Assignment-4

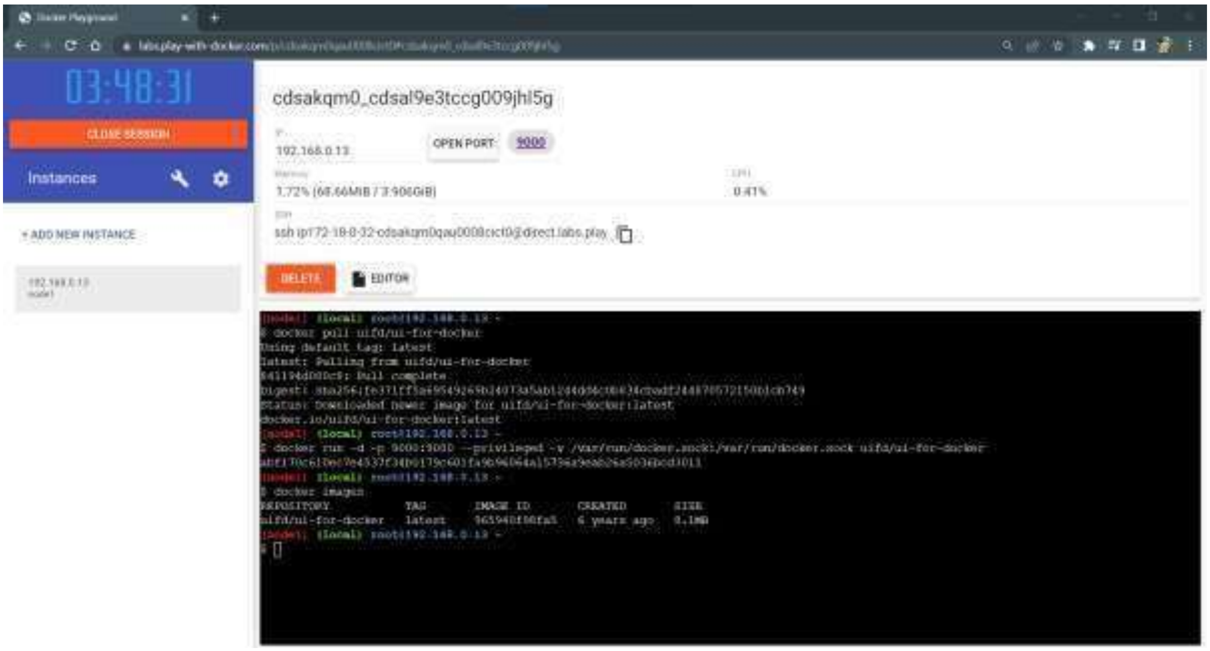
Kubernetes / Docker

Assignment Date	25 November 2022
Student Name	ANTANIN GINISTA D
Student Roll Number	962219104024
Maximum Marks	2 Marks

Question-1:

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

Solution:



cdsakqm0_cdsal9e3tccg009jhl5g

192.168.0.13

1.72% (68.66MiB / 3.906GiB)

0.41%

ssh ip172-18-0-32-cdsakqm0qau0008cict0@direct.labs.play

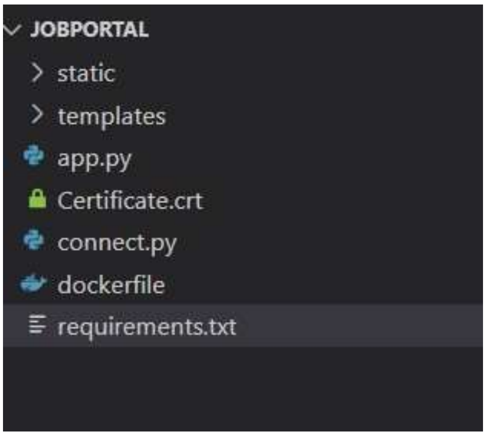
```
[node1] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
[illegible]: Pull complete
Digest: sha256:[illegible]
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.13 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
[illegible]
[node1] (local) root@192.168.0.13 ~
$ docker images
REPOSITORY           TAG       IMAGE ID       CREATED       SIZE
uifd/ui-for-docker   latest    965940f98fa5   6 years ago   8.1MB
[node1] (local) root@192.168.0.13 ~
$ 
```

Question-2:

