Assignment - 4
Docker and Kubernetes

Assignment Date	November 3
Student Name	Nithish J
Student Roll Number	310819106057
Maximum Marks	2 Marks

Question-1:

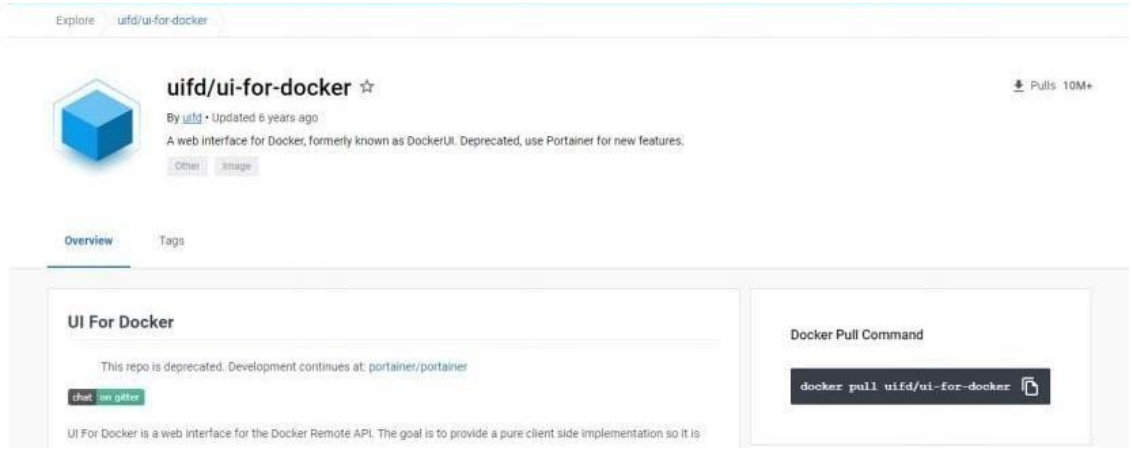
1. Pull an Image from docker hub and run it in docker playground.

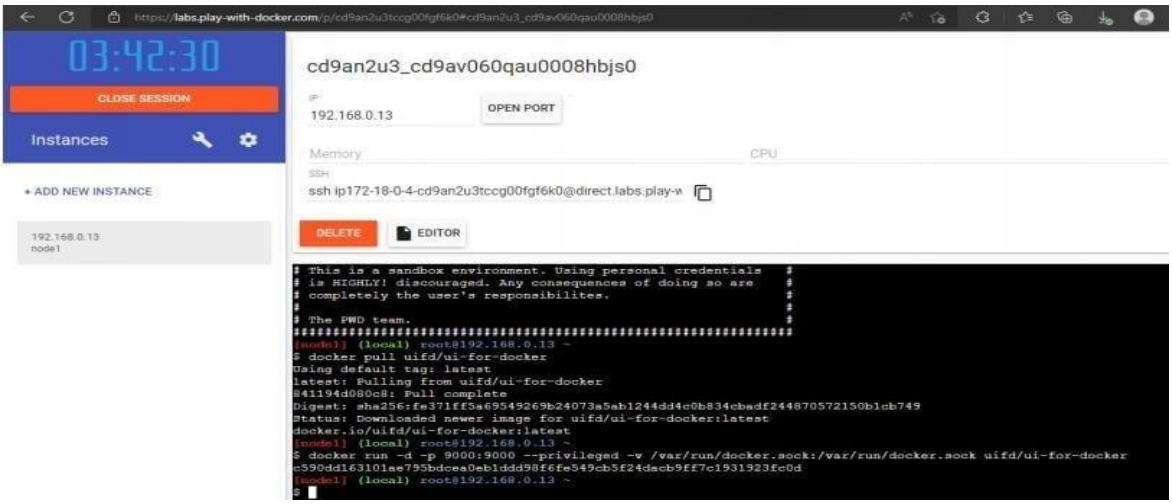
Solution:

docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=nithishj --email=nithishjaganathan@gmail.com
WARNING: login credentials saved in /home/nithishj/.docker/config.json
Login Succeeded

