

Assignment 4

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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
```


 docker hub

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Upgrade

711719104

Explore uifd/ui-for-docker



uifd/ui-for-docker ☆

By [uifd](#) • Updated 6 years ago

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

Image

Pulls

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.

Goals

- Minimal dependencies - I really want to keep this project a pure html/js app.

Docker Pull Command

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

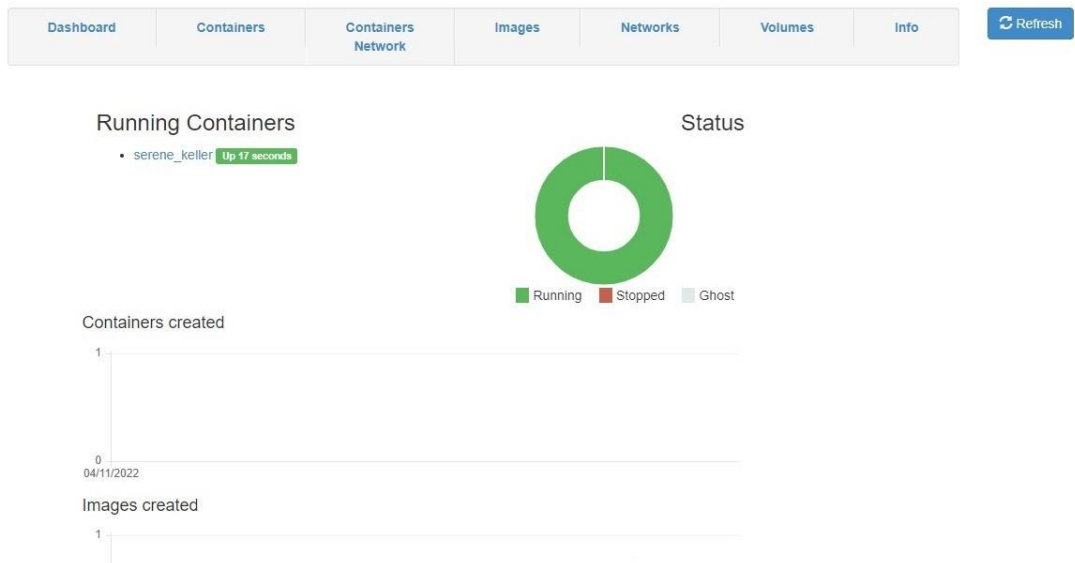
Docker playground:

The screenshot shows the Docker Playground interface in a web browser. The URL is https://labs.play-with-docker.com/p/cdoseje3tccg00aokbjg#cdoseje3_cdosevm3tccg00aokbk0. The interface includes a sidebar with a timer (03:44:55), a 'CLOSE SESSION' button, and an 'Instances' section with a '+ ADD NEW INSTANCE' button. The main area displays the instance name 'cdoseje3_cdosevm3tccg00aokbk0', its IP address '192.168.0.8', and an 'OPEN PORT' button. Below this, there are 'Memory' and 'CPU' sections, an 'SSH' button, and a 'DELETE' button. The terminal window shows the following commands and output:

```
[node1] (local) root@192.168.0.8 ~
$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
hello-world   latest   feb5d9fea6a5  13 months ago  13.3kB
[node1] (local) root@192.168.0.8 ~
$ docker run -d -p 9000:9000 --privileged -v/var/run/docker.sock hello-world
b56c7d9e14d6aab9e6606acc7e37f97619b33615b250bd9a9664ecfec9dec7f7
[node1] (local) root@192.168.0.8 ~
$ docker pull hello-world:latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
[node1] (local) root@192.168.0.8 ~
$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
hello-world   latest   feb5d9fea6a5  13 months ago  13.3kB
[node1] (local) root@192.168.0.8 ~
$
```

Docker UI:

UI For Docker



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

```
1 FROM python:3.10.6
2 WORKDIR /app
3 COPY requirements.txt ./
4 RUN pip install -r requirements.txt
5 COPY . .
6 EXPOSE 5000
7 CMD ["python", ". /app.py"]
8
```

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@sha256:089d758211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5
=> resolve docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5
=> sha256:9a00972ffecdc8c17c25b21573681851f092a054f57ccd7eb43937e1a47114480 8.56kB / 8.56kB
=> sha256:17c9e6141fdb3387e5a1c07d4f9bba05ac1498e96029fa3ea55470d4504f7770 55.05MB / 55.05MB
=> sha256:4edcd8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d 10.88MB / 10.88MB
=> sha256:089d758211770a2dd03ecc4b10a8d851f6f77ef3f1e3f3620d8519190b8aa1d5 1.06kB / 1.06kB
=> sha256:254101fcf737ef09e912ce9ad7488801a01e0a35bffc5e7d6bb86d0b0e1c3f 2.22kB / 2.22kB
=> sha256:de4a4c6cae8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1 5.16MB / 5.16MB
=> sha256:a7969cfff7b46e6a91291fd70b19ecbe93c03ea4ded0d14042aebc4c0c4211a43 54.59MB / 54.59MB
=> sha256:74fbfde6af91271fb88f0a1716224dce5c0beead3609943792a9cb6ba4d6d3d 196.87MB / 196.87MB
=> sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 6.29MB / 6.29MB
=> sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 17.39MB / 17.39MB
=> sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 234B / 234B
=> extracting sha256:17c9e6141fdb3387e5a1c07d4f9bba05ac1498e96029fa3ea55470d4504f7770
=> sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fdf7312a397800b4637f72ce91b6 2.89MB / 2.89MB
=> extracting sha256:de4a4c6cae8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1 1.35s
=> extracting sha256:4edcd8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d 1.80s
=> extracting sha256:a7969cfff7b46e6a91291fd70b19ecbe93c03ea4ded0d14042aebc4c0c4211a43 13.1s
=> extracting sha256:74fbfde6af91271fb88f0a1716224dce5c0beead3609943792a9cb6ba4d6d3d 13.6s
=> extracting sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 0.4s
=> extracting sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 1.1s
=> extracting sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 0.0s
=> extracting sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fdf7312a397800b4637f72ce91b6 0.4s
=> [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:f68fcdce5bb665f00e8f47bc4d137a4f7e0533348402c5bfdad71121d7d43f63
=> naming to docker.io/library/hello-world
0.0s
```

