

Assignment – 4

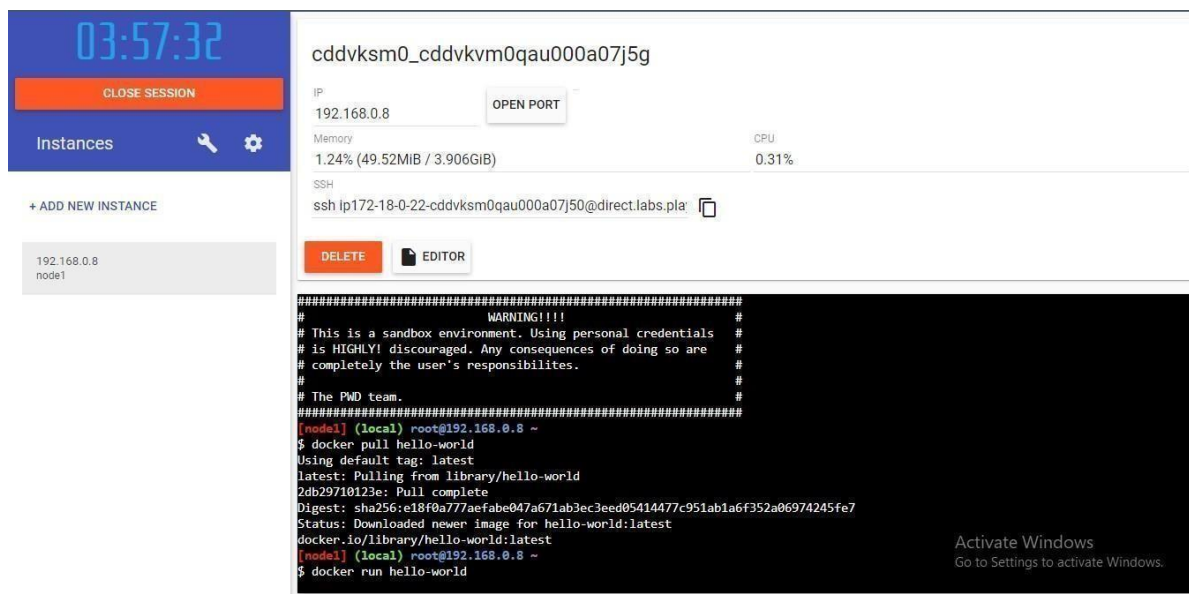
Assignment Date	04/11/2022
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Student Roll Number	210519104103(Old Reg.no) 311119104701(New Reg.no)
Maximum Marks	2 marks

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 details for an instance named 'cddvkms0_cddvkvm0qau000a07j5g'. It includes an 'OPEN PORT' button, memory usage (1.24% of 3.906GIB), CPU usage (0.31%), and an SSH command. Below this, there are 'DELETE' and 'EDITOR' buttons. The terminal window shows 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: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
```

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
```

