

Assignment -4

Assignment Date	22 October 2022
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Role	Team Member 1
Student Roll Number	113119UG04057
Maximum Marks	2 Marks
Team ID	PNT2022TMID22399

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. On the left, there's a sidebar with a clock showing 03:57:32, a 'CLOSE SESSION' button, and a list of instances. One instance is visible: '192.168.0.8 node1'. The main area displays details for a container named 'cddvksm0_cddvkvm0qau000a07j5g'. It shows the IP address '192.168.0.8', memory usage '1.24% (49.52MiB / 3.906GiB)', and CPU usage '0.31%'. There are buttons for 'OPEN PORT', 'DELETE', and 'EDITOR'. Below this, a 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
```

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

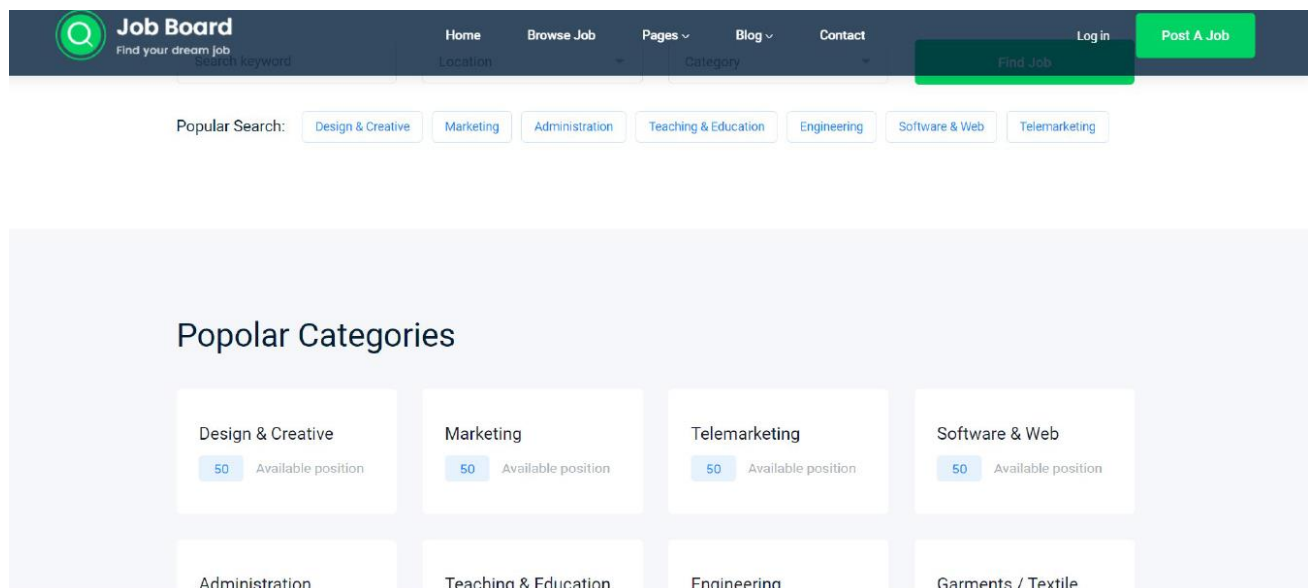
WORKDIR /flaskApp

RUN pip install -r requirements.txt

COPY . /flaskApp

ENTRYPOINT ["python"]

CMD ["app.py"]

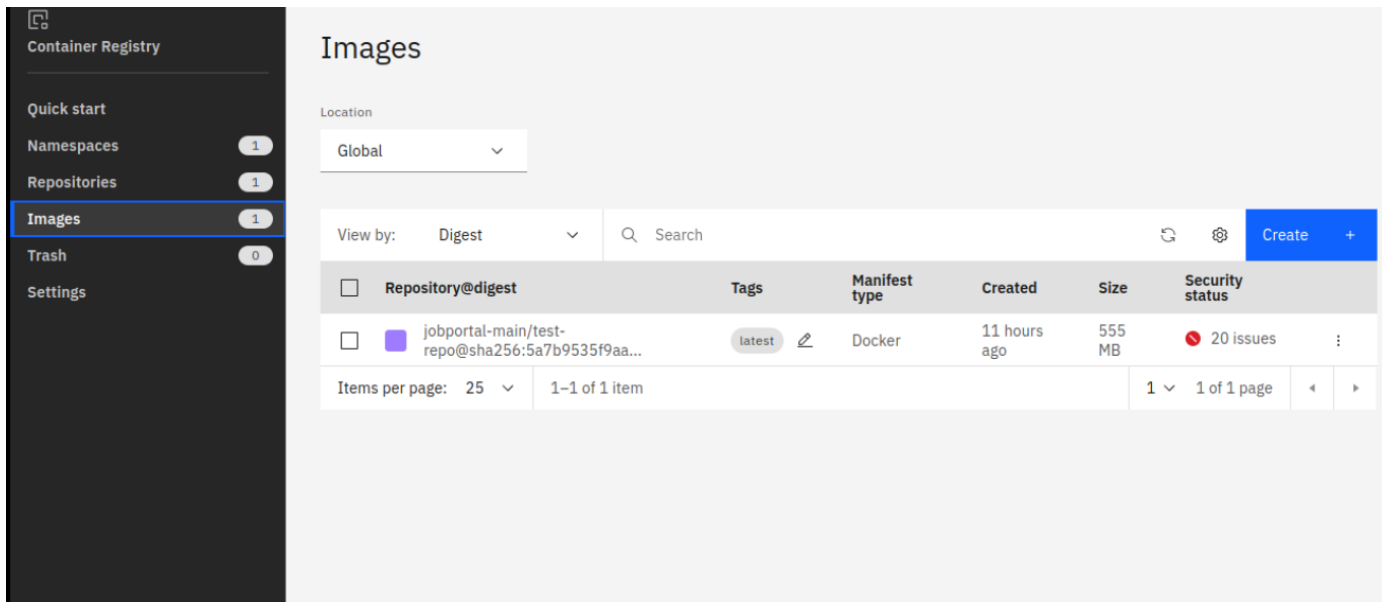


Question-3:

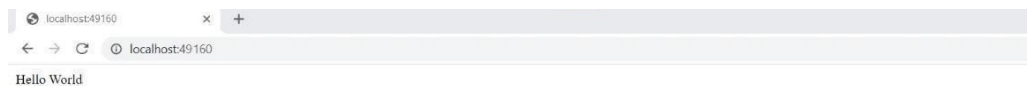
Create a IBM container registry and deploy hello world app or job portal app.

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.

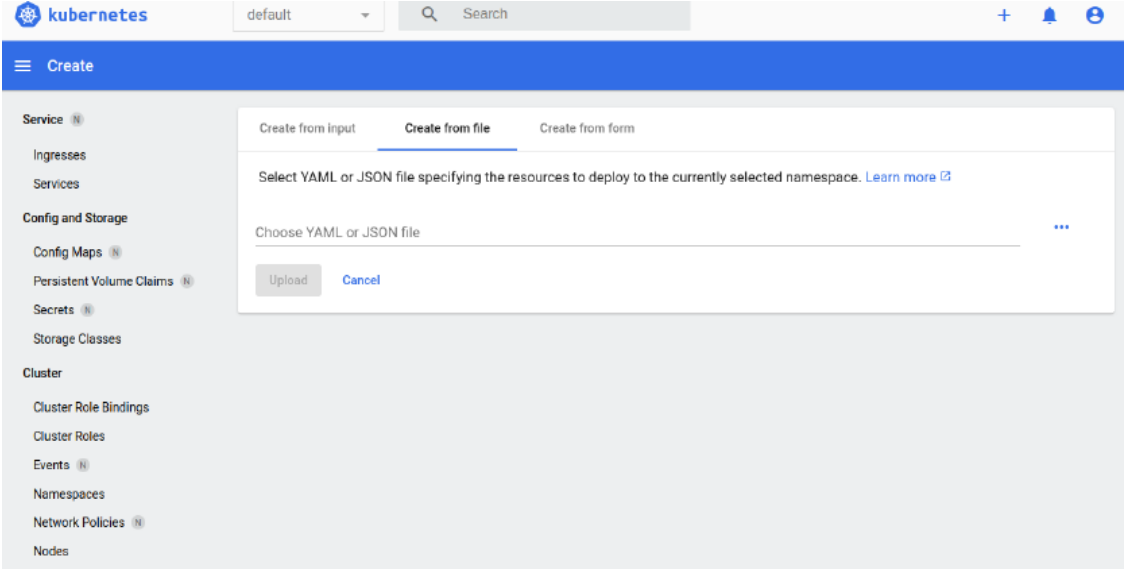
Solution:

- 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... <div></div>		Location: Filter... <div></div>		Search <div></div>		Create cluster +
Name	State	Location	Worker count	Created	Version	Infrastructure
jaga-cluster	<div></div> Normal	Amsterdam 03	1	Expires in 30 days	1.23.12_1546	Classic
Items per page: 25 <div></div>		1-1 of 1 item			1 <div></div>	1 of 1 page <div></div>