

Assignment - 4

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Maximum Marks	2 Marks
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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 shows the Docker Playground interface in a web browser. The top bar displays the time 03:58:11 and a 'CLOSE SESSION' button. The left sidebar shows 'Instances' with a list of instances, including '192.168.0.8 node1'. The main area shows the details of the selected instance, including its IP (192.168.0.8), memory usage (1.57%), and CPU usage (0.86%). Below this, there are 'DELETE' and 'EDITOR' buttons. The 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
841194d080c8: 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 ~
$
```

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
```

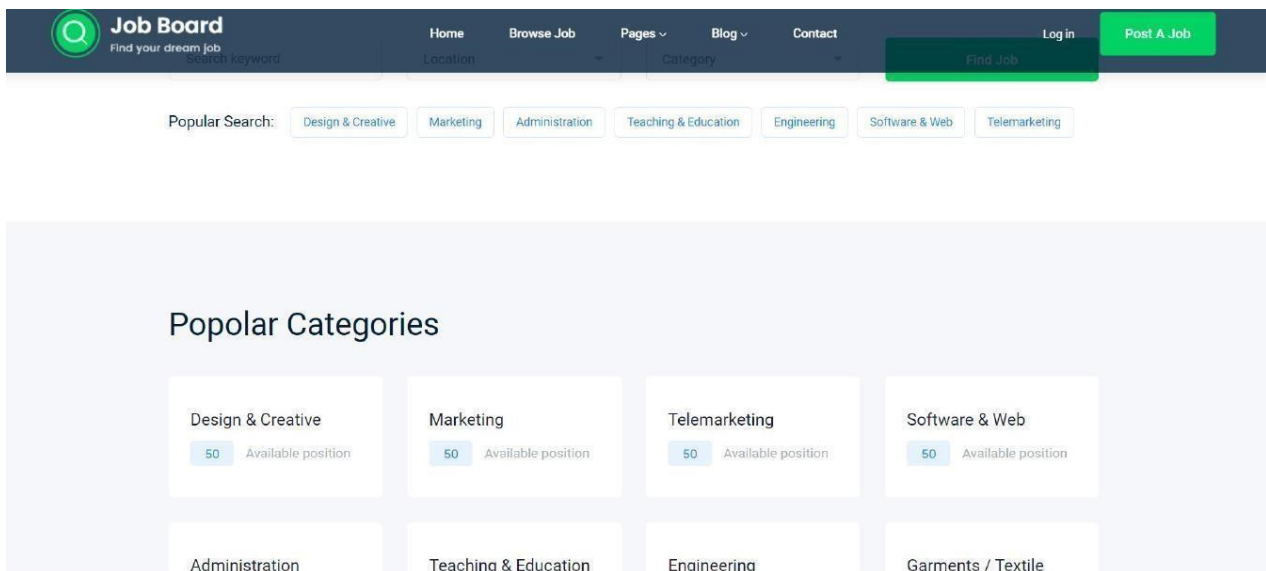
```
WORKDIR /flaskApp
```

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

```
COPY . /flaskApp
```

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

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

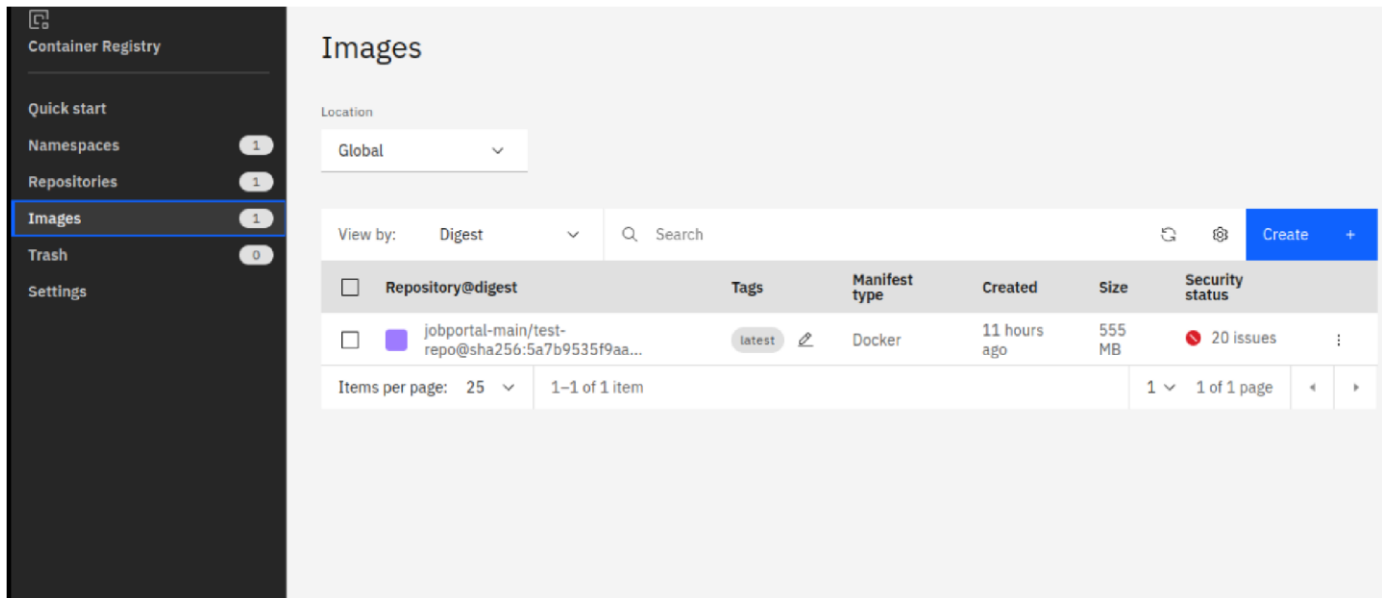


Question-3:

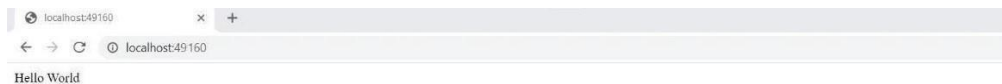
Create a IBM container registry and deploy hello world app or job portal app.

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:

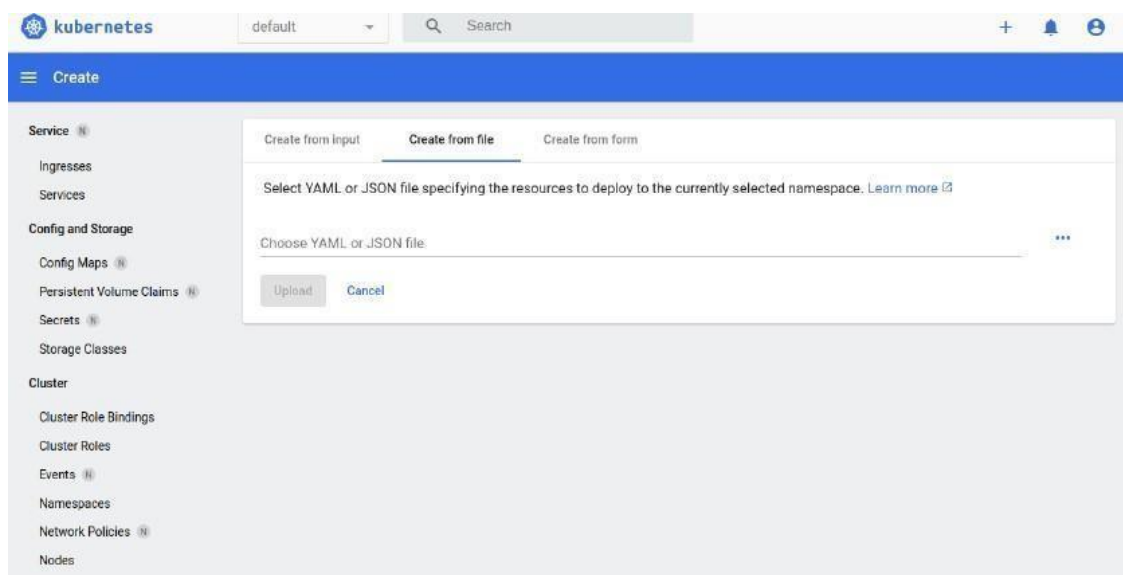
Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

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 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