

## ASSIGNMENT 4

### Database connection

Date	02 November 2022
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Student Roll no	621319104053
Maximum Marks	2 Marks

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

##### App.py

```
from flask import Flask
app=Flask(__name__)
import os
@app.route("/")
def home():
    return "Hello"

if __name__=="__main__":
    port=int(os.environ.get('PORT',5000))
    app.run(host='0.0.0.0',port=port)
```

##### Docker file

```
FROM python
WORKDIR /app
COPY . .
RUN pip install -r requirement.txt
CMD ["python","app.py"]
EXPOSE 5000
```

02:54:14

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.8  
node1

cdhl6tu3\_cdhm1q63tccg00fmst4g

IP  
192.168.0.8

OPEN PORT

Memory

CPU

SSH  
ssh ip172-18-0-45-cdhl6tu3tccg00fmsr9g@direct.labs.play-

DELETE

EDITOR

```
python latest 00cd1fb8bdcc 8 days ago 932MB
[node1] (local) root@192.168.0.8 ~
$ docker run -p 5000:5000 helloapp
* 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://172.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.18.0.1 - - [03/Nov/2022 06:41:07] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:41:08] "GET /favicon.ico HTTP/1.1" 404 -
172.18.0.1 - - [03/Nov/2022 06:41:53] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:42:04] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:42:06] "GET /favicon.ico HTTP/1.1" 404 -
172.18.0.1 - - [03/Nov/2022 06:42:16] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:42:20] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:42:21] "GET /favicon.ico HTTP/1.1" 404 -
172.18.0.1 - - [03/Nov/2022 06:42:29] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [03/Nov/2022 06:42:29] "GET / HTTP/1.1" 200 -
```

Windows taskbar with search, file explorer, and various application icons.

System tray with network, volume, and clock (12:12 03-11-2022).

03:46:39

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18  
node1

cdjqr4n9\_cdjqr6n91rrg00fv71ng

IP  
192.168.0.18

OPEN PORT

Memory  
56.86% (2.221GiB / 3.906GiB)

CPU  
0.22%

SSH  
ssh ip172-18-0-13-cdjqr4n91rrg00fv71ng@direct.labs.play-

DELETE

EDITOR

```
---> abd93ff8e465
Step 8/8 : CMD ["python","app.py"]
---> Running in c61cd0f020bb
Removing intermediate container c61cd0f020bb
---> cb0c181d8579
Successfully built cb0c181d8579
Successfully tagged helloworldapp:latest
[node1] (local) root@192.168.0.18 ~
$ docker image ls
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
helloworldapp        latest          cb0c181d8579    2 minutes ago  1.08GB
docker               latest          adc767c402b4    11 days ago    151MB
python               latest          00cd1fb8bdcc    11 days ago    932MB
python               3.6            54260638d07c    10 months ago  902MB
uifd/ui-for-docker   latest          965940f98fa5    6 years ago    8.1MB
[node1] (local) root@192.168.0.18 ~
$
```

03:49:35

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18  
node1

cdjqr4n9\_cdjqr6n91rrg00fv71ng

IP

192.168.0.18

OPEN PORT

Memory

57.03% (2.228GiB / 3.906GiB)

CPU

0.23%

SSH

ssh ip172-18-0-13-cdjqr4n91rrg00fv71mg@direct.labs.play-

DELETE

EDITOR

```
/venv
WARNING: You are using pip version 21.2.4; however, version 21.3.1 is available.
You should consider upgrading via the '/usr/local/bin/python3 -m pip install --upgrade pip' command.
Removing intermediate container 886c3e73680e
--> 8b26a09aa2a2
Step 7/8 : EXPOSE 5000
--> Running in 32fa8b673695
Removing intermediate container 32fa8b673695
--> abd93ff8e465
Step 8/8 : CMD ["python","app.py"]
--> Running in c61cd0f020bb
Removing intermediate container c61cd0f020bb
--> cb0c181d8579
Successfully built cb0c181d8579
Successfully tagged helloworldapp:latest
[nodal1] (local) root@192.168.0.18 ~
$
```

