Assignment - 4 Docker and Kubernetes

Assignment Date	18th November 2022
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Project ID	PNT2022TMID04044
Maximum Marks	2 Marks

Question-1:

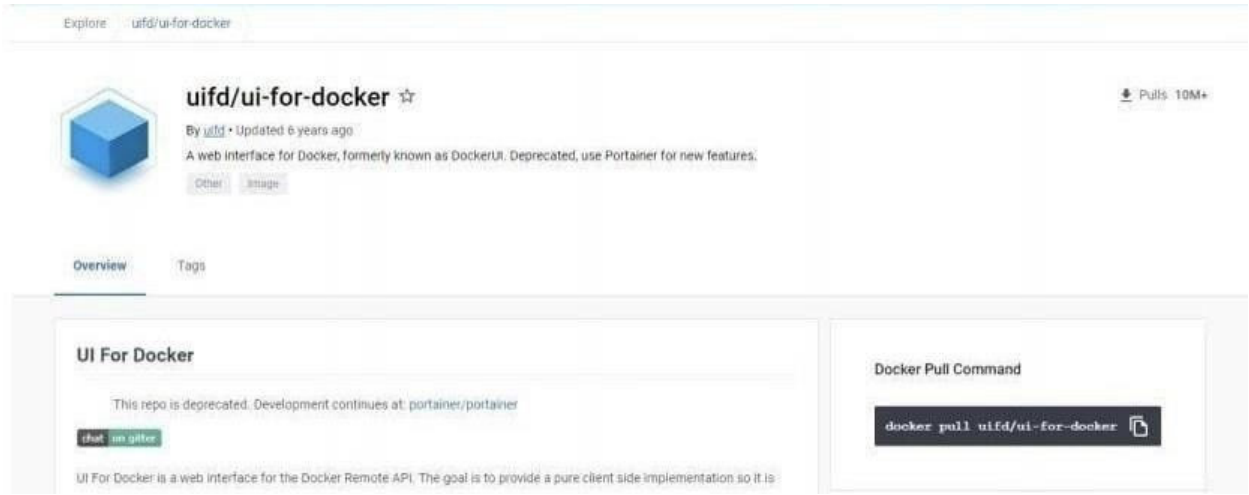
1. Pull an Image from docker hub and run it in docker playground.

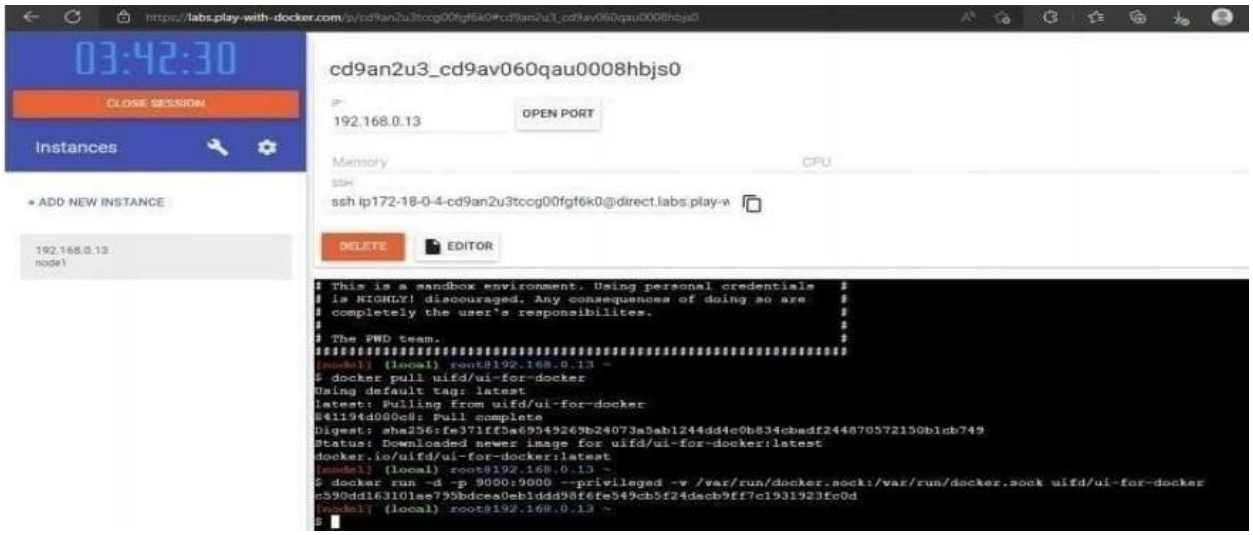
Solution:

