

Assignment 4

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
```

Explore [uifd/ui-for-docker](#)

 **uifd/ui-for-docker** ☆ Pulls 10M+

By [uifd](#) • Updated 6 years ago

A web interface for Docker, formerly known as DockerUI. Deprecated, use Portainer for new features.

Image

Overview Tags

UI For Docker

This repo is deprecated. Development continues at: [portainer/portainer](#)

[chat on gitter](#)

UI For Docker is a web interface for the Docker Remote API. The goal is to provide a pure client side implementation so it is effortless to connect and manage docker.

Docker Pull Command

```
docker pull uifd/ui-for-docker
```

Activate Windows
Go to Settings to activate Windows.

Windows taskbar: Type here to search, 21:21, 04-11-2022

Docker playground:

03:45:22

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18
node1

cdijgm3_cdijhlm3tccg00a7r74g

IP
192.168.0.18

OPEN PORT
9000

Memory
1.63% (65.11MiB / 3.906GiB)

CPU
0.51%

SSH
ssh ip172-18-0-26-cdijgm3tccg00a7r71g@direct.labs.play-

DELETE

EDITOR

```
# The FWD team.
#####
[node1] (local) root@192.168.0.18 ~
$ docker pull uifd/ui-for-docker
bash: $: command not found
[node1] (local) root@192.168.0.18 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080e8: 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@192.168.0.18 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
unknown flag: --privileged
See 'docker run --help'.
[node1] (local) root@192.168.0.18 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
78ab97261cc11c0d591ea17aca7505d9b1538af8f0e882f34eb334ba4657ba04
[node1] (local) root@192.168.0.18 ~
$
```

Activate Windows
Go to Settings to activate Windows.

UI For Docker

Dashboard

Containers

Containers Network

Images

Networks

Volumes

Info

Refresh

Running Containers

serene_keller Up 17 seconds

Status

Running

Stopped

Ghost

Containers created

Images created

Question 2:

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

Solution 2:

DockerFile

Dockerfile - Notepad

File Edit Format View Help

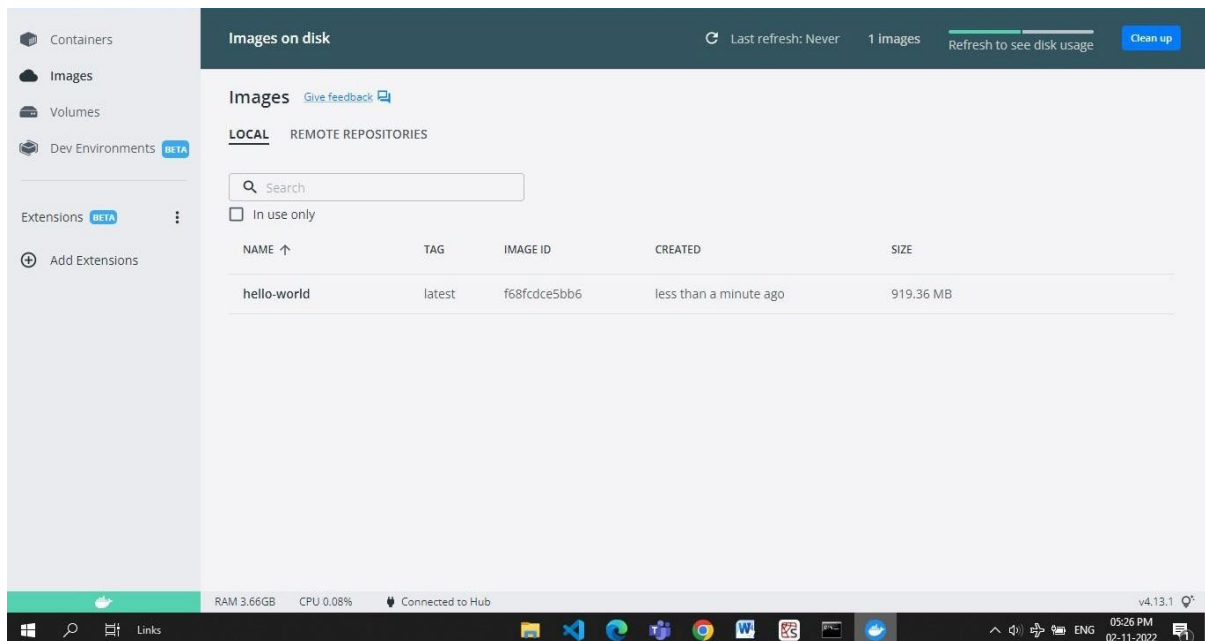
```
FROM python:3.8
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python", "app.py"]
```

Bulid Docker image

