

## Assignment -4

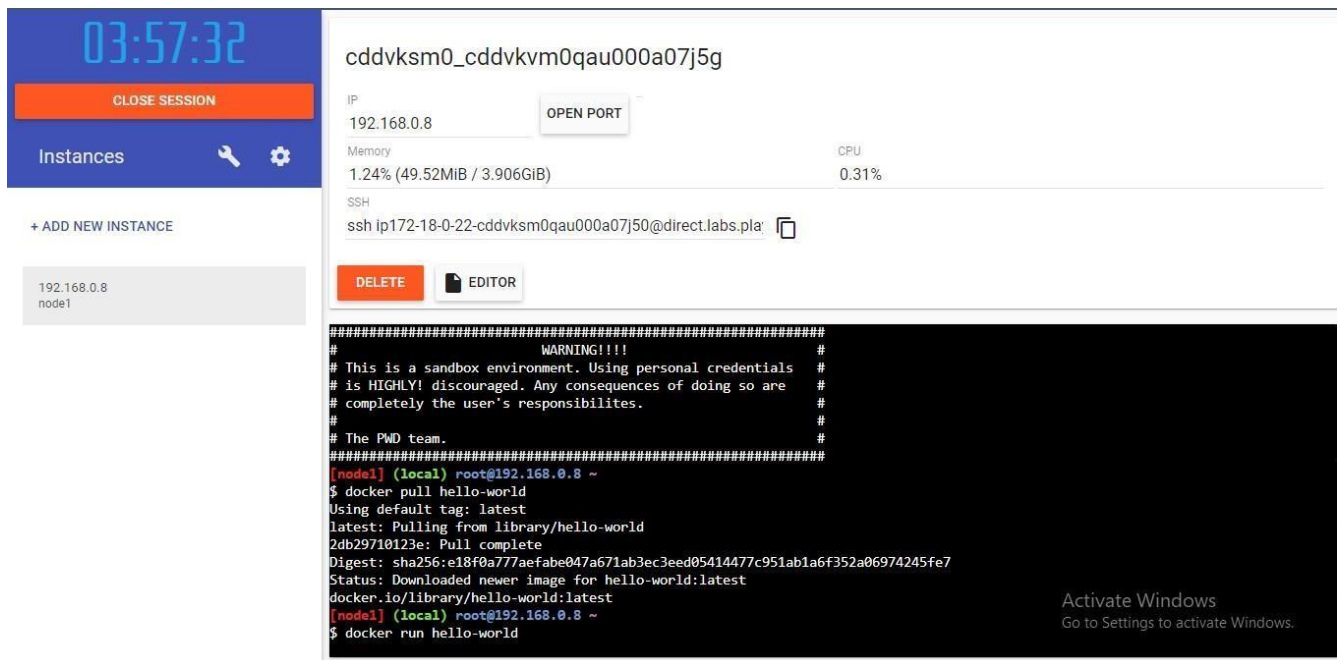
Assignment Date	10 November 2022
Student Name	Sathish kumar P
Role	Team Lead
Student Roll Number	727719EUCS124
Maximum Marks	2 Marks
Team ID	PNT2022TMID02796

### 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 an 'Instances' section with a '+ ADD NEW INSTANCE' button. Below this, a list of instances shows '192.168.0.8 node1'. The main area shows details for the instance 'cddvkism0\_cddvkvm0qau000a07j5g', including its IP (192.168.0.8), memory usage (1.24%), and CPU usage (0.31%). An SSH command is provided: 'ssh ip172-18-0-22-cddvkism0qau000a07j50@direct.labs.pla'. Below this are 'DELETE' and 'EDITOR' buttons. The terminal window shows the following 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:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7  
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 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

