

Assignment - 4

Docker and Kubernetes

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Project Name	PERSONAL EXPENSE TRACKER APPLICATION
Maximum Marks	2 Marks

Question-1:

1. Pull an Image from docker hub and run it in docker playground.

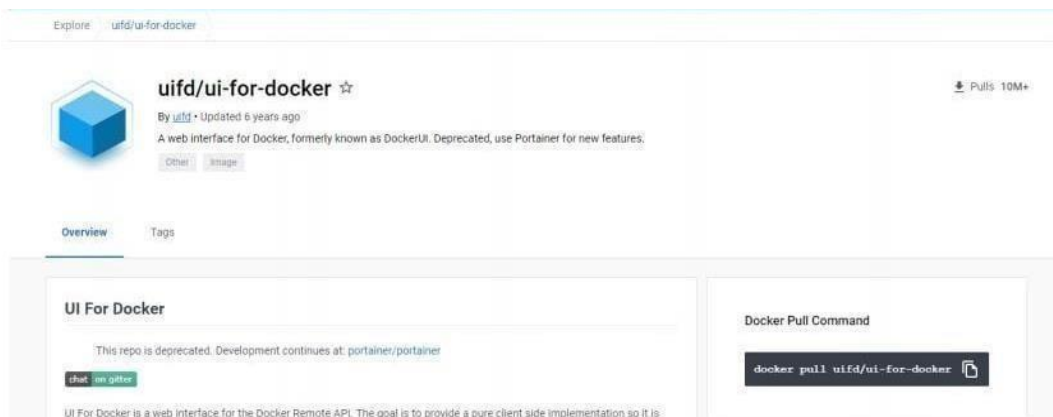
Solution:

```
docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=abishek --email=19it01@kcgcollege.com
WARNING: login credentials saved in
/home/madhanc/.docker/config.jsonLogin Succeeded
```

```
REPOSITORY          TAG       IMAGE ID       CREATED        SIZE
verse_gapminder_gsl  latest    023ab91c6291   3 minutes ago  1.975 GB
verse_gapminder      latest    bb38976d03cf   13 minutes ago 1.955 GB
rocker/verse         latest    0168d115f220   3 days ago    1.954 GB
docker tag bb38976d03cf madhan
/verse_gapminder:firsttry
docker push madhan
/verse_gapminder
```

Saving and loading images

```
docker save
verse_gapminder
docker save verse_gapminder > verse_gapminder.tar
docker load --inputverse_gapminder.tar
docker load --input verse_gapminder.tar
```



Explore uifd/ui-for-docker

uifd/ui-for-docker ☆

By [uifd](#) • Updated 6 years ago

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

Other Image

Overview Tags

UI For Docker

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

[that 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

Docker Pull Command

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

03:42:30

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13
node1

cd9an2u3_cd9av060qau0008hbjs0

IP
192.168.0.13

OPEN PORT

Memory
SSH
ssh ip172-18-0-4-cd9an2u3ccg00gf6k0@direct.labs.play-w

CPU

DELETE

EDITOR

```
# This is a sandbox environment. Using personal credentials
# is HIGHLY discouraged. Any consequences of doing so are
# completely the user's responsibility.
#
# The PRD team.
#####
[rook1] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
81194d080c8: Pull complete
Digest: sha256:fe371ff3a69549269b24073a5ab1244dd4c0b834cbddf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[rook1] (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
e590dd163101ae795bdcea0eb1dd498f6fe549cb5f24dcb9ff7c1931523fc0d
[rook1] (local) root@192.168.0.13 ~
$
```

ui For Docker

Images

Refresh

UI For Docker

The UI for Docker container engine

Learn more.

Running Containers

Status

• beautiful_goldwasser [Up Arrow & refresh](#)

