

Assignment 4

Assignment date	18 October 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
```

Please check your inbox to verify the email associated with this account. You won't be able to create a repository or configure your Docker Hub without verifying your email address.

Wasm is a fast, light alternative to Linux containers – try it out today in the [Docker+Wasm Technical Preview](#)

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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 github](#)

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.

Goals

Docker Pull Command

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

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Docker playground:

The screenshot shows 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 displays details for a container named 'cdi0ji60_cdi0jpe0qau0008f9u8g'. It shows the IP address 192.168.0.13, an 'OPEN PORT' button set to 9000, and resource usage: 1.59% (63.77MiB / 3.906GiB) memory and 0.45% CPU. Below this is an SSH command: 'ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-with-docker.com'. There are 'DELETE' and 'EDITOR' buttons. A terminal window at the bottom shows a shell session where the user pulls the 'uifd/ui-for-docker:latest' image and runs it with 'docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker'.

Docker UI:

The screenshot shows the Docker UI interface. At the top, there's a navigation bar with tabs for 'Dashboard', 'Containers', 'Containers Network', 'Images', 'Networks', 'Volumes', and 'Info'. A 'Refresh' button is on the right. The main content area is titled 'Running Containers' and shows a list of containers, including 'serene_keller' which is 'Up 17 seconds'. To the right, there's a 'Status' section with a donut chart showing the status of containers: Running (green), Stopped (red), and Ghost (grey). Below this, there are two line graphs: 'Containers created' and 'Images created', both showing a count of 1 over time.

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

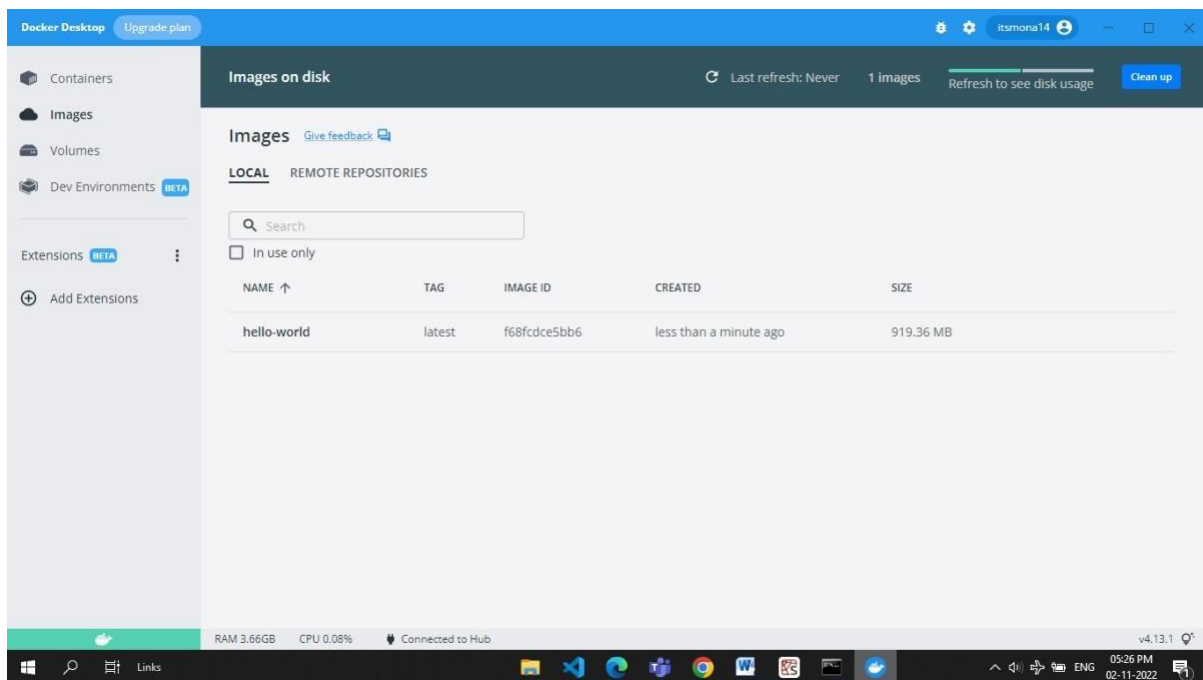
File Edit Format View Help

