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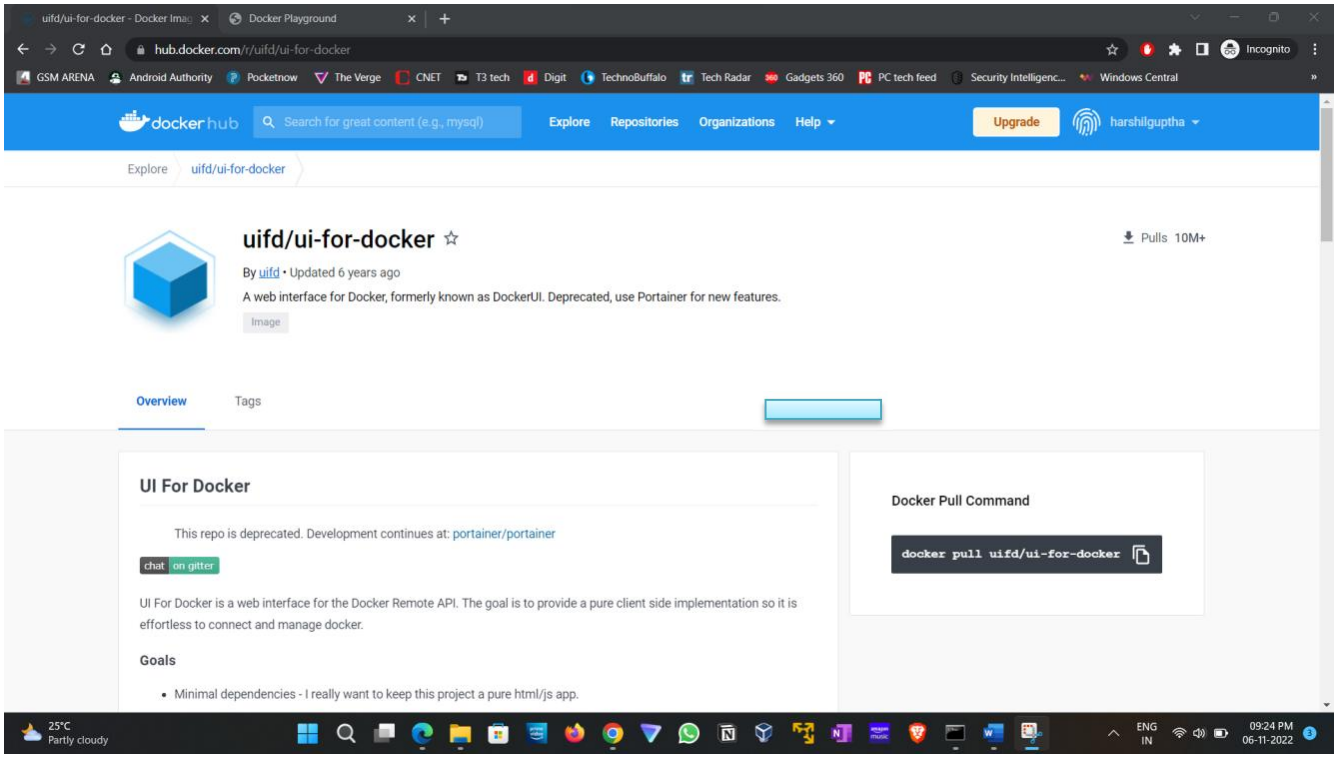
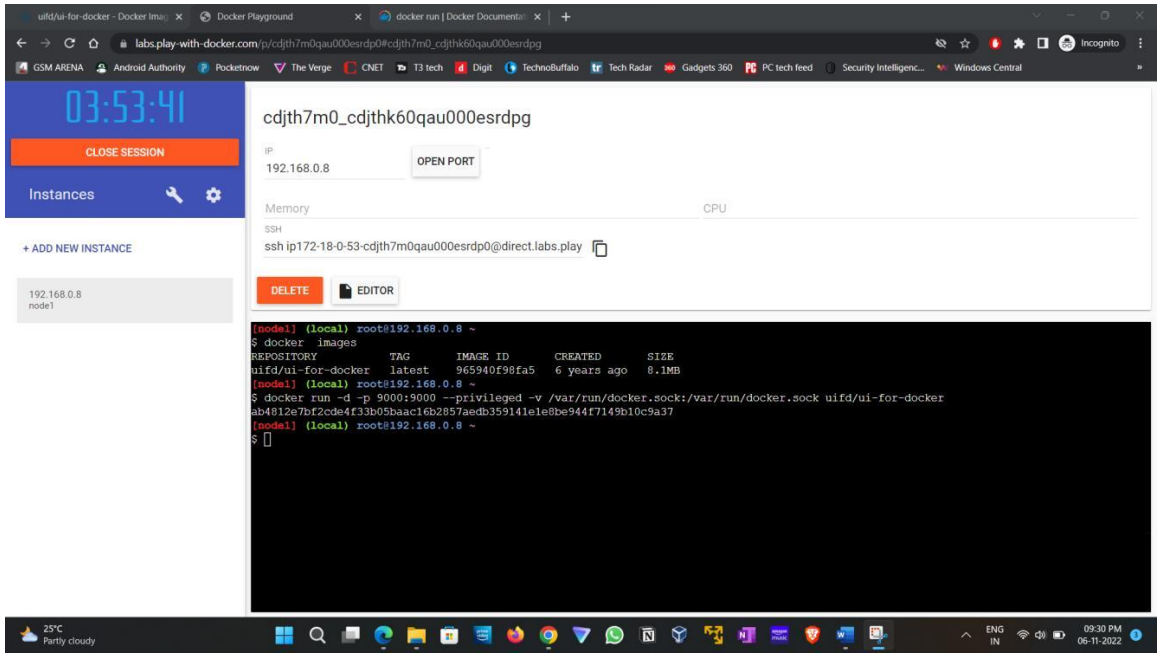
|---|---|
| Date | 03 November 2022 |
| Team ID | PNT2022TMID31668 |
