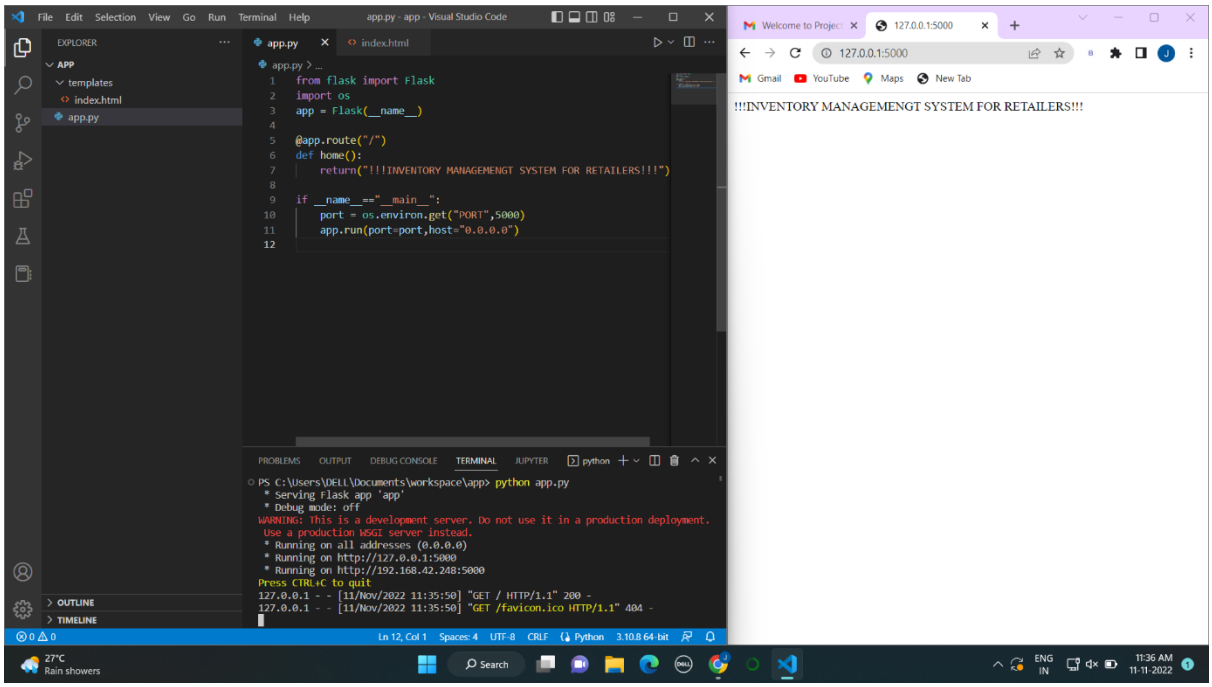
ASSIGNMENT – 4

DOCKER & KUBERNETES

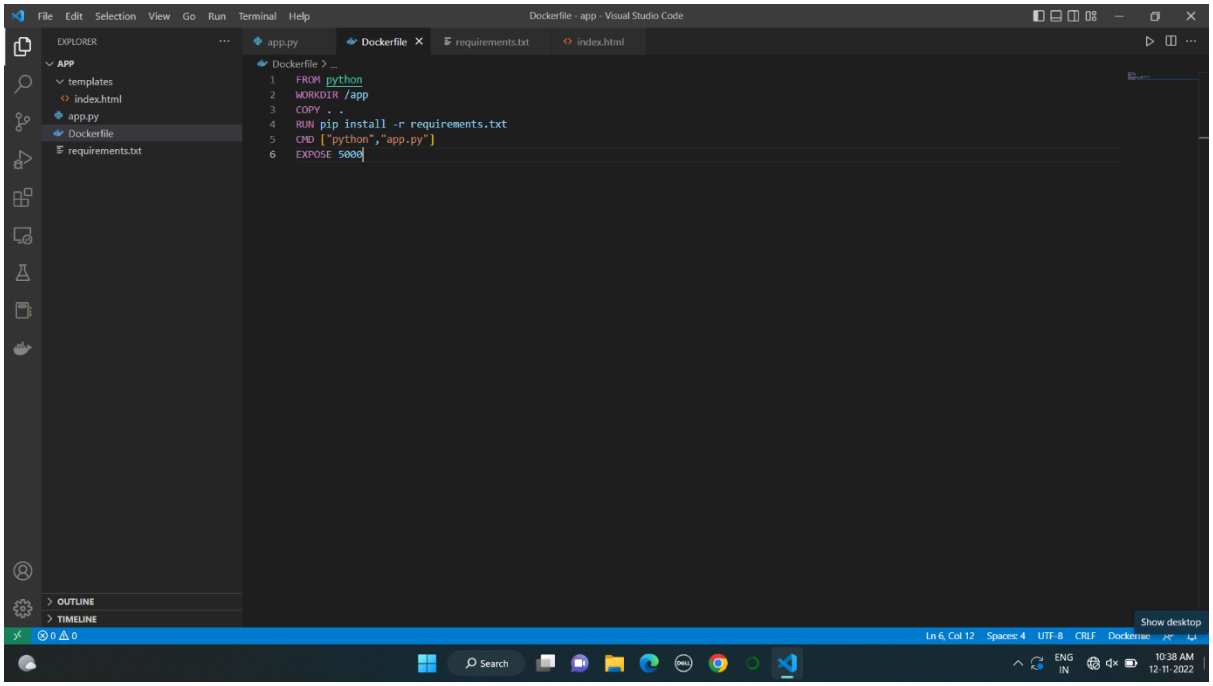
Student Name	Solaimathi T
Student Roll Number	731719205019
Maximum Marks	2 Marks