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

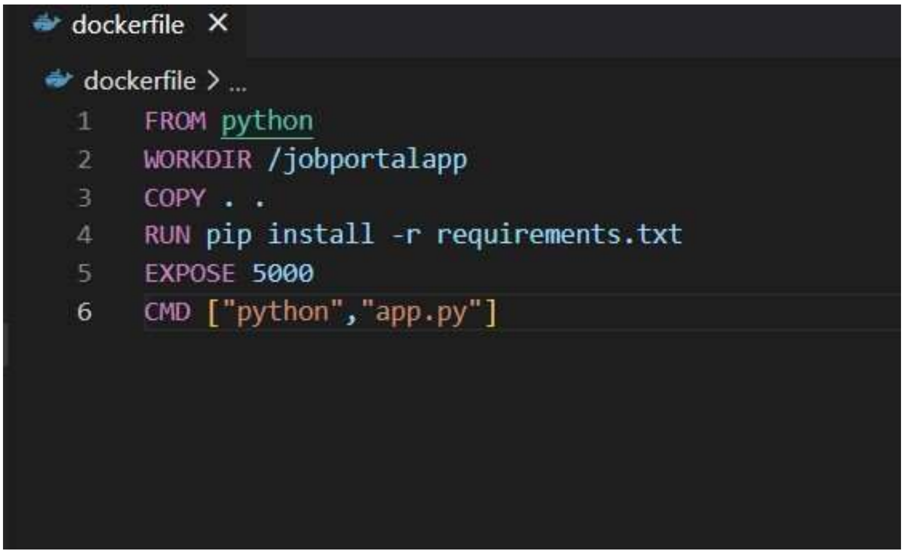
Solution:

File structure



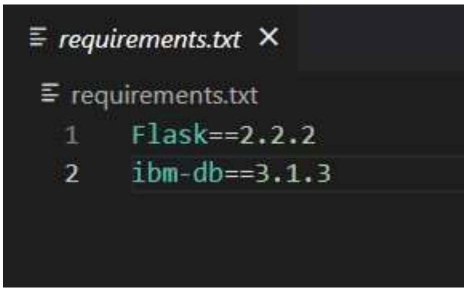
```
JOBPORTAL
  static
  templates
  app.py
  Certificate.crt
  connect.py
  dockerfile
  requirements.txt
```

Docker File

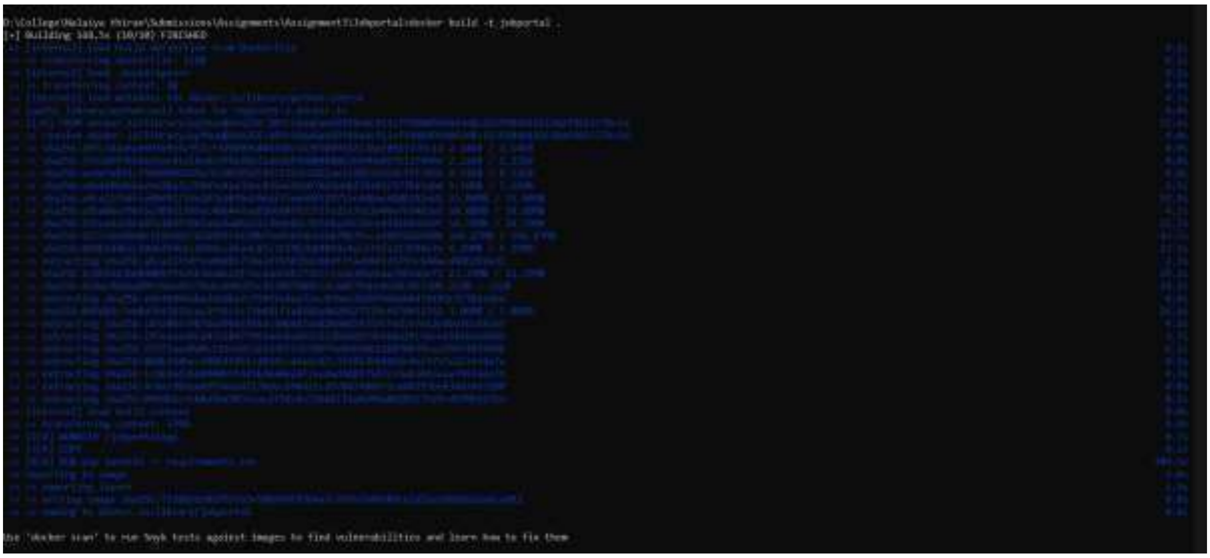


```
FROM python
WORKDIR /jobportalapp
COPY . .
RUN pip install -r requirements.txt
EXPOSE 5000
CMD ["python","app.py"]
```