```
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 .
[+] 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
[1/5] FROM docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851fe77af3f1e3f3620d8519190b8aa1d5
-> resolve docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851fe77af3f1e3f3620d8519190b8aa1d5
-> sha256:908072f9ec8c17c25b21573681851f092e054f57cc076b43937a1a47114480 8.56kB / 8.56kB
-> sha256:17c9e0141fdb3387e5a1c07d4f9bda5ac1408e96029fa3ea55470d4504f7770 55.05MB / 55.05MB
-> sha256:4edced8587edc18412817019074f5e04a8edede2fc09d06af13df3f8bd78a70d 10.08MB / 10.08MB
-> sha256:089d758211770a2dd03ecc4b10a8d851fe77af3f1e3f3620d8519190b8aa1d5 1.86kB / 1.86kB
-> sha256:254101fc7737ef89a912ce9a37408801a01e0a3b0ff1cc9e7d08080d0866e1c3f 2.22kB / 2.22kB
-> sha256:de4adccceae001b0b97377e1027a9214da083bc93fa9903c0f2d4f1000e0f1 1.16MB / 1.16MB
-> sha256:a7909cfff0f46e6a91291fd76b19cbe93c03ea4ded0d14842aeb4c8c4211a43 54.59MB / 54.59MB
-> sha256:74fbfd6eaf91271fb88f0a1716224dce5c0ebead3609943792a9cbb4d6d3d 196.87MB / 196.87MB
-> sha256:16fe51aed099f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 6.29MB / 6.29MB
-> sha256:2b979a731384cf50dac8fd255d381b70028d67b09b45c1a2b6c3ea10b02636d4 17.39MB / 17.39MB
-> sha256:aa3c4359fdb43308669ae8ba70b2ebb713221ef3a3eca97f93590508f1506de1 234B / 234B
-> extracting sha256:17c9e0141fdb3387e5a1c07d4f9bda5ac1408e96029fa3ea55470d4504f7770
-> sha256:58700fbcfa8c82e5d24a9f76ba7748a194c4fd7f312a397800b4637f72ce91b6 2.09MB / 2.09MB
-> extracting sha256:de4adccceae001b0b97377e1027a9214da083bc93fa9903c0f2d4f1000e0f1
-> extracting sha256:4edced8587edc18412817019074f5e04a8edede2fc09d06af13df3f8bd78a70d
-> extracting sha256:a7909cfff0f46e6a91291fd76b19cbe93c03ea4ded0d14842aeb4c8c4211a43
-> extracting sha256:74fbfd6eaf91271fb88f0a1716224dce5c0ebead3609943792a9cbb4d6d3d
-> extracting sha256:16fe51aed099f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37
-> extracting sha256:2b979a731384cf50dac8fd255d381b70028d67b09b45c1a2b6c3ea10b02636d4
-> extracting sha256:aa3c4359fdb43308669ae8ba70b2ebb713221ef3a3eca97f93590508f1506de1
-> extracting sha256:58700fbcfa8c82e5d24a9f76ba7748a194c4fd7f312a397800b4637f72ce91b6
-> [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:f68fcdce5b665f0e8f47bc4d137a4f7e053340402c5bfda07112d7d43f63
-> 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

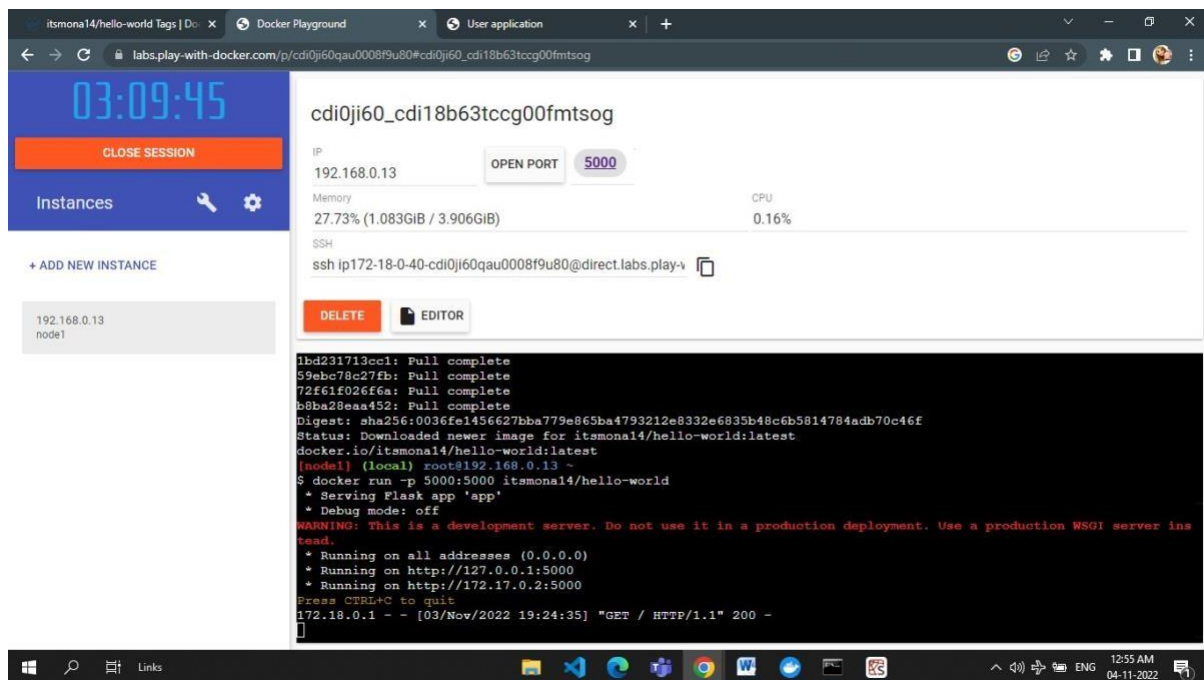
Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