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

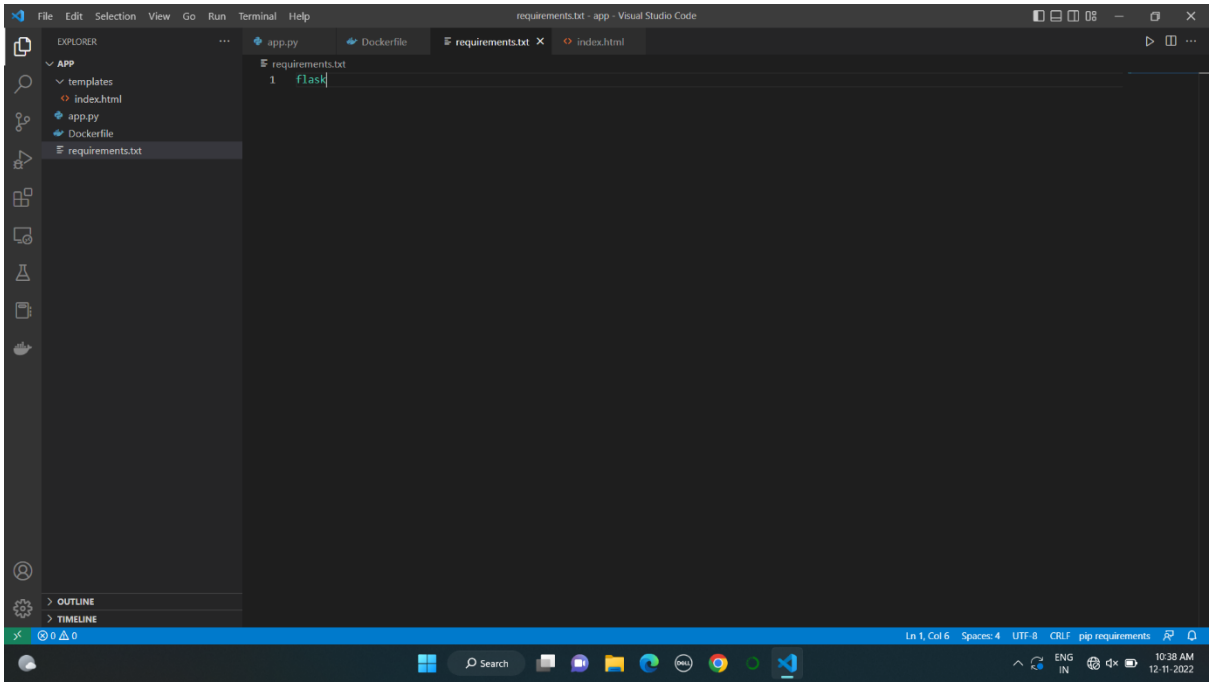
app.py



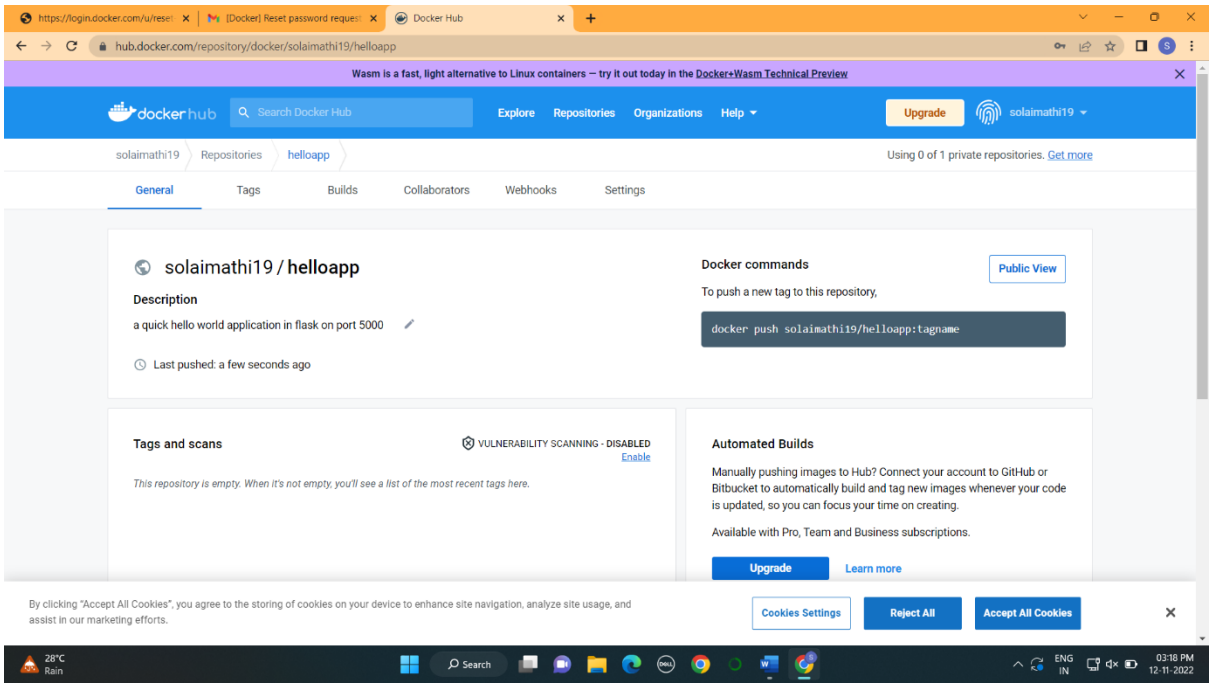
Dockerfile

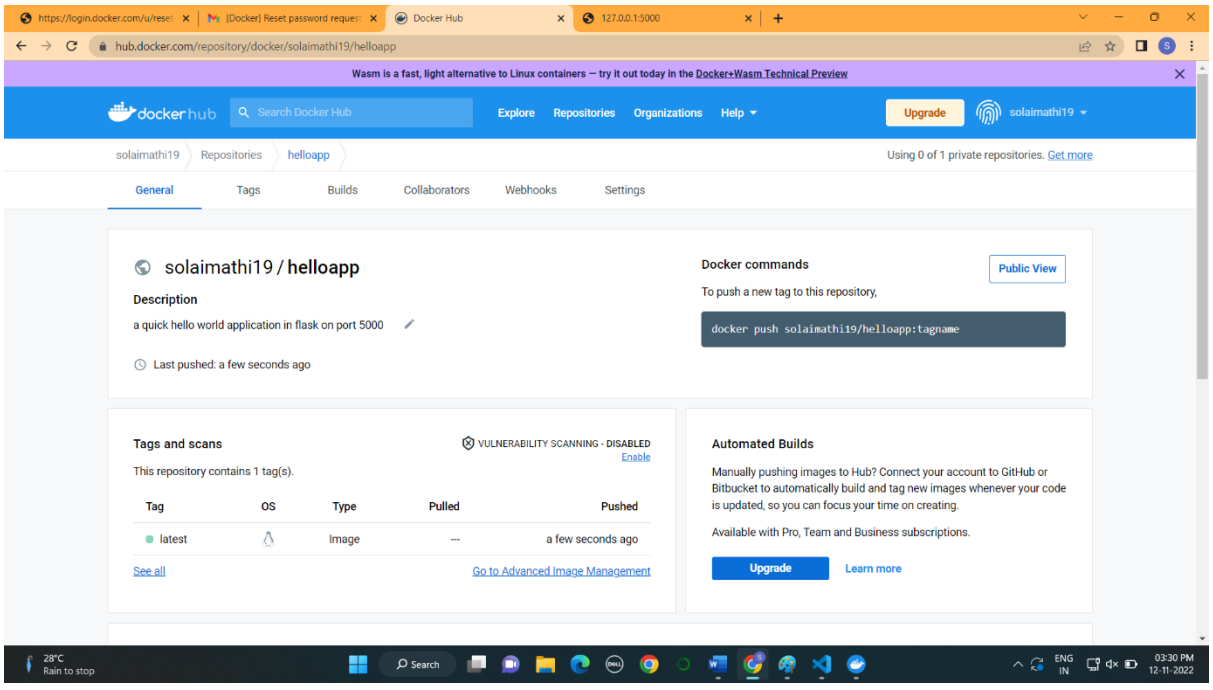


Requirements.txt

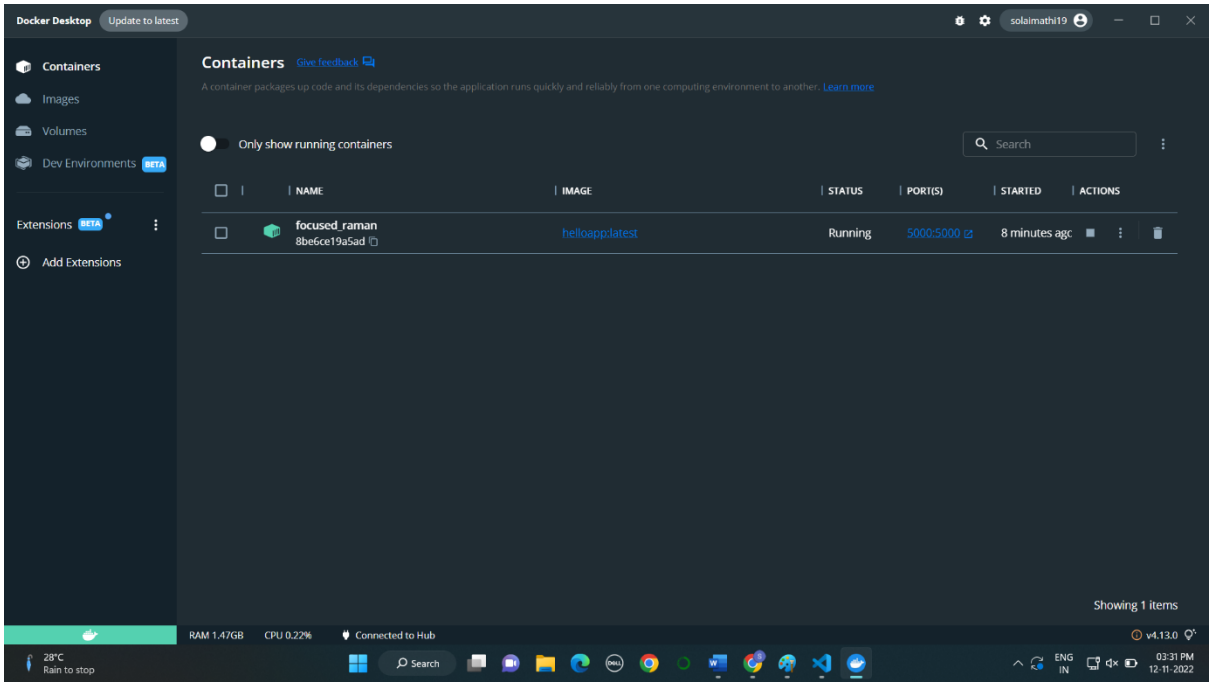


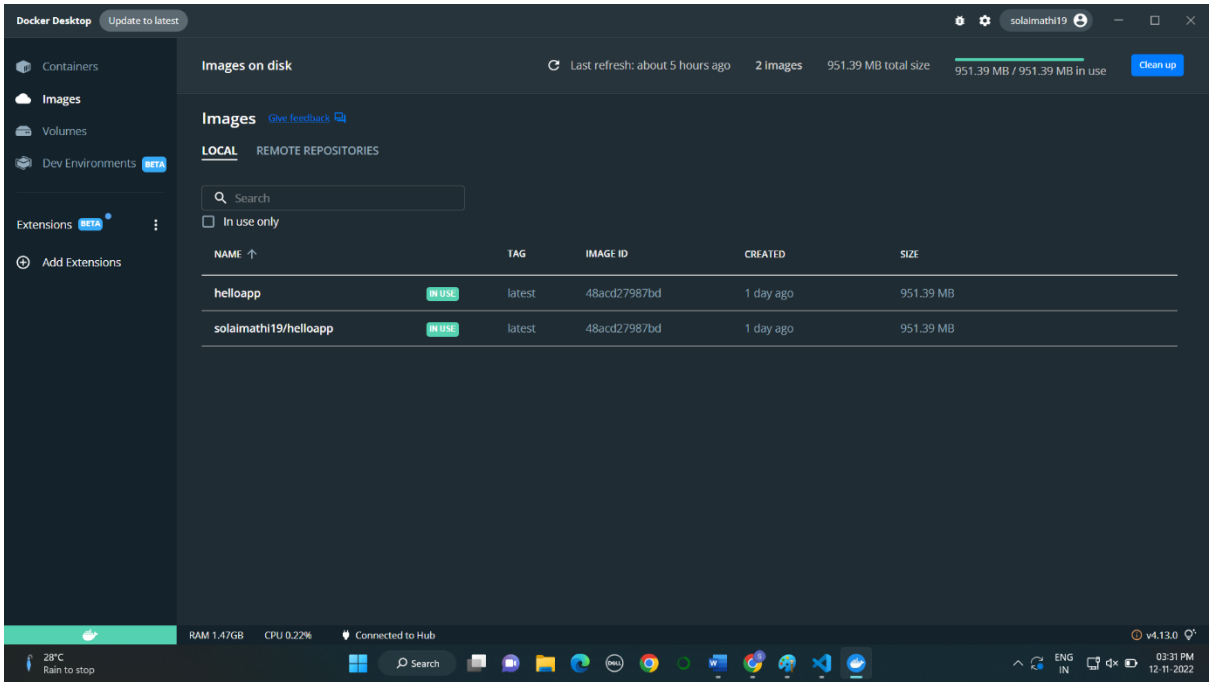
Docker hub

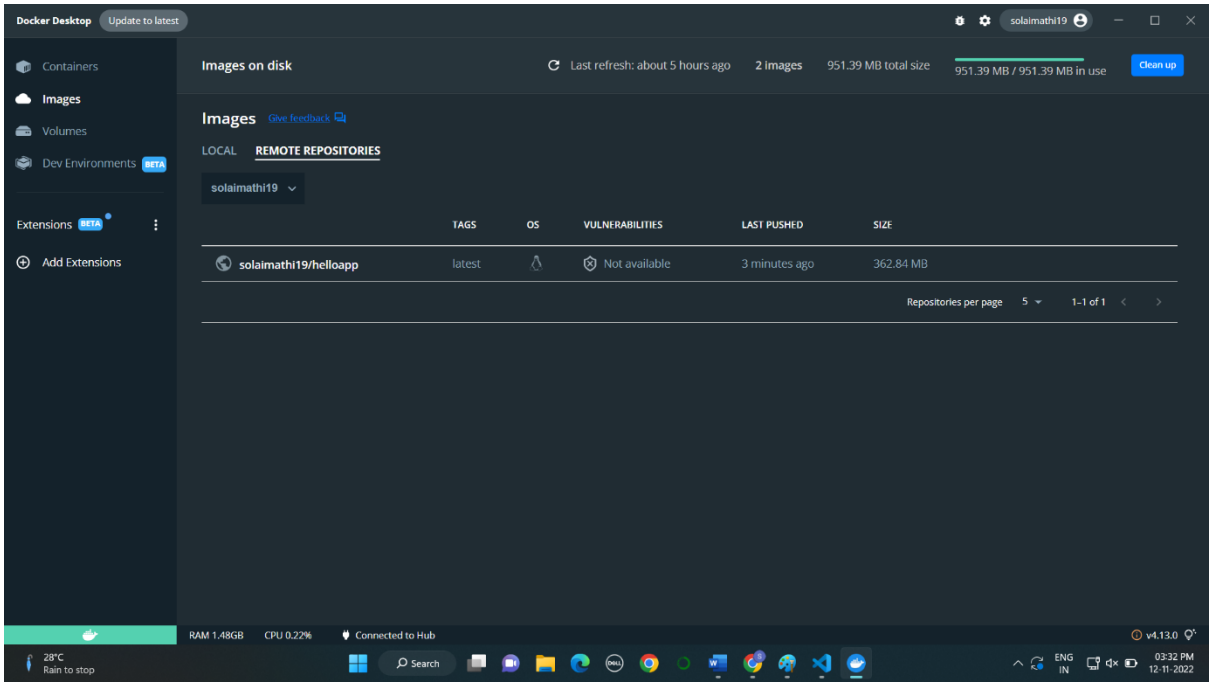

hub.docker.com/repository/docker/solaimathi19/helloapp
Wasm is a fast, light alternative to Linux containers – try it out today in the Docker+Wasm Technical Preview
docker hub
Search Docker Hub
Explore
Repositories
Organizations
Help
Upgrade
solaimathi19
solaimathi19 / Repositories / helloapp
Using 0 of 1 private repositories. Get more
General
Tags
Builds
Collaborators
Webhooks
Settings
solaimathi19 / helloapp
