Assignment 4

Assignment date	18 October 2022
Student name	Sivakumar T V
Student roll no	2019115098
Maximum Marks	2 Marks

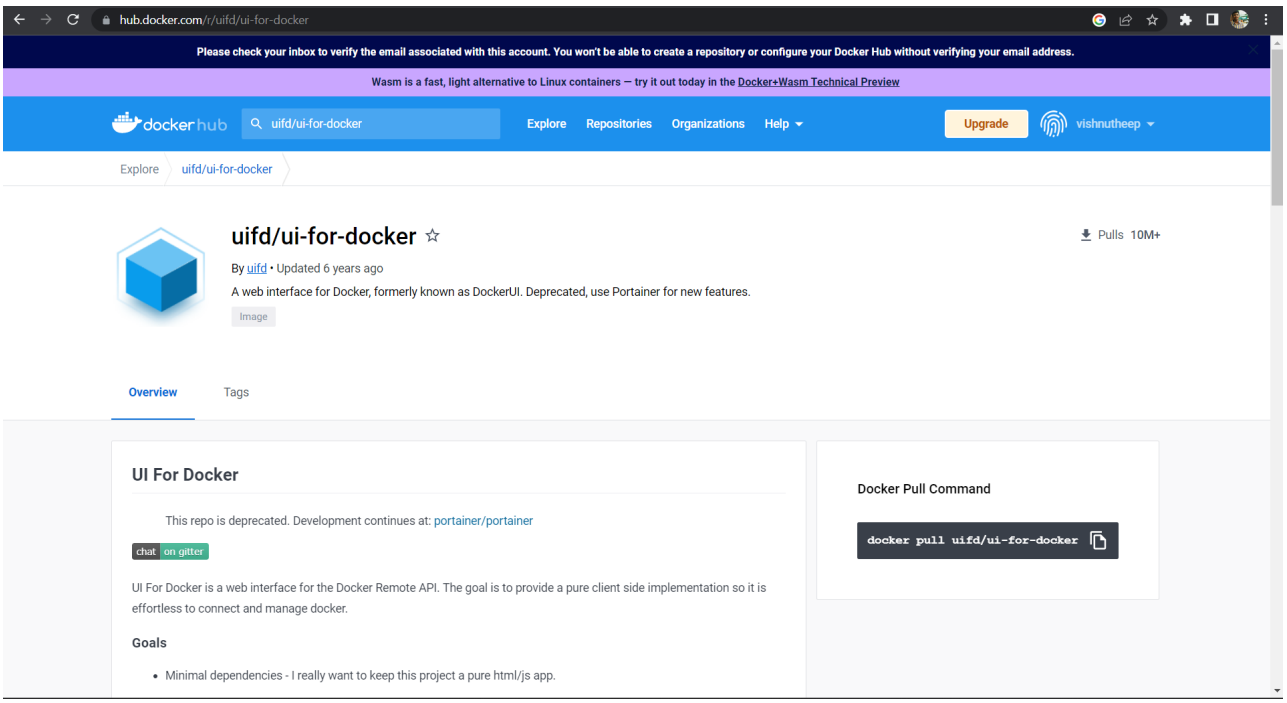
Question 1:

Pull an image from docker hub and run it on docker playground.