UI For Docker

Images

Networks

Refresh

Running Containers

Status

Containers created



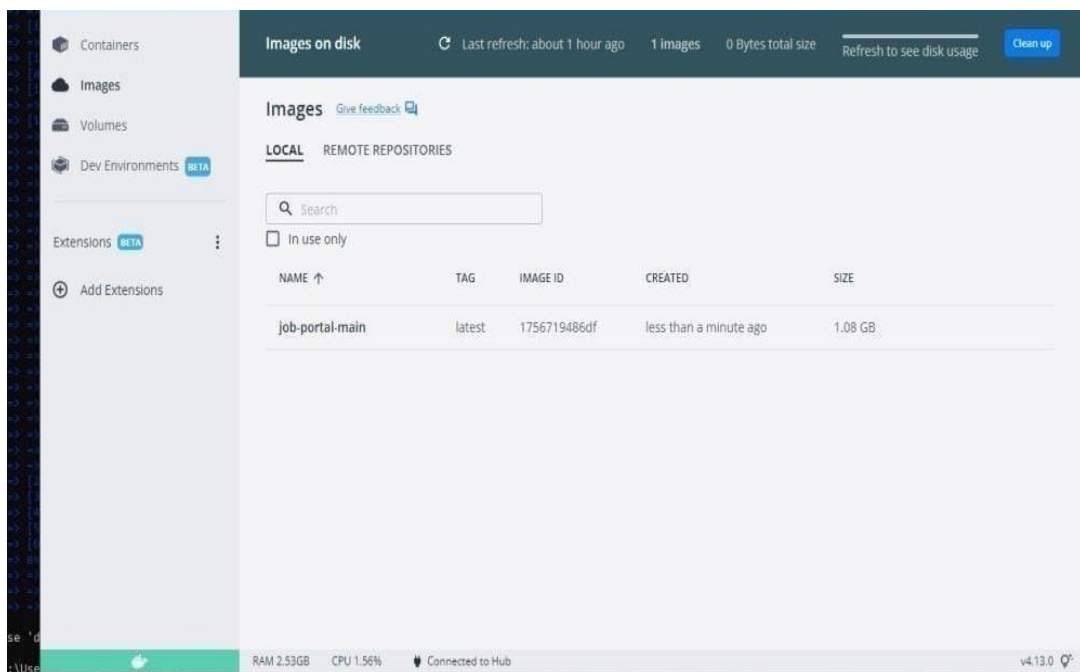
Running Stopped Ghost

Question-2:

2. Create a docker file for the jobportal application and deploy it in Docker desktop application.

SOLUTION:

```
[internal] load build definition from Dockerfile
--> transferring dockerfile: 32B
[internal] load .dockerignore
--> transferring context: 2B
[internal] load metadata for docker.io/library/python:3.6
[auth] library/python:pull token for registry-1.docker.io
[internal] load build context
--> transferring context: 687B
[1/6] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f0d22354d547db92591067aa4026a7fa0a0810df9f300af6fc
--> resolve docker.io/library/python:3.6@sha256:f8052aaf88c25f0d22354d547db92591067aa4026a7fa0a0810df9f300af6fc
--> sha256:f8052aaf88c25f0d22354d547db92591067aa4026a7fa0a0810df9f300af6fc 1.86kB / 1.86kB
--> sha256:d897a4007a8ec070d75ac31872359c2de510f82214c0448e026393b376d3b00d 2.22kB / 2.22kB
--> sha256:54268638007c5e3ad24c6e21fc889abbcb486a27634c8892080ff71f3f44b104 9.27kB / 9.27kB
--> sha256:0e29546d541c0d300281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 54.92MB / 54.92MB
--> sha256:00e20c73b52002b97d5c07a54f00f9e21995a290c714b53a32a667819231ffc 5.15MB / 5.15MB
--> sha256:c1b7070ecad3935823ed1ba0bd01d5095cd095a03d74bca556 19.87MB / 19.87MB
--> sha256:6404a0811522b31c027ccac322ca463937f005f569a9306f15c01a0d0732793 54.57MB / 54.57MB
--> sha256:6f9f74806d7a93fa0172f594faba85e0b4e8a0401a0f0d0112afc7e4d370f7 196.51MB / 196.51MB
--> sha256:5e3b1213fc56598e78bd002083945c164de2a37205e06a02dad0823124d743 6.29MB / 6.29MB
--> extracting sha256:0e29546d541c0d300281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3
--> sha256:9fddfdcc56334f2e0fad7e241bf5e7459c40ed105c5478076f41c1244bd06752 14.21MB / 14.21MB
--> extracting sha256:9b820c73b52002b97d5c07a54f00f9e21995a290c714b53a32a667819231ffc
--> extracting sha256:c05b7ae361722f070eca53f35823ed21baa85d61d5095cd5a95ab53d740cd056
--> sha256:404f02044bac0432ca522cb09f254b1c91fca0800bfeef00e0b243b2f31bab7 215B / 215B
--> sha256:c4f42be2b53b9900ebff040c1d1f30e338434ccc5f5d954u56848a0100a3a3f
--> extracting sha256:6404a0811522b31c027ccac322ca463937f005f569a9306f15c01a0d0732793
--> extracting sha256:6f9f74806d7a93fa0172f594faba85e0b4e8a0401a0f0d0112afc7e4d370f7
--> extracting sha256:5e3b1213fc56598e78bd002083945c164de2a37205e06a02dad0823124d743
--> extracting sha256:9fddfdcc56334f2e0fad7e241bf5e7459c40ed105c5478076f41c1244bd06752
--> extracting sha256:404f02044bac0432ca522cb09f254b1c91fca0800bfeef00e0b243b2f31bab7
--> extracting sha256:c4f42be2b53b9900ebff040c1d1f30e338434ccc5f5d954u56848a0100a3a3f
[2/6] WORKDIR /app
[3/6] ADD . /app
[4/6] COPY requirements.txt /app
[5/6] RUN python3 -m pip install -r requirements.txt
[6/6] RUN python3 -m pip install lbm_db
exporting to image
--> exporting layers
--> writing image sha256:1756719486df002fad5dae305c5221513f2ff2d1b49a8d242b22a28ef0379f19
--> naming to docker.io/library/job-portal-main
se 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```



QUESTION-3:

3. Create a IBM container registry and deploy helloworld app or jobportalapp.

Solution:

