

## Assignment -4

### Docker and kubernetes

Assignment Date	31 OCTOBER 2022
Student Name	Ms.P.Abarna
Student Roll Number	612419104001
Maximum Marks	2 Marks

**Question-1: pull an image from docker hub and run it in docker playground.**

**1)pull an image form docker hub**

```
C:\Windows\System32\cmd.exe - docker pull shabariganesan/docker_with_flask_form:latest
53ad072f9cd1: Download complete
d6b983117533: Retrying id6b983117533: Retrying in 15 seconds
53ad072f9cd1: Pull complete
d6b983117533: Downloading
864a10b3c704: Download complete
4334b2fe8293: Download complete
8944570703f4: Download complete
f885911288d0: Download complete
086f369ca59f: Download complete
e113bd27b88e: Download complete

Failed to lookup host: registry-1.docker.io

C:\Windows\system32>docker pull shabariganesan/docker_with_flask_form:latest
latest: Pulling from shabariganesan/docker_with_flask_form
1671565cc8df: Extracting [=====>] 12.26MB/55.01MB
3e94d13e55e7: Download complete
fa9c7528c685: Download complete
53ad072f9cd1: Downloading [=====>] 50.15MB/54.58MB
d6b983117533: Downloading [=====>] 32.35MB/196.8MB
d8092d56ded5: Downloading [=====>] 3.582MB/6.291MB
c71afc637d59: Waiting
864a10b3c704: Waiting
4334b2fe8293: Waiting
8944570703f4: Waiting
f885911288d0: Waiting
086f369ca59f: Waiting
e113bd27b88e: Waiting
```