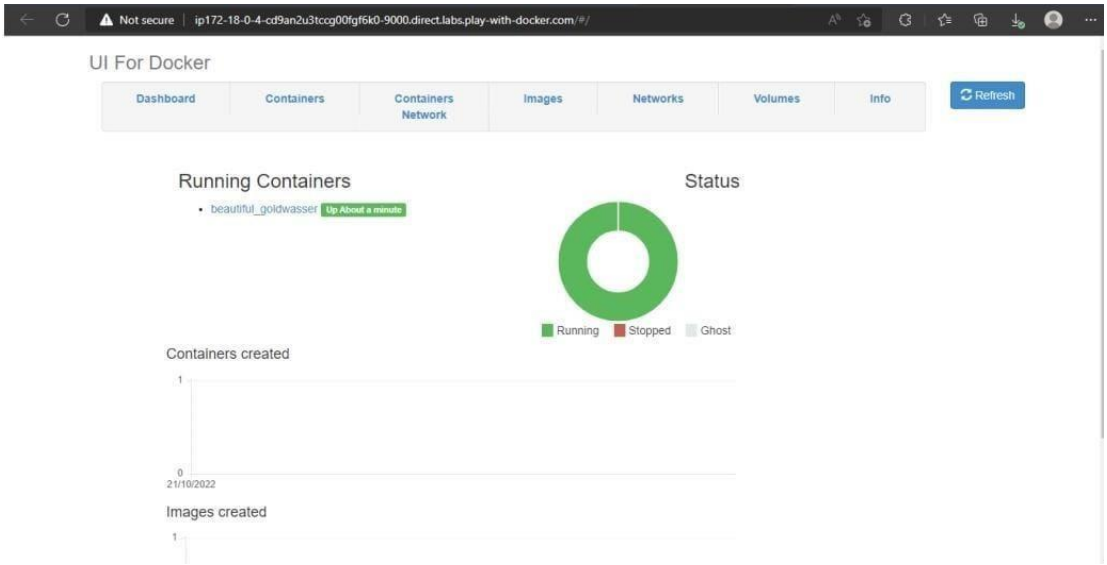
REPOSITORY TAG IMAGE ID CREATED SIZE
verse_gapminder_gsl latest 023ab91c6291 3 minutes ago 1.975 GB
verse_gapminder latest bb38976d03cf 13 minutes ago 1.955 GB
rocker/verse latest 0168d115f220 3 days ago 1.954 GB
docker tag bb38976d03cf nithishj
/verse_gapminder:firsttry
docker push nithishj
/verse_gapminder

Saving and loading images
docker save
verse_gapminder
docker save verse_gapminder > verse_gapminder.tar
docker load --input verse_gapminder.tar
docker load --input verse_gapminder.tar




https://labs.play-with-docker.com/p/cd9an2u3tccg00fgf6k0#cd9an2u3_cd9av060qau0008hbjs0
03:42:30
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.13
node1
cd9an2u3_cd9av060qau0008hbjs0
IP
192.168.0.13
OPEN PORT
Memory
CPU
SSH
ssh ip172-18-0-4-cd9an2u3tccg00fgf6k0@direct.labs.play-w
DELETE
EDITOR
This is a sandbox environment. Using personal credentials
is HIGHLY! discouraged. Any consequences of doing so are
completely the user's responsibilites.
The PWD 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
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf2448705721501b1cb749
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
e590dd163101ae795bdcea0eb1ddd98f6fe549cb5f24dacb9ff7c1931923fc0d
[node1] (local) root@192.168.0.13 ~