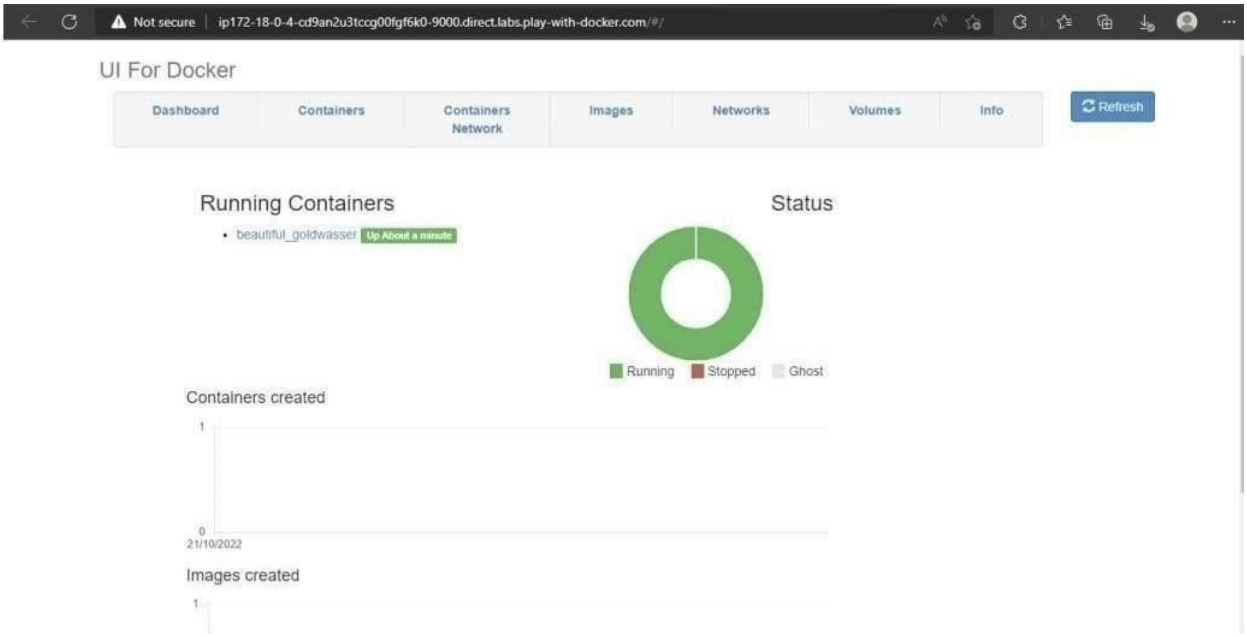
docker run --rm -p 8787:8787 rocker/verse docker pull rocker/verse docker login --username=rohithselvaraj --email=rohithjones@gmail.com WARNING: login credentials saved in /home/ rohithselvaraj /.docker/config.jsonLogin Succeeded

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 abuthahir /verse_gapminder:firsttry docker push abuthahir /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



