

Assignment -4
Docker and kubernetes

Assignment Date	18 November 2022
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Student Roll Number	310619104098
Maximum Marks	2 Marks

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

1) pull an image from docker hub

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1766]
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C:\Users\ADMIN>docker push shabariganesan/docker_with_flask_form
Using default tag: latest
The push refers to repository [docker.io/shabariganesan/docker_with_flask_form]
An image does not exist locally with the tag: shabariganesan/docker_with_flask_form

C:\Users\ADMIN>docker pull shabariganesan/docker_with_flask_form
Using default tag: latest
latest: Pulling from shabariganesan/docker_with_flask_form
1671565cc8df: Pull complete
3e94d13e55e7: Pull complete
fa9c7528c685: Pull complete
53ad072f9cd1: Pull complete
d6b983117533: Pull complete
d8092d56ded5: Pull complete
c71afc637d59: Pull complete
864a10b3c704: Pull complete
4334b2fe8293: Pull complete
8944570703f4: Pull complete
f885911288d0: Pull complete
086f369ca59f: Pull complete
e113bd27b88e: Pull complete
Digest: sha256:c61f28873bf1c909786ce991b8b60cd976765077f344e34d50e6cce8cf8d95c3
Status: Downloaded newer image for shabariganesan/docker_with_flask_form:latest
docker.io/shabariganesan/docker_with_flask_form:latest

C:\Users\ADMIN>
```

2) run 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>
```

Containers

Images

Volumes

Dev Environments BETA

Extensions BETA

Add Extensions

Containers Give Feedback

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. [Learn more](#)

Showing 2 items

Search

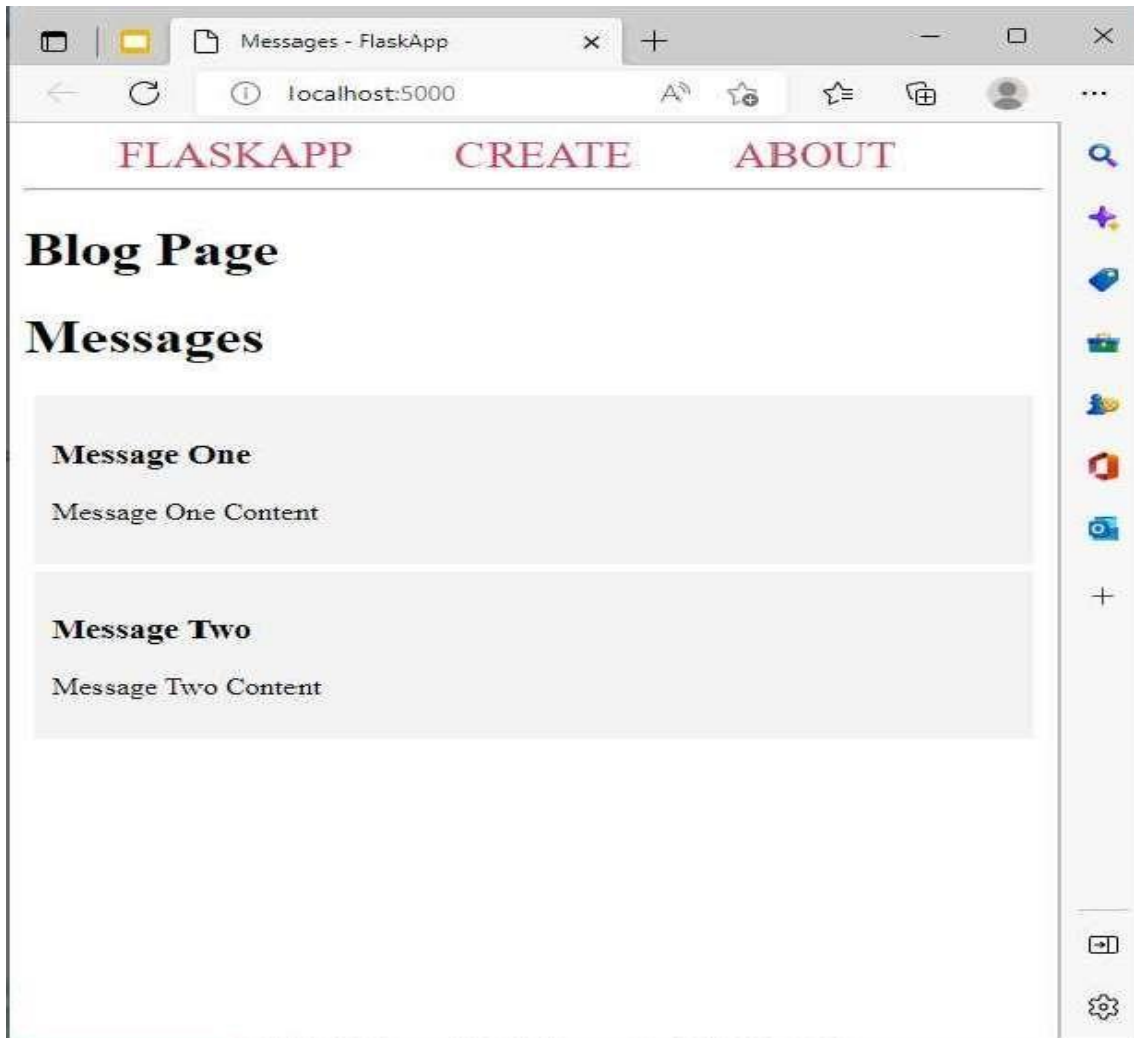
	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	<div>funny_shirley</div> <div>8ee929159404</div>	docker/get	Exited	80		<div></div> <div></div> <div></div>
<input type="checkbox"/>	<div>determined_m</div> <div>cc3e98e68102</div>	shabarigar	Running	5000	12 seconds ago	<div></div> <div></div> <div></div>