Hello

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

```
C:\Windows\System32\cmd.e  X  +  v

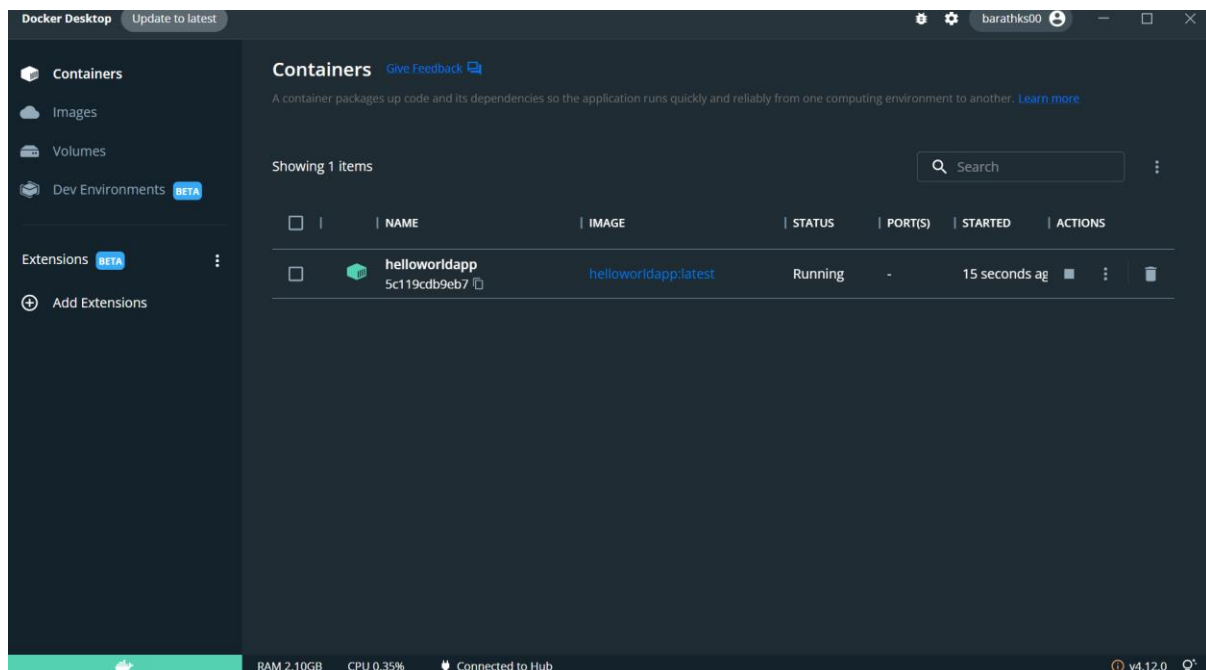
Microsoft Windows [Version 10.0.22621.755]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Barath\Desktop\helloworldapp>docker build -t helloworldapp .
[+] Building 101.1s (12/12) FINISHED
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 229B                                              0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                  0.0s
=> [internal] load metadata for docker.io/library/python:3.6                    3.8s
=> [auth] library/python:pull token for registry-1.docker.io                    0.0s
=> [internal] load build context                                                  0.0s