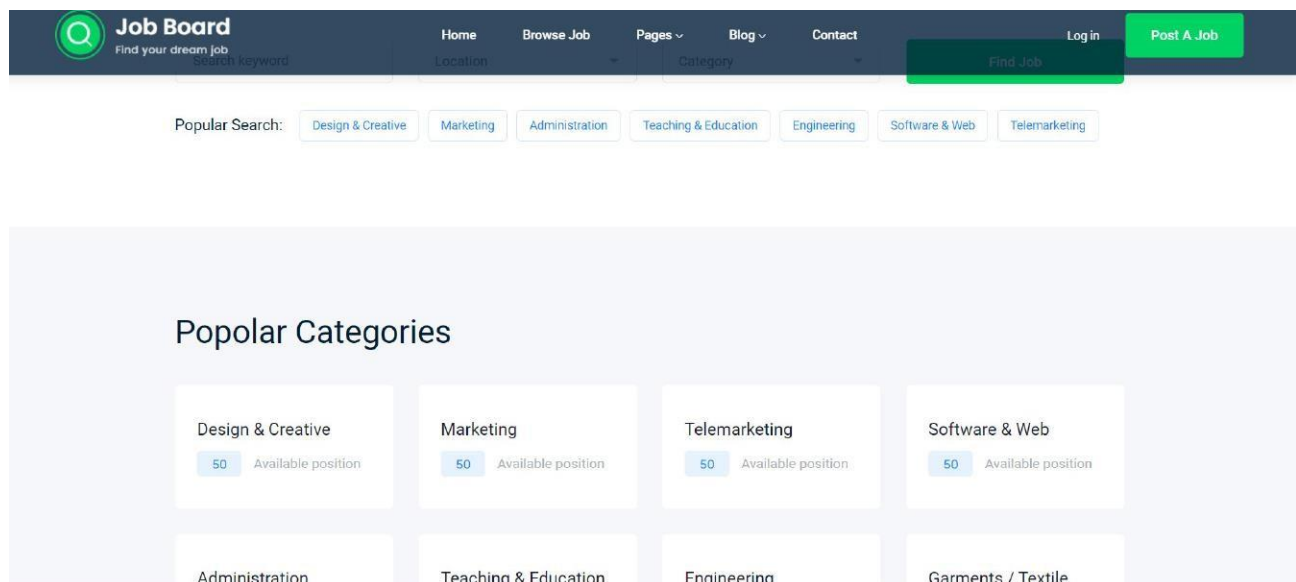
WORKDIR /flaskApp

RUN pip install -r requirements.txt

COPY . /flaskApp

ENTRYPOINT [ "python" ]

CMD ["app.py" ]