Description
a quick hello world application in flask on port 5000
Last pushed: a few seconds ago
Docker commands
Public View
To push a new tag to this repository,
docker push solaimathi19/helloapp:tagname
Tags and scans
VULNERABILITY SCANNING - DISABLED
Enable
This repository is empty. When it's not empty, you'll see a list of the most recent tags here.
Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions.
Upgrade
Learn more
By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.
Cookies Settings
Reject All
Accept All Cookies
28°C
Rain
Search
ENG
IN
03:18 PM
12-11-2022


hub.docker.com/repository/docker/solaimathi19/helloapp
127.0.0.1:5000
Wasm is a fast, light alternative to Linux containers – try it out today in the Docker+Wasm Technical Preview
docker hub
Search Docker Hub
Explore
Repositories
Organizations
Help
Upgrade
solaimathi19
solaimathi19 / Repositories / helloapp
Using 0 of 1 private repositories. Get more
General
Tags
Builds
Collaborators
Webhooks
Settings
solaimathi19 / helloapp
Description
a quick hello world application in flask on port 5000
Last pushed: a few seconds ago
Docker commands
Public View
To push a new tag to this repository,
docker push solaimathi19/helloapp:tagname
Tags and scans
VULNERABILITY SCANNING - DISABLED
Enable
This repository contains 1 tag(s).
Tag
OS
Type
Pulled
Pushed
latest
Image
---
a few seconds ago
See all
Go to Advanced Image Management
Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions.
Upgrade
Learn more
28°C
Rain to stop
Search
ENG
IN
03:30 PM
12-11-2022