=> => transferring context: 338B                                                0.0s
=> [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6  0.0s
=> CACHED [2/6] WORKDIR /app                                                    0.0s
=> [3/6] ADD . /app                                                             0.1s
=> [4/6] COPY requirements.txt /app                                             0.2s
=> [5/6] RUN python3 -m pip install -r requirements.txt                         94.7s
=> [6/6] RUN python3 -m pip install ibm_db                                    1.2s
=> exporting to image                                                            1.0s
=> => exporting layers                                                            0.9s
=> => writing image sha256:2388a5f6ea31f7e206970cfd97754e130fdd4c780d8e9c5dc3f1b7804e313f70  0.0s
=> => naming to docker.io/library/helloworldapp                                0.0s

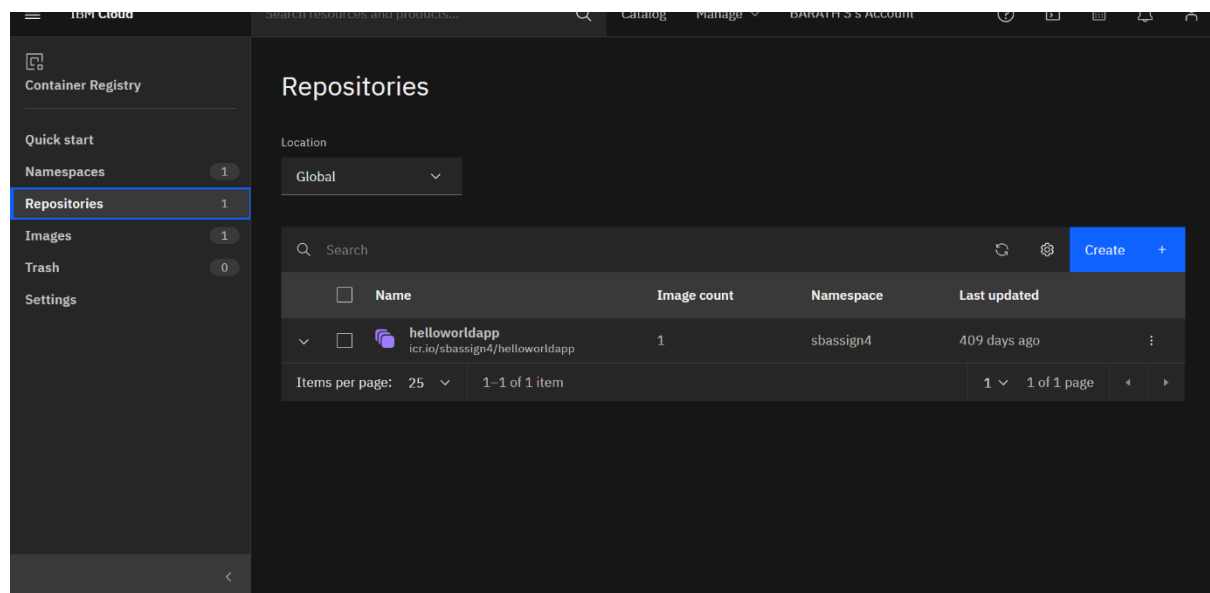
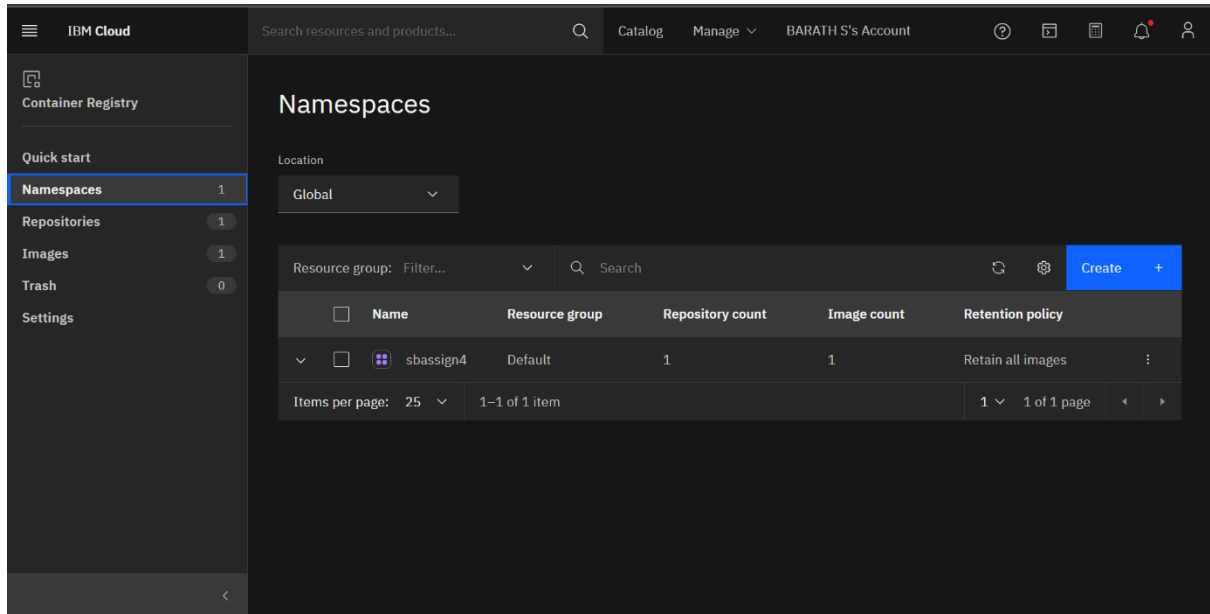
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

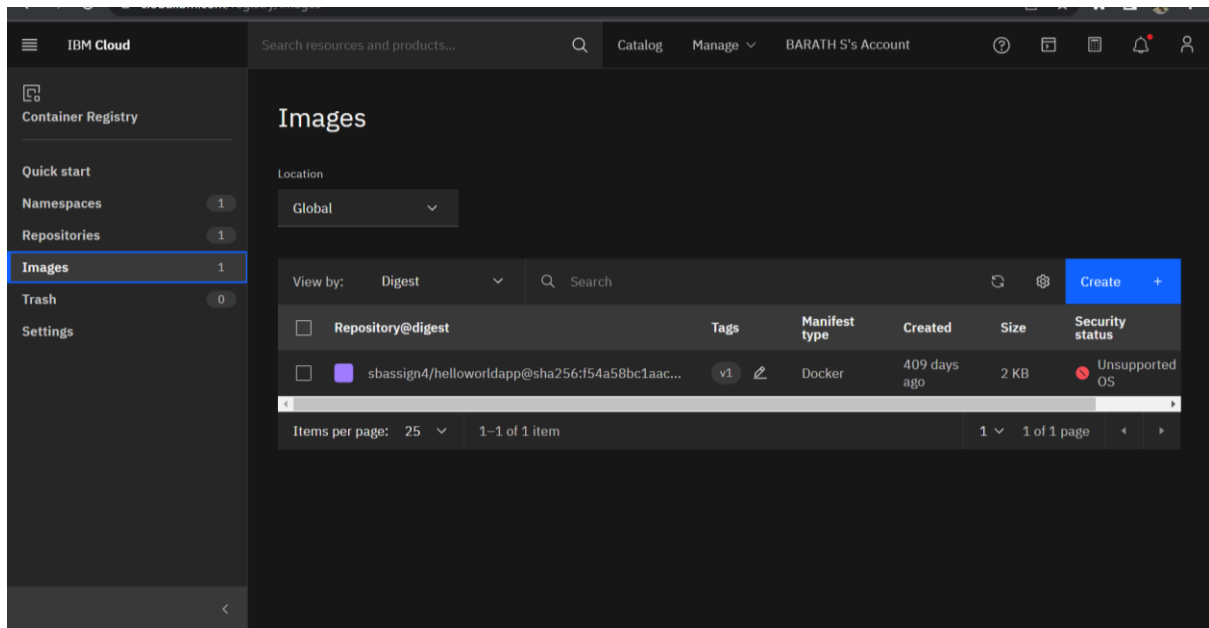
C:\Users\Barath\Desktop\helloworldapp>
```

```
C:\Users\Barath\Desktop\helloworldapp>docker images
REPOSITORY          TAG         IMAGE ID      CREATED        SIZE
helloworldapp       latest     2388a5f6ea31  About a minute ago  1.08GB
code                latest     d4e73184e6f8  29 hours ago   1.08GB
docker/getting-started latest     cb90f98fd791  6 months ago   28.8MB
```