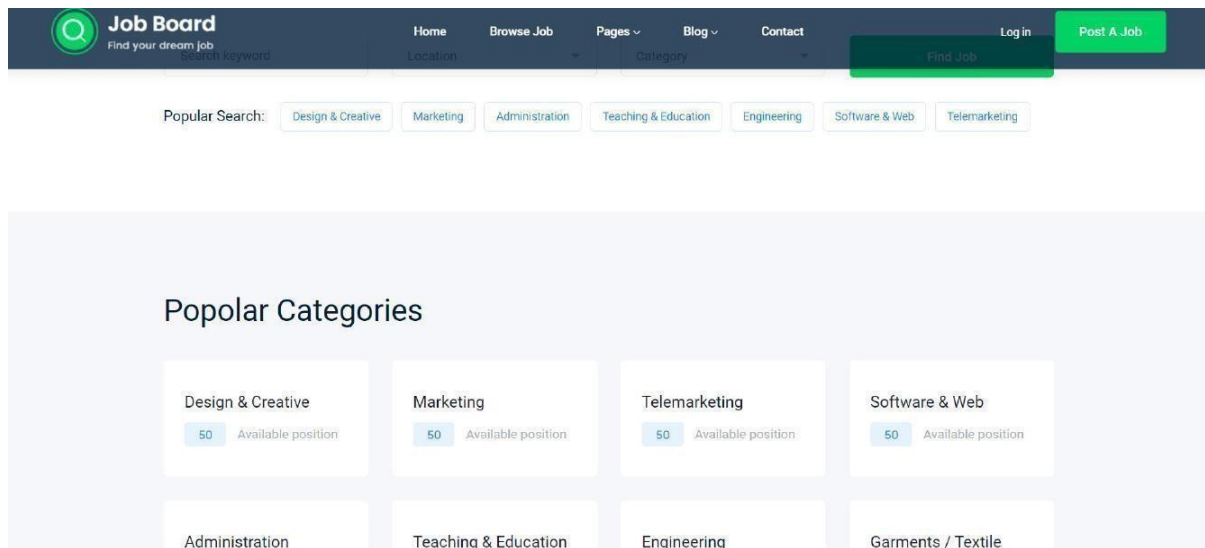
```
WORKDIR /flaskApp
```

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

```
COPY . /flaskApp
```

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

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

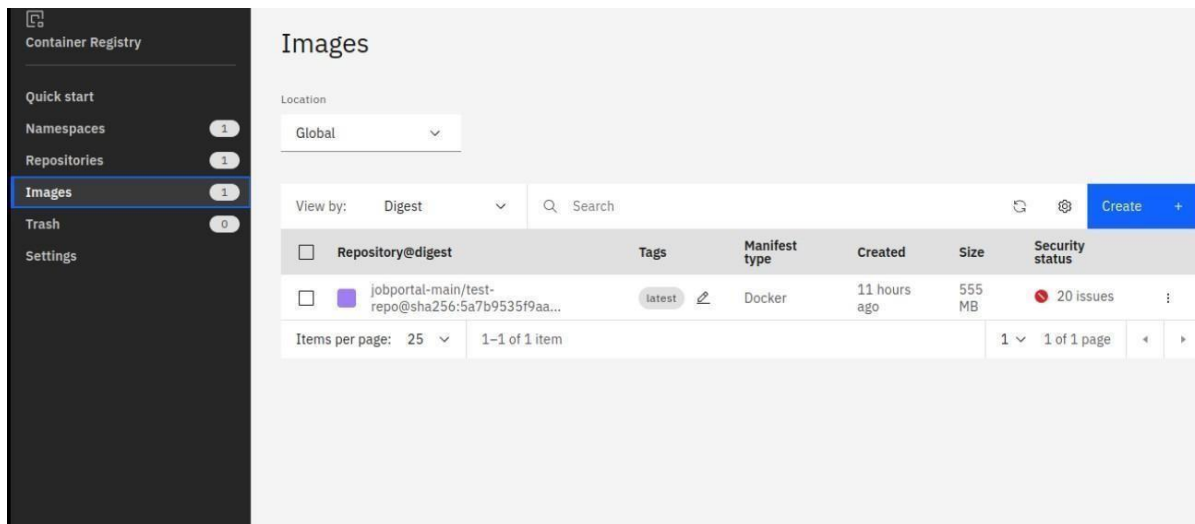


Question-3:

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

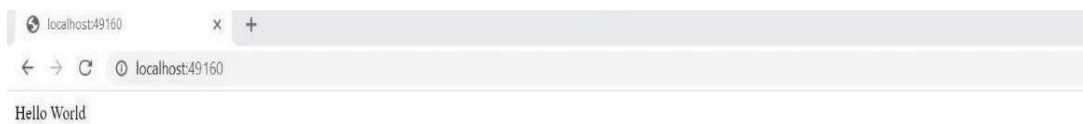
Solution:

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

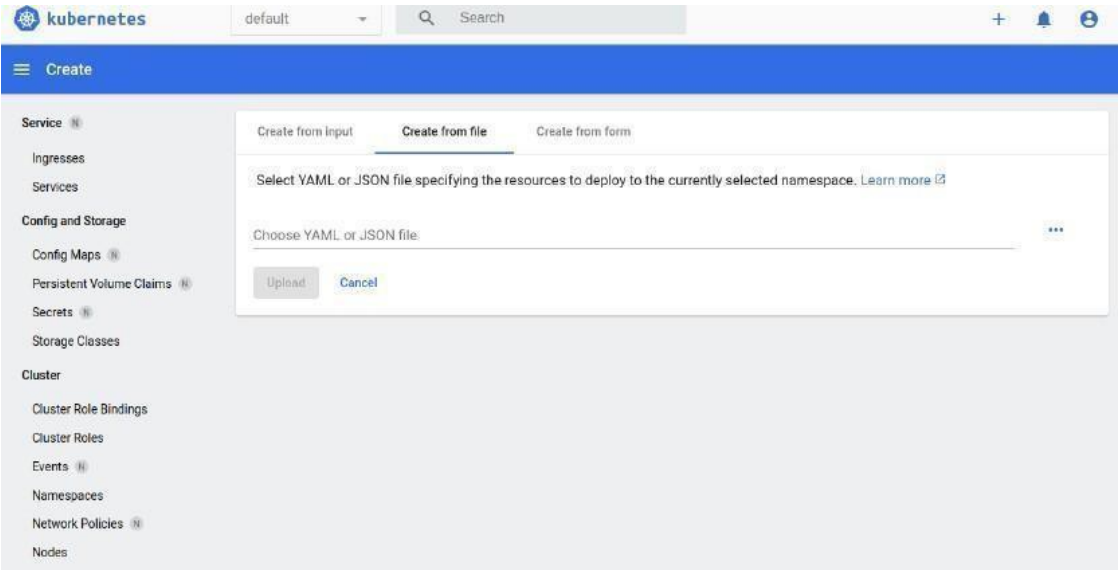
Solution:

- 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:      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_AP
P
value: "false"
```



Kubernetes clusters

Resource group: Filter...

Location: Filter...

Search

Create cluster +

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

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