

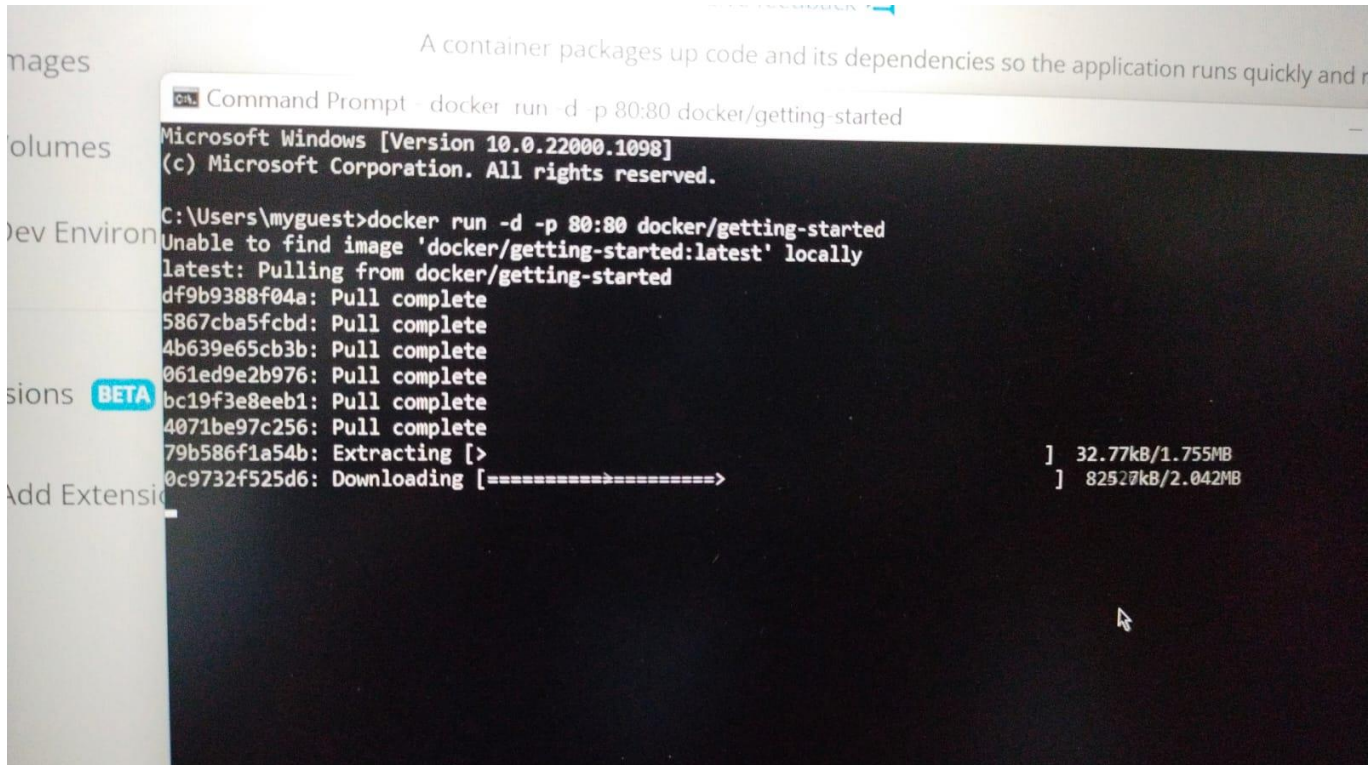
**Assignment -4**  
**Docker and kubernetes**

|                     |                 |
|---------------------|-----------------|
| Assignment Date     | 10 October 2022 |
| Student Name        | Augusta S       |
| Student Roll Number | 951319104008    |
| 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**



```
Command Prompt - docker run -d -p 80:80 docker/getting-started
Microsoft Windows [Version 10.0.22000.1098]
(c) Microsoft Corporation. All rights reserved.