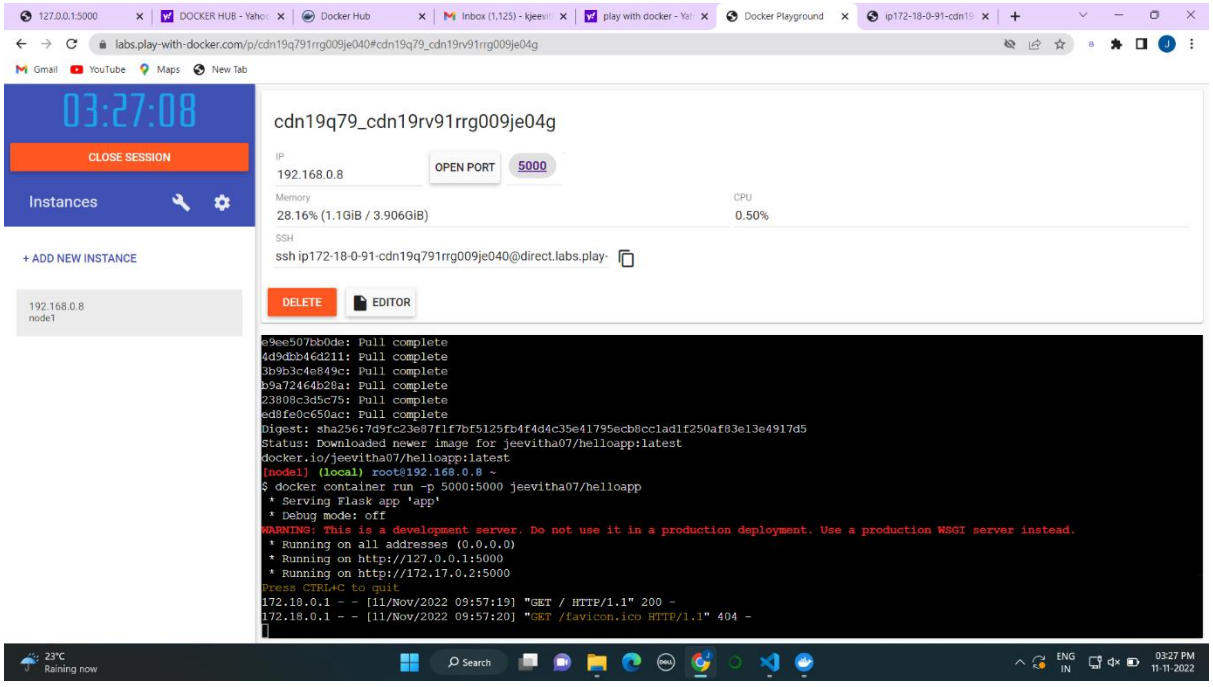
Docker

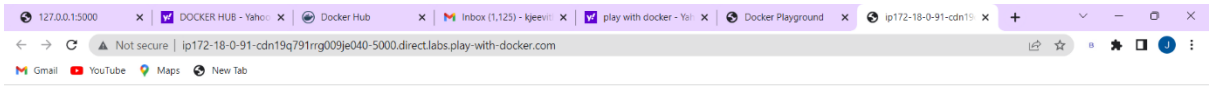

Docker Desktop
Update to latest
solaimathi19
Containers
Images
Volumes
Dev Environments
BETA
Extensions
BETA
Add Extensions
Containers
Give feedback
A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. Learn more
Only show running containers
Search
NAME
IMAGE
STATUS
PORT(S)
STARTED
ACTIONS
focused_raman
8be6ce19a5ad
helloapp:latest
Running
5000:5000
8 minutes ago
Showing 1 items
RAM 1.47GB
CPU 0.22%
Connected to Hub
v4.13.0
28°C
Rain to stop
Search
ENG
IN
03:31 PM
12-11-2022


Docker Desktop
Update to latest
solaimathi19
Containers
Images
Volumes
Dev Environments
BETA
Extensions
BETA
Add Extensions
Images on disk
Last refresh: about 5 hours ago
2 images
951.39 MB total size
951.39 MB / 951.39 MB in use
Clean up
Images
Give feedback
LOCAL
REMOTE REPOSITORIES
Search
In use only
NAME
TAG
IMAGE ID
CREATED
SIZE
helloapp
IN USE
latest
48acd27987bd
1 day ago
951.39 MB
solaimathi19/helloapp
IN USE
latest
48acd27987bd
1 day ago
951.39 MB
RAM 1.47GB
CPU 0.22%
Connected to Hub
v4.13.0
28°C
Rain to stop
Search
ENG
IN
03:31 PM
12-11-2022