| Name | AJITH KUMAR S |
| Project Name | CONTAINMENT ZONE ALERTING |

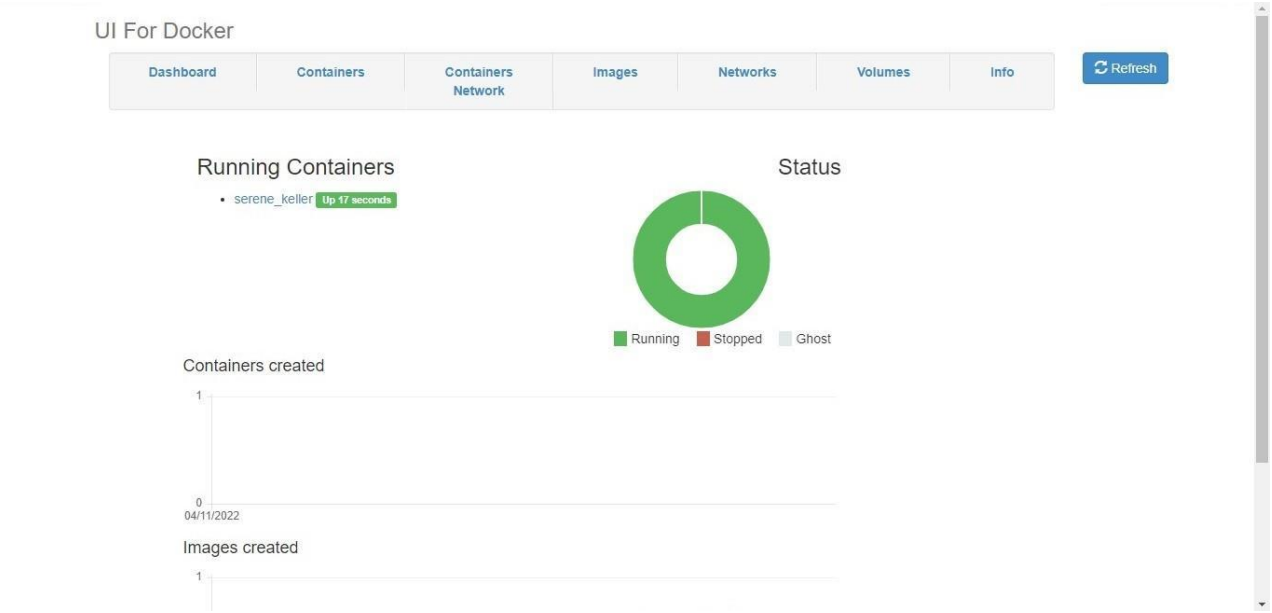
**Question 1:**
Pull an image from docker hub and run it on docker playground.
