Assignment - 4
Docker and Kubernetes

Assignment Date	24 October 2022
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Maximum Marks	2 Marks

Question-1:

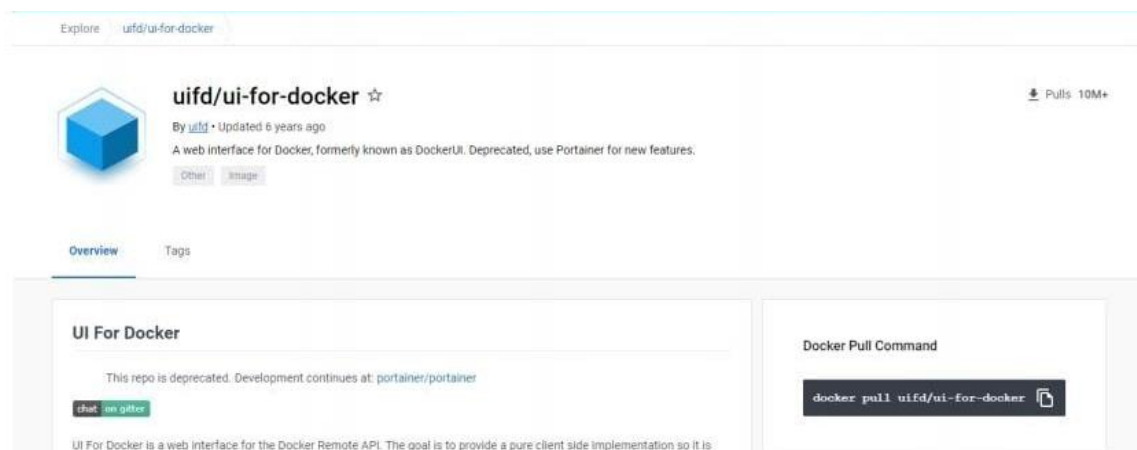**1. Pull an Image from docker hub and run it in docker playground.**

Solution:

docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=yashicav --email=suseendhar.92@company.com
WARNING: login credentials saved in /home/yashicav/.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 yashicav/verse_gapminder:firsttry
docker push
yashicav/verse_gapminder

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

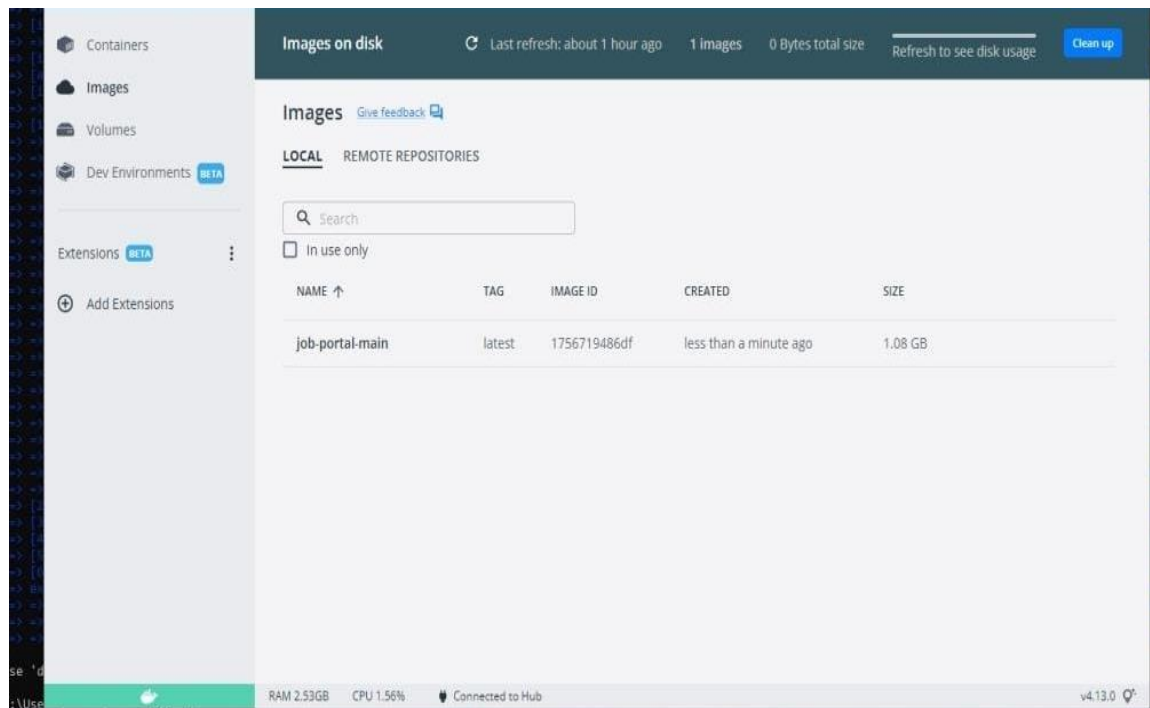**Question-2:**

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
        <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
```

DEPLOY   DELETE

INPUT   **JOBS**   ENVIRONMENT PROPERTIES

Rolling De...   ADD JOB

Rolling Deploy   REMOVE

Deploy configuration

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 in nodeport.

Solution:

ibmcloud target -g <resource_group_name>ibmcloud cr yashicav-add <your_yashicav>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>
```