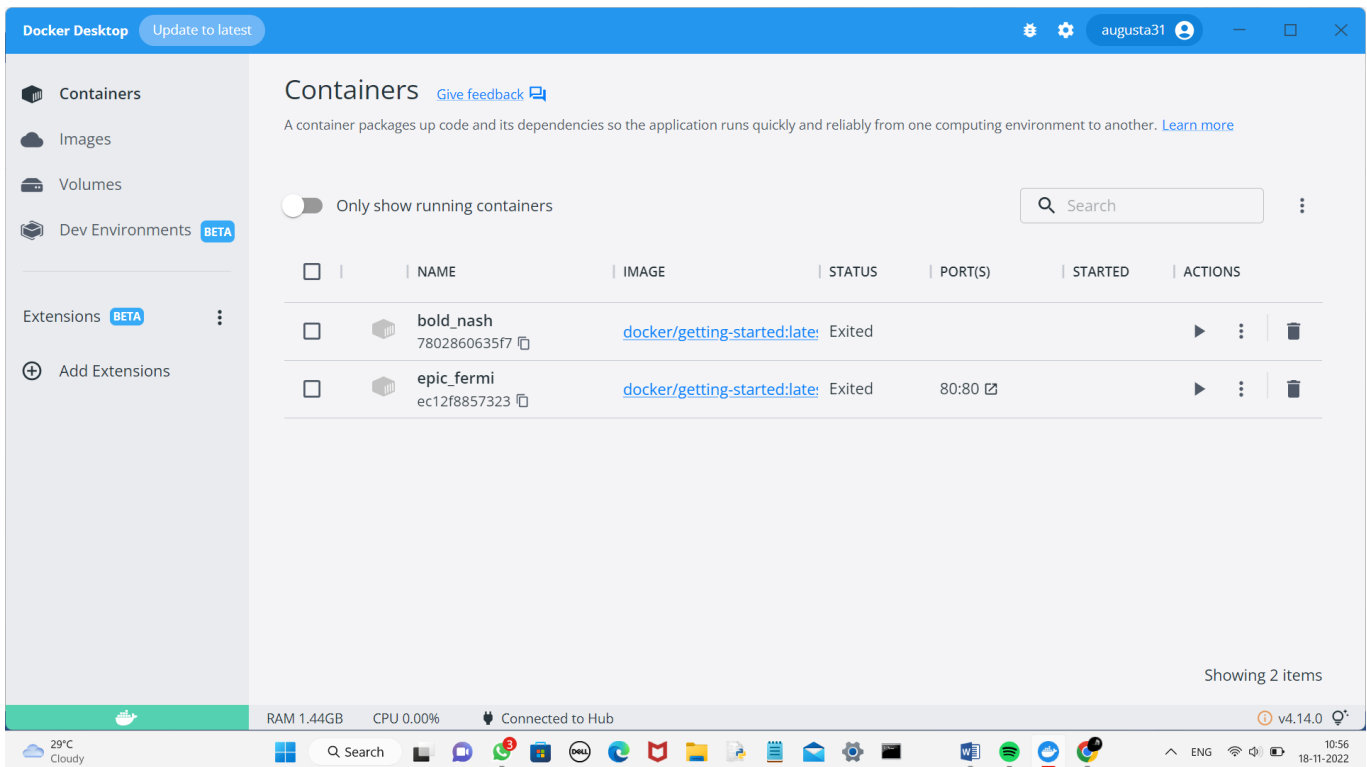
C:\Users\myguest>docker run -d -p 80:80 docker/getting-started
Unable to find image 'docker/getting-started:latest' locally
latest: Pulling from docker/getting-started
df9b9388f04a: Pull complete
5867cba5fcdb: Pull complete
4b639e65cb3b: Pull complete
061ed9e2b976: Pull complete
bc19f3e8eeb1: Pull complete