**Solution 1:**
docker pull uifd/ui-for-docker
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for docker



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"]
```

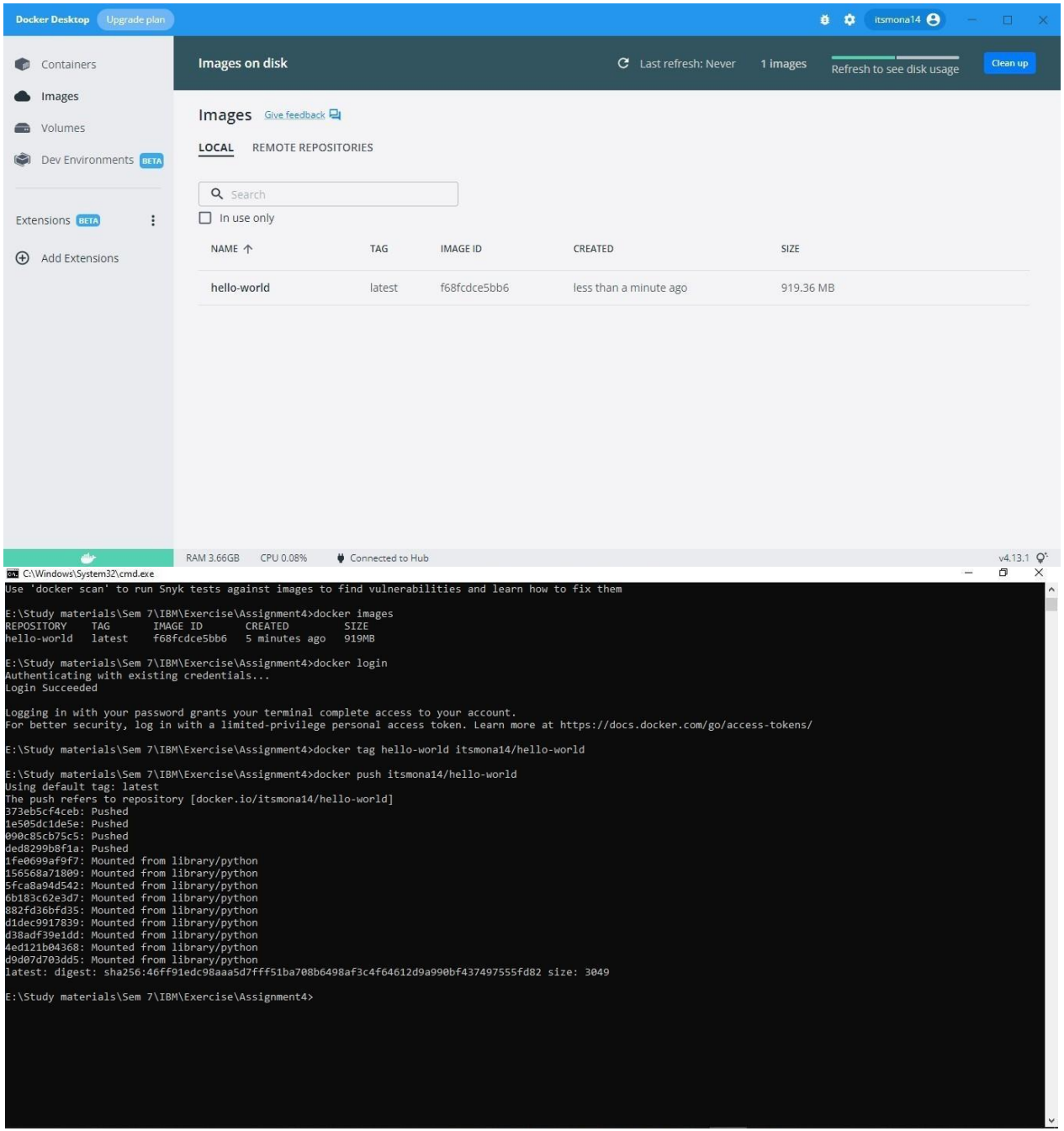
**Bulid Docker image**

C:\Windows\System32\cmd.exe

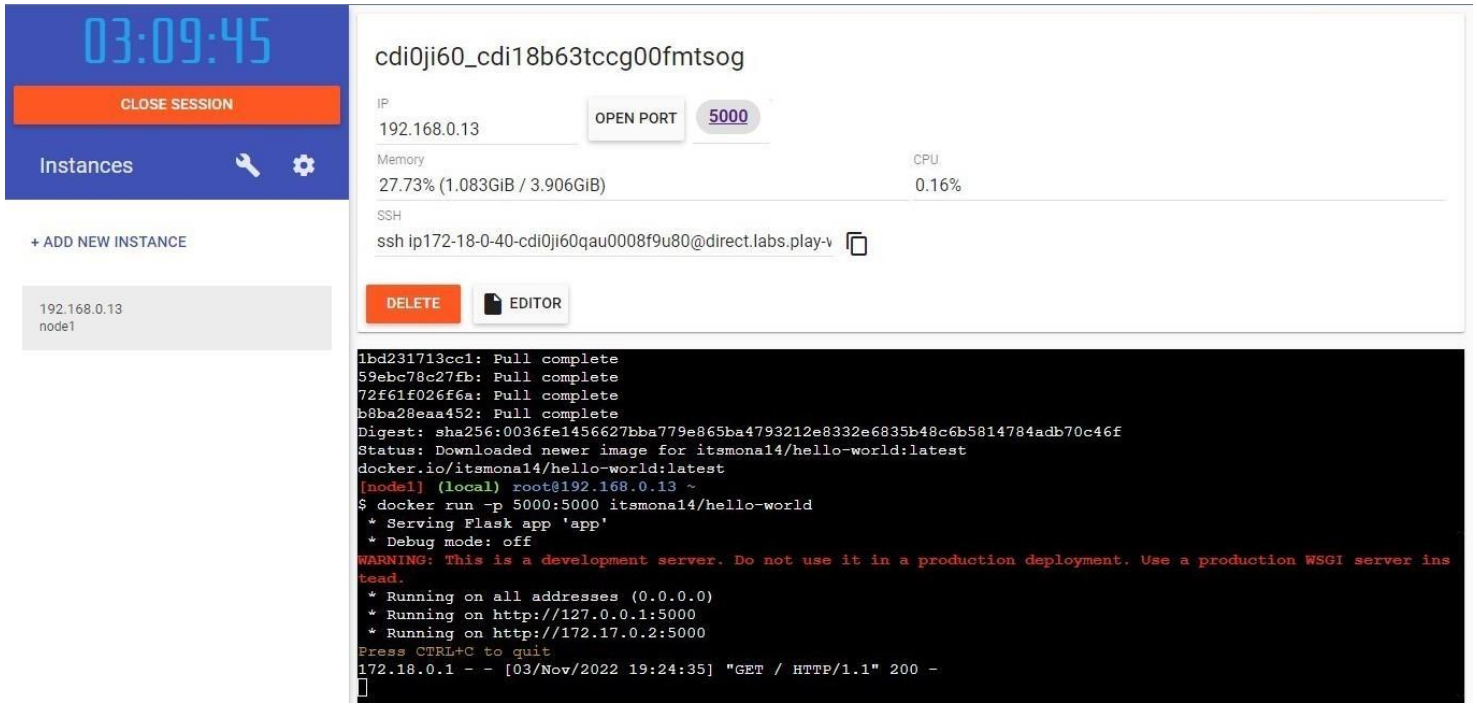
```
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker build -t hello-world .
[+] Building 160.4s (10/10) FINISHED
 => [internal] load build definition from Dockerfile                                                                    0.0s
 => => transferring dockerfile: 194B                                                                                    0.0s
 => [internal] load .dockerignore                                                                                       0.0s
 => => transferring context: 2B                                                                                         0.0s
 => [internal] load metadata for docker.io/library/python:3.8                                                           5.8s
 => [1/5] FROM docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5      149.9s
 => => resolve docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5        0.0s
 => => sha256:900972ffeecd8c17c25b21573681851f092e054f57ccd7eb43937a1a47114480 8.56kB / 8.56kB                          0.0s
 => => sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770 55.05MB / 55.05MB                       65.2s
 => => sha256:4edced8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d 10.88MB / 10.88MB                        8.7s
 => => sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5 1.86kB / 1.86kB                          0.0s