RAM 2.86GB

CPU 9.39%

Connected to Hub

v4.12.0

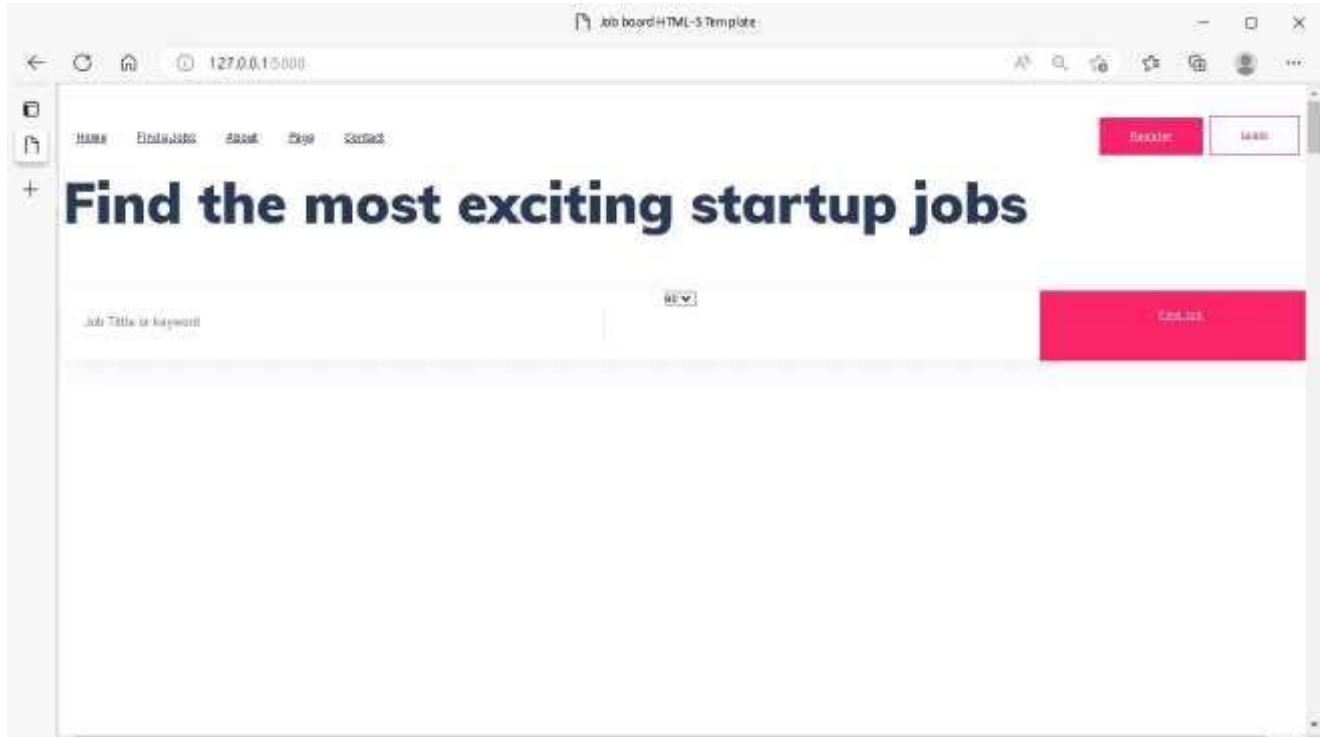
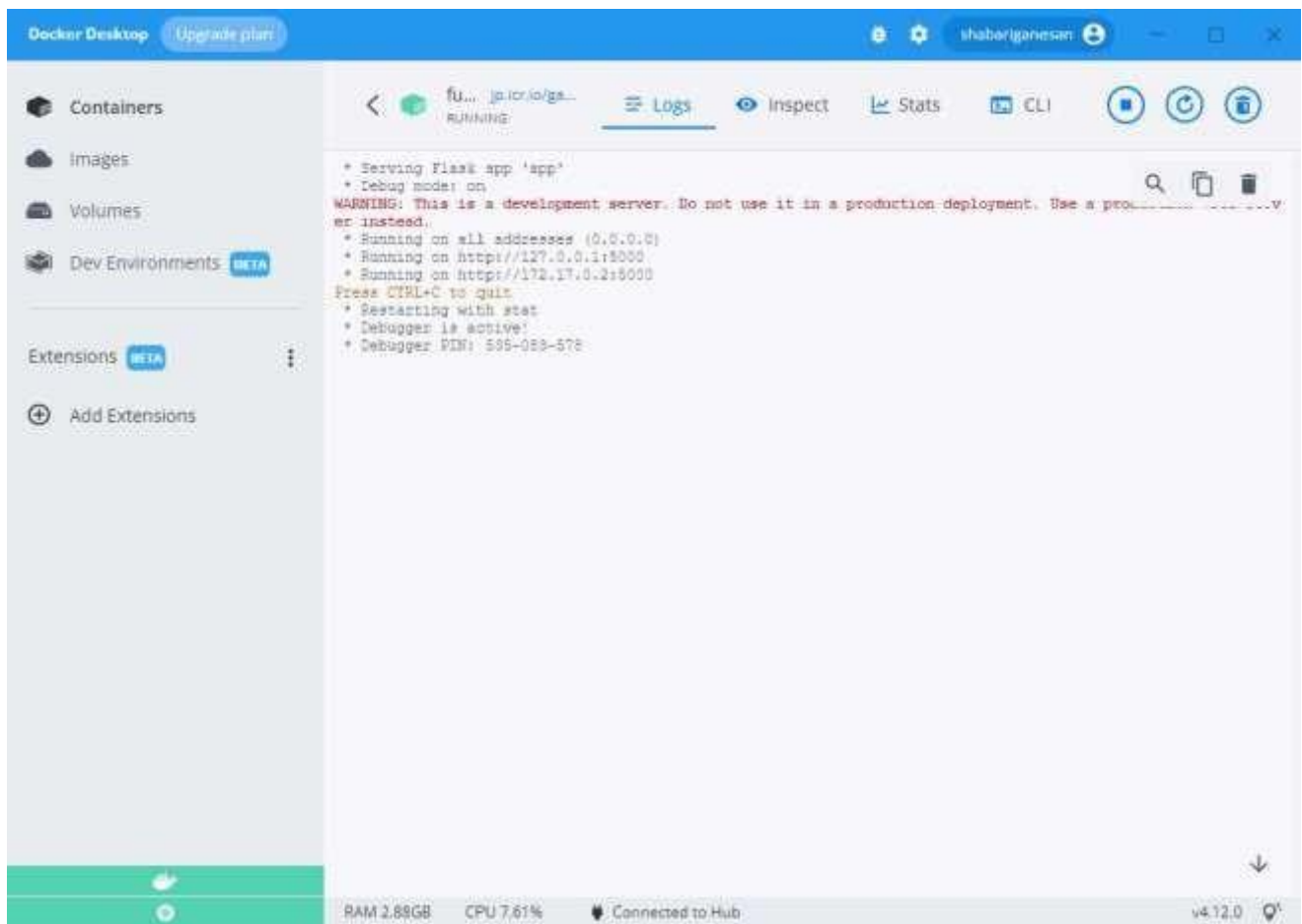