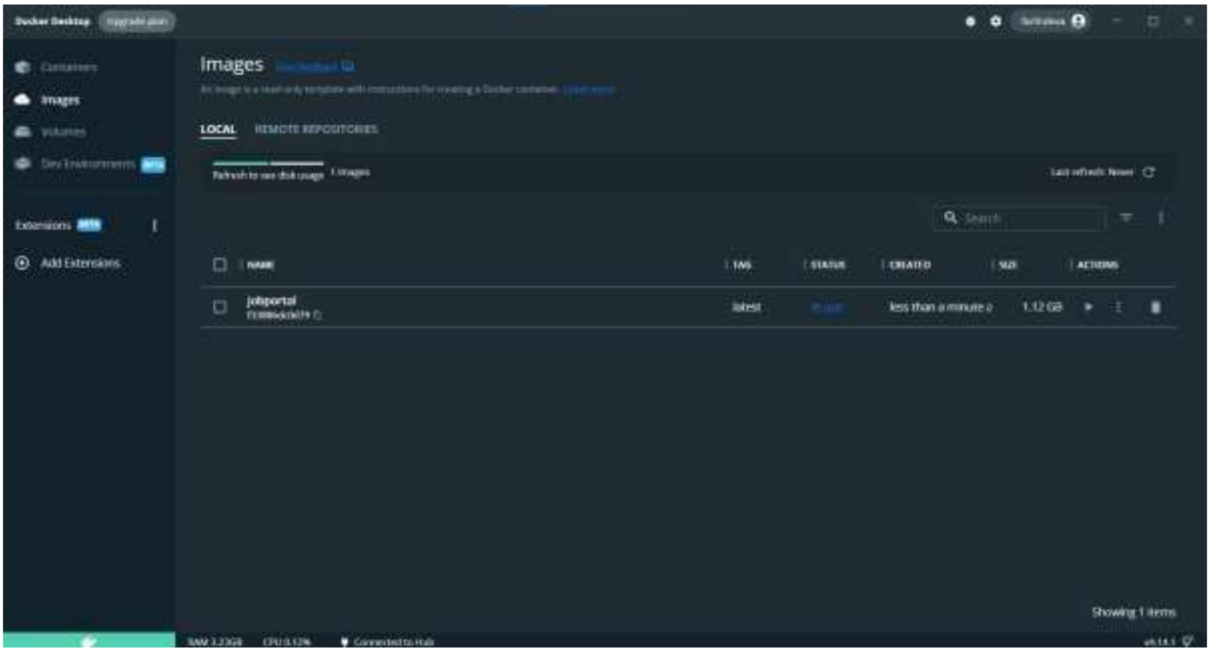
Requirements file



```
Flask==2.2.2
ibm-db==3.1.3
```



```
D:\College\Malaiya thiran\Submissions\Assignments\Assignment3\Jobportal>docker build -t jobportal .