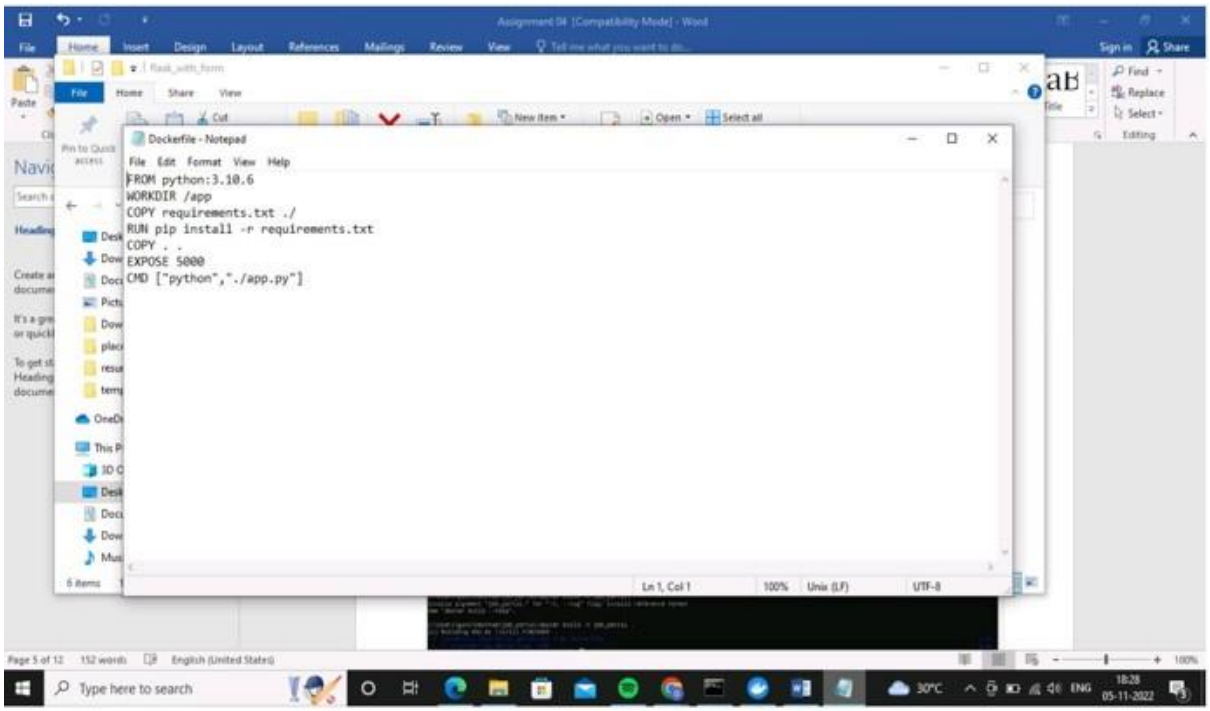


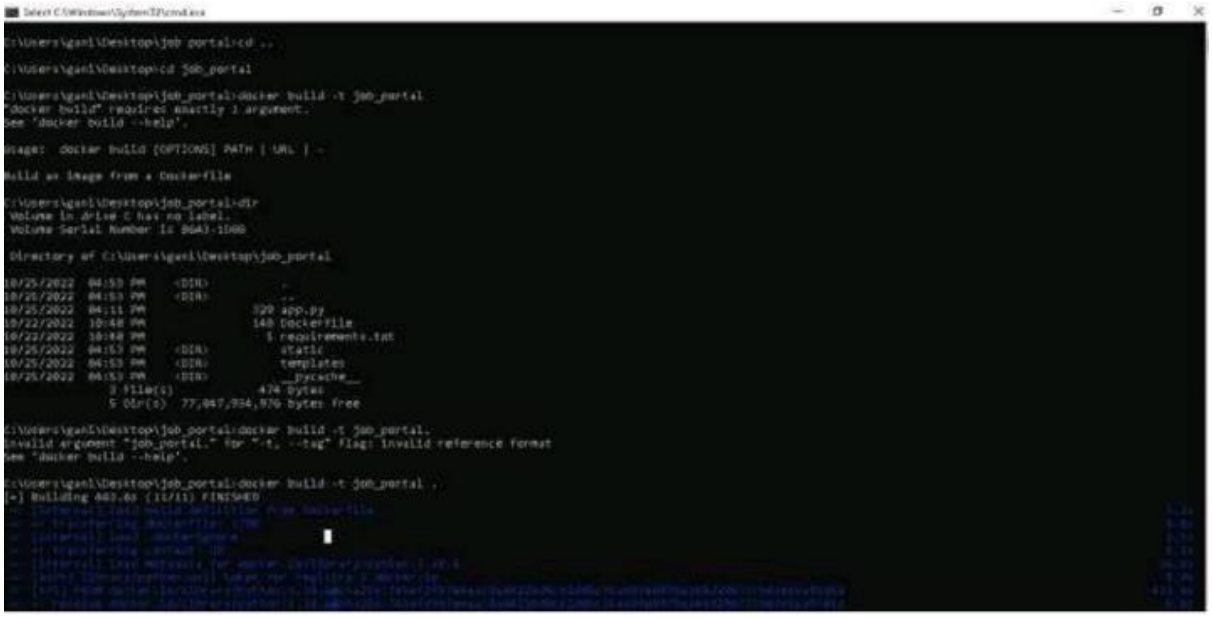
DockerPlayground

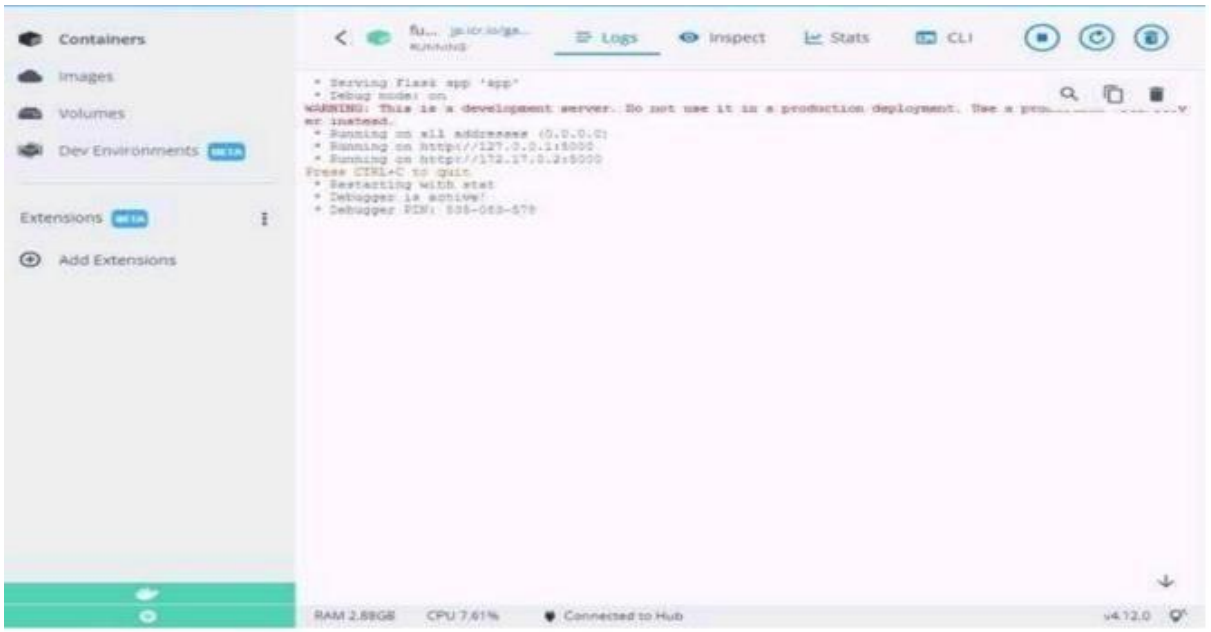




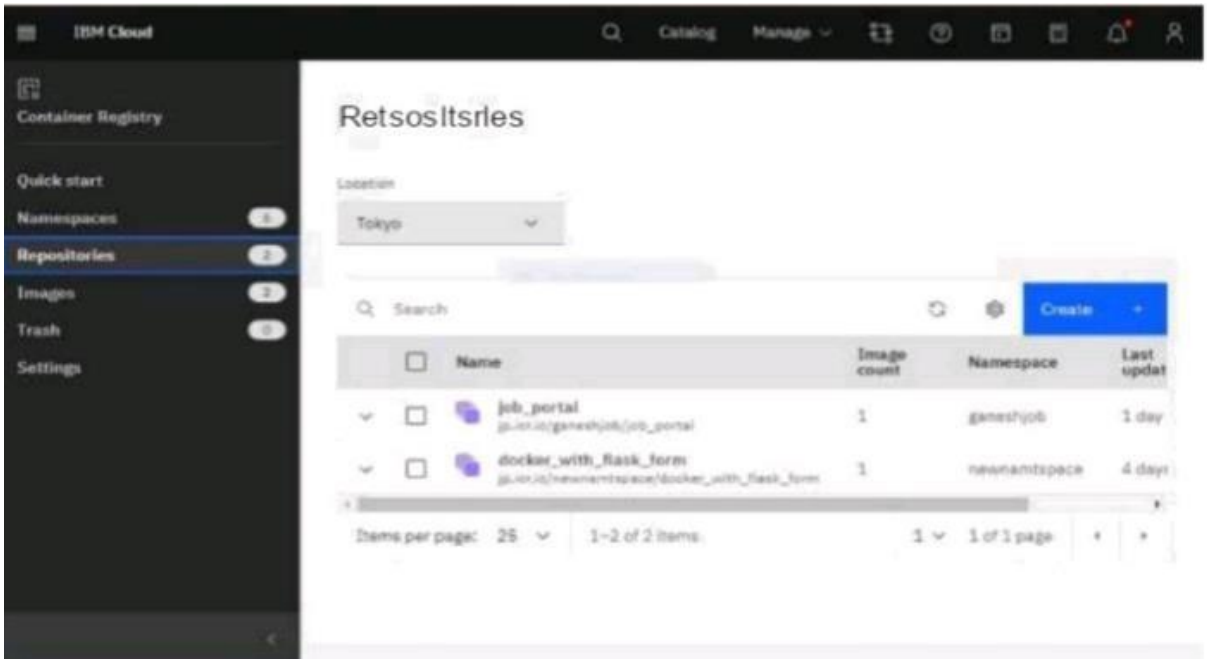
2. Create a dockerfile for the jobportal application and deploy it in docker desktop application.