4071be97c256: Pull complete
79b586f1a54b: Extracting [>
0c9732f525d6: Downloading [=====>] 32.77kB/1.755MB
] 82527kB/2.042MB
```

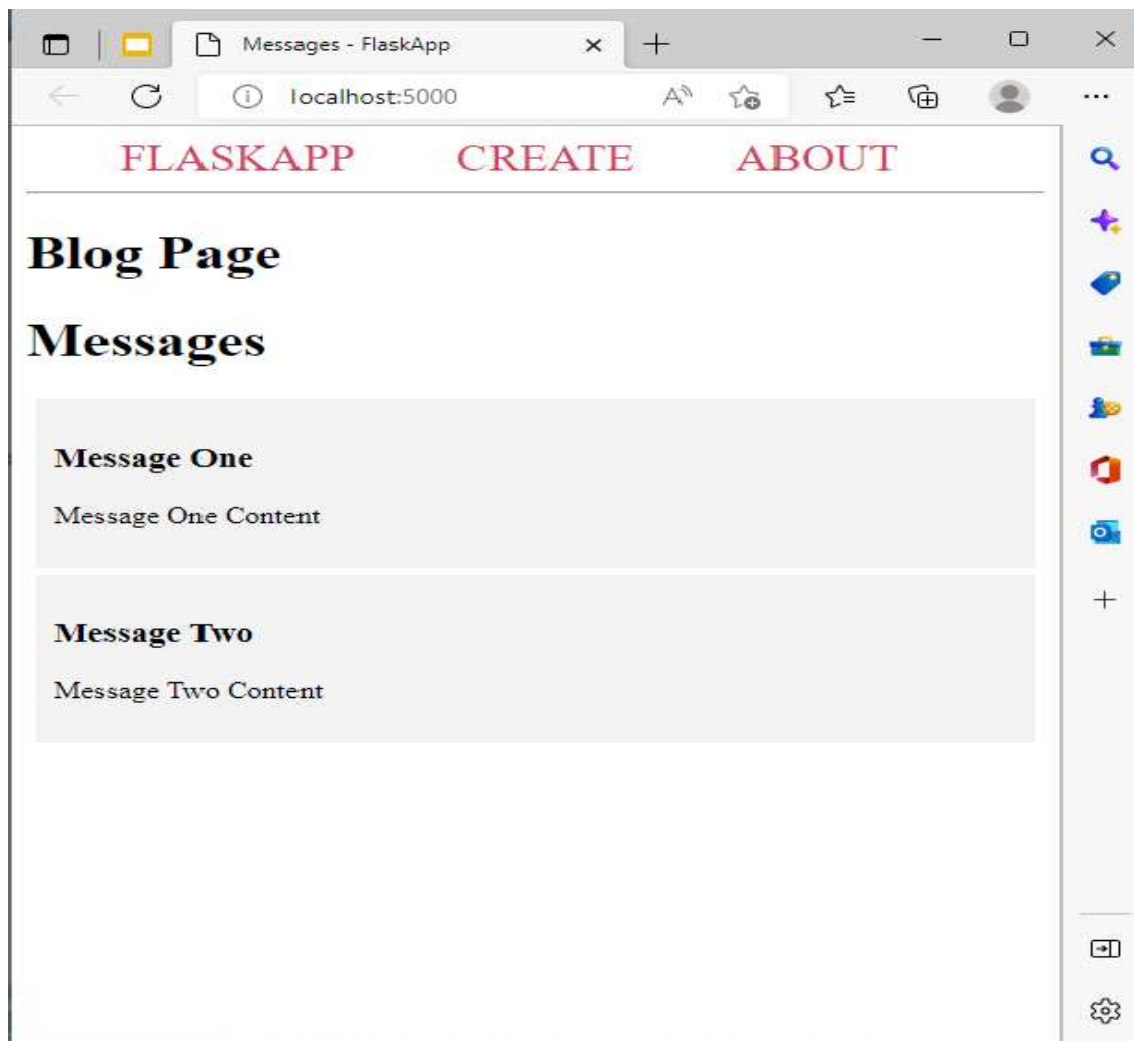
## 2) runt it in docker playground

```
Select Command Prompt
Microsoft Windows [Version 10.0.19044.1766]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ADMIN> docker