

## ASSIGNMENT -4 : DOCKER DESKTOP (Kubernetes)

Assignment date	04 November 2022
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Maximum Marks	2 Marks

### Question 1:

Pull an image from docker hub and run it on docker playground.

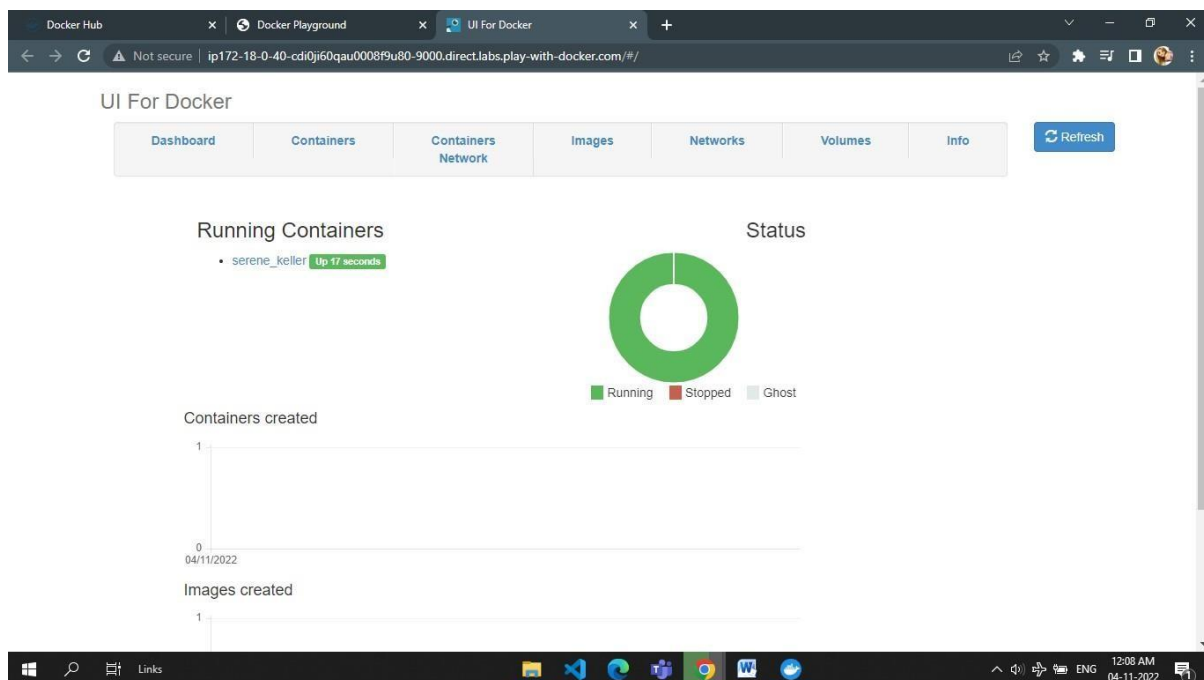
### Solution 1:

`docker pull uifd/ui-for-docker`

`docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker`

The screenshot shows the Docker Playground interface in a web browser. The top bar indicates the session is active. The left sidebar shows a list of instances, with one instance named 'node1' at IP 192.168.0.13. The main panel displays details for the selected container 'cdi0ji60\_cdi0jpe0qau0008f9u8g'. It shows the IP address 192.168.0.13, memory usage of 1.59% (63.77MiB / 3.906GiB), and CPU usage of 0.45%. There is an 'OPEN PORT' button set to 9000 and an 'SSH' button. Below these are 'DELETE' and 'EDITOR' buttons. The terminal window at the bottom 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 FWD team. #
#####
[node1] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.13 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
c2557355d58010b2607d19372fd954a94b3f2c922d1c5377d8458ff941cb2cab
[node1] (local) root@192.168.0.13 ~
$
```



## Question 2:

Create a docker file for the job portal app or hello world app and deploy it in docker desktop app.

### Solution 2:

#### Docker file

Dockerfile - Notepad

File Edit Format View Help

```
FROM python:3.8
```

```
WORKDIR /app
```

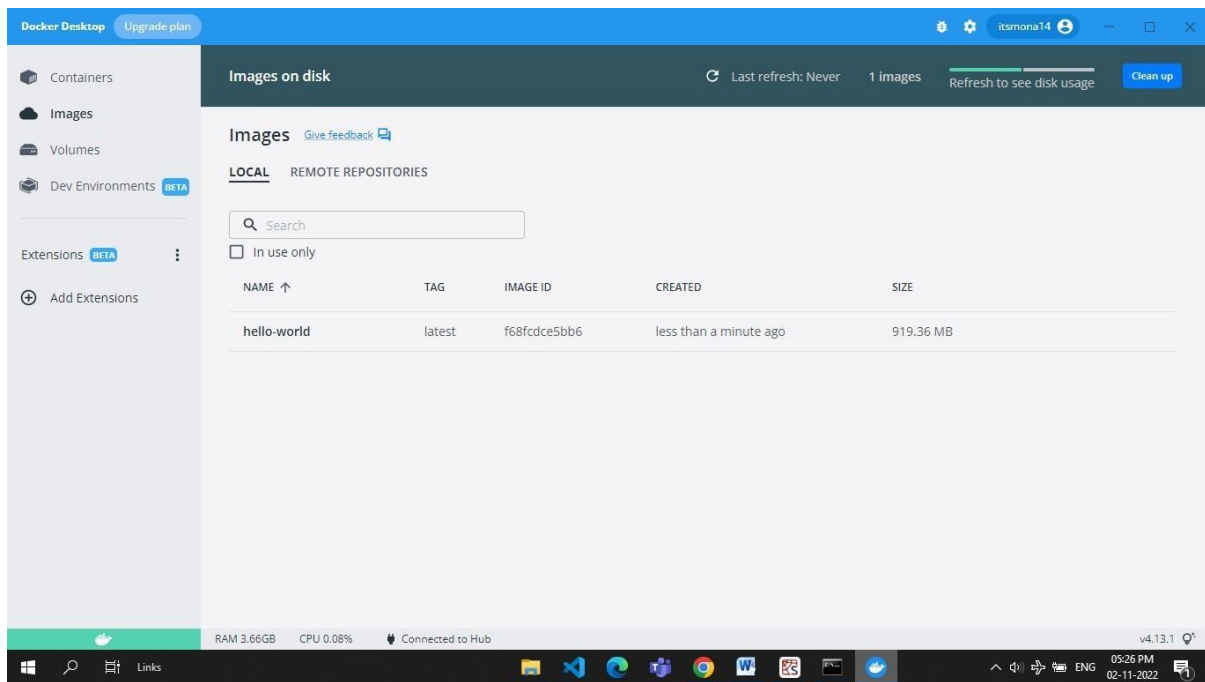
```
ADD . /app
```

