Assignment - 4
Docker and Kubernetes

Assignment Date	24 October 2022
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Student Roll Number	913319104014
Maximum Marks	2 Marks

Question-1:

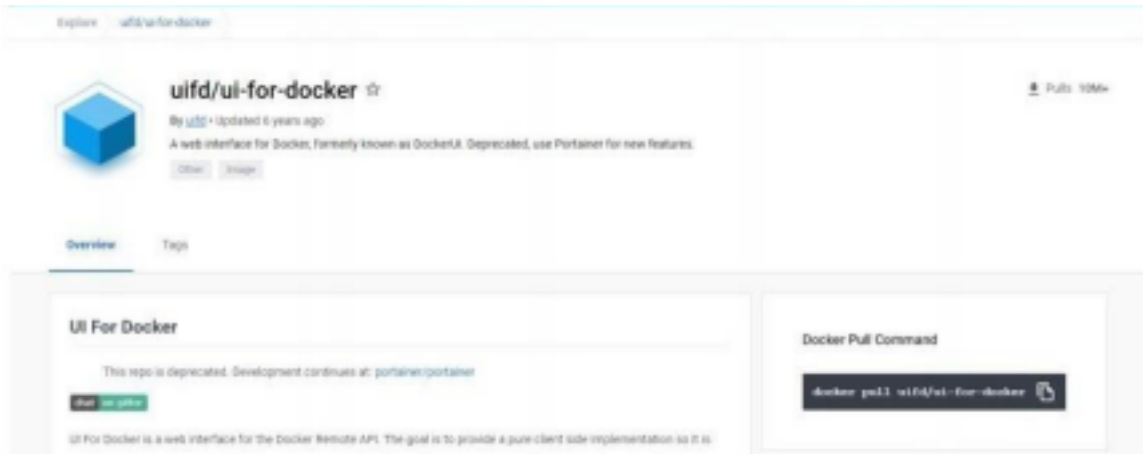
1. Pull an Image from docker hub and run it in docker playground.

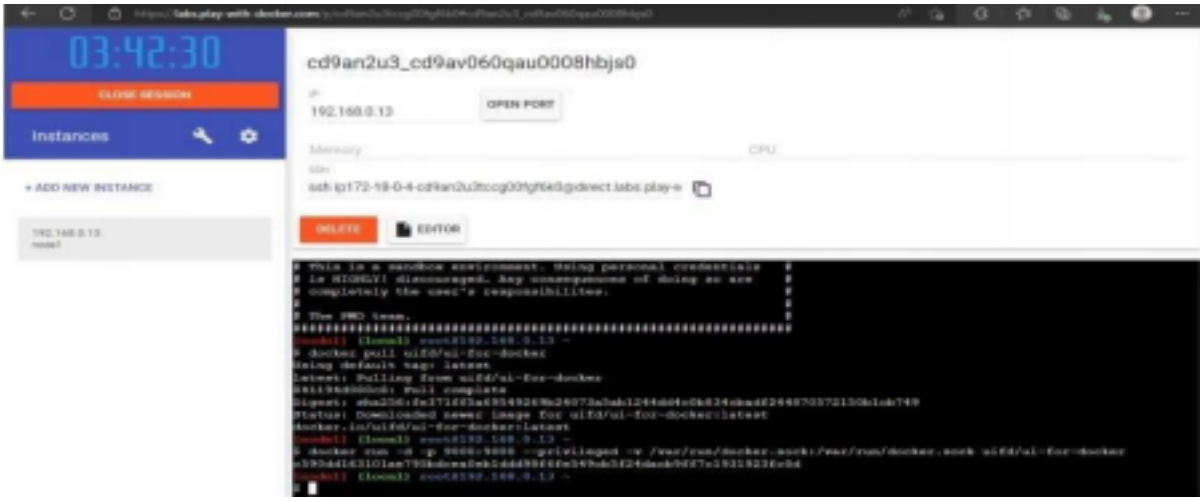
Solution:

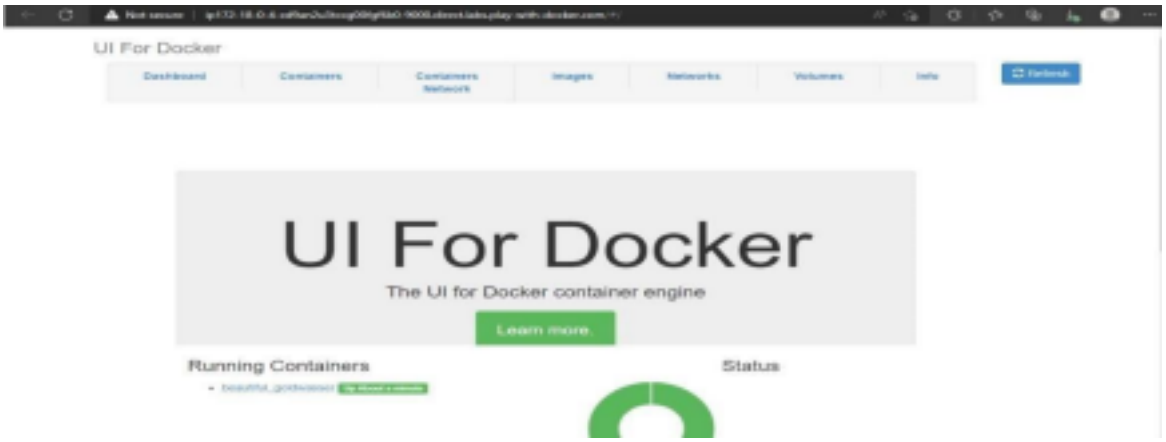
docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=punithavennilan--email=punithavennila025@gmail.com WARNING: login credentials saved in /home/punithavennilan/.docker/config.json Login Succeeded

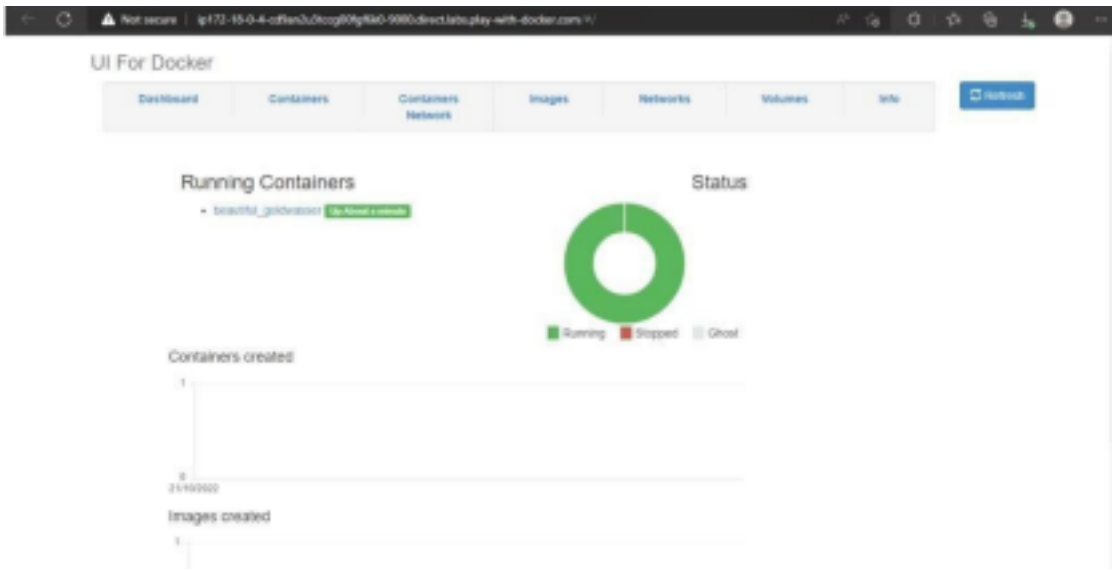
REPOSITORY TAG IMAGE ID CREATED SIZE
verse_gapminder_gsl latest 023ab91c6291 3 minutes ago 1.975 GB
verse_gapminder latest bb38976d03cf 13 minutes ago 1.955 GB
rocker/verse latest 0168d115f220 3 days ago 1.954 GB
docker tag bb38976d03cf punithavennilan
/verse_gapminder:firsttry
docker push
punithavennilan/verse_gapminder