```
<html>
<body>
  Hello, IBM Cloud World!
</body>
</html>---
```

applications:

```
- buildpack: https://github.com/cloudfoundry/staticfile-buildpack.git
host: simple-website-{$random}
name: simple-website-{$random}
memory: 64M
stack: cflinuxfs2
```

The screenshot shows the IBM Cloud Deploy console. At the top, there's a 'DEPLOY' header with a 'DELETE' button. Below it, there are tabs for 'INPUT', 'JOBS', and 'ENVIRONMENT PROPERTIES'. The 'JOBS' tab is active, showing a 'Rolling De...' status and an 'ADD JOB' button. Below this, there's a 'Rolling Deploy' section with a 'REMOVE' button. The 'Deploy configuration' section includes the following fields:

- Deployer type: Cloud Foundry
- IBM Cloud region: US South - https://api.ng.bluemix.net
- Organization: bluemix_devops@ibm.com
- Space: demo
- Application name: simple-website-ae7f5ff6

```
1 {
2   "ServiceId": "com.ibm.cloudoe.orion.client.deploy",
3   "Params": {
4     "Target": {
5       "Url": "https://api.ng.bluemix.net",
6       "Org": "bluemix_devops@ibm.com",
7       "Space": "demo"
8     },
9     "Name": "simple-website-ae7f5ff6",
10    "Instrumentation": {}
11  },
12  "Path": "manifest.yml",
13  "Type": "Cloud Foundry"
14 }
```

Hello, IBM Cloud World!

QUESTION-4:

4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run innodeport.

Solution:

```
ibmcloud target -g <resource_group_name>ibmcloud cr madhan-add  
<your_madhan>ibmcloudresource service-instance-create example-postgresql databases-for-  
postgresql standard us- southibmcloud ks cluster-service-bind mycluster default example-  
postgresqlgit clone -b node git@github.com:IBM-Cloud/cloudatabases-helloworld-kubernetes-  
examples.gitspec:
```

```
replicas: 3name: cloudpostgres-nodejs-app
```

```
image: "registry.<region>.bluemix.net/<namespace>/icdpg" # Edit me
```

```
imagePullPolicy: Alwaysibmcloud cr regionYou are targeting region 'us-south', the registry is  
'registry.ng.bluemix.net'.ibmcloud cr build -t registry.ng.bluemix.net/<namespace>/icdpg .ibmcloud  
cr images
```

env:

```
- name: BINDING
```

```
valueFrom:
```

```
secretKeyRef:
```

```
name: <postgres-secret-name> # Edit me
```

```
key: binding
```

```
apiVersion: v1
```

```
kind: Service
```

```
metadata:
```

```
name: cloudpostgres-service
```

```
labels:
```

```
run: clouddb-demo
```

```
spec:
```

```
type: NodePort
```

```
selector:
```

```
run: clouddb-demo
```

```
ports:
```

```
- protocol: TCP
```

```
port: 8080
```

```
nodePort: 30081
```

```
kubectl apply -f clouddb-deployment.yml
```

```
deployment.apps/icdpostgres-app created
```

```
service/cloudpostgres-service created
```

```
kubectl get pods -o wideibmcloud ks workers <your_cluster_name>
```