run -d -p 5000:5000 shabariganesan/docker_with_flask_form
cc3e98e68102474e9c89c7674b07ad17a5645a7216d7c854d785197bdb54dee5

C:\Users\ADMIN>
```

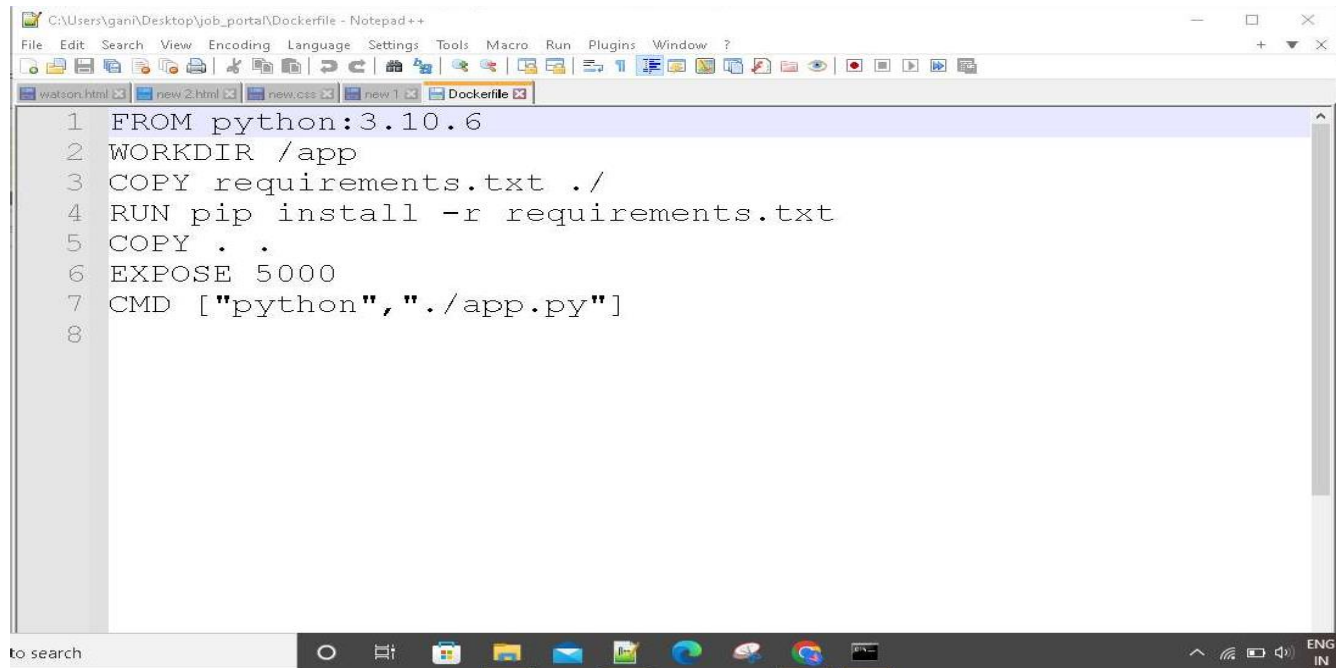




## Question-2:

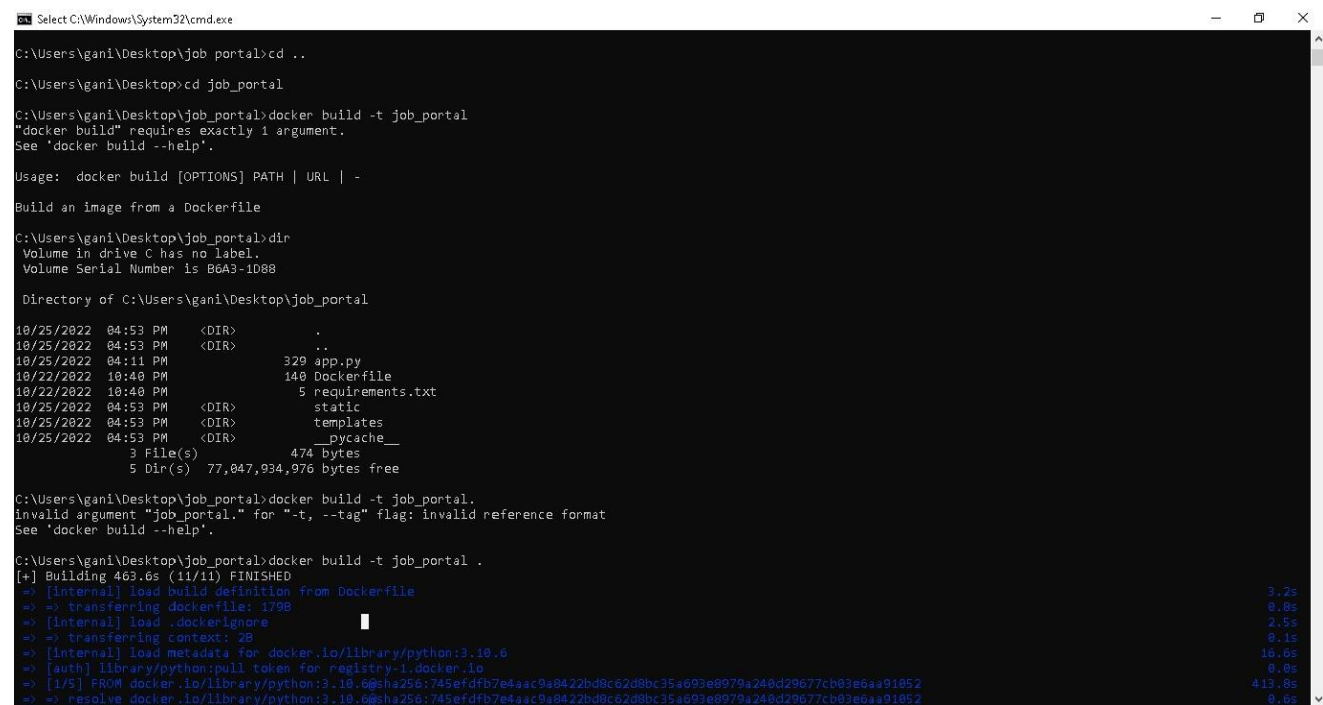
Create a docker file for the jobportal application and deploy it in docker application.