**2)run it in docker playground**

```
Select C:\Windows\System32\cmd.exe

C:\Users\gani\Desktop\job_portal>cd ..

C:\Users\gani\Desktop>cd job_portal

C:\Users\gani\Desktop\job_portal>docker build -t job_portal
"docker build" requires exactly 1 argument.
See 'docker build --help'.

Usage:  docker build [OPTIONS] PATH | URL | -

Build an image from a Dockerfile

C:\Users\gani\Desktop\job_portal>dir
Volume in drive C has no label.
Volume Serial Number is B6A3-1D88

Directory of C:\Users\gani\Desktop\job_portal

10/25/2022  04:53 PM    <DIR>          .
10/25/2022  04:53 PM    <DIR>          ..
10/25/2022  04:11 PM               329 app.py
10/22/2022  10:40 PM               140 Dockerfile
10/22/2022  10:40 PM                5 requirements.txt
10/25/2022  04:53 PM    <DIR>          static
10/25/2022  04:53 PM    <DIR>          templates
10/25/2022  04:53 PM    <DIR>          __pycache__
                        3 File(s)          474 bytes
                        5 Dir(s)  77,047,934,976 bytes free

C:\Users\gani\Desktop\job_portal>docker build -t job_portal.
invalid argument "job_portal." for "-t, --tag" flag: invalid reference format
See 'docker build --help'.

C:\Users\gani\Desktop\job_portal>docker build -t job_portal .
[+] Building 463.6s (11/11) FINISHED
=> [internal] load build definition from Dockerfile                                3.25s
=> => transferring dockerfile: 179B                                              0.85s
=> [internal] load .dockerignore                                                  2.55s
=> => transferring context: 2B                                                    0.15s
=> [internal] load metadata for docker.io/library/python:3.10.6                 16.65s
=> [auth] library/python:pull token for registry-1.docker.io                    0.05s
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91052 413.85s
=> => resolve docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91052 0.65s

=> [internal] load build definition from Dockerfile                                3.25s
=> => transferring dockerfile: 179B                                              0.85s
=> [internal] load .dockerignore                                                  2.55s
=> => transferring context: 2B                                                    0.15s
=> [internal] load metadata for docker.io/library/python:3.10.6                 16.65s
=> [auth] library/python:pull token for registry-1.docker.io                    0.05s
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91052 413.85s
=> => resolve docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91052 0.65s
=> sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91052 2.35kB / 2.35kB
=> sha256:8d1f943ceaf3b3ce85df5c9926e7958836b048b700176bf9c56dbf73ac13fca 2.22kB / 2.22kB
=> sha256:d25a66380b10283603ff696d7777bba5c5db1b9126fbabe7d110b9574946bcf84 8.53kB / 8.53kB
=> sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0438c6179588428f99a9da2e 55.01MB / 55.01MB
=> sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 10.88MB / 10.88MB
=> sha256:3e94d13e5e7a4ef17f121376f57fb95c7e1706931f8704aa99260968d81f6e4 5.16MB / 5.16MB
=> sha256:53ad072f9cd16fc8eb93b182b20e758e11acc8ef60babeef0bf1043c08de1901a 54.58MB / 54.58MB
=> sha256:d6b983117533b718374f1701ef593dd2af6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB
=> sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB
=> extracting sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0438c6179588428f99a9da2e 23.4s
=> sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB
=> sha256:864a18b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 234B / 234B
=> sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB
=> extracting sha256:3e94d13e5e7a4ef17f121376f57fb95c7e1706931f8704aa99260968d81f6e4 2.3s
=> extracting sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 3.0s
=> extracting sha256:53ad072f9cd16fc8eb93b182b20e758e11acc8ef60babeef0bf1043c08de1901a 21.2s
=> extracting sha256:d6b983117533b718374f1701ef593dd2af6613c7908c6553be8e2a150e6448a 30.8s
=> extracting sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 3.3s
=> extracting sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 3.4s
=> extracting sha256:864a18b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 0.0s
=> extracting sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 1.2s
=> [internal] load build context                                                  19.4s
=> => transferring context: 526.95kB                                             18.2s
=> [2/5] WORKDIR /app                                                            1.8s
=> [3/5] COPY requirements.txt ./                                                1.8s
=> [4/5] RUN pip install -r requirements.txt                                     18.7s
=> [5/5] COPY . .                                                                1.9s
=> exporting to image                                                            3.6s
=> => exporting layers                                                            2.8s
=> writing image sha256:c450817622a20f1173f9d9da336f8fce5d470a73c535863d970081ba398152d7 0.1s
=> naming to docker.io/library/job_portal                                       0.1s

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

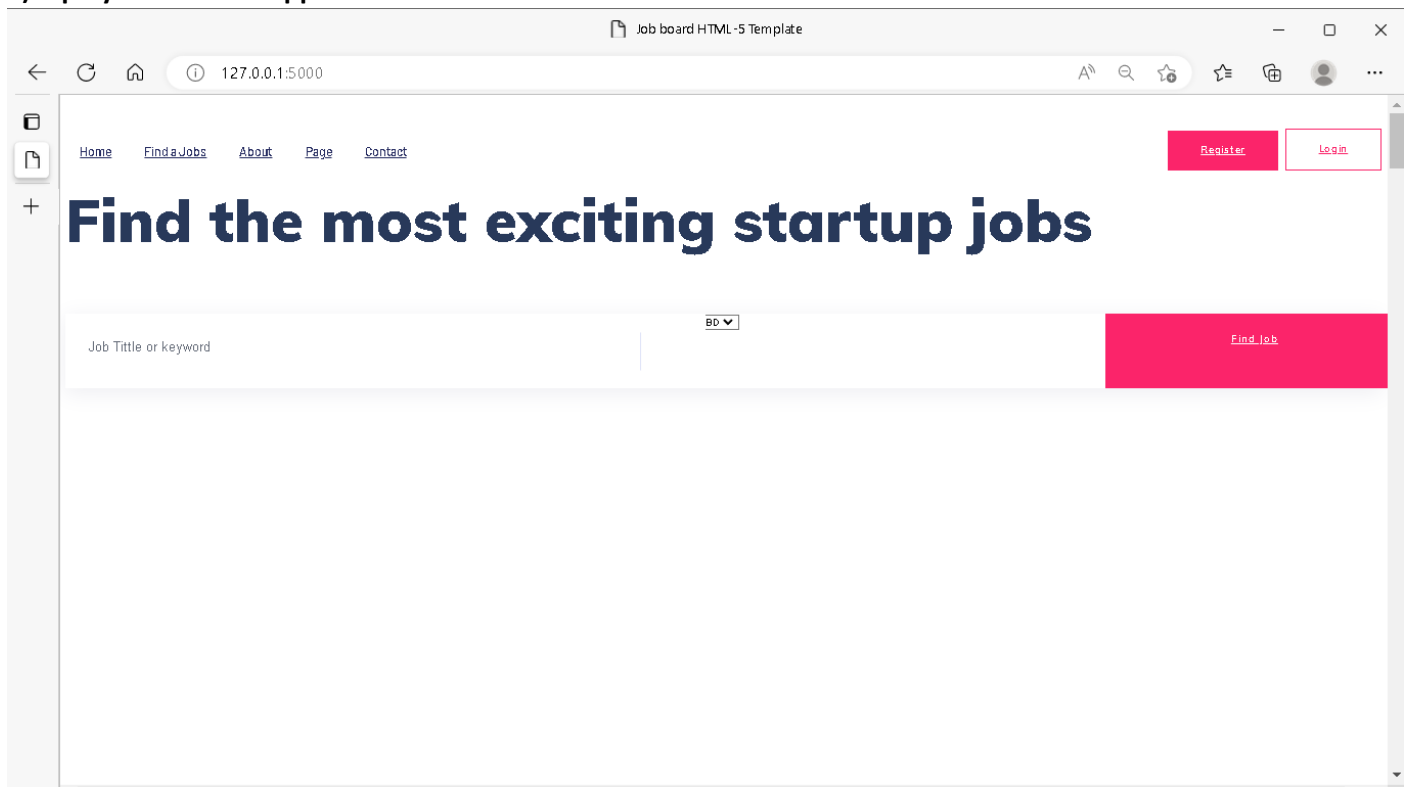
C:\Users\gani\Desktop\job_portal>-
```