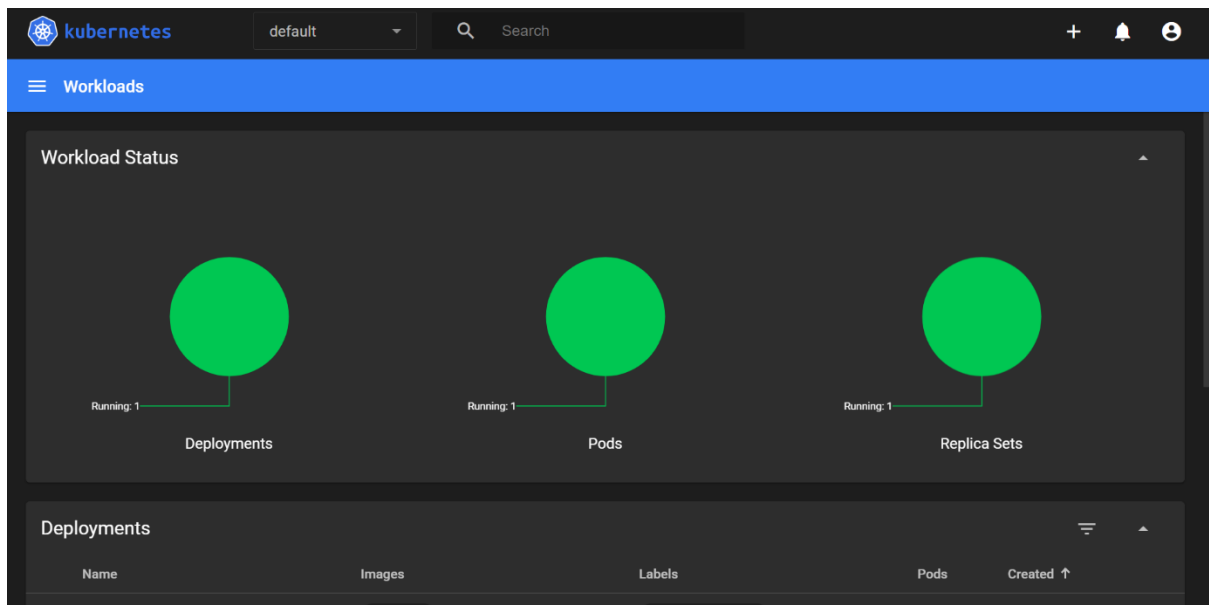


### 3.Create a IBM container registry and deploy helloworld app or jobportalapp.





**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**



kubernetes

default

Search

Workloads

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Deployments

Name	Images	Labels	Pods	Cr
<div></div> helloworldapp	nginx	app: helloworldapp	1 / 1	8 h

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)
<div></div> helloworldapp-7989877b4b-b25rz	nginx	app: helloworldapp pod-template-hash: 7989877b4b	docker-desktop	Running	1	-	-

Replica Sets

Name	Images	Labels	Pods	C
<div></div> helloworldapp-7989877b4b	nginx	app: helloworldapp pod-template-hash: 7989877b4b	1 / 1	8

kubernetes

default

Search

Cluster > Namespaces

Namespaces

Name	Labels	Phase	Created ↑
<div></div> kubernetes-dashboard	kubernetes.io/metadata.name: kubernetes-dashboard	Active	17 hours ago
<div></div> default	kubernetes.io/metadata.name: default	Active	17 hours ago
<div></div> kube-node-lease	kubernetes.io/metadata.name: kube-node-lease	Active	17 hours ago
<div></div> kube-public	kubernetes.io/metadata.name: kube-public	Active	17 hours ago
<div></div> kube-system	kubernetes.io/metadata.name: kube-system	Active	17 hours ago