```
COPY requirements.txt /app
```

```
RUN python3 -m pip install -r requirements.txt
```

```
EXPOSE 5000
```

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

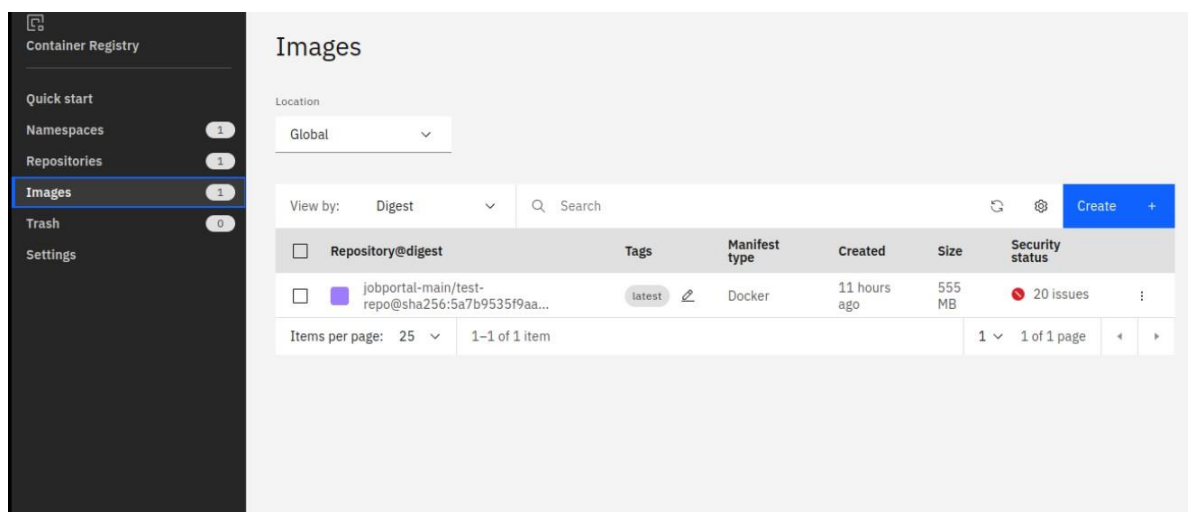


### Question 3:

Create an IBM container registry and deploy helloworld app or job portal app.

### Solution 3:

**My image link:** [au.icr.io/hello-world-app/hello-world](https://au.icr.io/hello-world-app/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 4:

```
apiVersion:
v1kind:
Service
metadata:
  name: hello-world-
  deploymentSpec:
    ports:
      - port: 5000
        targetPort:
          5000selector:
      app: hello-world
---
apiVersion:
apps/v1kind:
Deployment
metadata:
  name: hello-world-
  deploymentSpec:
    replic
as: 1
select
or:
  matchLabels:
    app: hello-
worldtemplate:
  meta
da
ta
:
la
be
ls
:
  app: hello-
worldspec:
  containers:
    - name: hello-world
      image: au.icr.io/hello-world-app/hello-
worldimagePullPolicy: Always
      ports:
        - containerPort: 5000
```

mycluster-free - IBM Cloud

cloud.ibm.com/kubernetes/clusters/cdi1j33f0a6mchav5kig/overview

IBM Cloud Search resources and products... Catalog Manage Monashree K's Account

Clusters / mycluster-free Normal Expires in 29 days Add tags Help Kubernetes dashboard Actions...

Overview

Worker nodes

Worker pools

DevOps New

Expires in 29 days: Be sure to back up your data, your cluster will be deleted in 29 days. To access the full capabilities of the service, try out a standard cluster.

Node status 1 of 1 Normal Details

Add-on status 0 of 0 Normal Details

Master status Normal Docs

Ingress status Unknown Docs

Details

Cluster ID	Version	Infrastructure	Zones
cdi1j33f0a6mchav5kig	1.24.7_1542	Classic	Milan 01
Created	Resource group	Image security enforcement	
04/11/2022, 01:12	Default	Enable	

mycluster-free - Kubernetes Dashboard

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdi1j33f0a6mchav5kig/service/#/log/default/hello-world-deployment-6c75b9c898-p4ntv/pod?namespac...

kubernetes default Search

Workloads > Pods > hello-world-deployment-6c75b9c898-p4ntv > Logs

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Ingress Classes
- Services

Config and Storage

Logs from hello-world in hello-world-dep...

```
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.30.82.142:5000
Press CTRL+C to quit
```

Logs from Nov 4, 2022 to Nov 4, 2022 UTC