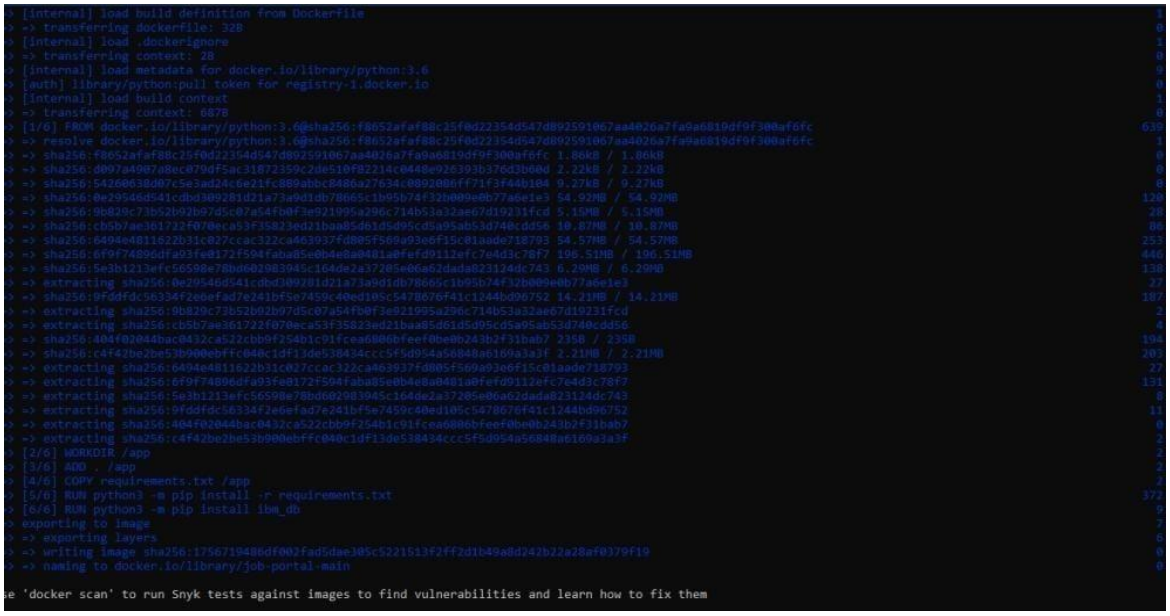

Not secure | ip172-18-0-4-cd9an2u3tccg00fgf6k0-9000.direct.labs.play-with-docker.com/#/
UI For Docker
Dashboard
Containers
Containers Network
Images
Networks
Volumes
Info
Refresh
UI For Docker
The UI for Docker container engine
Learn more.
Running Containers
beautiful_goldwasser
Up About a minute
Status