 => => sha256:254101fcf737ef89a912ce9ad7488801a01e0a35bff1cc5e7d6bb86d0b6e1c3f 2.22kB / 2.22kB                          0.0s
 => => sha256:de4a4c6caea8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1 5.16MB / 5.16MB                         18.3s
 => => sha256:a7969cffbf46e6a91291fd76b19ecbe93c03ea4ded0d14042aecb4c0c4211a43 54.59MB / 54.59MB                       47.5s
 => => sha256:74fbfde6af91271fb88f0a1716224dcce5c0ebead3609943792a9cb6ba4d6d3d 196.87MB / 196.87MB                    133.3s
 => => sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 6.29MB / 6.29MB                         53.8s
 => => sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 17.39MB / 17.39MB                       68.0s
 => => sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 234B / 234B                             67.3s
 => => extracting sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770                               10.8s
 => => sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fdf7312a397860b4637f72ce91b6 2.89MB / 2.89MB                         70.7s
 => => extracting sha256:de4a4c6caea8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1                                1.3s
 => => extracting sha256:4edced8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d                                1.0s
 => => extracting sha256:a7969cffbf46e6a91291fd76b19ecbe93c03ea4ded0d14042aecb4c0c4211a43                               13.1s
 => => extracting sha256:74fbfde6af91271fb88f0a1716224dcce5c0ebead3609943792a9cb6ba4d6d3d                               13.6s
 => => extracting sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37                                0.4s