```
C:\Windows\System32\cmd.exe

e:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker build -t hello-world .
(a) Building 160.4s (10/10) FINISHED
-> [internal] load build definition from Dockerfile
-> >> transferring dockerfile: 194B
-> [internal] load .dockerignore
-> >> transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.8
-> [1/1] FROM docker.io/library/python:3.8@sha256:089d750211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5
-> resolve docker.io/library/python:3.8@sha256:089d750211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5
-> sha256:900972f2eed8c17c25b21573681051f902e054f57ccdd7eb43937a1a47114400 8.56kB / 8.56kB
-> sha256:17c9e6141fdb3307e5a1c07d4f9b6a05ac1490e9029fa3ea55470d4504f7770 55.05MB / 55.05MB
-> sha256:4edced8587e0c18412017019074f5e04a8ede4e2fc89d06ef13df3f80d78a70d 10.08MB / 10.08MB
-> sha256:089d750211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5 1.06kB / 1.06kB
-> sha256:254101fc7737ef89a912ce9ad748801a01e0a35bfff1cc5e7d0bb86d0b6e1c3f 2.22kB / 2.22kB
-> sha256:de44dc6ca8081bb007377e10210a914da403bc93fa706dcbcf2dcf1000b6f1 5.10MB / 5.10MB
-> sha256:a7909cfff4f4e6a91201f076b19ecbe93c03ea4ded0d14042aecb4c0c4211a43 54.59MB / 54.59MB
-> sha256:74fbfd6af91271fb80f0a1716224dce5c0ebad3609943792a9cb6ba4dd6d3d 196.07MB / 196.07MB
-> sha256:10fe51aed099f36017fe42b598b1a622b29ebe8c3622e92e13df14578025eb37 6.29MB / 6.29MB
-> sha256:2b979a731384cf50dac8fd255d381b70020d67b69b45c1a2b6c3ea10b92636d4 17.39MB / 17.39MB
-> sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590500f1506de1 234B / 234B
-> extracting sha256:17c9e6141fdb3307e5a1c07d4f9b6a05ac1490e9029fa3ea55470d4504f7770
-> sha256:5b700bfcf0e62e5d24e9f706a7748a194c4fd7312a3970004637f72ce91b6 2.09MB / 2.09MB
-> extracting sha256:de44dc6ca8081bb007377e10210a914da403bc93fa706dcbcf2dcf1000b6f1
-> extracting sha256:4edced8587e0c18412017019074f5e04a8ede4e2fc89d06ef13df3f80d78a70d
-> extracting sha256:a7909cfff4f4e6a91201f076b19ecbe93c03ea4ded0d14042aecb4c0c4211a43
-> extracting sha256:74fbfd6af91271fb80f0a1716224dce5c0ebad3609943792a9cb6ba4dd6d3d
-> extracting sha256:10fe51aed099f36017fe42b598b1a622b29ebe8c3622e92e13df14578025eb37
-> extracting sha256:2b979a731384cf50dac8fd255d381b70020d67b69b45c1a2b6c3ea10b92636d4
-> extracting sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590500f1506de1
-> extracting sha256:5b700bfcf0e62e5d24e9f706a7748a194c4fd7312a3970004637f72ce91b6
-> [internal] load build context
-> >> transferring context: 1.15kB
-> [2/5] WORKDIR /app
-> [3/5] ADD . /app
-> [4/5] COPY requirements.txt /app
-> [5/5] RUN python3 -m pip install -r requirements.txt
-> exporting to image
-> exporting layers
-> writing image sha256:f68fcdce5bb665f00ebf47bc4d137a4f7e053348402c5b5dad71121d7d43f63
-> naming to docker.io/library/hello-world
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```