**Question-2: Create a docker file for the jobportal application and deploy it in docker application.**

## 1)Creating a docker file for the jobportal application

```
C:\Users\gani\Desktop\job_portal\Dockerfile - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
1 FROM python:3.10.6
2 WORKDIR /app
3 COPY requirements.txt ./
4 RUN pip install -r requirements.txt
5 COPY . .
6 EXPOSE 5000
7 CMD ["python", "./app.py"]
8
```

## 2)deploy in dokcer application



**Question-3:Create albm container registry and deploy helloworld app or jobportalapp**

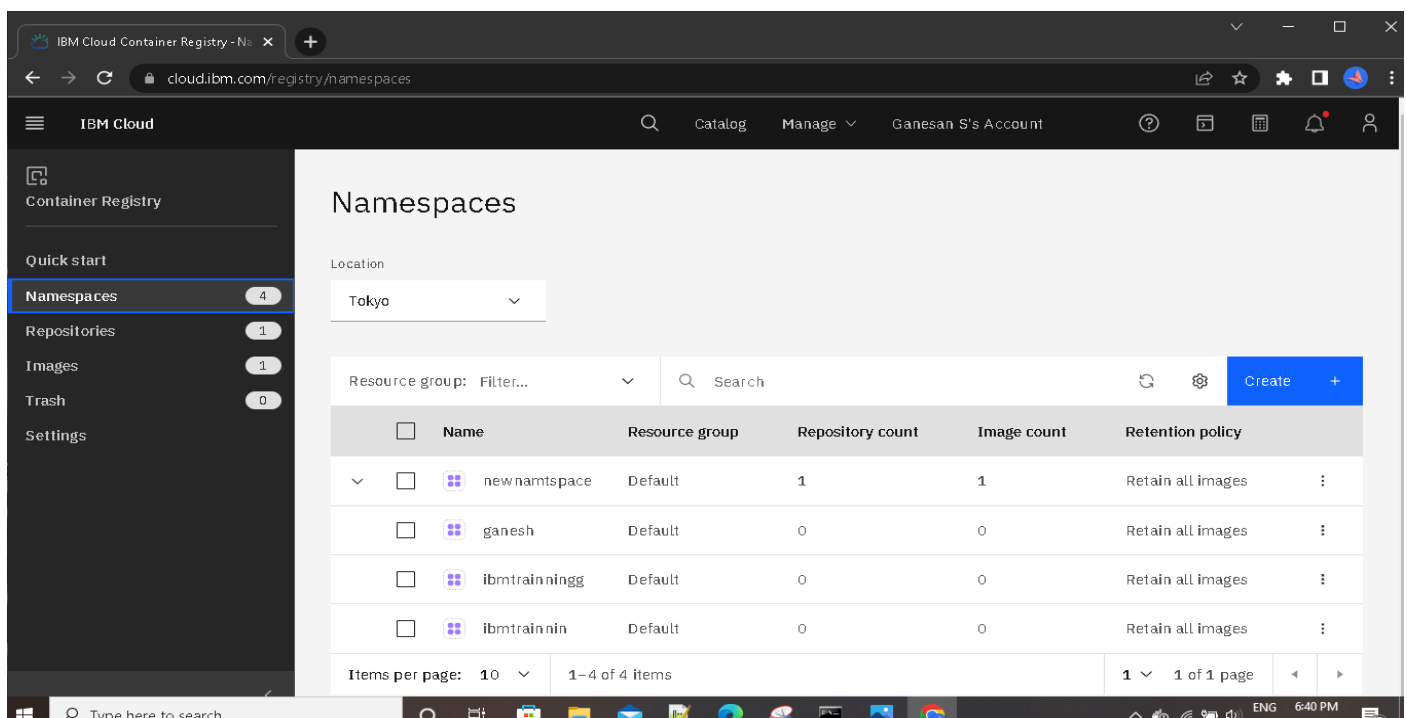
**1)create a ibm container registry**

```
C:\Windows\System32\cmd.exe
11. bn-sao
Enter a number> 4
Targeted region jp-tok

API endpoint:      https://cloud.ibm.com
Region:           jp-tok
User:             612419104010@smartinternz.com
Account:          Ganesan S's Account (2a239674b9ba463891acc3c4fcbe0a99)
Resource group:   No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\gani\Desktop\job_portal>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'
Plug-in 'container-registry 1.0.2' was already installed. Do you want to update it with 'container-registry[cr] 1.0.2' or not? [y/N] > y
Attempting to download the binary file...
 11.90 MiB / 11.90 MiB [=====] 100.00% 7s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\gani\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to s
how its details.

C:\Users\gani\Desktop\job_portal>
```