[+] Building 168.3s (10/10) FINISHED

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

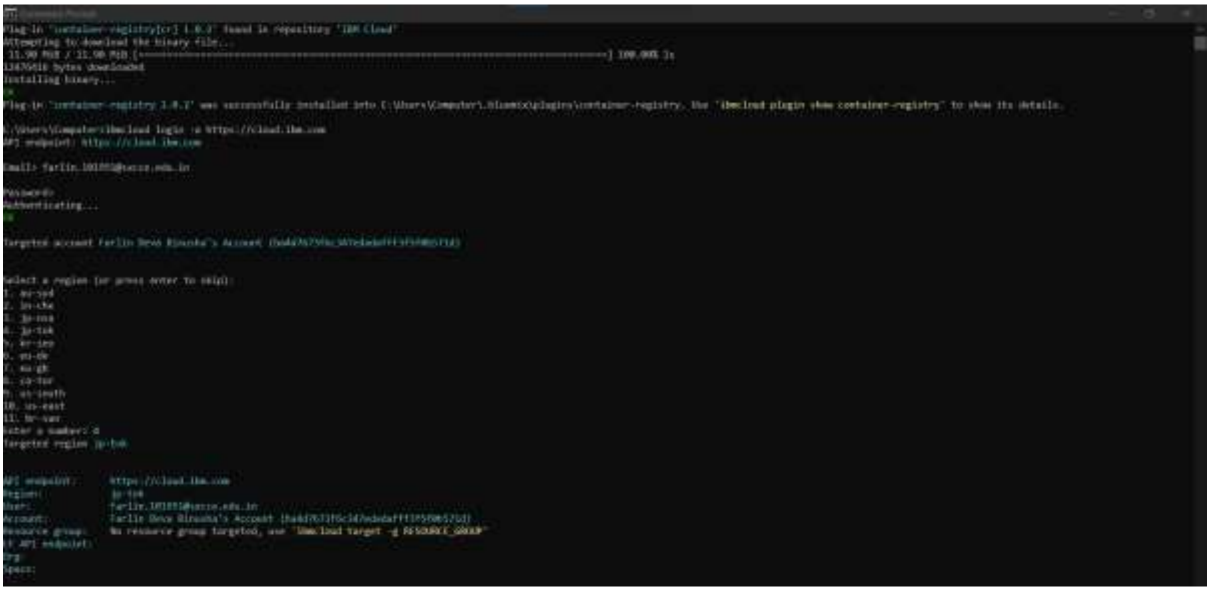


NAME	TAG	STATUS	CREATED	SIZE	ACTIONS
jobportal	latest	In use	less than a minute a	1.12 GB	