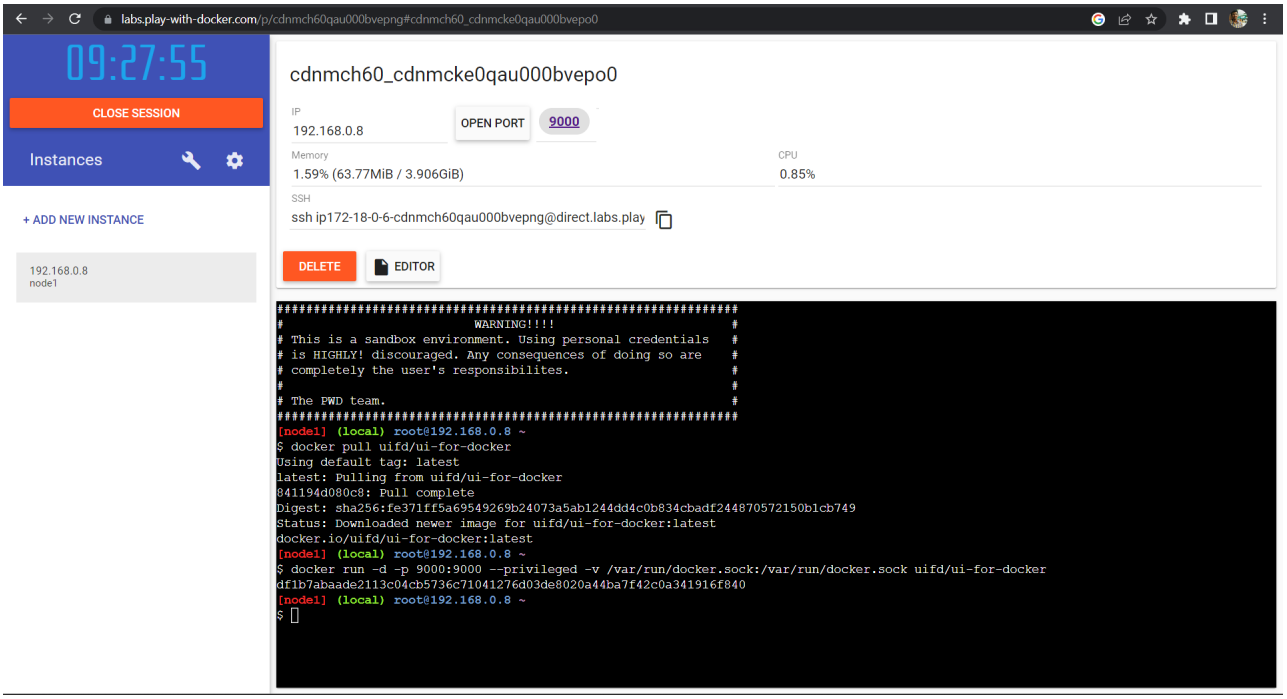
Solution 1:

docker pull uifd/ui-for-docker

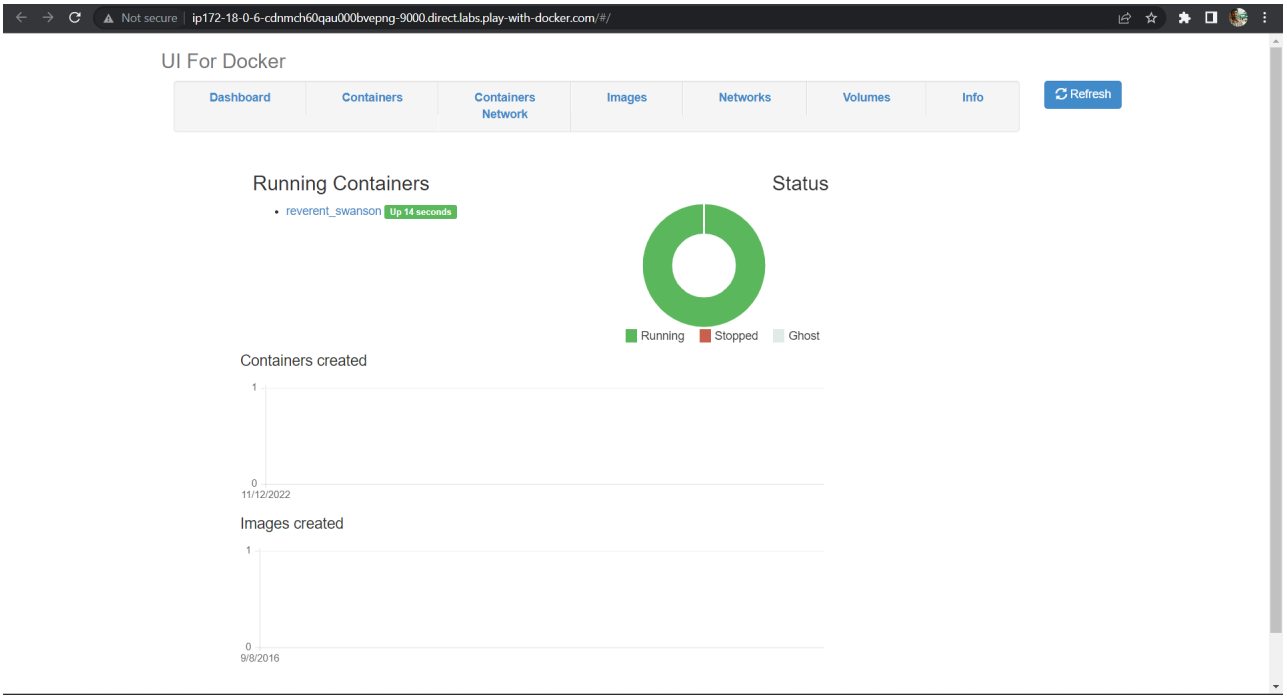
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker



Docker playground:



Docker UI:



Question 2:

Create a docker file for the job portal app or hello world app and deploy it in docker desktop app.

Solution 2:

DockerFile

Dockerfile - Notepad

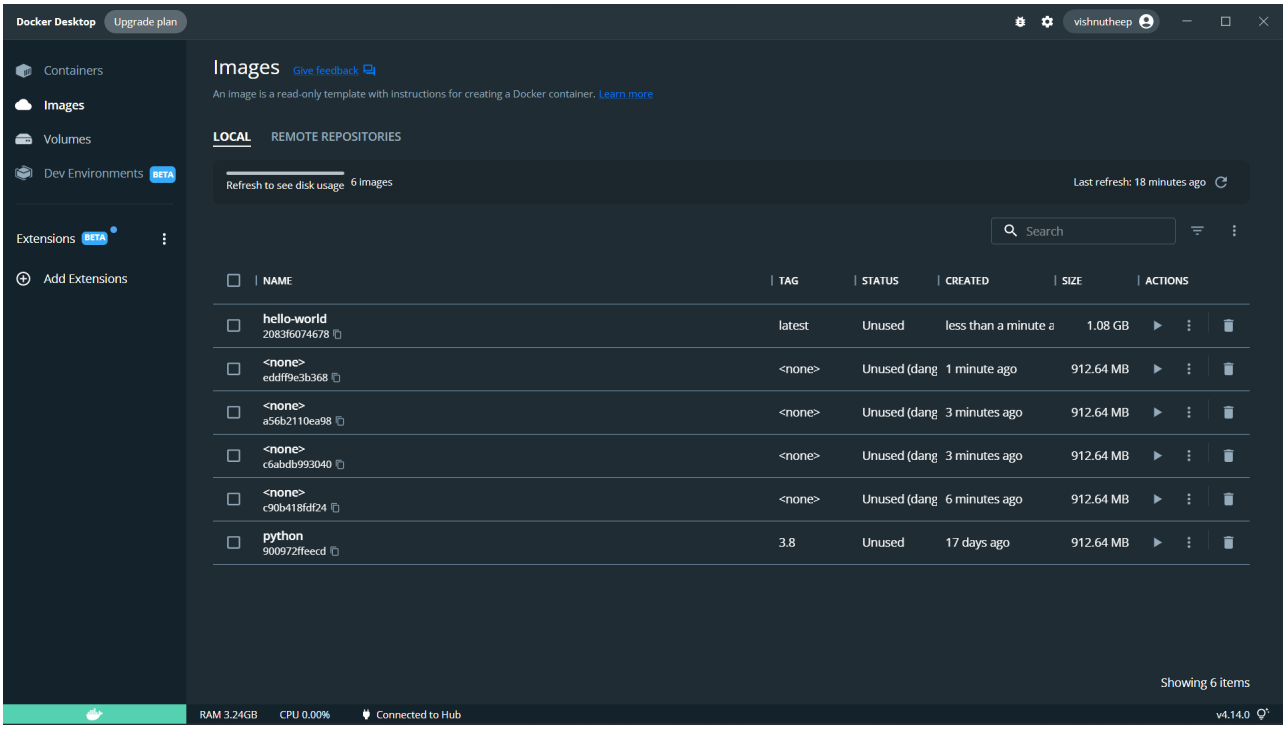
File Edit Format View Help

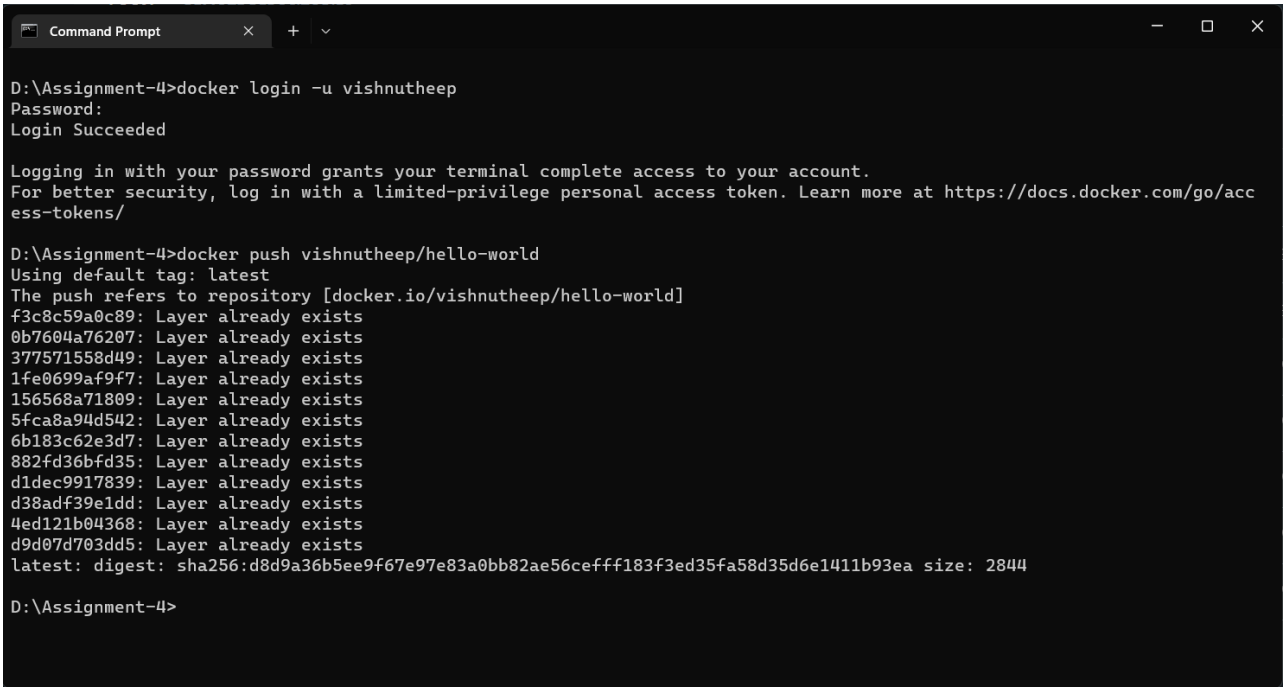
```
FROM python:3.8
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python","app.py"]
```