### 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 ?
Dockerfile
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 in dokcer application



```
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

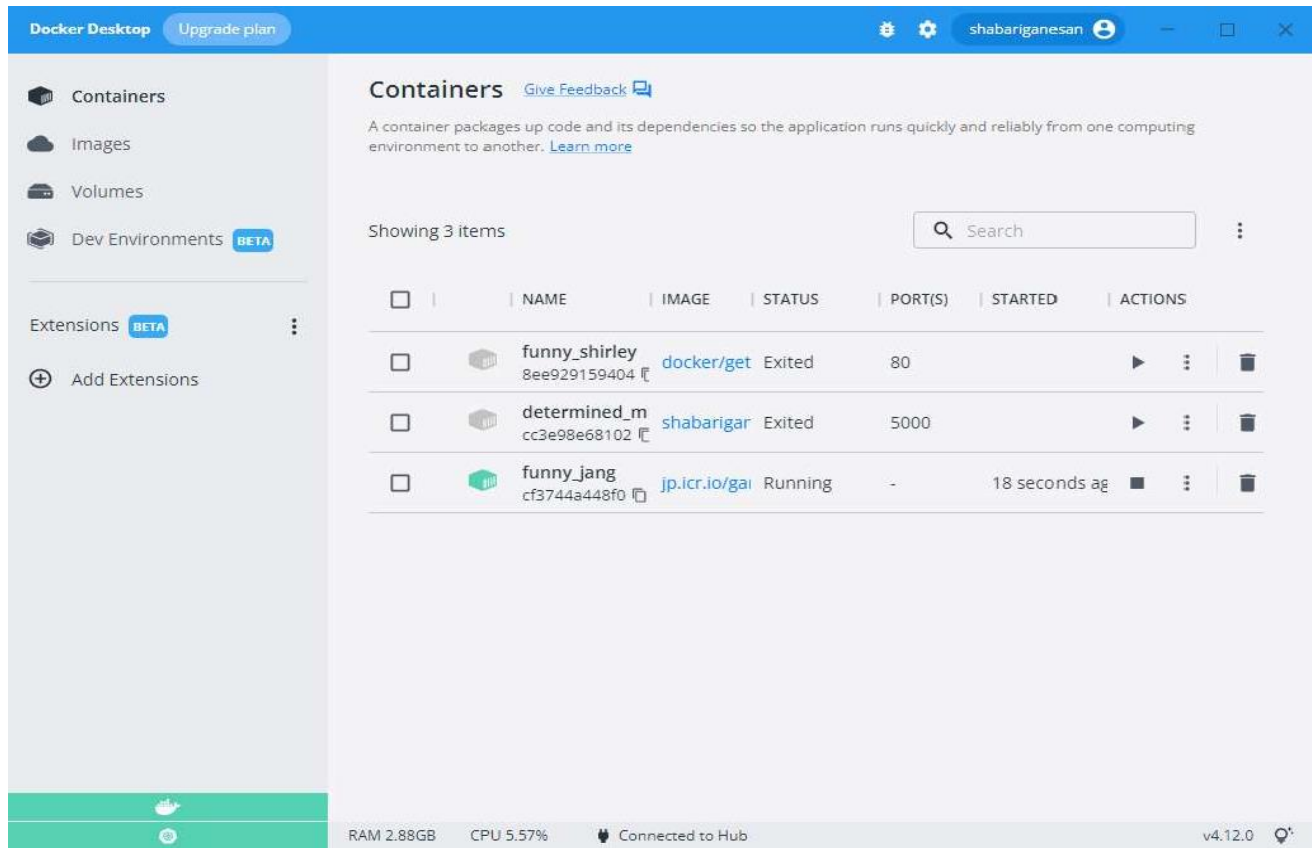
Directory of C:\Users\gani\Desktop\job_portal

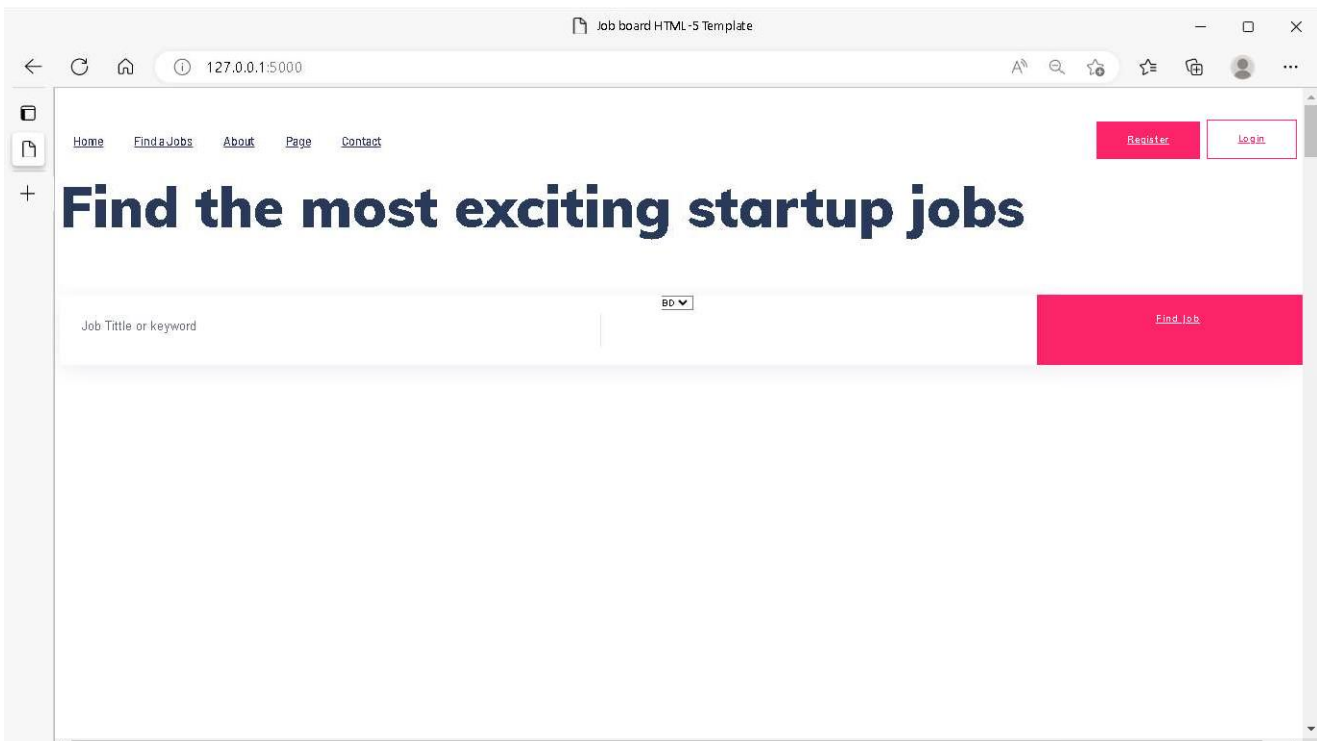
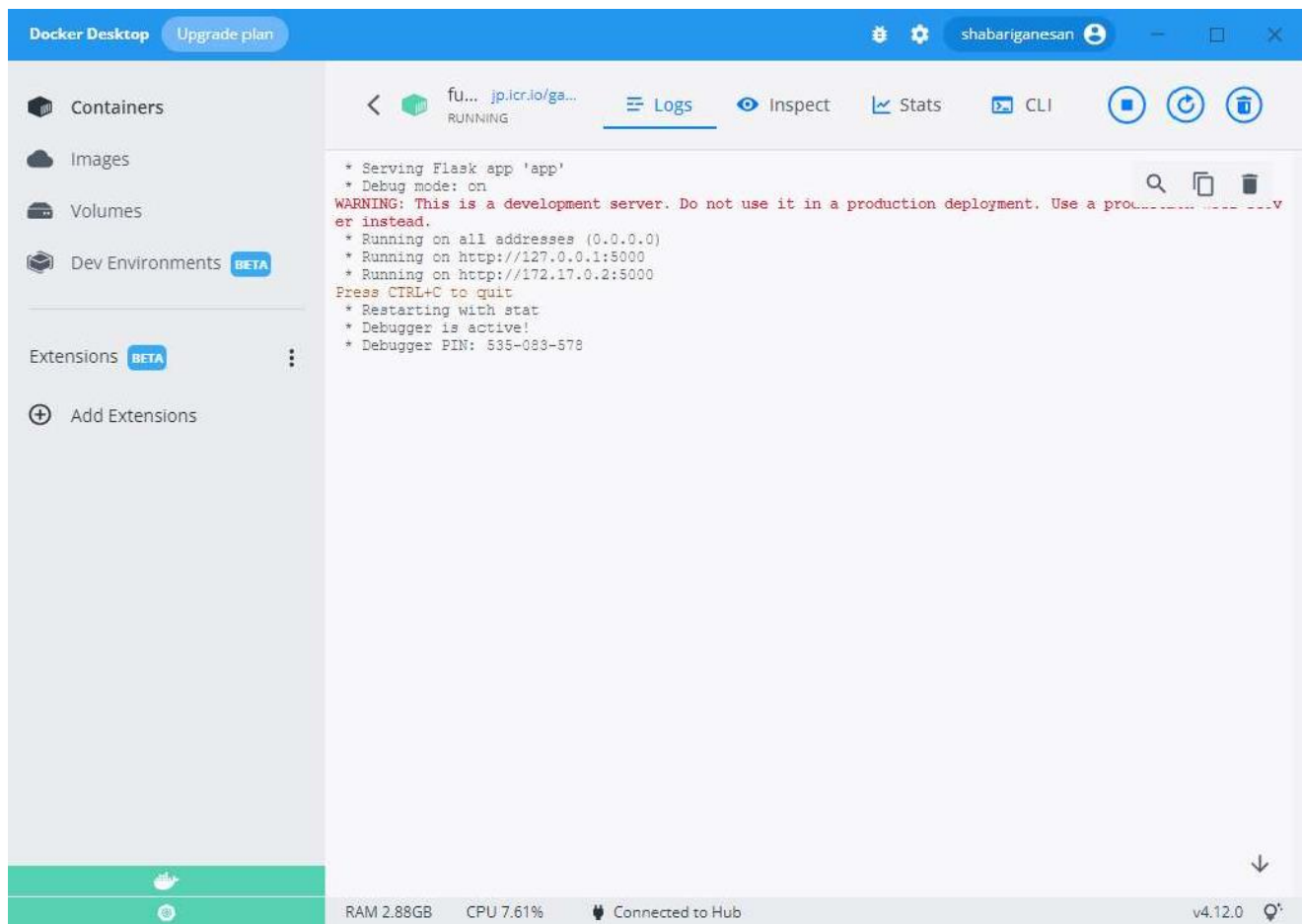
10/25/2022  04:53 PM  <DIR>          .