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

Deploy it on Docker hub

Docker Desktop Upgrade plan

Containers Images Volumes Dev Environments **BETA**

Extensions **BETA** Add Extensions

Images on disk Last refresh: Never 1 images Refresh to see disk usage **Clean up**

Images [Give feedback](#)

LOCAL REMOTE REPOSITORIES

Search

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NAME ↑	TAG	IMAGE ID	CREATED	SIZE
hello-world	latest	f68fcdce5bb6	less than a minute ago	919.36 MB

RAM 3.66GB CPU 0.08% Connected to Hub v4.13.1

```
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]
373eb5cf4cab: Pushed
1e505dc1de5e: Pushed
098c85cb75c5: 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
d9d07d703dd5: Mounted from library/python
latest: digest: sha256:46ff91edc98aaa5d7fff51ba708b6498af3c4f64612d9a990bf437497555fd82 size: 3049
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>
```

Tested it using Docker playground

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a timer '03:09:45', a 'CLOSE SESSION' button, and a list of instances. The main area shows details for a container named 'cdi0ji60_cdi18b63tccg00fmtsog' with IP '192.168.0.13'. It includes buttons for 'OPEN PORT' (set to 5000), 'DELETE', and 'EDITOR'. The terminal window shows the following output:

```
1bd231713cc1: Pull complete
59ebc78c27fb: Pull complete
72f61f026f6a: Pull complete
b8ba28eaa452: Pull complete
Digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f
Status: Downloaded newer image for itsmona14/hello-world:latest
docker.io/itsmona14/hello-world:latest
(node1) (local) root@192.168.0.13 ~
$ docker run -p 5000:5000 itsmona14/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
172.18.0.1 - - [03/Nov/2022 19:24:35] "GET / HTTP/1.1" 200 -
```

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

The screenshot shows a Command Prompt window with the following commands and output:

```
C:\Users\Monashree>ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
11.90 MiB / 11.90 MiB [=====] 100.00% 5s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Monashree\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\Monashree>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> 2019115055@smartinternz.com
Password>
Authenticating...
OK
Targeted account Monashree K's Account (302198646cc145ea8bc880cfb8a0d15d)

Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
882fd36bfd35: Pushing [=====] 110.5MB/529MB
d1dec9917839: Pushing [=====] 79.9MB/152MB

API endpoint: https://cloud.ibm.com
d9d07d703dd5: Pushing [=====] 67.45MB/124.1MB
d1dec9917839: Pushing [=====] 69.67MB/152MB
```

```

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]
492bcd5cc009: Pushed
006e0938fc5e: Pushed
40b28ce8724f: Pushed
402de03c8533: Pushed
f5d161bbe139: Pushed
1569e0d95ca6: Pushed
09e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/hello-world-app
882fd36bfd35: Mounted from hello-world-app/hello-world-app
d1dec9917839: Mounted from hello-world-app/hello-world-app
d38adf39e1dd: Mounted from hello-world-app/hello-world-app
4ed121b04368: Mounted from hello-world-app/hello-world-app
d9d07d703dd5: Mounted from hello-world-app/hello-world-app
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  350 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
- Namespaces 1
- Repositories 1**
- Images 1
- Trash 1
- Settings

Repositories

Location: Sydney

Create +

	Name	Image count	Namespace	Last updated
	<div>hello-world</div> <div>au.icr.io/hello-world-app/hello-world</div>	1	hello-world-app	15 minutes ago

Items per page: 25
1-1 of 1 item

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
```

The screenshot displays the IBM Cloud Kubernetes Dashboard for a cluster named 'mycluster-free'. The cluster is in a 'Normal' state and will expire in 29 days. The dashboard provides a summary of the cluster's components and details.

Node status	Add on status	Master status	Ingress status
1 of 1 Normal	0 of 0 Normal	Normal	Unknown
Details ↓	Details ↓	Docs ↗	Docs ↗

Details			
Cluster ID cd14j3cfe0a6mchav0k1g	Version 1.24.7_1542	Infrastructure Clastic	Zones Milan 01
Created 04/11/2022, 01:12	Resource group Default	Image security enforcement Enable	