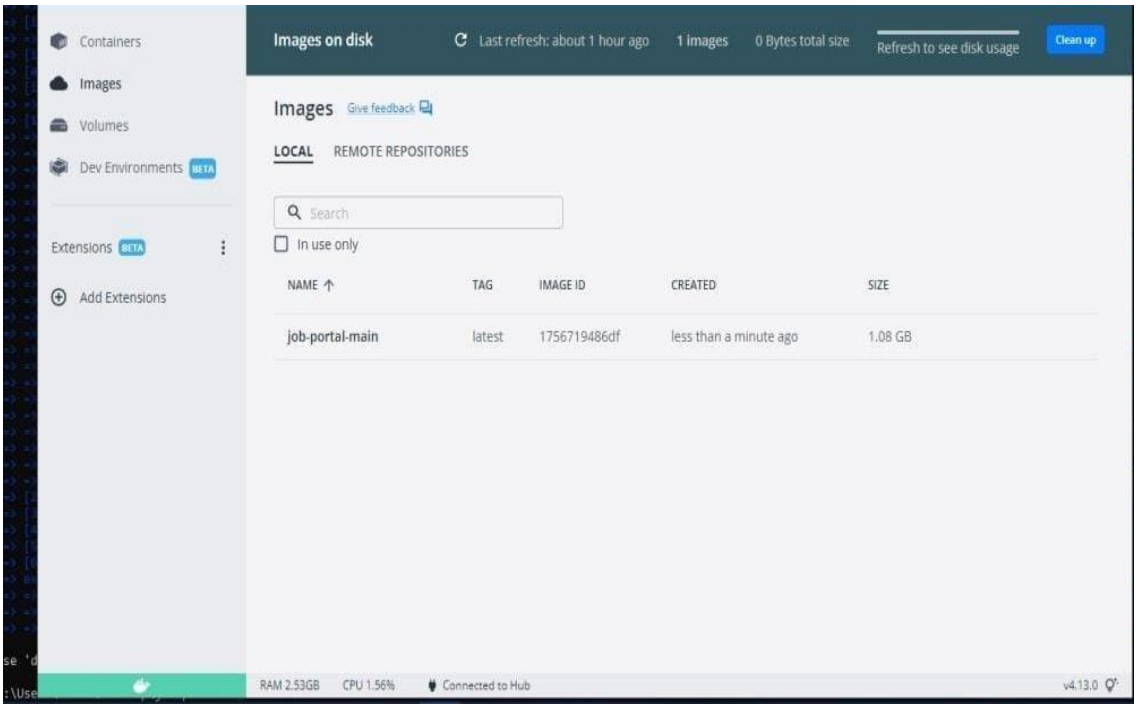

Not secure | ip172-18-0-4-cd9an2u3tccg00fgf6k0-9000.direct.labs.play-with-docker.com/#/
UI For Docker
Dashboard
Containers
Containers Network
Images
Networks
Volumes
Info
Refresh
Running Containers
beautiful_goldwasser
Up About a minute
Status
Running
Stopped
Ghost
Containers created
1
0
21/10/2022
Images created
1

Question-2:

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

SOLUTION:



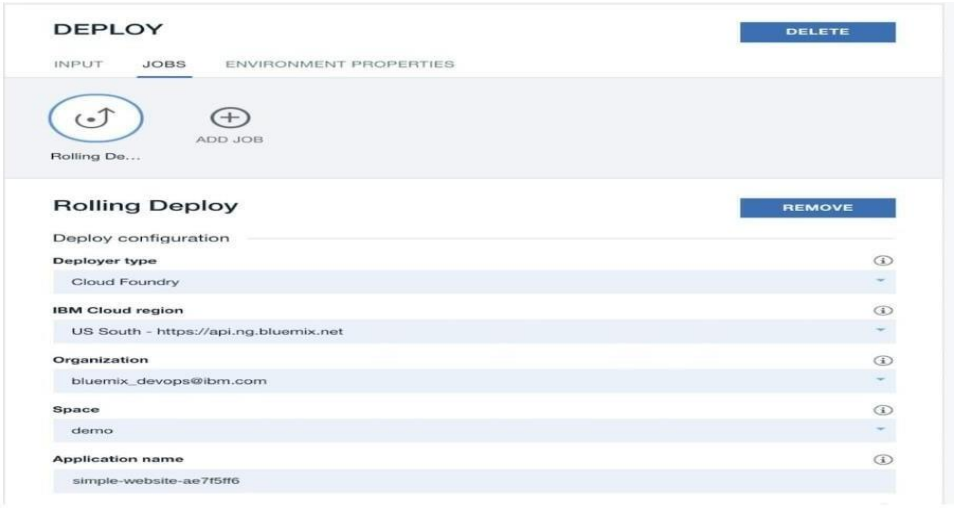


QUESTION-3:

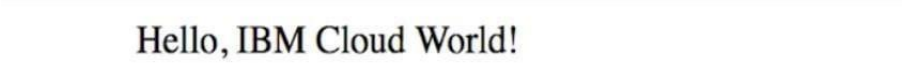
3. Create a IBM container registry and deploy helloworld app or jobportalapp.

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
```



```
{
  "ServiceId": "com.ibm.cloudoe.orion.client.deploy",
  "Params": {
    "Target": {
      "Url": "https://api.ng.bluemix.net",
      "Org": "bluemix_devops@ibm.com",
      "Space": "demo"
    },
    "Name": "simple-website-ae7f5ff6",
    "Instrumentation": {}
  },
  "Path": "manifest.yml",
  "Type": "Cloud Foundry"
}
```



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 in nodeport.

Solution:

ibmcloud target -g <resource_group_name>ibmcloud cr nithishj-add <your_nithishj>ibmcloud resource 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/clouddatabases-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>