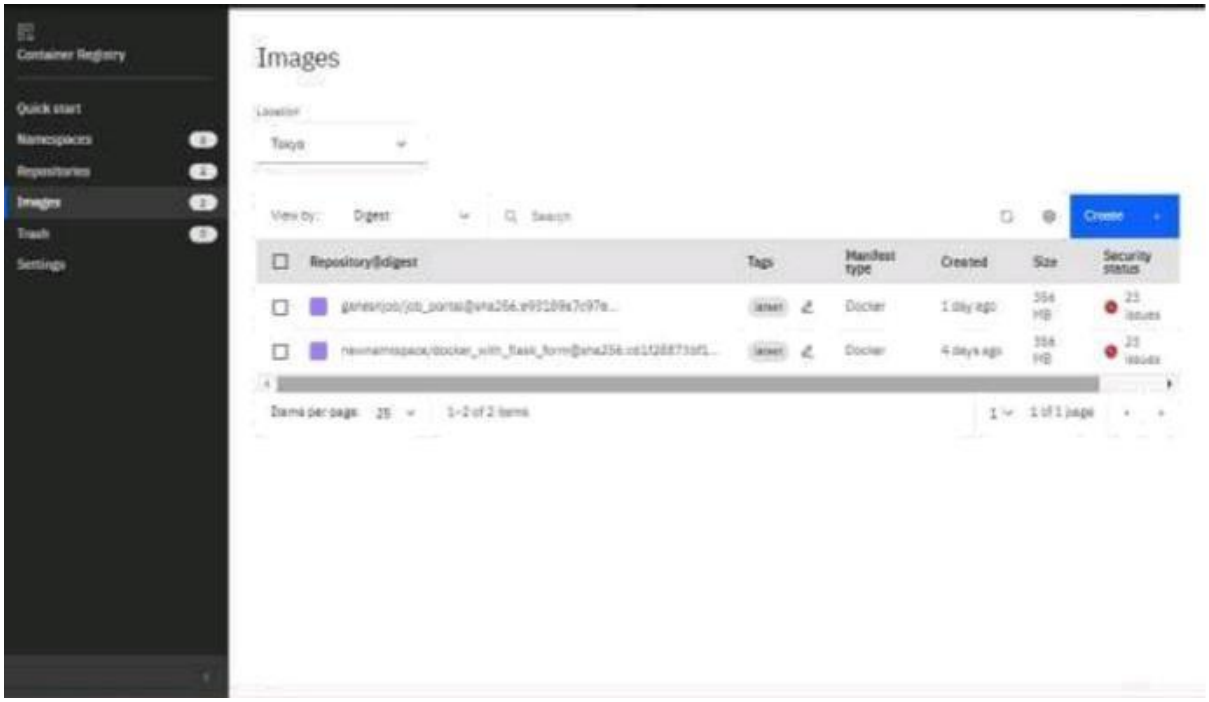


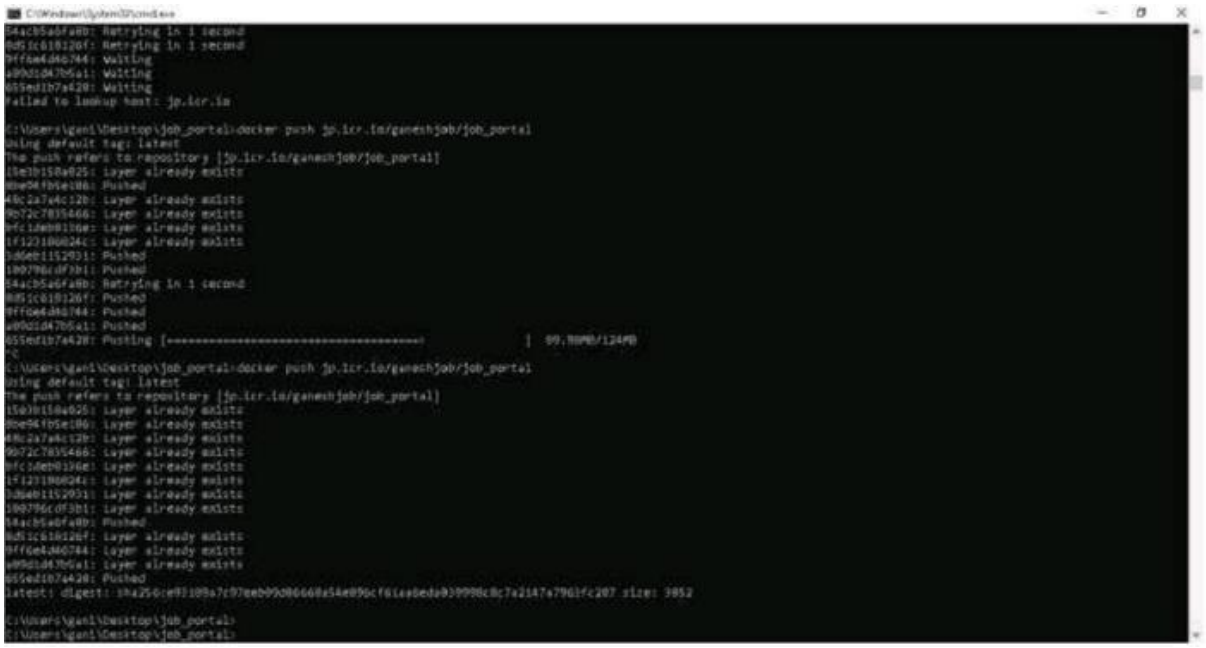

C:\Users\ganl\Desktop\job_portal>cd ..
C:\Users\ganl\Desktop>cd job_portal
C:\Users\ganl\Desktop\job_portal>docker build -t job_portal
"docker build" requires exactly 1 argument.
See 'docker build --help'.
Usage: docker build [OPTIONS] PATH | URL | -
Build an image from a Dockerfile
C:\Users\ganl\Desktop\job_portal>dir
Volume in drive C has no label.
Volume Serial Number is 86A3-1D88
Directory of C:\Users\ganl\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 10:48 PM 148 Dockerfile