 => => extracting sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4                                1.1s
 => => extracting sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1                                0.0s
 => => extracting sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fdf7312a397860b4637f72ce91b6                                0.4s
 => [internal] load build context                                                                                       0.0s
 => => transferring context: 1.15kB                                                                                     0.0s
 => [2/5] WORKDIR /app                                                                                                  0.4s
 => [3/5] ADD . /app                                                                                                    0.1s
 => [4/5] COPY requirements.txt /app                                                                                    0.0s
 => [5/5] RUN python3 -m pip install -r requirements.txt                                                                3.8s
 => exporting to image                                                                                                  0.2s
 => => exporting layers                                                                                                 0.2s
 => => writing image sha256:f68fcdce5bb665f00e8f47bc4d137a4f7e0533348402c5bfdad71121d7d43f63                            0.0s
 => => naming to docker.io/library/hello-world                                                                          0.0s

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

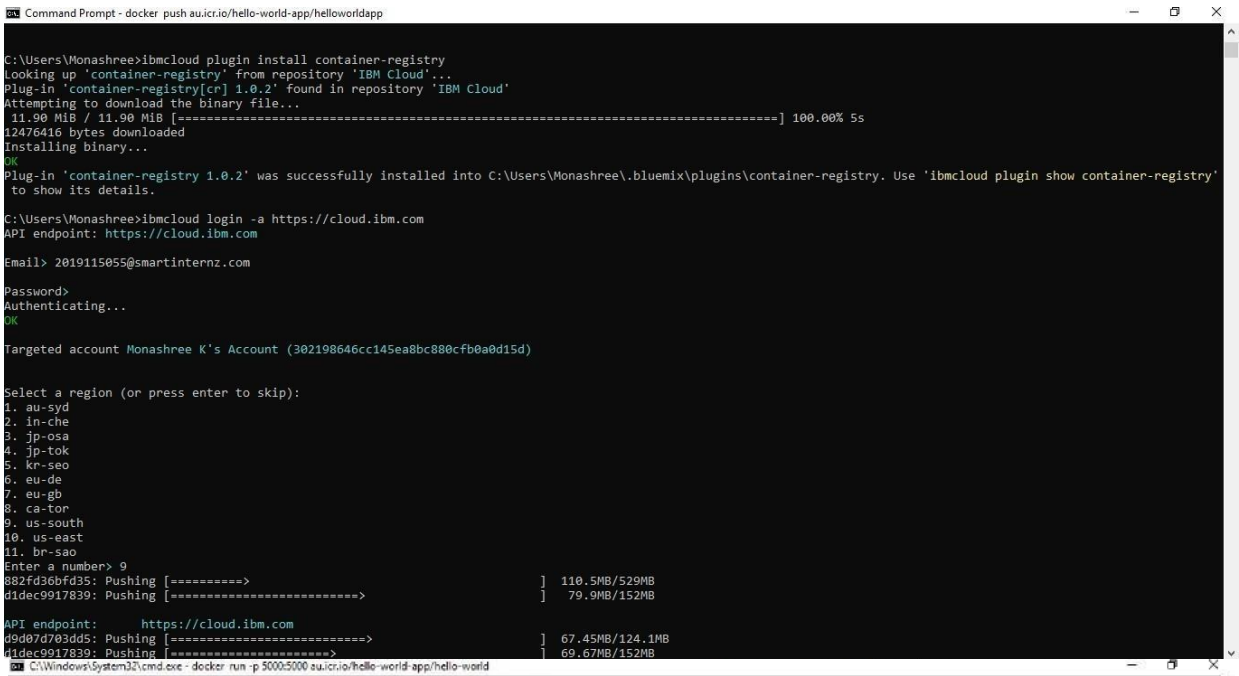
# Deploy it on Docker hub

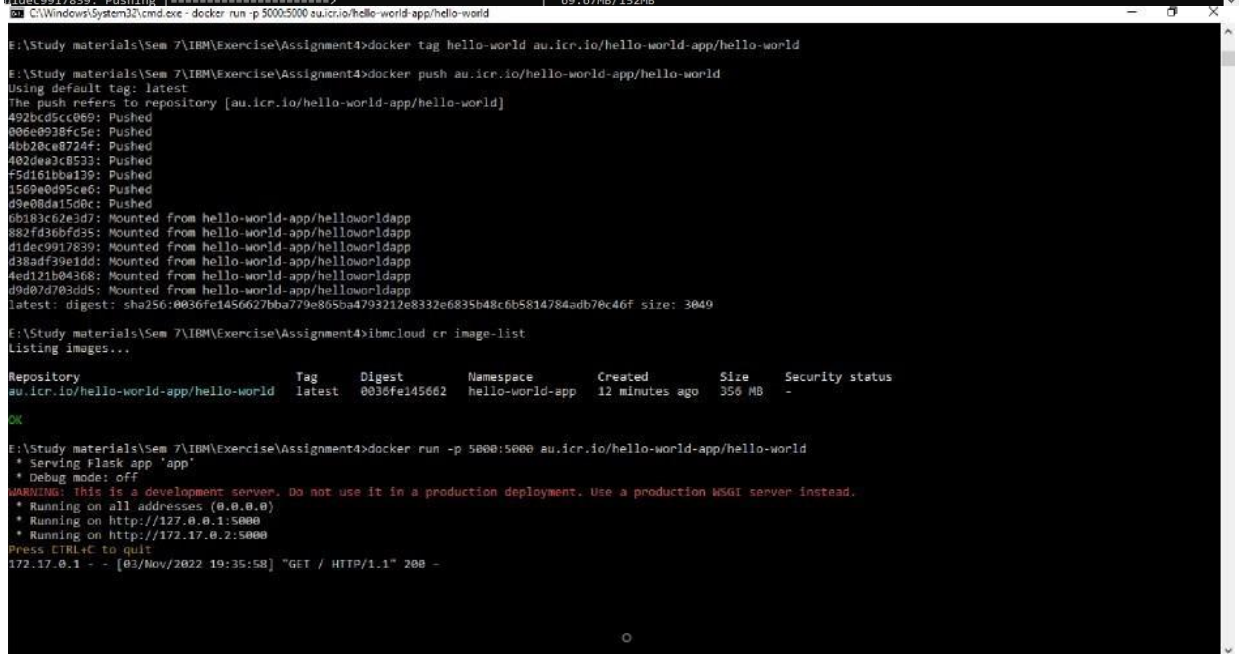