Bulid Docker image

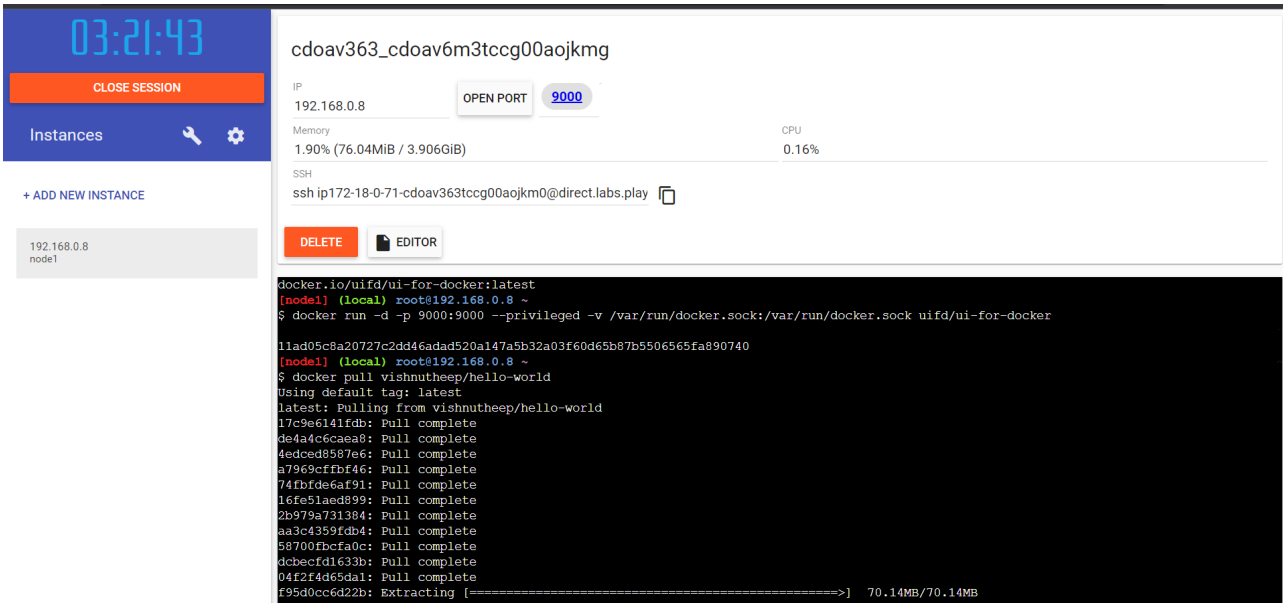
```
C:\Windows\System32\cmd.e
D:\Assignment-4>docker build -t hello-world -f ./Dockerfile.txt .
Sending build context to Docker daemon  3.072kB
Step 1/6 : FROM python:3.8
 ---> 900972ffeecd
Step 2/6 : WORKDIR /app
 ---> Using cache
 ---> b88d5cd12c50
Step 3/6 : ADD . /app
 ---> 10c4362dc12c
Step 4/6 : RUN python3 -m pip install pandas
 ---> Running in 67f6b4819d37
Collecting pandas
  Downloading pandas-1.5.1-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (12.2 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 12.2/12.2 MB 1.9 MB/s eta 0:00:00
Collecting numpy>=1.20.3
  Downloading numpy-1.23.4-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.1 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 17.1/17.1 MB 3.1 MB/s eta 0:00:00
Collecting pytz>=2020.1
  Downloading pytz-2022.6-py2.py3-none-any.whl (498 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 498.1/498.1 kB 2.9 MB/s eta 0:00:00
Collecting python-dateutil>=2.8.1
  Downloading python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 247.7/247.7 KB 5.5 MB/s eta 0:00:00
Collecting six>=1.5
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: pytz, six, numpy, python-dateutil, pandas
Successfully installed numpy-1.23.4 pandas-1.5.1 python-dateutil-2.8.2 pytz-2022.6 six-1.16.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use
 a virtual environment instead: https://pip.pypa.io/warnings/venv
WARNING: You are using pip version 22.0.4; however, version 22.3.1 is available.
You should consider upgrading via the '/usr/local/bin/python3 -m pip install --upgrade pip' command.
Removing intermediate container 67f6b4819d37
 ---> f8292666cfd0
Step 5/6 : EXPOSE 5000
 ---> Running in c0de9dffb4ac
Removing intermediate container c0de9dffb4ac
 ---> b7b8c93b968d
Step 6/6 : CMD ["python","app.py"]
 ---> Running in ef3b212833fe
Removing intermediate container ef3b212833fe
 ---> 2083f6074678
Successfully built 2083f6074678
```