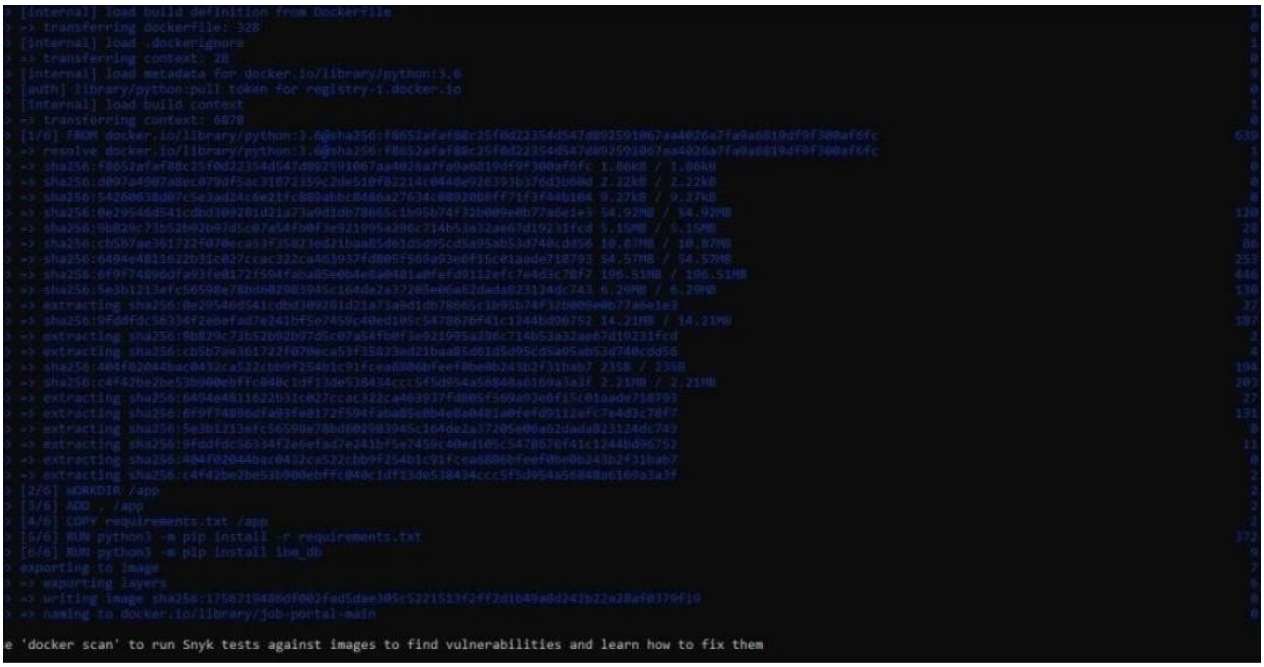


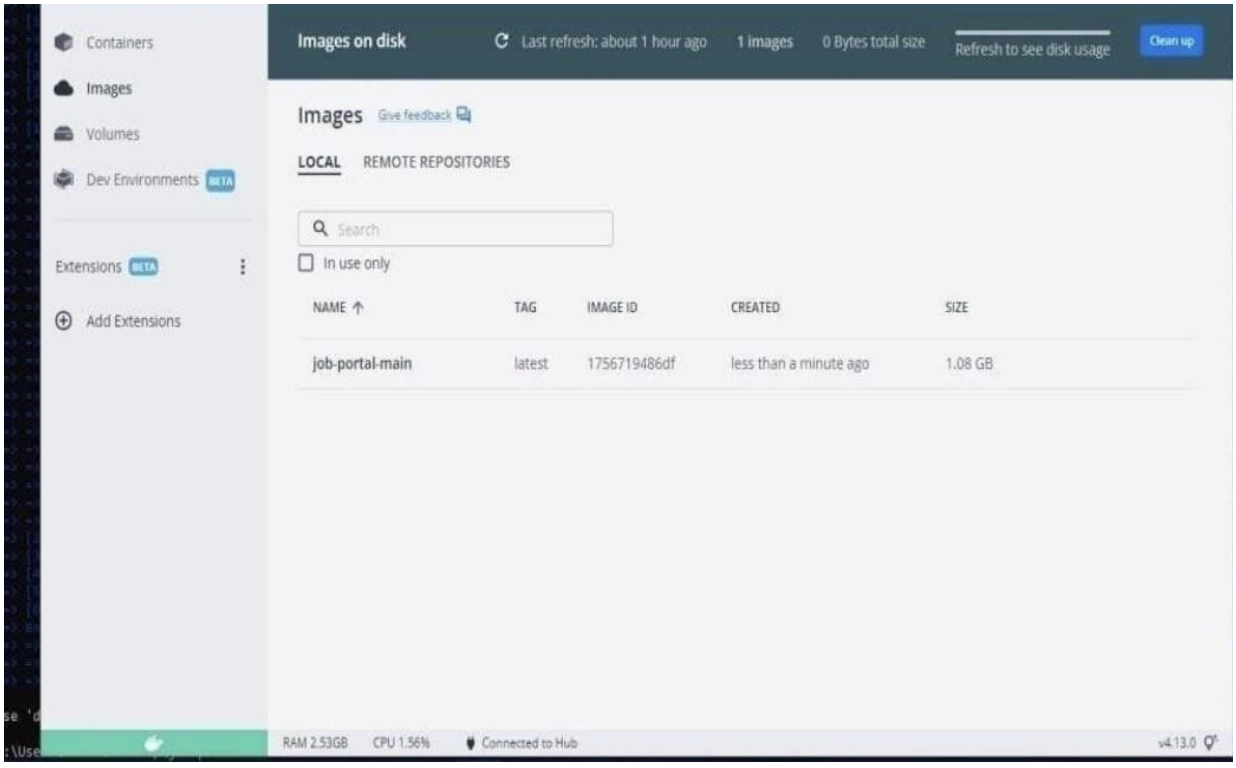


Question-2:

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

SOLUTION:

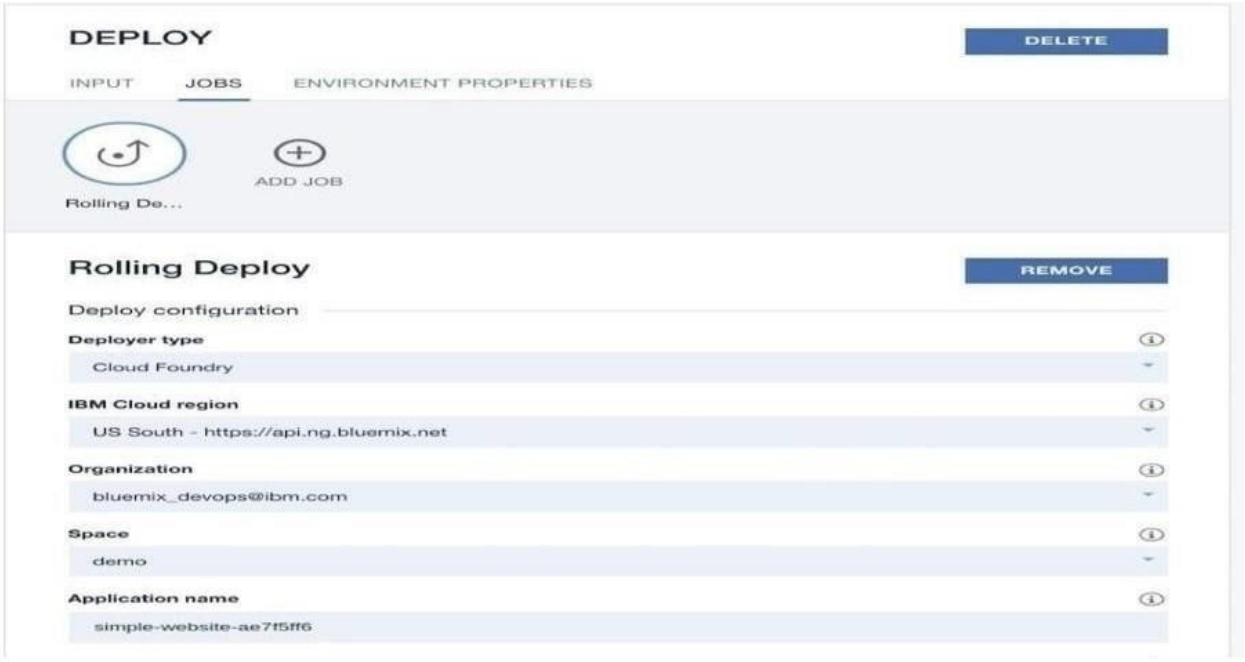

e 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them


Containers
Images
Volumes
Dev Environments BETA
Extensions BETA
Add Extensions
Images on disk
Last refresh: about 1 hour ago
1 images
0 Bytes total size
Refresh to see disk usage
Clean up
Images
Give feedback
LOCAL
REMOTE REPOSITORIES
Search
In use only
NAME
TAG
IMAGE ID
CREATED
SIZE
job-portal-main
latest
1756719486df
less than a minute ago
1.08 GB
RAM 2.53GB
CPU 1.56%
Connected to Hub
v4.13.0

QUESTION-3:

1. 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:

1. 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 abuthahir-add <your_abuthahir>ibmcloudresource service-instance-create example-postgresql databases-forpostgresql 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**