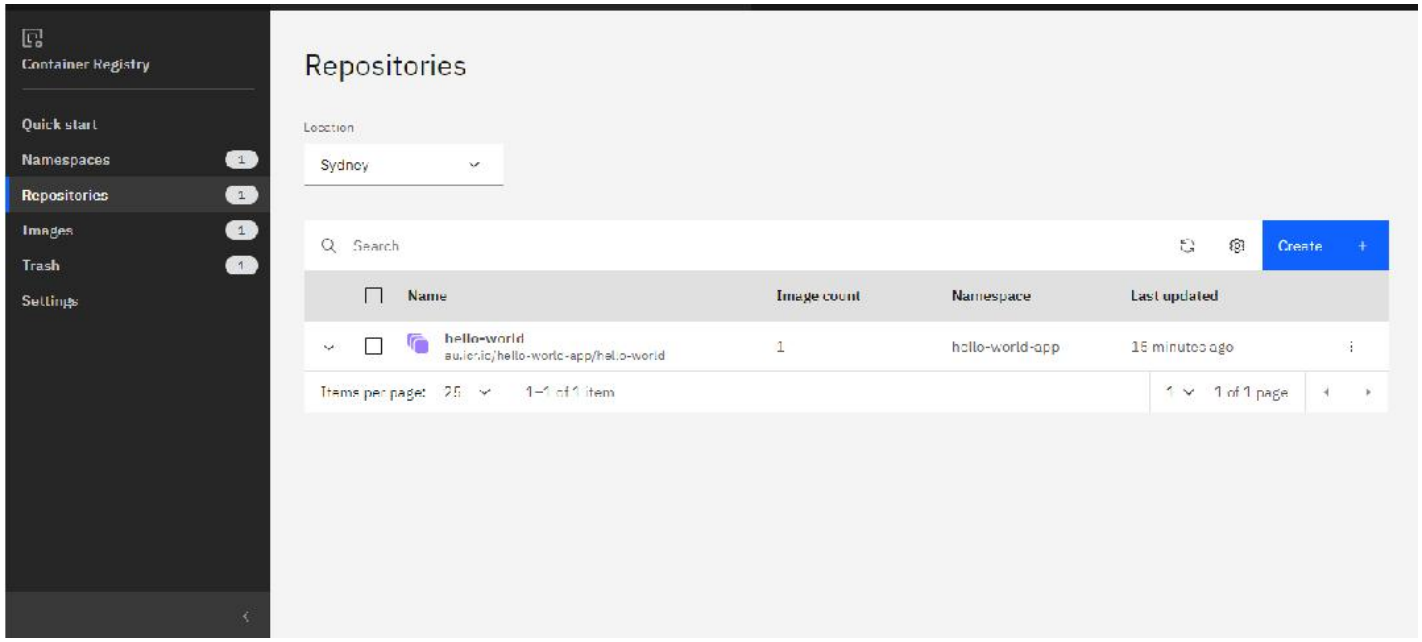
**Tested it using Docker playground**




**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/hello-world


Command Prompt - docker push au.icr.io/hello-world-app/helloworldapp
C:\Users\Monashree>ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
11.90 MiB / 11.90 MiB [==========] 100.00% 5s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Monashree\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.
C:\Users\Monashree>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com
Email> 2019115055@smartinternz.com
Password>
Authenticating...
OK
Targeted account Monashree K's Account (302198646cc145ea8bc880cfb0a0d15d)
Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
882fd36bfd35: Pushing [==========> ] 110.5MB/529MB
d1dec9917839: Pushing [==========> ] 79.9MB/152MB
API endpoint: https://cloud.ibm.com
d9d07d703dd5: Pushing [==========> ] 67.45MB/124.1MB
d1dec9917839: Pushing [==========> ] 69.67MB/152MB


C:\Windows\System32\cmd.exe - docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc069: Pushed
006e0938fc5e: Pushed
4bb20ce8724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1569e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/helloworldapp
882fd36bfd35: Mounted from hello-world-app/helloworldapp
d1dec9917839: Mounted from hello-world-app/helloworldapp
d38adf39e1dd: Mounted from hello-world-app/helloworldapp
4ed121b04368: Mounted from hello-world-app/helloworldapp
d9d07d703dd5: Mounted from hello-world-app/helloworldapp
latest: digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f size: 3049
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>ibmcloud cr image-list
Listing images...