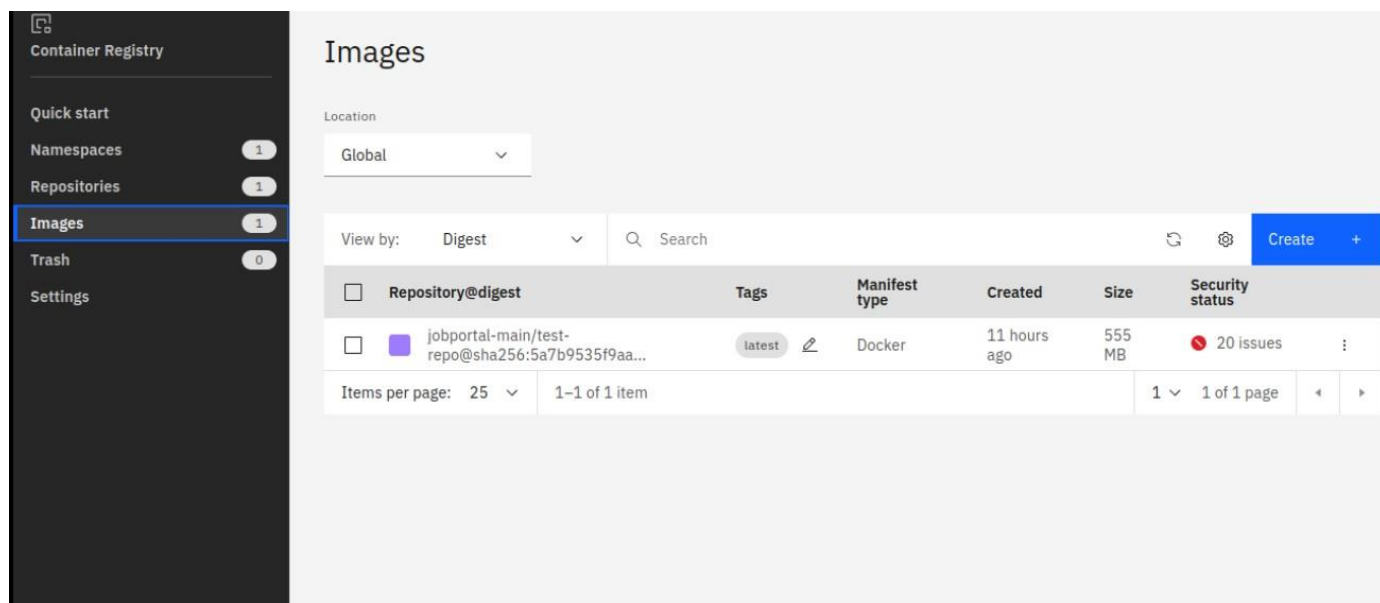


## Question-3:

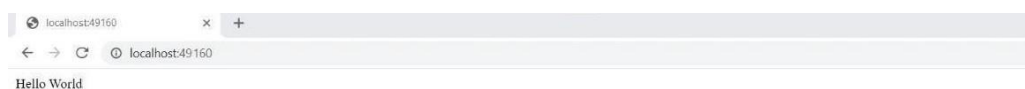
Create a IBM container registry and deploy hello world app or job portal app.

### 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.

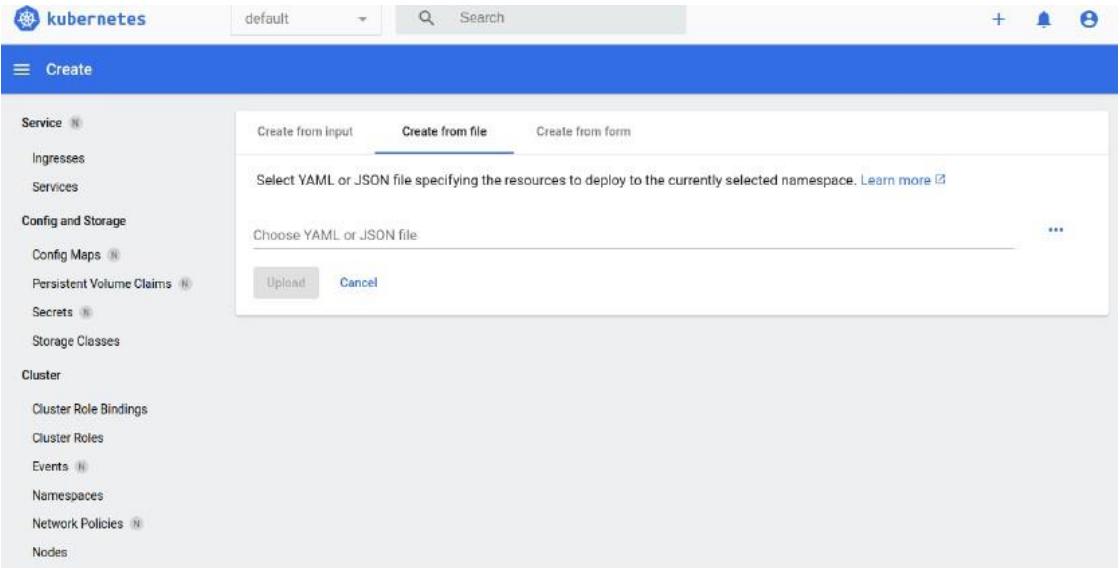
#### Solution:

- 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 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:  
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\_APP  
value: "false"



## 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 of 1 page	