Question-2:

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

1) Creating a docker file for the jobportal application

[illegible]



running in docker desktop 1

Question-3: Create an IBM container registry and deploy a 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>
```

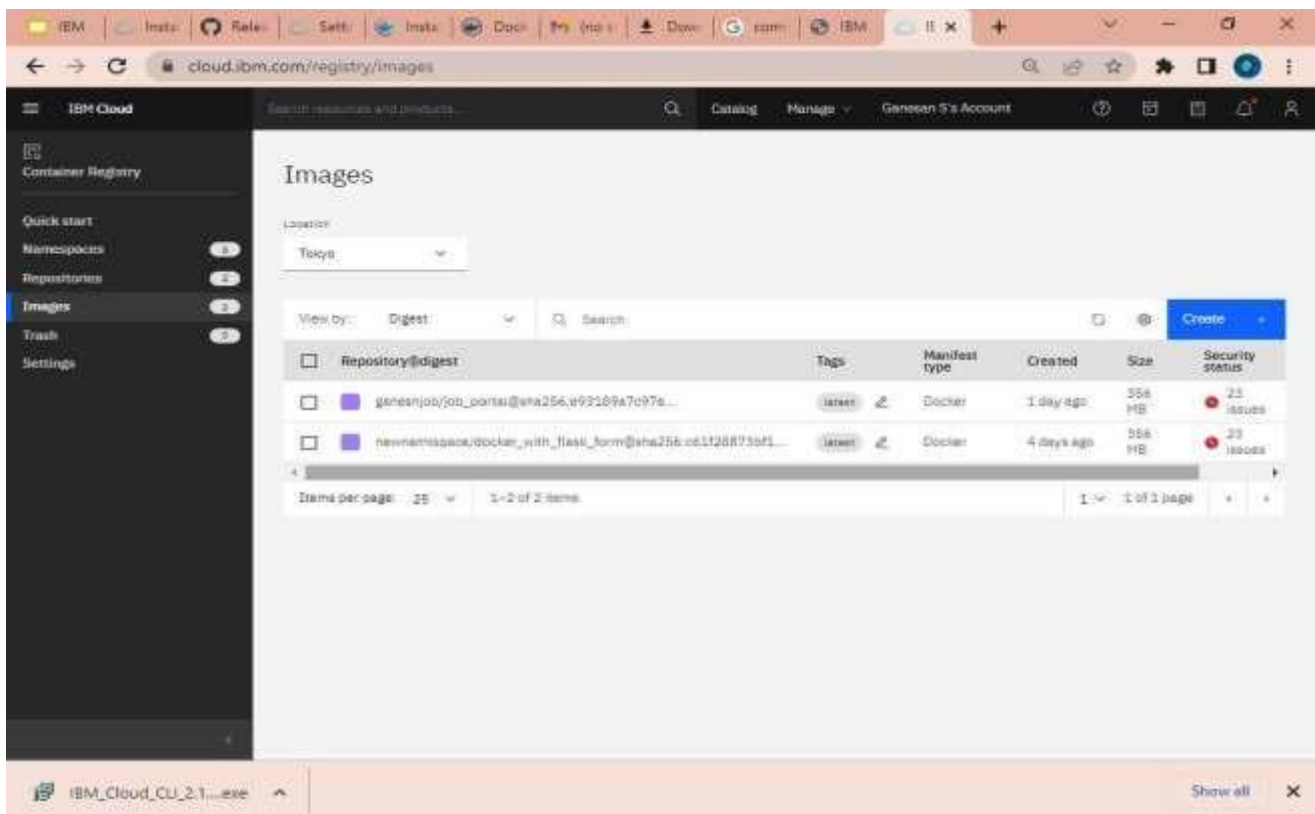
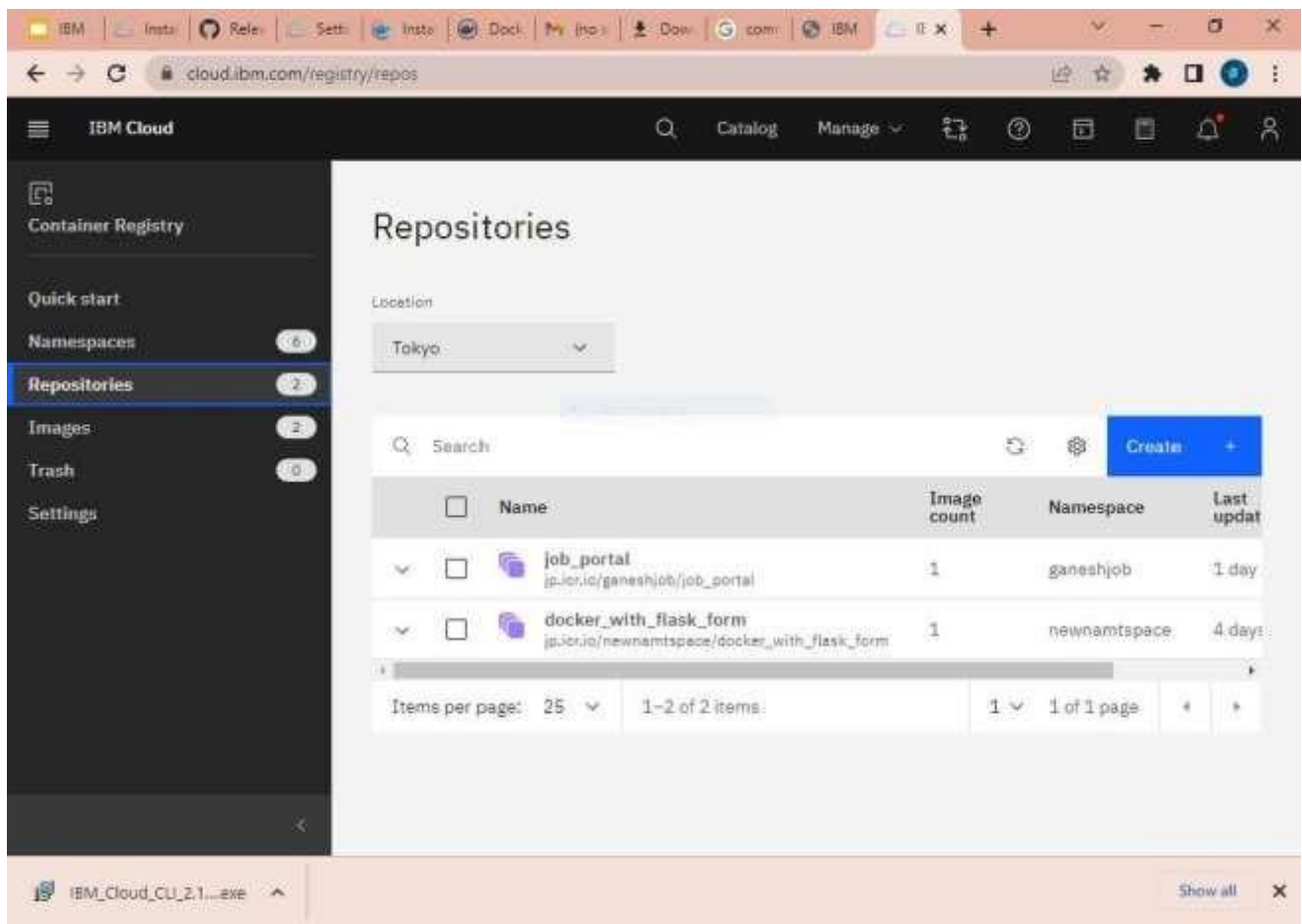
2) deployhelloworld or jobportal

