

## Assignment – 4

Assignment Date	22 October 2022
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Student Roll Number	311019104016
Maximum Marks	2 marks

### 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. On the left, there's a sidebar with a clock showing 03:57:32, a 'CLOSE SESSION' button, and a list of instances. The main area shows the details of an instance named 'cddvksm0\_cddvkv00a000a07j5g' with IP 192.168.0.8, 1.24% memory usage, and 0.31% CPU usage. Below this, there's a terminal window showing the following commands and output:

```
##### WARNING!!!! #####
# 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 pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:e18f0a77aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
[node1] (local) root@192.168.0.8 ~
$ docker run hello-world
```

An 'Activate Windows' watermark is visible in the bottom right corner of the terminal area.

### Question-2:

Create a docker file for the job portal 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
```

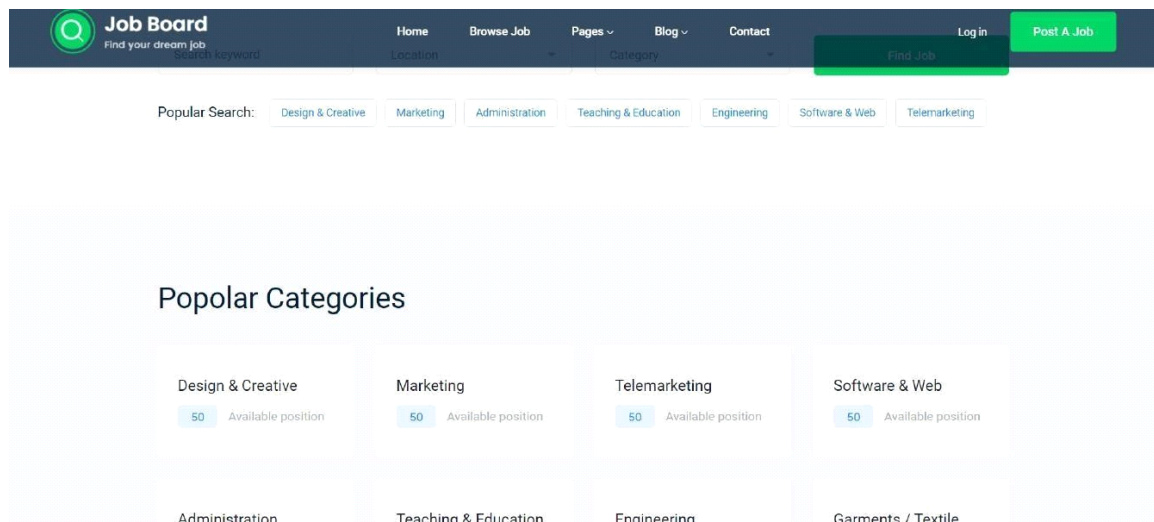
```
WORKDIR /flaskApp
```

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

```
COPY . /flaskApp
```

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

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

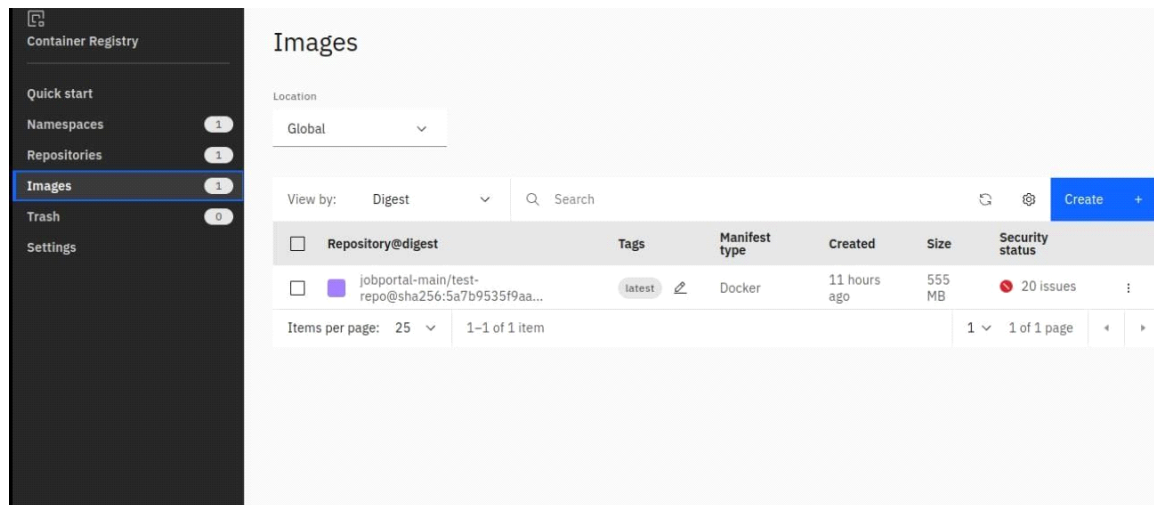


### Question-3:

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
- 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 hello world image or job portal image and also expose the same app to run in node port.

**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 ● yml 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:
selecto
r:
match
Labels
: app:
job-
portal-
app
repli
cas:
1
tem
plate
:
meta
data:
label
s:
app:
job-
portal-
app
spec:
contai
ners:
• name:
job-portal-
app image:
image_name
ports:
• container
Port: 5000
env:
• name:
DISABLE_W
EB_APP
value: "false"
```

 **kubernetes**

default

Search

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Create

Service ⓘ  
Ingresses  
Services

Config and Storage  
Config Maps ⓘ  
Persistent Volume Claims ⓘ  
Secrets ⓘ  
Storage Classes

Cluster  
Cluster Role Bindings  
Cluster Roles  
Events ⓘ  
Namespaces  
Network Policies ⓘ  
Nodes

Create from inputCreate from fileCreate from form

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

Choose YAML or JSON file

Upload Cancel

## Kubernetes clusters

Resource group: Filter...		Location: Filter...		Search		Create cluster
Name	State	Location	Worker count	Created	Version	Infrastructure
jaga-cluster	<div><div></div>Normal</div>	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