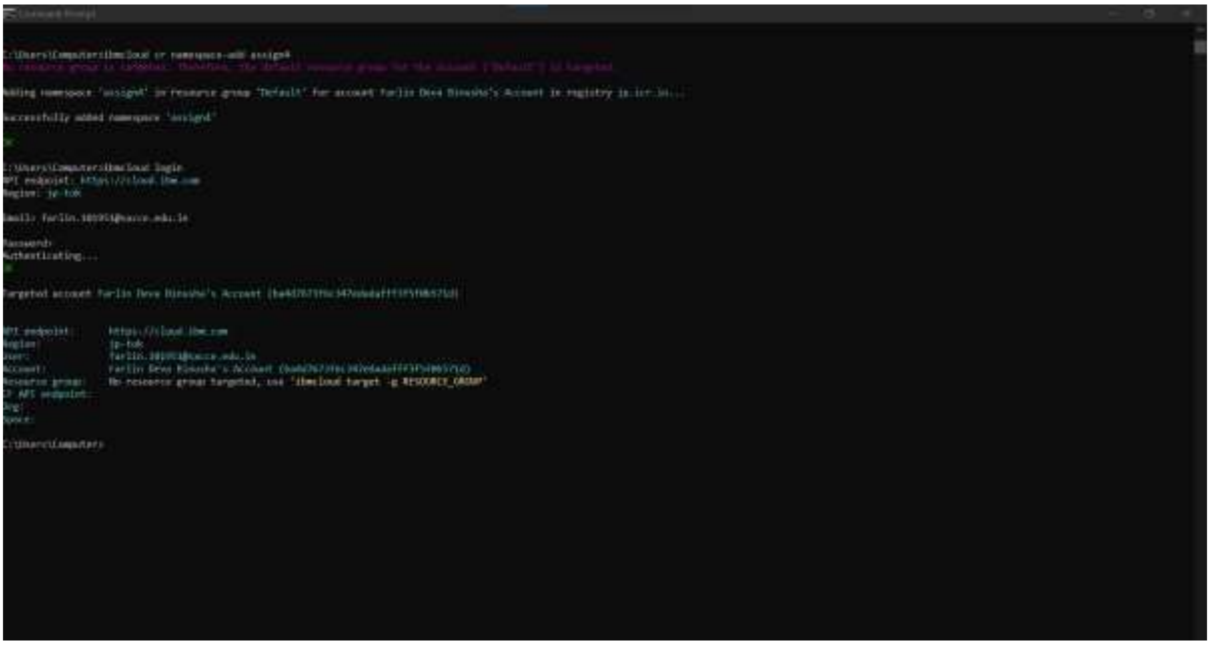
Question-3:

Create a IBM container registry and deploy helloworld app or jobportalapp

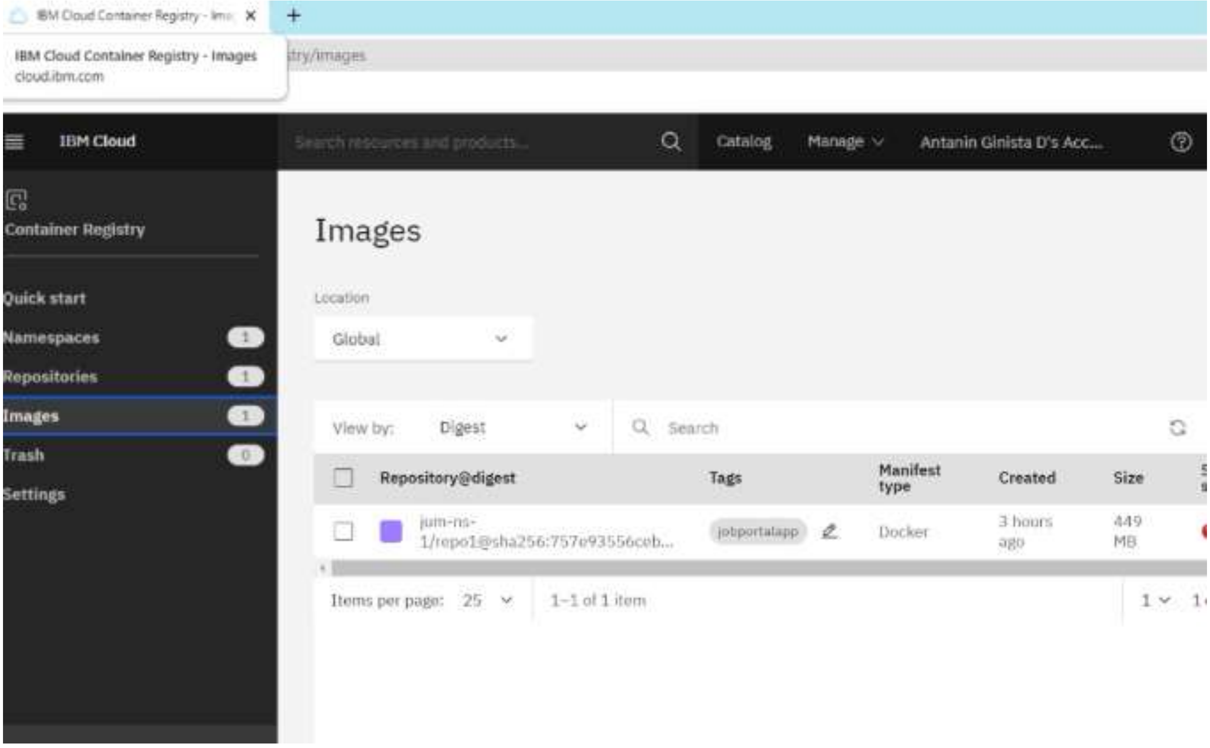
Solution:



```
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
[illegible] bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Computer\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\Computer>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> farlin.[illegible]@[illegible].edu.in

Password>
Authenticating...
OK

Targeted account Farlin Deva Binusha's Account ([illegible])


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: 4
Targeted region jp-tok


API endpoint:      https://cloud.ibm.com
Region:            jp-tok
User:              farlin.[illegible]@[illegible].edu.in
Account:           Farlin Deva Binusha's Account ([illegible])
Resource group:    No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:
```



```
C:\Users\Computer>ibmcloud cr namespace-add assign4
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace 'assign4' in resource group 'Default' for account Farlin Deva Binusha's Account in registry jp.icr.io...

Successfully added namespace 'assign4'

OK

C:\Users\Computer>ibmcloud login
API endpoint: https://cloud.ibm.com
Region: jp-tok

Email> farlin.[illegible]@[illegible].edu.in

Password>
Authenticating...
OK

Targeted account Farlin Deva Binusha's Account ([illegible])


API endpoint:      https://cloud.ibm.com
Region:            jp-tok
User:              farlin.[illegible]@[illegible].edu.in
Account:           Farlin Deva Binusha's Account ([illegible])
Resource group:    No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\Computer>
```



☐	Repository@digest	Tags	Manifest type	Created	Size
☐	jum-ns-1/repo1@sha256:757e93556ceb...	jobportalapp	Docker	3 hours ago	449 MB

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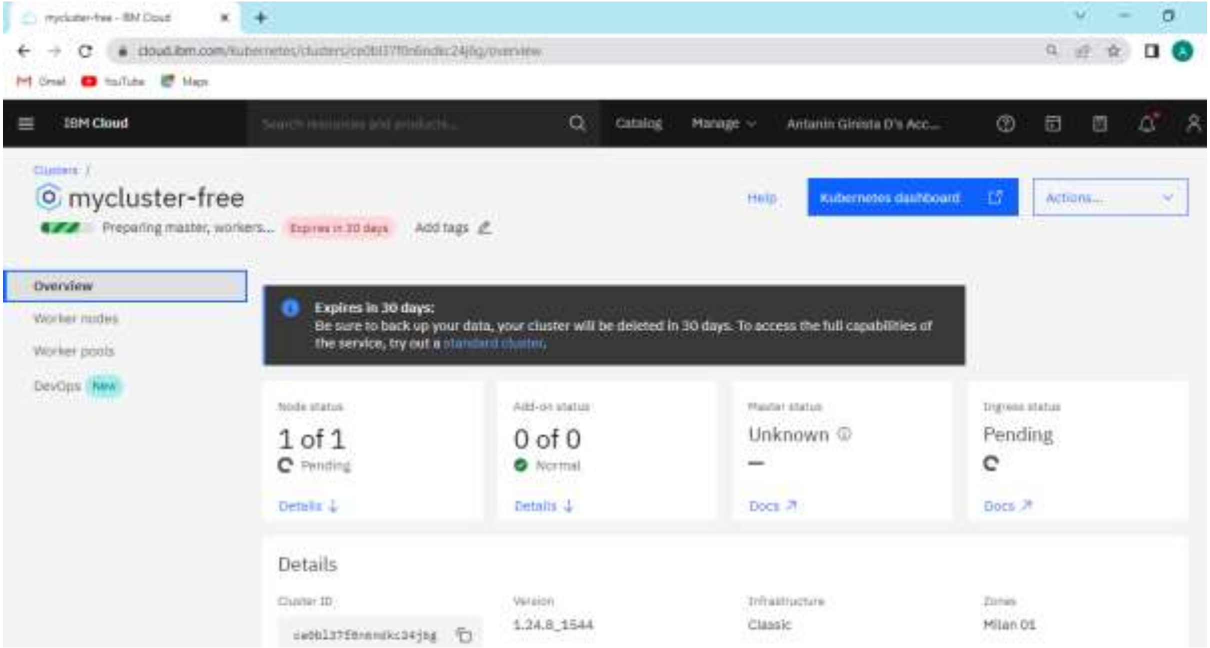
Question-4:

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:



mycluster-free

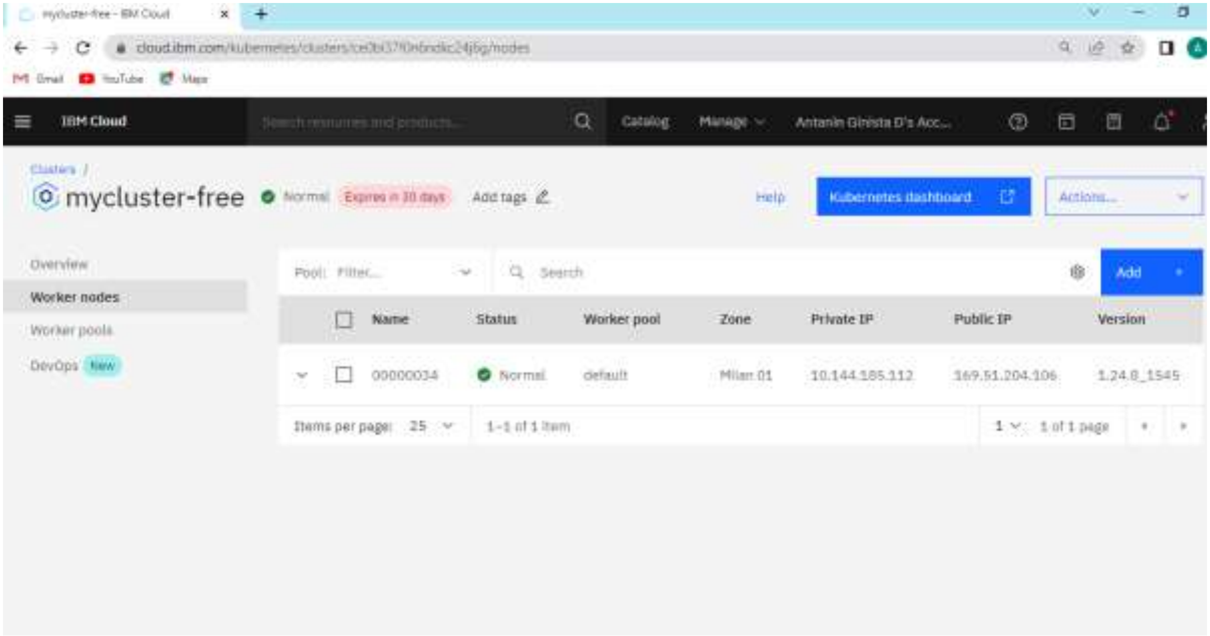
Preparing master, workers... Expires in 30 days

Expires in 30 days:
Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a standard cluster.

Node status	Add-on status	Master status	Ingress status
1 of 1 Pending	0 of 0 Normal	Unknown —	Pending
Details	Details	Docs	Docs

Details

Cluster ID	Version	Infrastructure	Zones
ce0bl37f0n6ndkc24j6g	1.24.8_1544	Classic	Milan 01



mycluster-free Normal Expires in 30 days