```
C:\Windows\system32\cmd.exe
54acb5a6fa8b: Retrying in 1 second
8d51c618126f: Retrying in 1 second
9ffae4d46744: Waiting
a89dd47b5e1: Waiting
055ed1b7a420: Waiting
Failed to lookup host: jp.kcr.io

C:\Users\ganl\Desktop\job_portal>docker push jp.kcr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.kcr.io/ganeshjob/job_portal]
1503b158a025: layer already exists
80e64fb5e186: Pushed
48c2a7a4c12b: layer already exists
9b72c7835466: layer already exists
bfc1deb8136e: layer already exists
1f123106024c: layer already exists
3d8eb1152931: Pushed
180796cdf3b1: Pushed
54acb5a6fa8b: Retrying in 1 second
8d51c618126f: Pushed
9ffae4d46744: Pushed
a89dd47b5e1: Pushed
055ed1b7a420: Pushing [=====] 89.89MB/124MB
^C

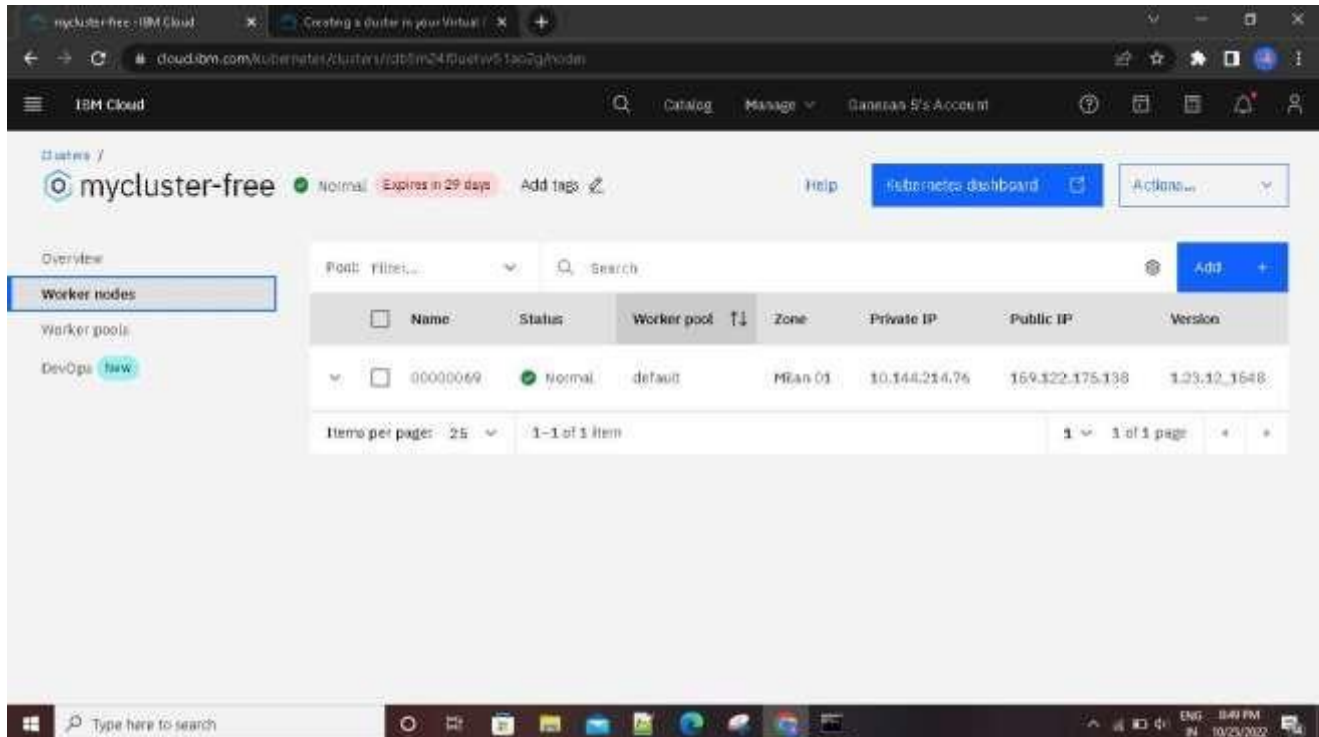
C:\Users\ganl\Desktop\job_portal>docker push jp.kcr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.kcr.io/ganeshjob/job_portal]
1503b158a025: layer already exists
80e64fb5e186: layer already exists
48c2a7a4c12b: layer already exists
9b72c7835466: layer already exists
bfc1deb8136e: layer already exists
1f123106024c: layer already exists
3d8eb1152931: layer already exists
180796cdf3b1: layer already exists
54acb5a6fa8b: Pushed
8d51c618126f: layer already exists
9ffae4d46744: layer already exists
a89dd47b5e1: layer already exists
055ed1b7a420: Pushed
latest: sha256:e93189a7c97eeb9308660a54e895cf61aa6eda939998c8c7a2147a7961fc207 size: 3852

