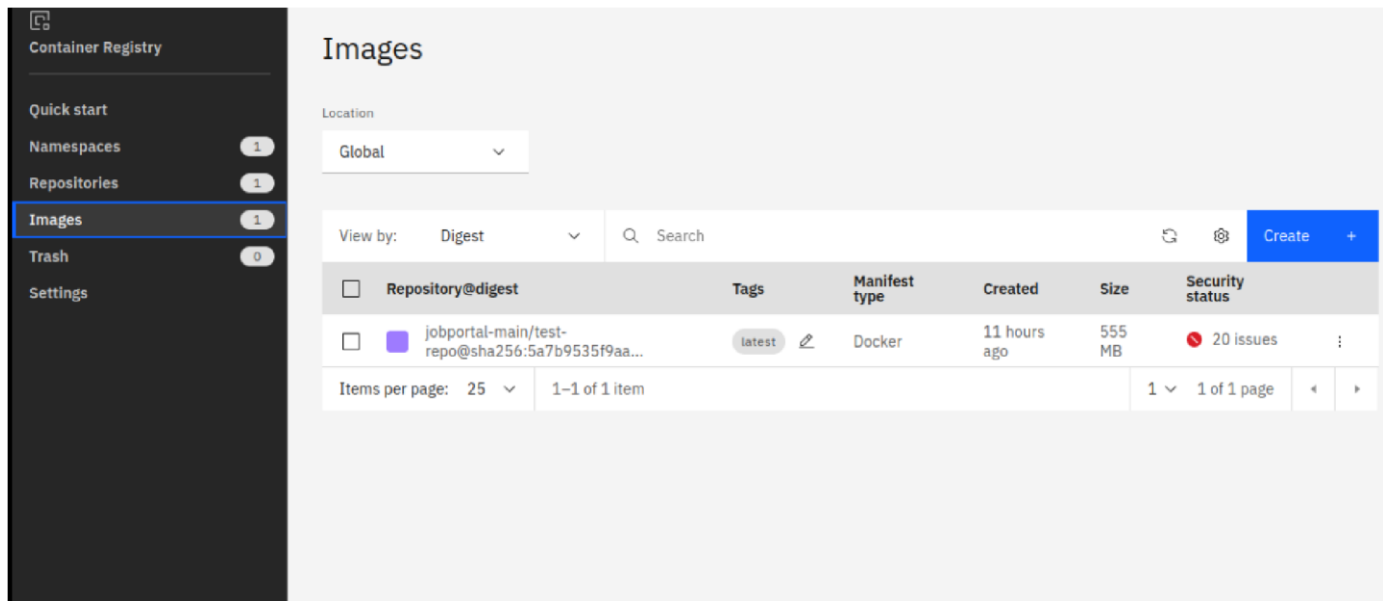


Question-3:

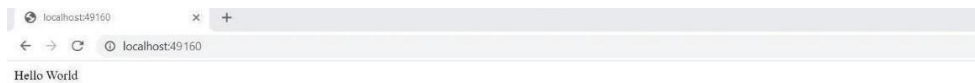
Create a IBM container registry and deploy hello world app or job portal app.

Solution:

- Log into IBM cloud
- Create a container registry
- Using IBM Cloud CLI, install the container registry plugin in our system
- Push our docker image into the created container registry using docker push
- So, our job portal app is deployed in the IBM container registry
-



OUTPUT: "HELLO
WORLD"



Question-4:


Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

Solution:

- Log into IBM cloud
- Create a kubernetes
- Using IBM Cloud CLI, install the ks plugin in our system
- Create a cluster in the kubernetes
- Now, go to the kubernetes dashboard where we need to create a service based on a
- yaml file (given below)
- In that file, we have to mention which image we are going to use and the app name
- Take the public IP address and Nodeport since we exposed the flask app in nodeport
- Finally, we got the url address where our flask app is hosted



CODE:

```
apiVersion: v1 kind:
Service metadata:
name: job-portal-app
spec:
selector:
app: job-portal-app
ports: - port: 5000
type: NodePort
---
apiVersion: apps/v1 kind:
Deployment metadata:
name: job-portal-app labels:
app: job-portal-app
spec: selector:
matchLabels: app:
job-portal-app
replicas: 1
template:
metadata: labels:
app: job-portal-app
spec: containers:
- name: job-portal-app
image: image_name
ports:
- containerPort: 5000 env:
- name:
DISABLE_WEB_APPvalue: "false"
```

kubernetes

default

Search

+

Create

Service

Ingresses

Services

Config and Storage

Cluster

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Cluster Role Bindings

Cluster Roles

Events

Namespaces

Network Policies

Nodes

Create from input

Create from file

Create from form

Select YAML or JSON file specifying the resources to deploy to the currently selected namespace. [Learn more](#)

Choose YAML or JSON file

UploadCancel



Kubernetes clusters

Resource group: Filter...

Location: Filter...

Search

Create cluster +

| Name | State | Location | Worker count | Created | Version | Infrastructure |
|--------------|---|--------------|--------------|--------------------|---|----------------|
| jaga-cluster |  Normal | Amsterdam 03 | 1 | Expires in 30 days |  1.23.12_1546 | Classic |

Items per page: 25

1-1 of 1 item

1 1 of 1 page