	☐ Name	Status	Worker pool	Zone	Private IP	Public IP	Version
	☐ 00000034	Normal	default	Milan 01	10.144.185.112	169.51.204.106	1.24.8_1545

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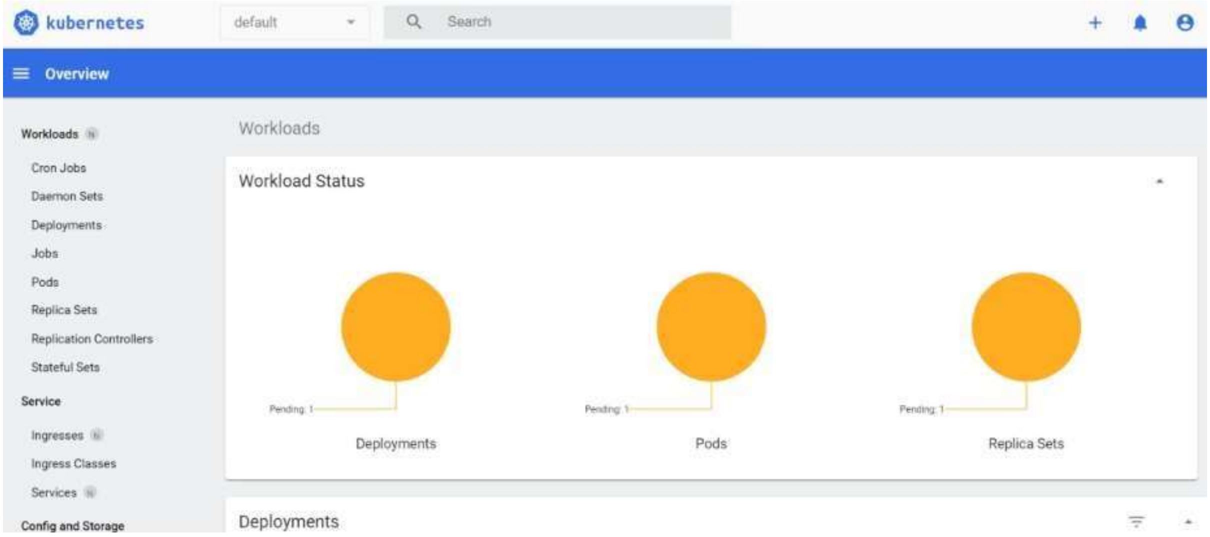
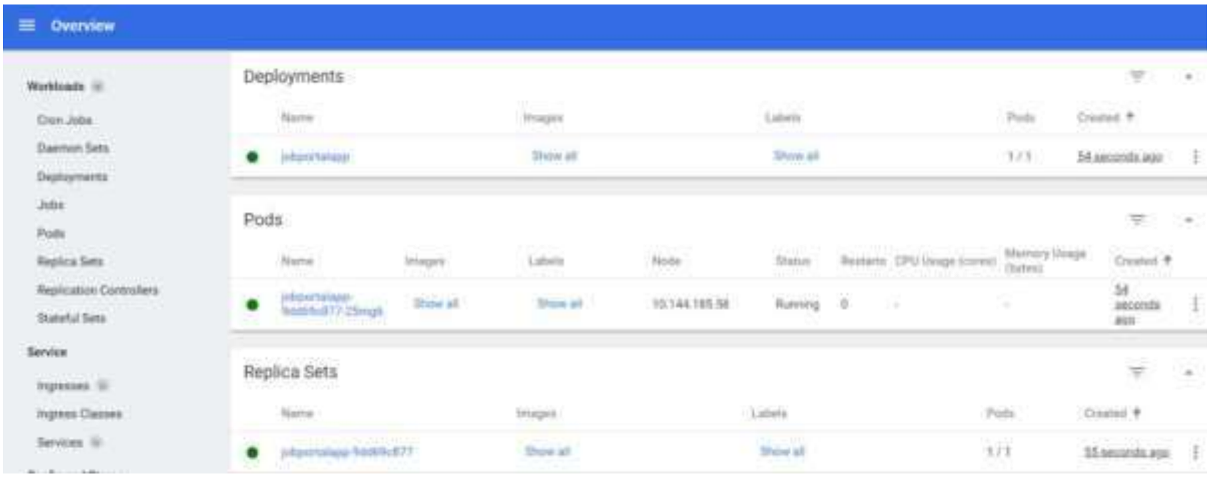




Deployments

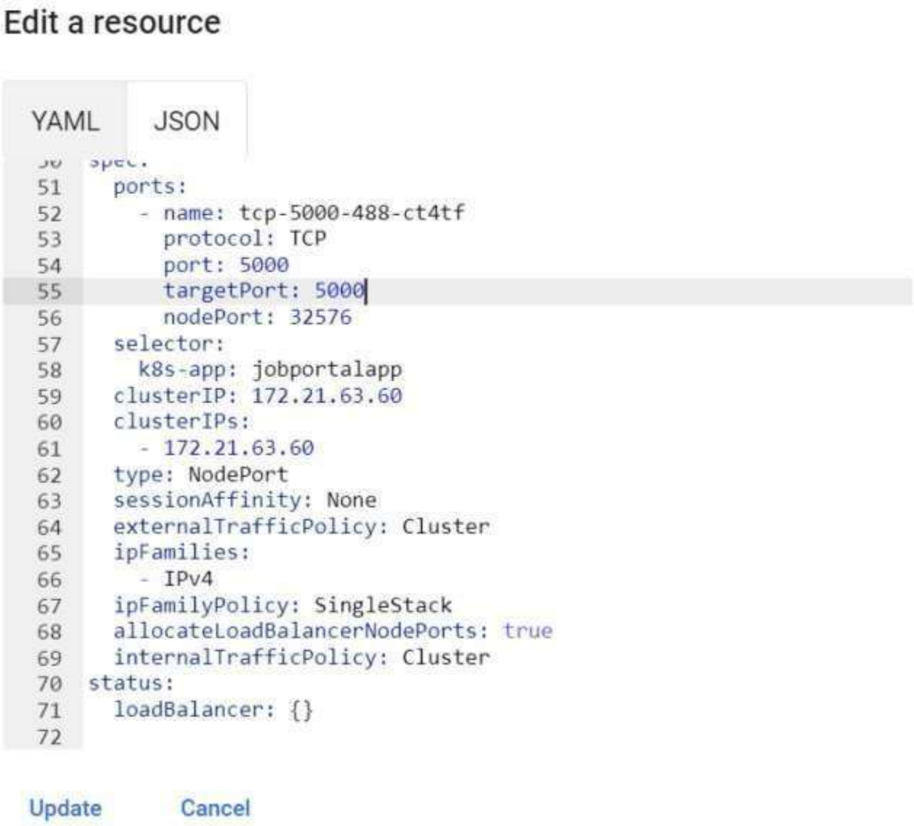
	Name	Images	Labels	Pods	Created
●	jobportalapp	Show all	Show all	1 / 1	54 seconds ago

Pods

	Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
●	jobportalapp-[illegible]	Show all	Show all	10.144.185.56	Running	0	-	-	54 seconds ago

Replica Sets

	Name	Images	Labels	Pods	Created
●	jobportalapp-[illegible]	Show all	Show all	1 / 1	55 seconds ago



```
spec:
  ports:
    - name: tcp-5000-488-ct4tf
      protocol: TCP
      port: 5000
      targetPort: 5000
      nodePort: 32576
  selector:
    k8s-app: jobportalapp
  clusterIP: 172.21.63.60
  clusterIPs:
    - 172.21.63.60
  type: NodePort
  sessionAffinity: None
  externalTrafficPolicy: Cluster
  ipFamilies:
    - IPv4
  ipFamilyPolicy: SingleStack
  allocateLoadBalancerNodePorts: true
  internalTrafficPolicy: Cluster
status:
  loadBalancer: {}
```