Deploy it on Docker hub



```
C:\Windows\System32\cmd.exe
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
hello-world latest f68fcdce5bb6 5 minutes ago 919MB

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

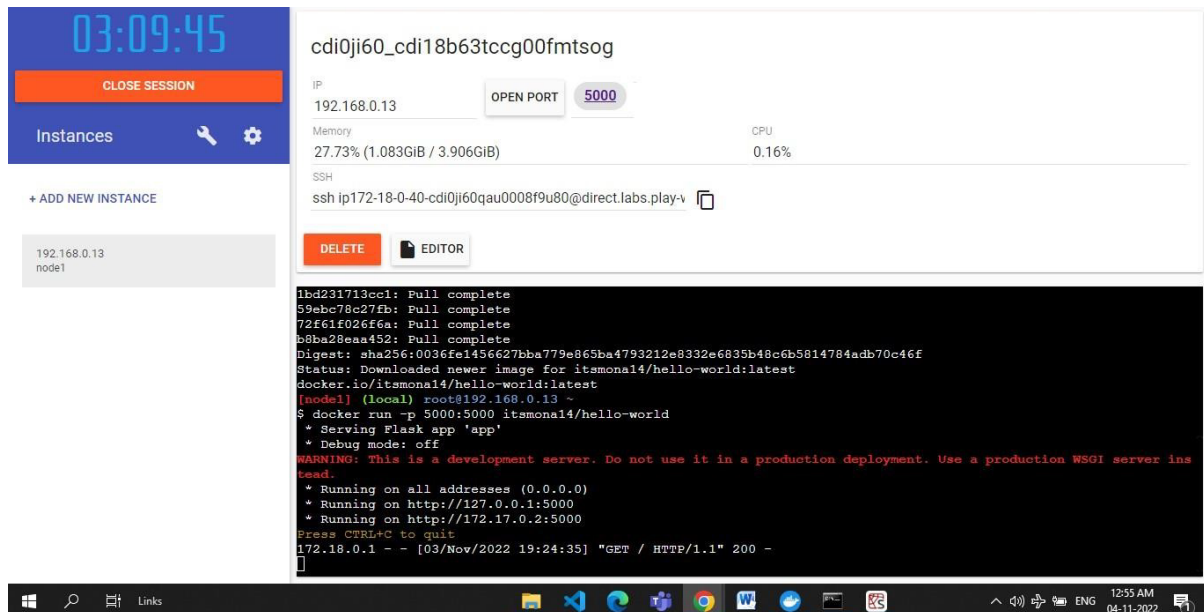
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world itsmona14/hello-world

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push itsmona14/hello-world
Using default tag: latest
The push refers to repository [docker.io/itsmona14/hello-world]
373eb5cf4ceb: Pushed
1a5085de1de5e: Pushed
090c85cb75c5: Pushed
ded8299bb8f1a: Pushed
1fe0699af9f7: Mounted from library/python
156568a71809: Mounted from library/python
5fca8a94d542: Mounted from library/python
6b183c2e3d7: Mounted from library/python
802fd36bd3d5: Mounted from library/python
d1dec9817839: Mounted from library/python
d38adf39e1dd: Mounted from library/python
4ed121b04368: Mounted from library/python
d9d07d703dd5: Mounted from library/python
latest: digest: sha256:46ff91edc98aaa5d7fff51ba708b6498af3c4f64612d9a990bf437497555fd82 size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>
```

Tested it using Docker playground

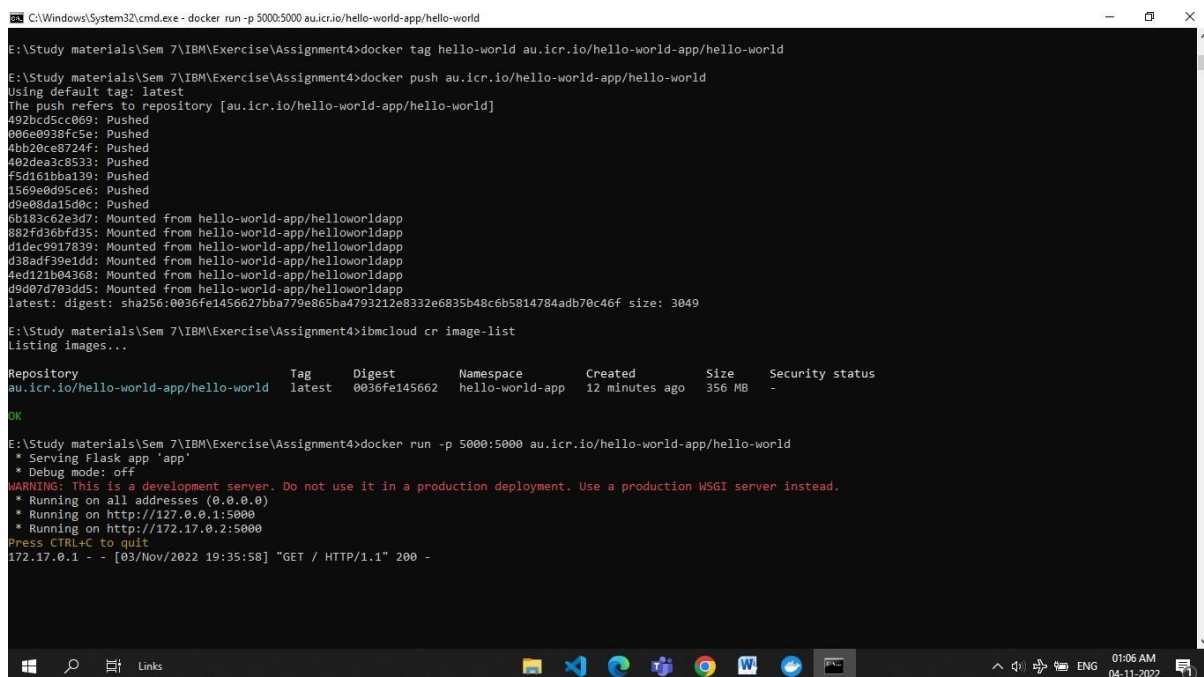
Question 3:



The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:09:45, a 'CLOSE SESSION' button, and an 'Instances' section. Below that, there's a '+ ADD NEW INSTANCE' button and a list of instances, including one named '192.168.0.13 node1'. The main area displays details for a container named 'cdi0ji60_cdi18b63tccg00fmtsog'. It shows the IP address '192.168.0.13', an 'OPEN PORT' button set to '5000', and resource usage: 'Memory 27.73% (1.083GiB / 3.906GiB)' and 'CPU 0.16%'. There's an SSH command: 'ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-v'. Below this are 'DELETE' and 'EDITOR' buttons. The terminal output shows the Docker run command: '\$ docker run -p 5000:5000 itsmona14/hello-world'. The output of the container shows the Docker version, the image being used, and the 'Hello from Docker!' message. It also shows the container's IP address and the port it's running on.

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

Solution 3:



The screenshot shows a Windows command prompt with the following commands and output:

```
C:\Windows\System32\cmd.exe - docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc069: Pushed
006e0938f5e: Pushed
4bb20ce8724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1569e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/helloworldapp
882fd36bfd35: Mounted from hello-world-app/helloworldapp
01dec9917839: Mounted from hello-world-app/helloworldapp
438adf39e1dd: Mounted from hello-world-app/helloworldapp
4ed121b04368: Mounted from hello-world-app/helloworldapp
49d07d703dd5: Mounted from hello-world-app/helloworldapp
latest: digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>ibmcloud cr image-list
Listing images...

Repository          Tag      Digest      Namespace      Created      Size      Security status
au.icr.io/hello-world-app/hello-world  latest  0036fe145662  hello-world-app  12 minutes ago  356 MB  -

OK

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
* 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://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [03/Nov/2022 19:35:58] "GET / HTTP/1.1" 200 -
```

Container Registry

Quick start

Namespaces1

Repositories1

Images1

Trash1

Settings

Repositories

Location

Sydney

Search

Create

<input type="checkbox"/>	Name	Image count	Namespace	Last updated
<input checked="" type="checkbox"/>	<div>hello-world</div> <div>au.icr.io/hello-world-app/hello-world</div>	1	hello-world-app	15 minutes ago

Items per page: 251-1 of 1 item

11 of 1 page

Windows taskbar with icons for File Explorer, Edge, Word, and others. System tray shows date and time: 01:06 AM 04-11-2022.

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: v1
kind: Service
metadata:
  name: hello-world-deployment
spec:
  ports:
    - port: 5000
      targetPort: 5000
  selector:
    app: hello-world
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: hello-world
  template:
    metadata:
      labels:
        app: hello-world
    spec:
      containers:
        - name: hello-world
          image: au.icr.io/hello-world-app/hello-world
          imagePullPolicy: Always
          ports:
            - containerPort: 5000
```

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

cd1133f0a6mchav5kig

Version

1.24.7_1542

Infrastructure

Classic

Zones

Milan 01

Created

04/11/2022, 01:12

Resource group

Default

Image security enforcement

Enable

Windows Taskbar

01:37 PM 04-11-2022

kubernetes

default

Search

+

🔔

👤

Workloads > Deployments

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

CPU Usage


Memory Usage

Deployments


Name	Images	Labels	Pods	Created
hello-world-deployment	Show all	-	1 / 1	34 minutes ago



Windows Taskbar

03:48 PM 04-11-2022


 **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

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdi1j3380a6mchav5kig/.../ser...

   Links

   ENG 03:49 PM 04-11-2022 