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

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 noteport

1)Creating a kubernetes cluster in ibm cloud



2) deploy helloworld image or jobportal image and also expose the same app to run in noteport

```
C:\Windows\System32\cmd.exe
10/16/2022 12:28 PM 3,721 windows shortcut.txt
08/25/2022 08:40 PM 2,897 YouTube.lnk
24 File(s) 804,677,196 bytes
9 Dir(s) 79,221,886,976 bytes free

C:\Users\gani\Desktop>cd deploy
The system cannot find the path specified.

C:\Users\gani\Desktop>kubectl apply -f kubernetes/depoly.yaml
error: the path "kubernetes/depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f depoly.yaml
error: the path "depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f C:\Users\gani\Desktop\deploy.yaml
deployment.apps/flask-app created

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

mycluster-free - IBM Cloud mycluster-free - Kubernetes Dashb... flask-app-with-ibm-kubernetes-ex... +

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdb5m2#0uetvv51ad2g/service/#/pod?namespace=default

kubernetes default Search

Workloads > Pods

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods**
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets
- Storage Classes

CPU Usage

Waiting for more data to display chart...

Memory Usage

Waiting for more data to display chart...

Name	Image	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
flask-app-79447b5c8c-4d8ww	gcr.io/genwhyco/flask-app	Show all	10.144.214.76	Running	0	0.00%	37.4310 MB	8 minutes ago
flask-app-79447b5c8c-dprrn5	Show all	Show all	10.144.214.76	Running	0	0.00%	37.4310 MB	8 minutes ago
flask-app-79447b5c8c-zzpg	Show all	Show all	10.144.214.76	Running	0	0.00%	37.5330 MB	5 minutes ago

mycluster-free - IBM Cloud mycluster-free - Kubernetes Dashb... 127.0.0.1 172.21.135.01

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdb5m2#0uetvv51ad2g/service/#/log/default/flask-app-79447b5c8c-4d8ww/pod?na...

kubernetes default Search

Workloads > Pods > flask-app-79447b5c8c-4d8ww > Logs

Workloads

- Cron Jobs
- Pods**
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets
- Storage Classes

Cluster

- Cluster Role Bindings
- Cluster Roles
- Events
- Namespaces

Logs from flask-app-cont... in flask-app-7944...

```

Installing Flask app 'app'
Running on all addresses (0.0.0.0)
Running on http://127.0.0.1:5000
Press CTRL+C to quit[0m
Starting with stat
Debugger is active!
Debugger PID: 316-487-349
  
```

from Oct 26, 2022 to Oct 26, 2022 UTC

```

C:\Windows\System32>cmd.exe
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
Error from server (AlreadyExists): services "flask-service" already exists
C:\Windows\system32>
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl proxy
Starting to serve on 127.0.0.1:8081
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl -n kubernetes-dashboard get pods
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
Error from server (AlreadyExists): services "flask-service" already exists
C:\Windows\system32>kubectl get ing
NAME          CLASS    HOSTS          ADDRESS          PORTS          AGE
flask-app-ingress  cncn    *              80              27m
C:\Windows\system32>kubectl get svc
NAME          TYPE          CLUSTER-IP          EXTERNAL-IP          PORT(S)          AGE

```