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
1e505dc1de5e: Pushed
090c85cb75c5: Pushed
ded8299b8f1a: Pushed
1fe0699af9f7: Mounted from library/python
156568a71809: Mounted from library/python
5fca8a94d542: Mounted from library/python
6b183c62e3d7: Mounted from library/python
882fd36bfd35: Mounted from library/python
d1dec9917839: Mounted from library/python
d38adf39e1dd: Mounted from library/python
4ed121b04368: Mounted from library/python
09d07d703dd5: Mounted from library/python
latest: digest: sha256:46ff91edc98aaa5d7fff51ba708b6498af3c4f64612d9a990bf437497555fd82 size: 3049

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

Tested it using Docker playground

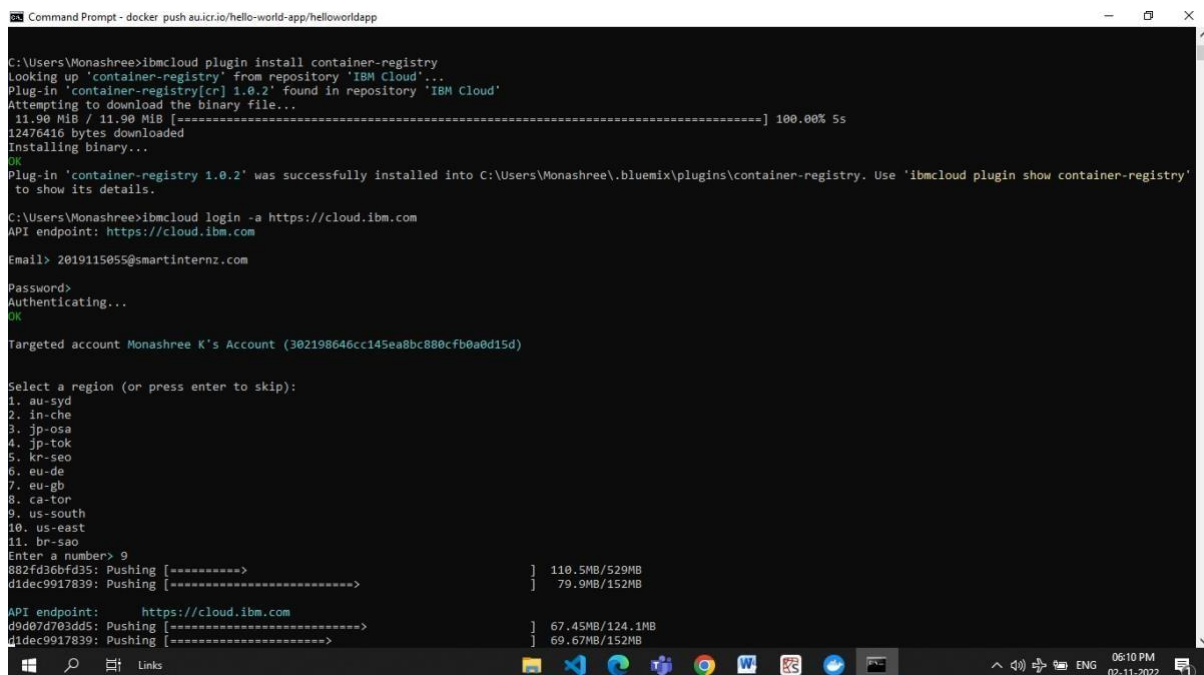


Question 3:

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



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

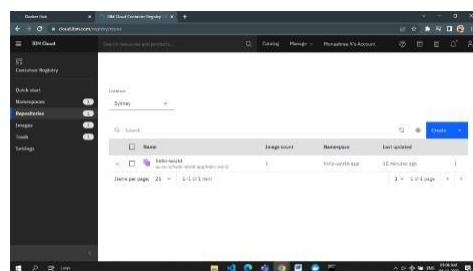
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc0e0: Pushed
006e0938fc5e: Pushed
4bb20ce8724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1559e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/hello-worldapp
882fd36bf9d35: Mounted from hello-world-app/hello-worldapp
d1dec9917839: Mounted from hello-world-app/hello-worldapp
d38adf39e1dd: Mounted from hello-world-app/hello-worldapp
4ed121b04368: Mounted from hello-world-app/hello-worldapp
d9d07d703dd5: Mounted from hello-world-app/hello-worldapp
latest: digest: sha256:0030fe1456627bba779e805ba4793212e8332e6835b48c6b5814784adb70c46f 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  0030fe145662    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://172.17.0.1:5000
* 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 -
```



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:

<https://raw.githubusercontent.com/itsmona14/IBM-Assignment-cloud/main/deployment.yaml>

```
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

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

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oOro

Normal

Unknown

Details

Details g

Docs

Details

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Default

Image security enforcement

Enable

kubernetes

default

Search

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Workloads > Deployments

Workloads

CPU Usage

Memory usage

Daemon Sets

Replication Controllers

Service

Ingresses

Ingress Classes

Services

Deployments

Name

Images

Labels

Pods

Created I

hello-world-deployment

Show all

1 / 1

34 minutes ago

Config Maps

Links

File Explorer, Microsoft Edge, Microsoft Word, Google Chrome, Wondershare PDFElement

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