10/25/2022  04:53 PM  <DIR>          ..
10/25/2022  04:11 PM                329 app.py
10/22/2022  10:40 PM               140 Dockerfile
10/22/2022  10:40 PM                5 requirements.txt
10/25/2022  04:53 PM  <DIR>          static
10/25/2022  04:53 PM  <DIR>          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                                3.2s
=> => transferring dockerfile: 179B                                              0.8s
=> [internal] load .dockerignore                                                  2.5s
=> => transferring context: 2B                                                    0.1s
=> [internal] load metadata for docker.io/library/python:3.10.6                 16.6s
=> [auth] library/python:pull token for registry-1.docker.io                    0.0s
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745e9dfb7e4aac9a8422bd8c62d8bc35a693e9979a248d29677cb03e6aa91052 413.8s
=> => resolve docker.io/library/python:3.10.6@sha256:745e9dfb7e4aac9a8422bd8c62d8bc35a693e9979a248d29677cb03e6aa91052 0.0s
```

```
Select C:\Windows\System32\cmd.exe
[internal] load build definition from Dockerfile
=> transferring dockerfile: 179B
[internal] load .dockerignore
=> transferring context: 2B
[internal] load metadata for docker.io/library/python:3.10.6
[auth] library/python:pull token for registry-1.docker.io
[1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a0422bd8c62d8bc35a693e0979a246d29677cb03e6aa91052
=> resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a0422bd8c62d8bc35a693e0979a246d29677cb03e6aa91052
=> sha256:745efdfb7e4aac9a0422bd8c62d8bc35a693e0979a246d29677cb03e6aa91052 2.35kB / 2.35kB
=> sha256:8d1f943ceaa7f3b3ce95df5c0926e795081db040b70b176bf9c56d0f37ac13fca 2.22kB / 2.22kB
=> sha256:d25e6090b10281693f4696d7770ba5c0b0126f0b07d11009574040bcf8a 8.53kB / 8.53kB
=> sha256:1671565cc8df8c365c0b61d3fbc164e73d01f1b0430c6179508420f99a9da2e 55.81MB / 55.81MB
=> sha256:fa0c7528c685216129e0e67bf36217703e7b1da5961b05546a41508830657d0 10.80MB / 10.80MB
=> sha256:3e94d12e5e7a4ef17ff21376f57fb95c7e1706931f8704a309260968d81f6e4 5.16MB / 5.16MB
=> sha256:53ad072f9cd16fc0eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a 54.58MB / 54.58MB
=> sha256:d6b983117533b718374f1701ef593dd22fa6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB
=> sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae0fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB
=> extracting sha256:1671565cc8df8c365c0b61d3fbc164e73d01f1b0430c6179508420f99a9da2e 23.4s
=> sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB
=> sha256:864a10b3c704553e08cb5fcd12fbaee1c07049f6365f0fa35e84a285413da40b 234B / 234B
=> sha256:4334b2fe8293d19ddc1c3559093aae08f21601a7c85a31c6da6c0dc40fb0ed3c 3.04MB / 3.04MB
=> extracting sha256:3e94d12e5e7a4ef17ff21376f57fb95c7e1706931f8704a309260968d81f6e4 2.3s
=> extracting sha256:fa9c7528c685216129e0e67bf36217703e7b1da5961b05546a41508830657d0 3.0s
=> extracting sha256:53ad072f9cd16fc0eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a 21.2s
=> extracting sha256:d6b983117533b718374f1701ef593dd22fa6613c7908c6553be8e2a150e6448a 30.8s
=> extracting sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae0fb4dd28aa18dbcb7581e24a6c 3.3s
=> extracting sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 3.4s
=> extracting sha256:864a10b3c704553e08cb5fcd12fbaee1c07049f6365f0fa35e84a285413da40b 0.0s
=> extracting sha256:4334b2fe8293d19ddc1c3559093aae08f21601a7c85a31c6da6c0dc40fb0ed3c 1.2s
[internal] load build context
=> transferring context: 526.95kB
[2/5] WORKDIR /app
[3/5] COPY requirements.txt ./
[4/5] RUN pip install -r requirements.txt
[5/5] COPY . .
