

## 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.

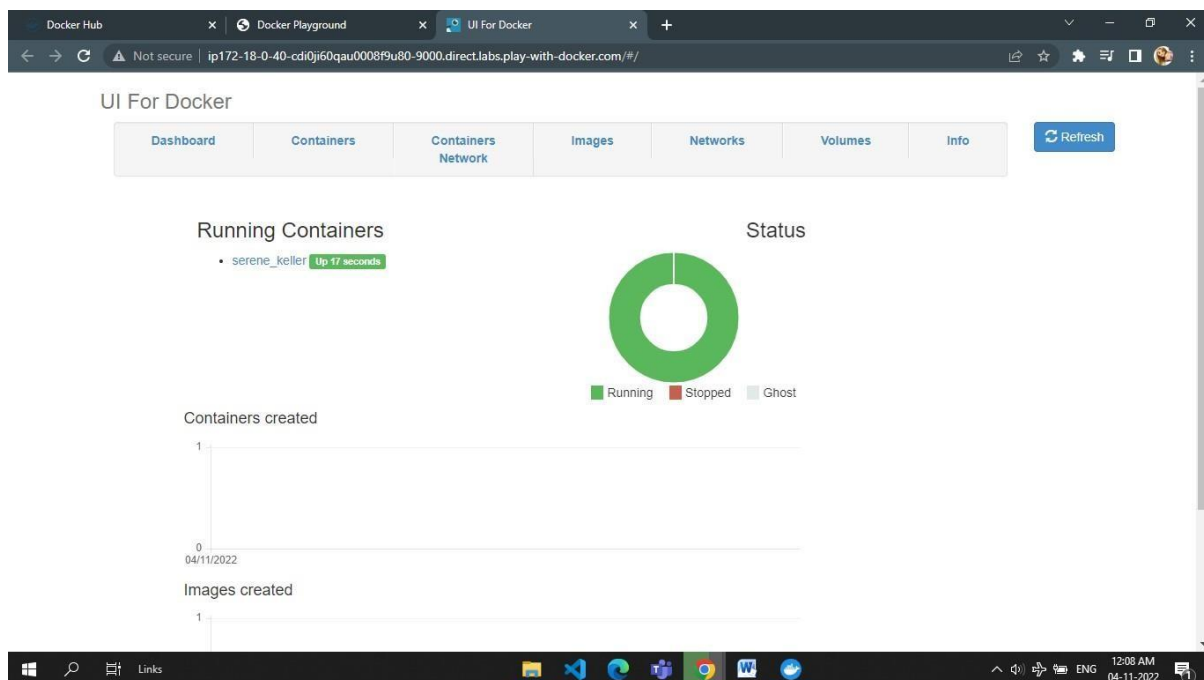
### Solution 1:

`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 displays the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:57:05, a 'CLOSE SESSION' button, and a list of instances. The main area shows details for a container named 'cdi0ji60\_cdi0jpe0qau0008f9u8g'. It lists the IP as 192.168.0.13, memory usage as 1.59% (63.77MiB / 3.906GiB), and CPU usage as 0.45%. There's an 'OPEN PORT' button set to 9000 and an SSH command: 'ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-'. Below this 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
```

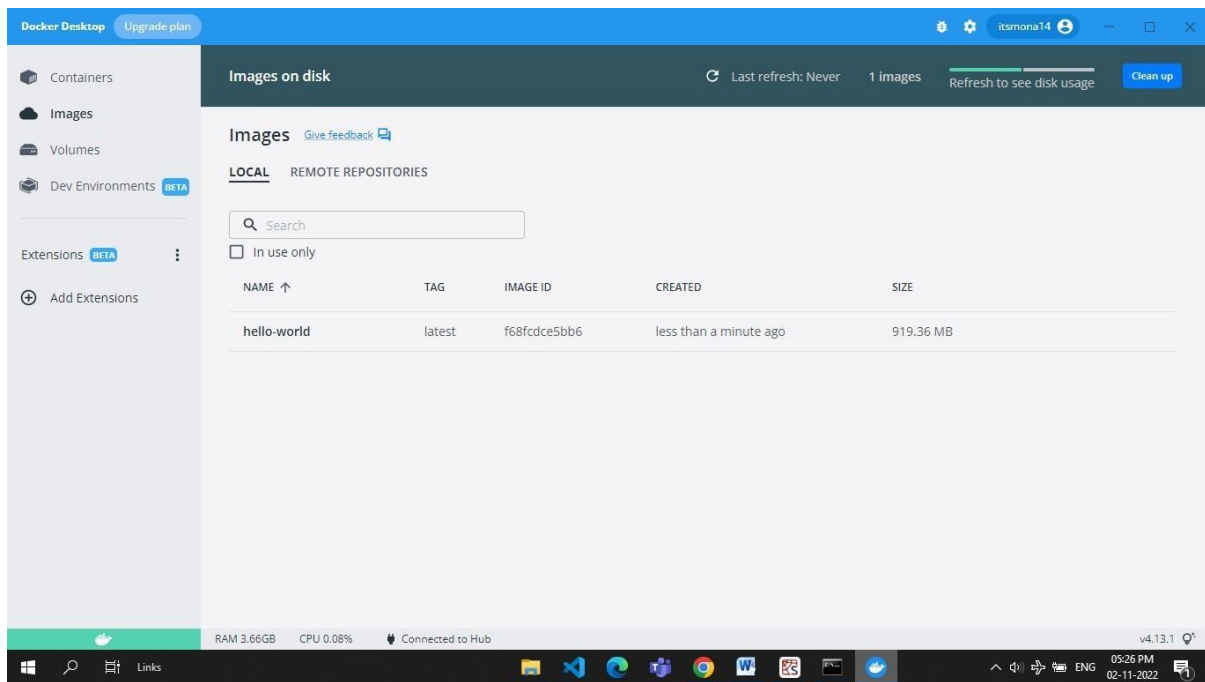
```
ADD . /app
```

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

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

```
EXPOSE 5000
```

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

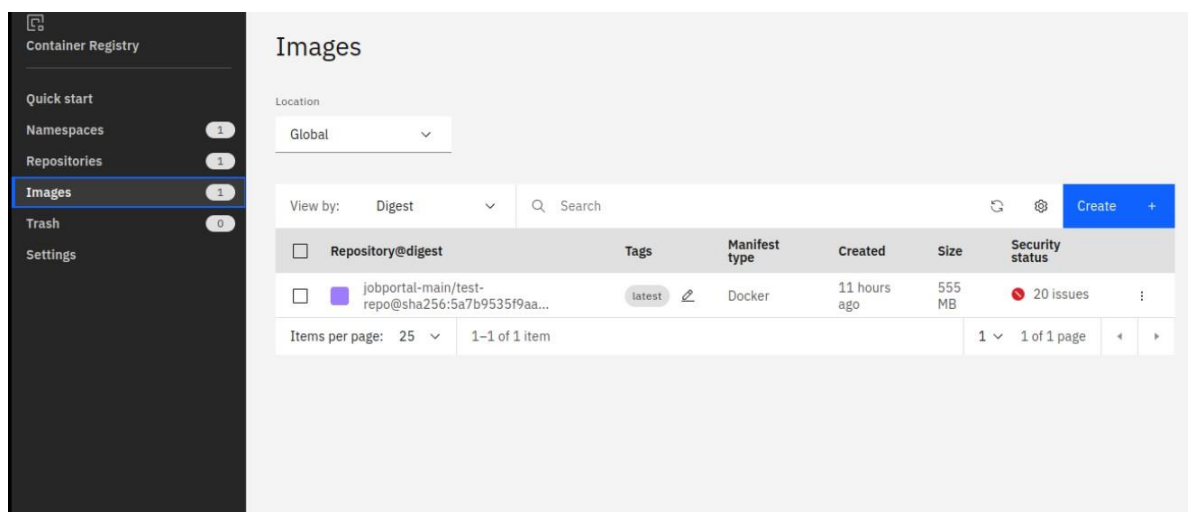


### Question 3:

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?namespace=...

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