## 2)deployhelloworld or jobportal

```
C:\Windows\System32\cmd.exe
54acb5a6fa0b: Retrying in 1 second
8d51c618126f: Retrying in 1 second
9ff6e4d46744: Waiting
a89d1d47b5a1: Waiting
655ed1b7a428: Waiting
Failed to lookup host: jp.icr.io

C:\Users\gani\Desktop\job_portal>docker push jp.icr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganeshjob/job_portal]
15e3b158a025: Layer already exists
8be94fb5e186: Pushed
48c2a7a4c12b: Layer already exists
9b72c7835466: Layer already exists
bfc1deb8136e: Layer already exists
1f123186824c: Layer already exists
3d6eb1152931: Pushed
100796cdf3b1: Pushed
54acb5a6fa0b: Retrying in 1 second
8d51c618126f: Pushed
9ff6e4d46744: Pushed
a89d1d47b5a1: Pushed
655ed1b7a428: Pushing [=====>] 89.98MB/124MB
^C

C:\Users\gani\Desktop\job_portal>docker push jp.icr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganeshjob/job_portal]
15e3b158a025: Layer already exists
8be94fb5e186: Layer already exists
48c2a7a4c12b: Layer already exists
9b72c7835466: Layer already exists
bfc1deb8136e: Layer already exists
1f123186824c: Layer already exists
3d6eb1152931: Layer already exists
100796cdf3b1: Layer already exists
54acb5a6fa0b: Pushed
8d51c618126f: Layer already exists
9ff6e4d46744: Layer already exists
a89d1d47b5a1: Layer already exists
655ed1b7a428: Pushed
latest: digest: sha256:e93189a7c97eeb09d86668a54e896cf61aa6eda039998c8c7a2147a7963fc287 size: 3052

C:\Users\gani\Desktop\job_portal>
C:\Users\gani\Desktop\job_portal>
```

## Question-4: Create a kubernetes cluster in ibm cloud

mycluster-free - IBM Cloud

Creating a cluster in your Virtual I

+

cloud.ibm.com/kubernetes/clusters/cdb5m24f0uetwv51ao2g/nodes

IBM Cloud

Q Catalog Manage Ganesan S's Account

Clusters /

mycluster-free

Normal Expires in 29 days Add tags

Help Kubernetes dashboard Actions...

Overview

Worker nodes

Worker pools

DevOps New

Pool: Filter... Search Add

<input type="checkbox"/>	Name	Status	Worker pool	Zone	Private IP	Public IP	Version
<input type="checkbox"/>	00000069	Normal	default	Milan 01	10.144.214.76	159.122.175.138	1.23.12_1548

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Windows Type here to search

8:49 PM 10/25/2022