Deploy it on Docker hub





Tested it using Docker playground

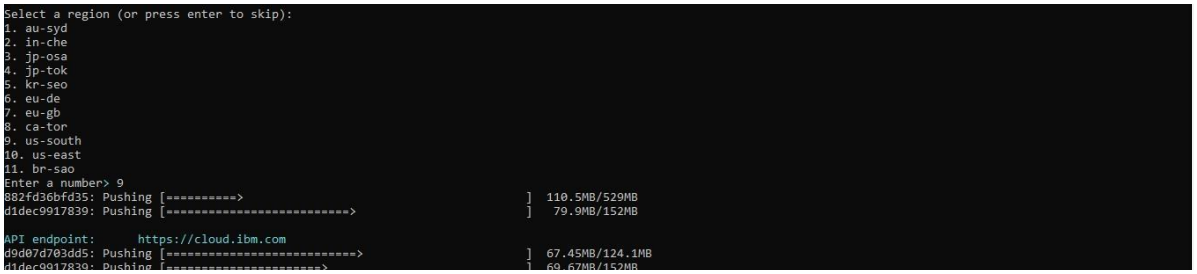


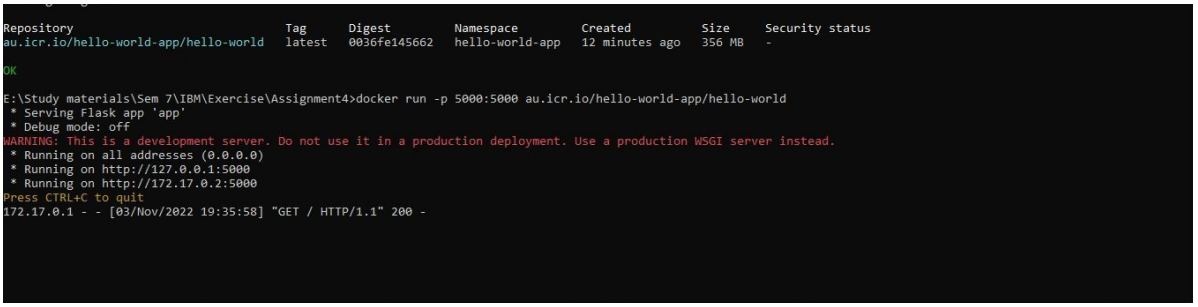
Question 3:

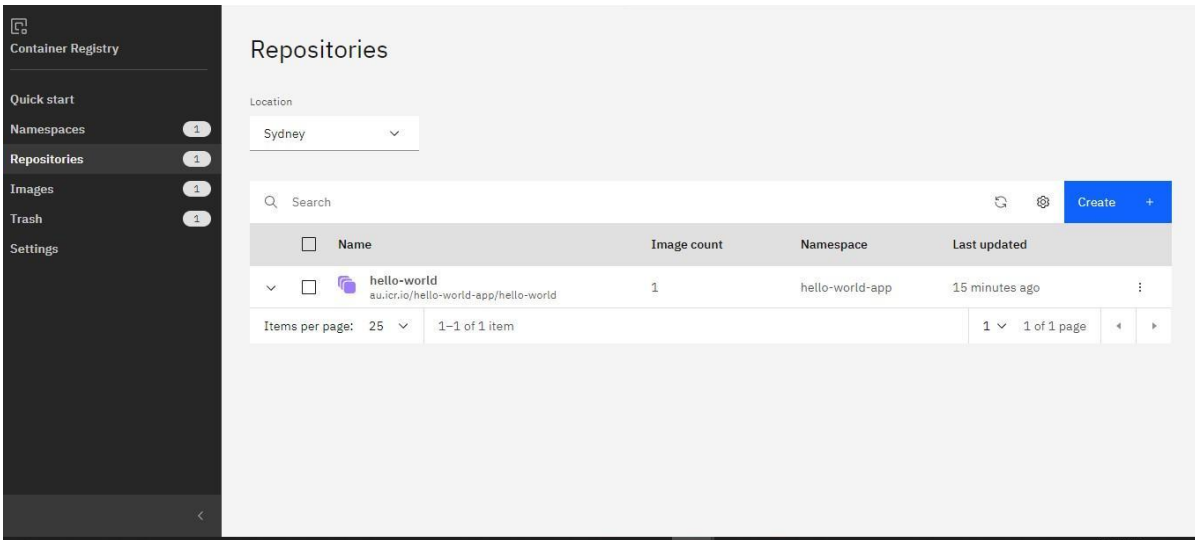
Create an IBM container registry and deploy helloworld app or job portal app.

Solution 3:

My image link: au.icr.io/hello-world-app/hell





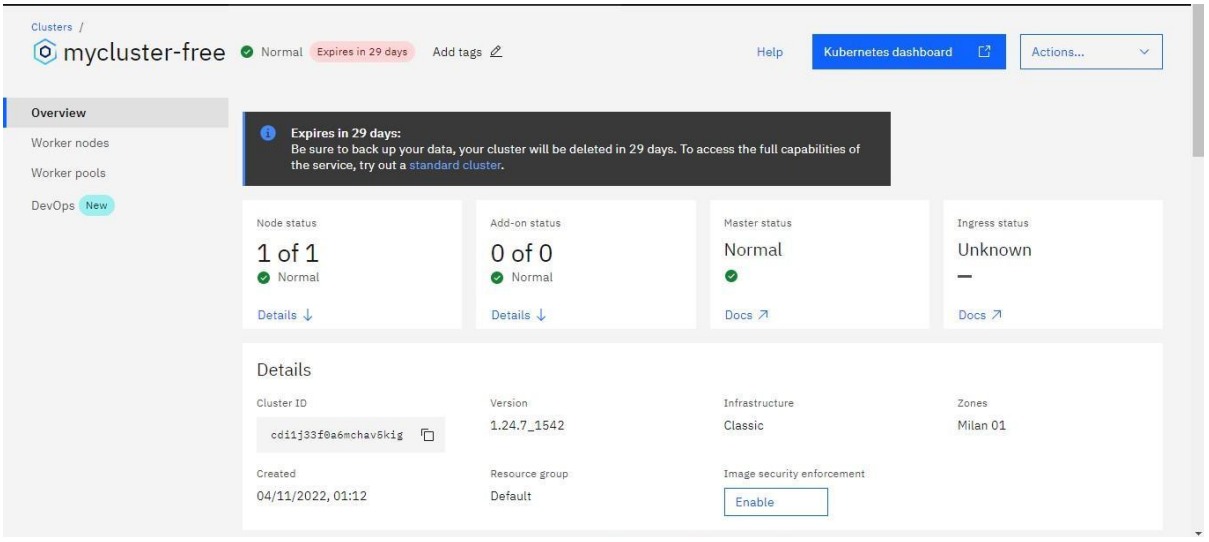


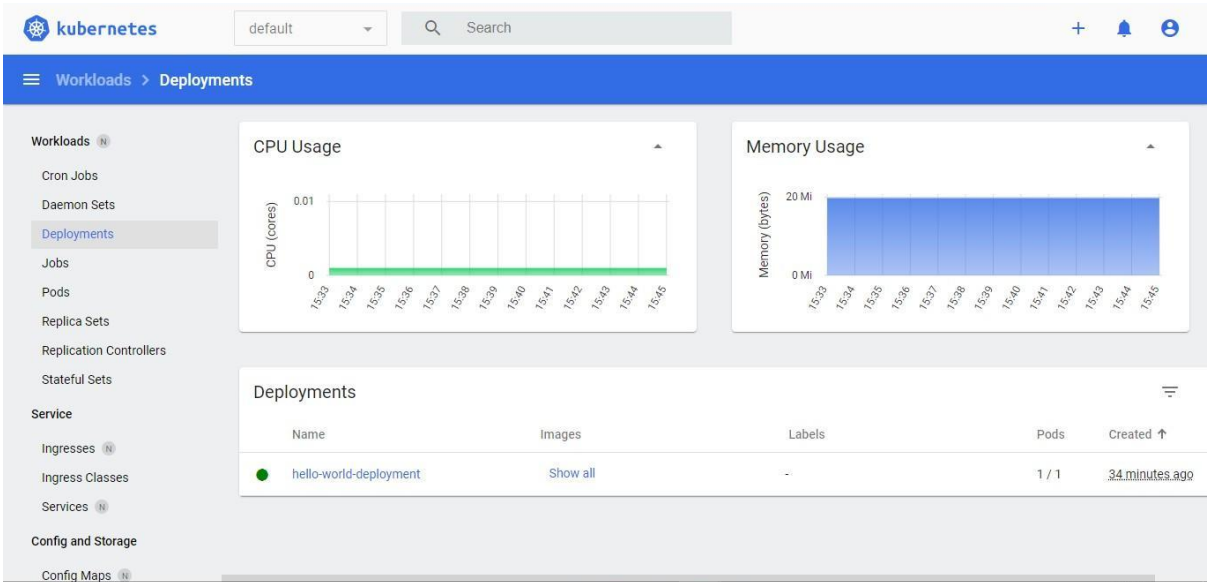
Question 4:

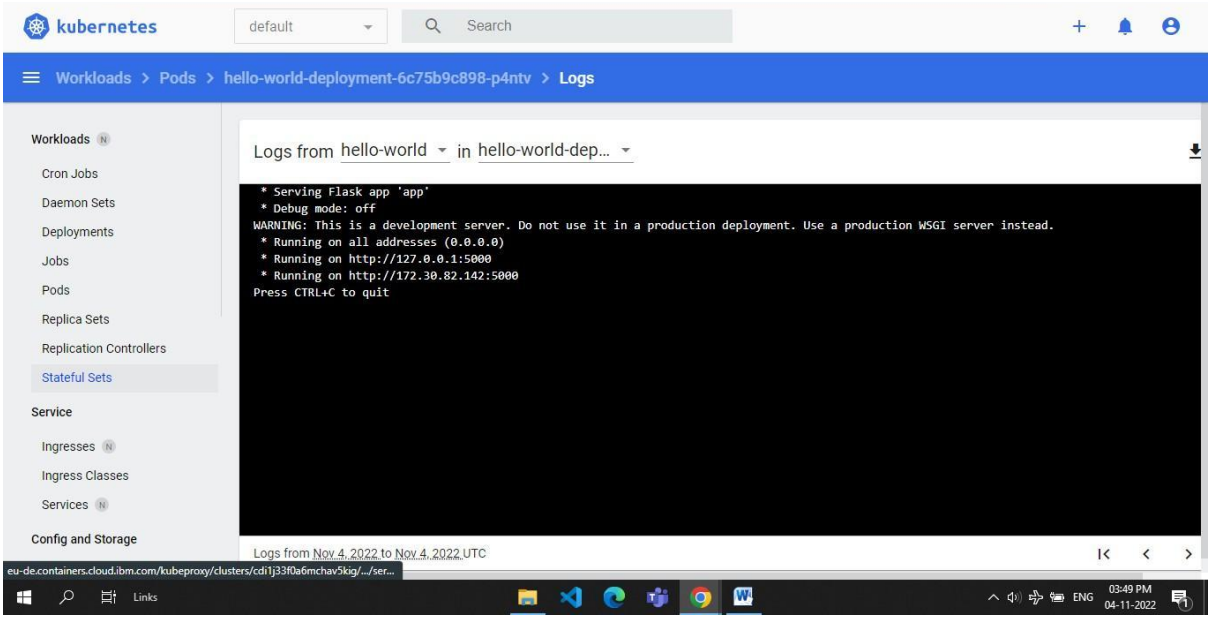
Create a kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

Solution 4:

```
apiVersion: v1
kind: Service
metadata:
   name: hello-world-deployment
spec:
   ports:
   - port: 5000
     targetPort: 5000
   selector:
     app: hello-world
---
apiVersion: apps/v1
kind: Deployment
metadata:
   name: hello-world-deployment
spec:
   replicas: 1
   selector:
     matchLabels:
       app: hello-world
   template:
     metadata:
       labels:
         app: hello-world
     spec:
       containers:
       - name: hello-world
         image: au.icr.io/hello-world-app/hello-world
         imagePullPolicy: Always
         ports:
         - containerPort: 5000
```


Clusters /
mycluster-free
Normal
Expires in 29 days
Add tags
Help
Kubernetes dashboard
Actions...
Overview
Worker nodes
Worker pools
DevOps
New
Expires in 29 days:
Be sure to back up your data, your cluster will be deleted in 29 days. To access the full capabilities of the service, try out a standard cluster.
Node status
1 of 1
Normal
Details
Add-on status
0 of 0
Normal
Details
Master status
Normal
Docs
Ingress status
Unknown
Docs
Details
Cluster ID
cdi1j33f0a6mchav5kig
Version
1.24.7_1542
Infrastructure
Classic
Zones
Milan 01
Created
04/11/2022, 01:12
Resource group
Default
Image security enforcement
Enable


kubernetes
default
Search
Workloads > Deployments
Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Ingress Classes
Services
Config and Storage
Config Maps
CPU Usage
CPU (cores)
0.01
0
Memory Usage
Memory (bytes)
20 Mi
0 Mi
Deployments
Name
Images
Labels
Pods
Created
hello-world-deployment
Show all
-
1 / 1
34 minutes ago


kubernetes
default
Search
Workloads > Pods > hello-world-deployment-6c75b9c898-p4ntv > Logs
Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Ingress Classes
Services
Config and Storage
Logs from hello-world in hello-world-dep...
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.30.82.142:5000
Press CTRL+C to quit
Logs from Nov 4, 2022 to Nov 4, 2022 UTC
eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdi1j33f0a6mchav5kig/.../ser...
Links
ENG
03:49 PM
04-11-2022