Repository Tag Digest Namespace Created Size Security status
au.icr.io/hello-world-app/hello-world latest 0036fe145662 hello-world-app 12 minutes ago 356 MB -
OK
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
* 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://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [03/Nov/2022 19:35:58] "GET / HTTP/1.1" 200 -




**Question 4:**

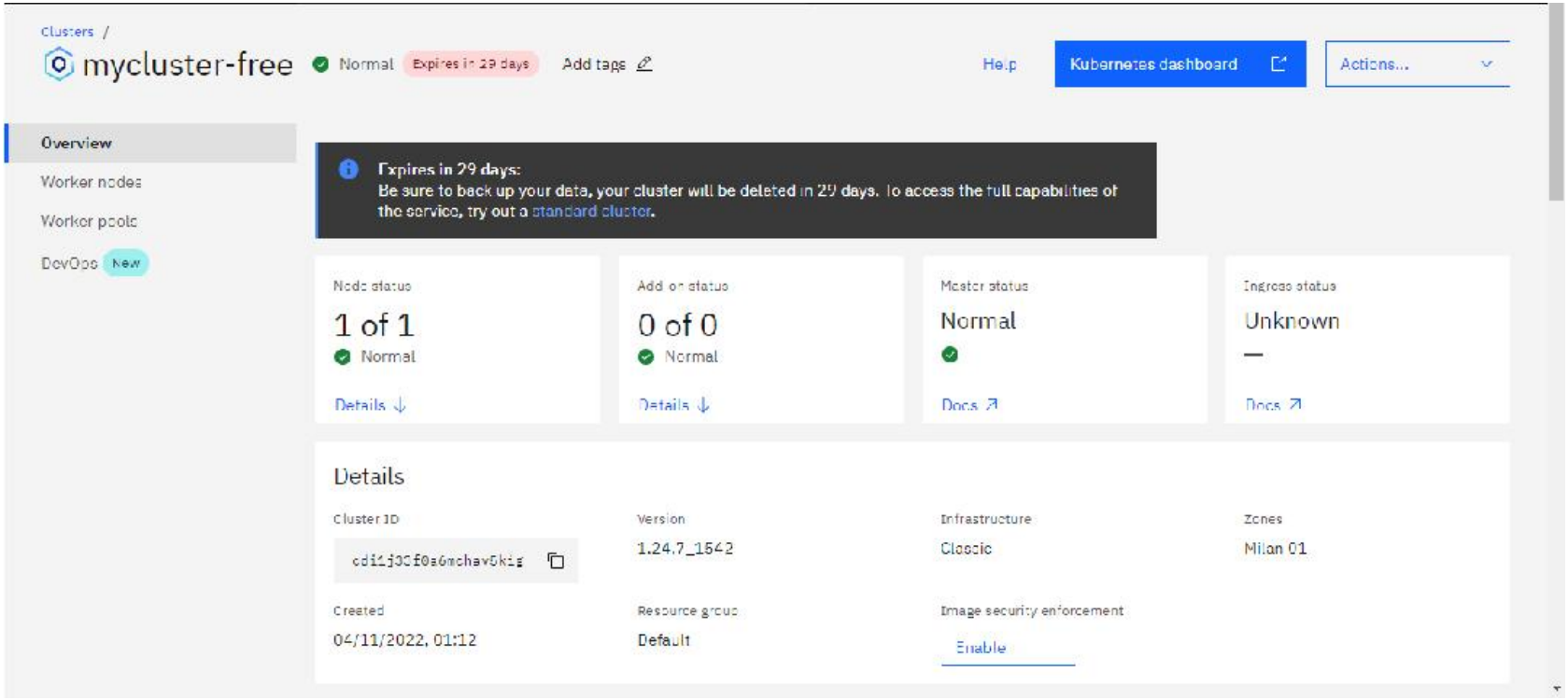