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





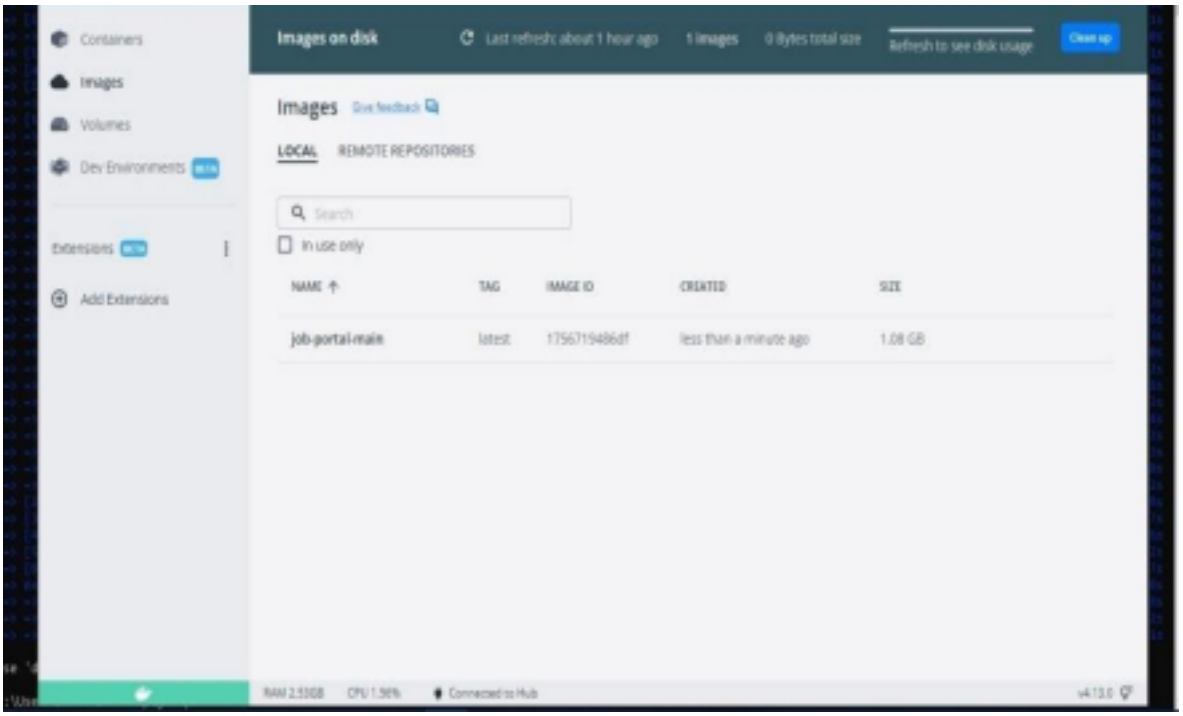




Question-2:

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

SOLUTION:

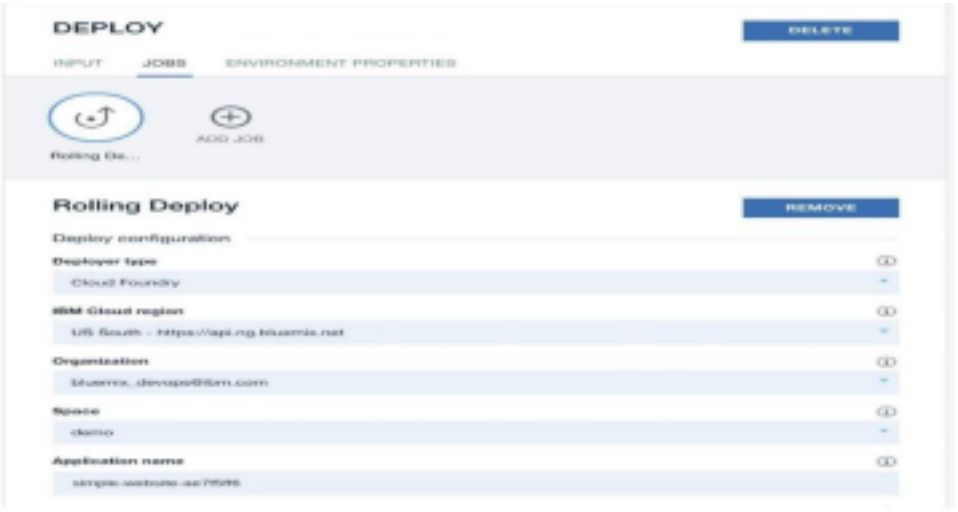


QUESTION-3:

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
```



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 punithavennilan-add <your_punithavennilan>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

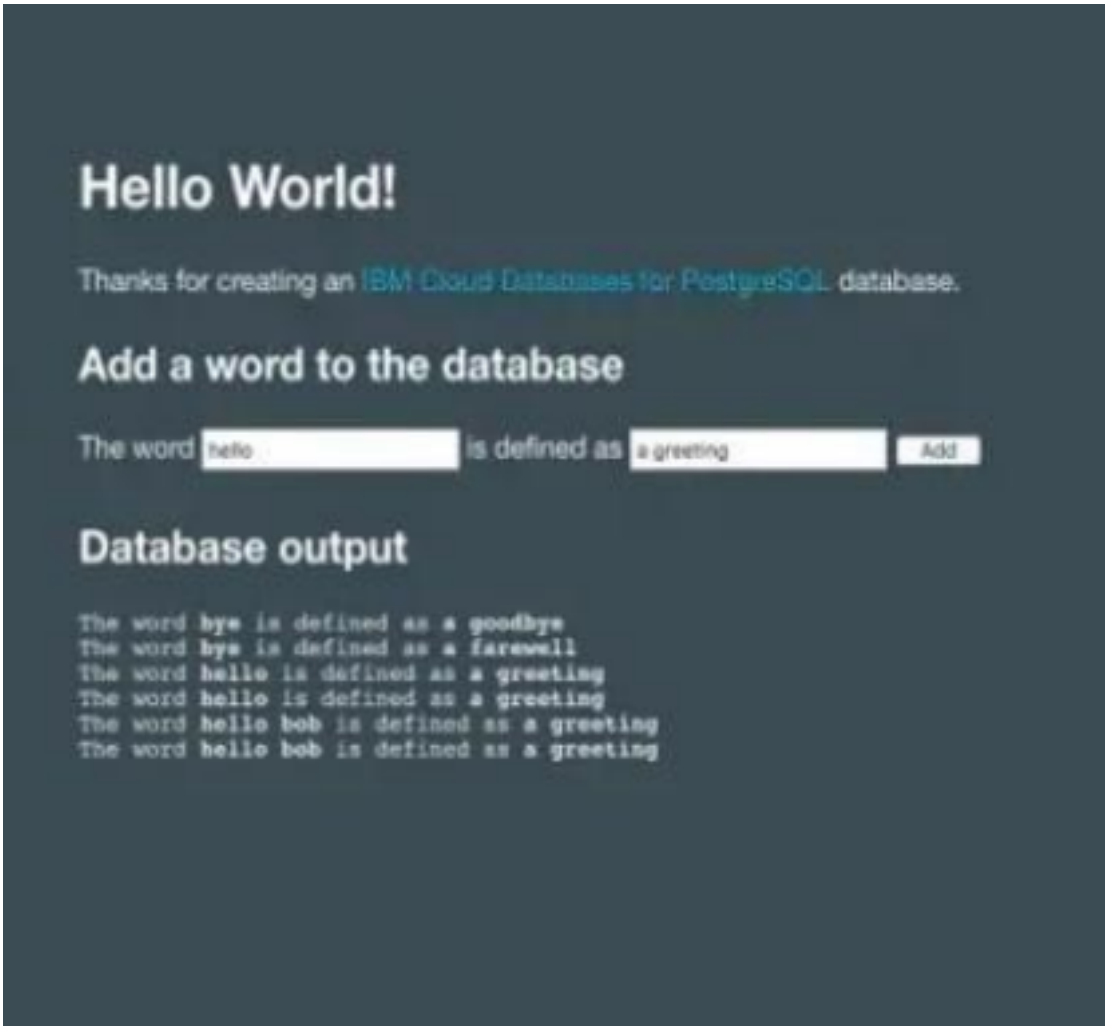
imagePullPolicy: Alwaysibmcloud cr regionYou are targeting region 'us-south', the registry is 'registry.ng.bluemix.net'.ibmcloud cr build -t registry.ng.bluemix.net/<namespace>/icdpg .ibmcloud cr images

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>
```


Hello World!
Thanks for creating an IBM Cloud Databases for PostgreSQL database.
Add a word to the database
The word hello is defined as a greeting
Add
Database output
The word bye is defined as a goodbye
The word bye is defined as a farewell
The word hello is defined as a greeting
The word hello is defined as a greeting
The word hello bob is defined as a greeting
The word hello bob is defined as a greeting