=> exporting to image
=> exporting layers
=> writing image sha256:c450817622a28f1173f9d9da336f8fce5d470a73c535863d970081ba398152d7
=> naming to docker.io/library/job_portal
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
C:\Users\ganil\Desktop\job_portal>
```





running in docker desktop 1



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

#### 1) create a ibm container registry

```
Command Prompt

Account:      Ganesan S's Account (2a239674b9ba463891acc3c4fcbe0a99)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

New version 2.11.1 is available.
Change logs: https://github.com/IBM-Cloud/ibm-cloud-cli-release/releases/tag/v2.11.1
TIP: use 'ibmcloud config --check-version=false' to disable update check.

Do you want to update? [y/N] > y

Installing version '2.11.1'...
Downloading...
 14.88 MiB / 14.88 MiB [=====] 100.00% 2s
15604696 bytes downloaded
Saved in C:\Users\ADMIN\bluemix\tmp\bx_2625690972\IBM_Cloud_CLI_2.11.1_amd64.exe

C:\Users\ADMIN>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% 1s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\ADMIN\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\ADMIN>
```

#### 2) deploy helloworld 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\gan1\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\gan1\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:e93189a7c97eeb09d8668a54e896cf61aa6eda039998c8c7a2147a7963fc287 size: 3052

C:\Users\gan1\Desktop\job_portal>
C:\Users\gan1\Desktop\job_portal>
```

IBM Cloud Container Registry Repositories

Location: Tokyo

Search:  Refresh Settings Create +

| <input type="checkbox"/> | Name   | Image count | Namespace       | Last updated |
|--------------------------|--|-------------|-----------------|--------------|
| <input type="checkbox"/> | job_portal<br>jp.icr.io/ganeshjob/job_portal                               | 1           | ganeshjob       | 1 day        |
| <input type="checkbox"/> | docker_with_flask_form<br>jp.icr.io/newnamtamespace/docker_with_flask_form | 1           | newnamtamespace | 4 days       |

Items per page: 25 1-2 of 2 items 1 1 of 1 page

Taskbar: IBM\_Cloud\_CLI\_2.1....exe

IBM Cloud Container Registry Images

Location: Tokyo

View by: Digest Search:  Refresh Settings Create +

| <input type="checkbox"/> | Repository@digest   | Tags   | Manifest type | Created    | Size   | Security status |
|--------------------------|---|--------|---------------|------------|--------|-----------------|
| <input type="checkbox"/> | ganeshjob/job_portal@sha256:e93189a7c97e...                   | latest | Docker        | 1 day ago  | 356 MB | 23 issues       |
| <input type="checkbox"/> | newnamtamespace/docker_with_flask_form@sha256:c61f28873bf1... | latest | Docker        | 4 days ago | 356 MB | 23 issues       |

Items per page: 25 1-2 of 2 items 1 1 of 1 page

Taskbar: IBM\_Cloud\_CLI\_2.1....exe



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

The screenshot displays the IBM Cloud Kubernetes dashboard. The browser address bar shows the URL `cloud.ibm.com/kubernetes/clusters/cdb5m24f0uetvv51ao2g/nodes`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user's account (Ganesan S's Account). The main content area is titled "Clusters / mycluster-free" and includes a status indicator "Normal" and a warning "Expires in 29 days". A sidebar on the left contains links for Overview, Worker nodes (selected), Worker pools, and DevOps. The main table lists the worker nodes with columns for Name, Status, Worker pool, Zone, Private IP, Public IP, and Version. A single node is listed with ID 00000069, status Normal, and version 1.23.12\_1548. The bottom of the image shows a Windows taskbar with the search bar and system tray.

Overview

**Worker nodes**

Worker pools

DevOps New

Pool: Filter... Search

| <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

Type here to search

ENG IN 8:49 PM 10/25/2022