Create a kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

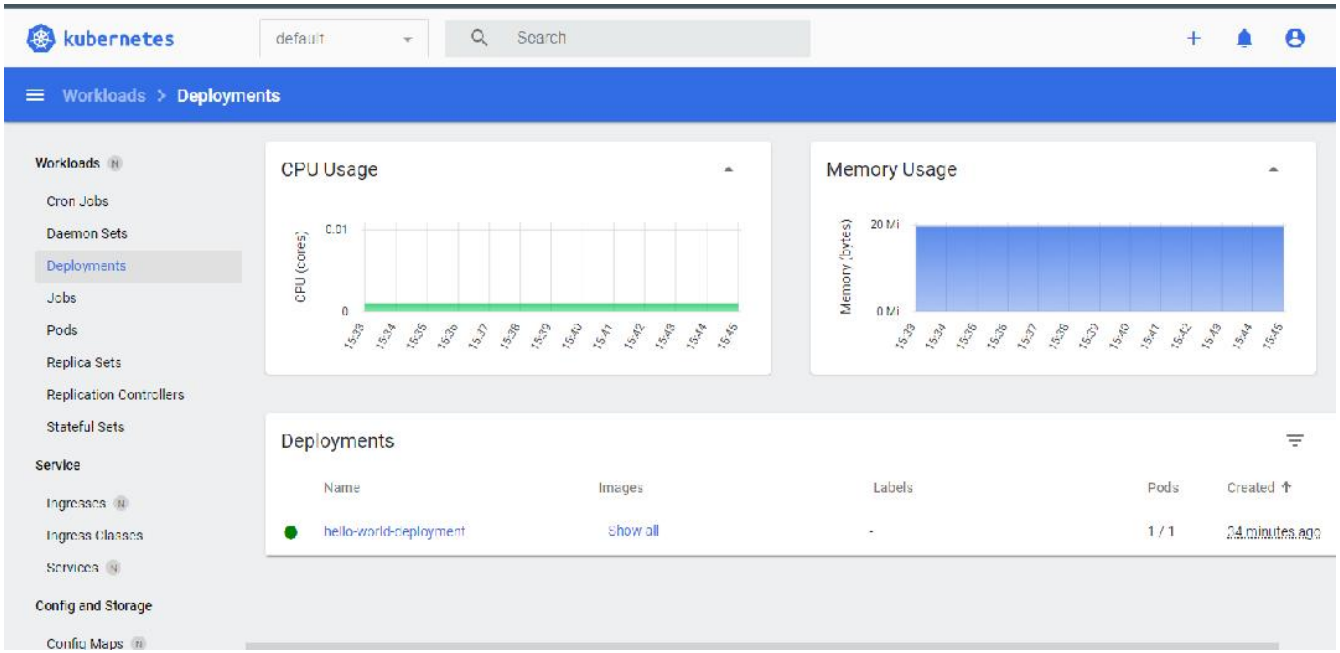
**Solution 4:**

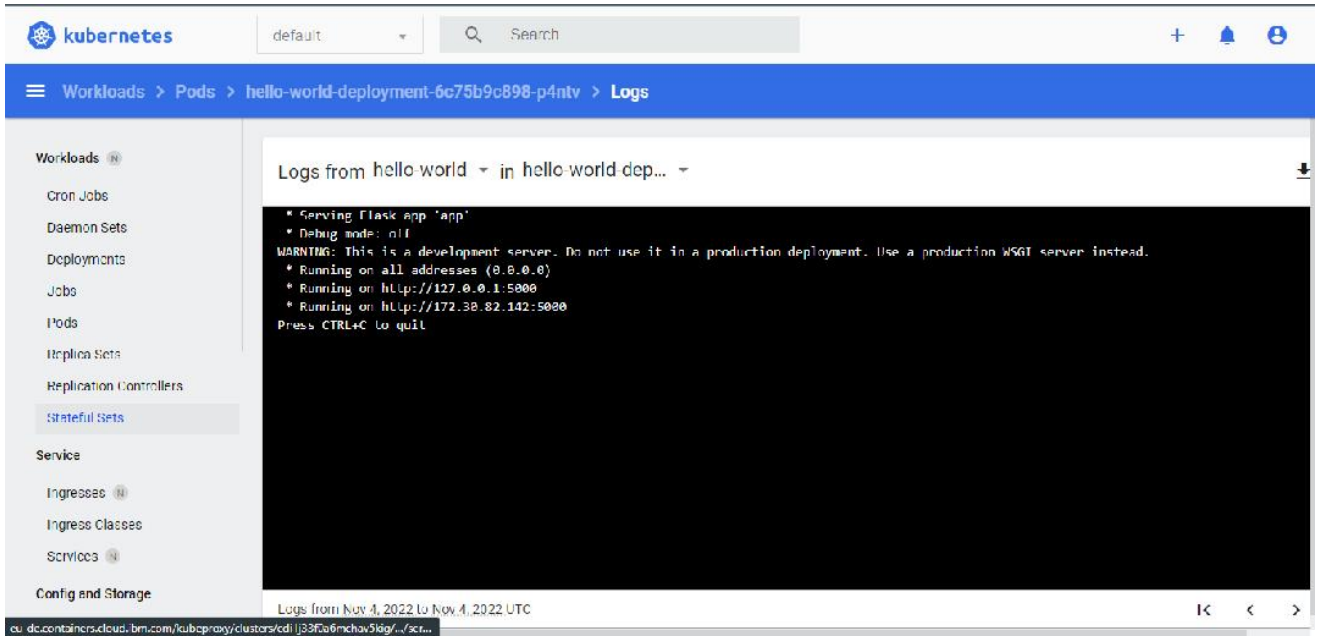
https://raw.githubusercontent.com/itsmona14/IBM-Assignment-cloud/main/deployment.yaml

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
cdijd3f0s6mchav0kig
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
24 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