10/22/2022 10:48 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\ganl\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\ganl\Desktop\job_portal>docker build -t job_portal .
[+] Building 443.6s (11/11) FINISHED


Containers
Images
Volumes
Dev Environments BETA
Extensions BETA
Add Extensions
Logs
Inspect
Stats
CLI
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a pro... ...v
er instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 535-063-579
RAM 2.88GB
CPU 7.61%
Connected to Hub
v4.12.0

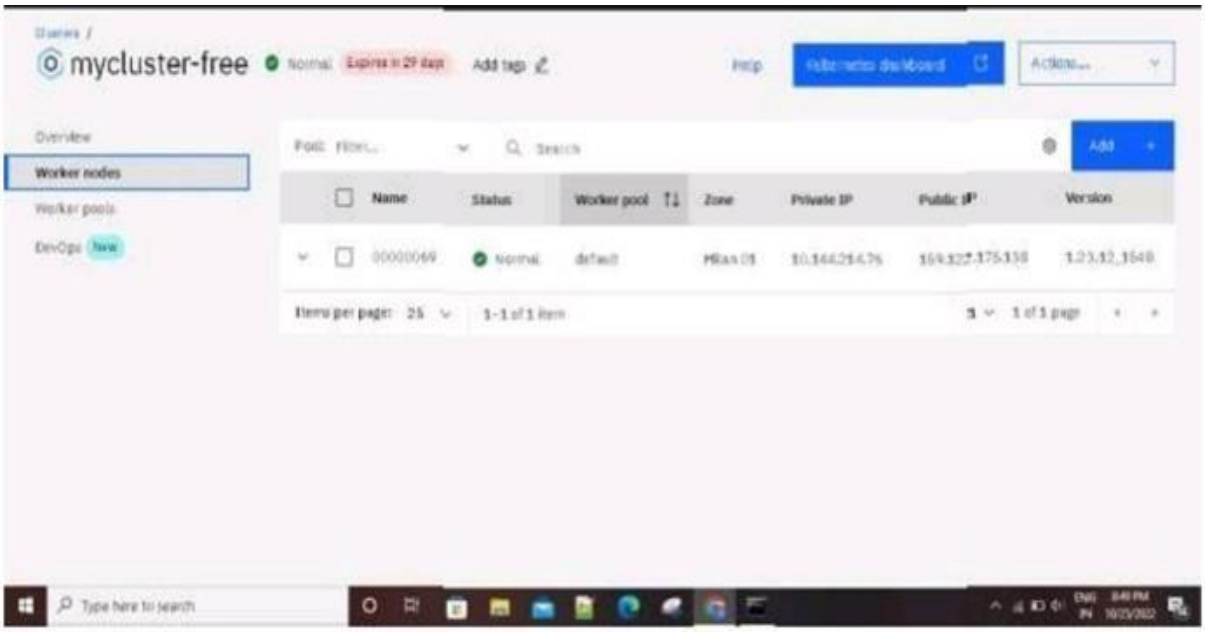
3. Create a IBM container registry and deploy helloworld app or jobportalapp.

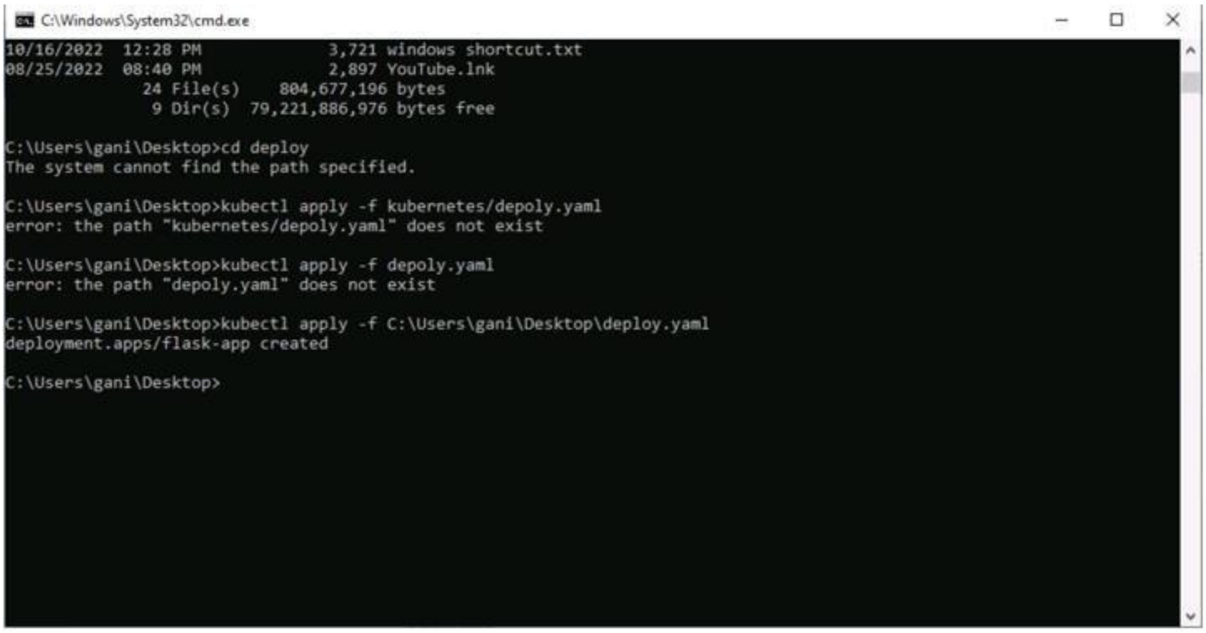


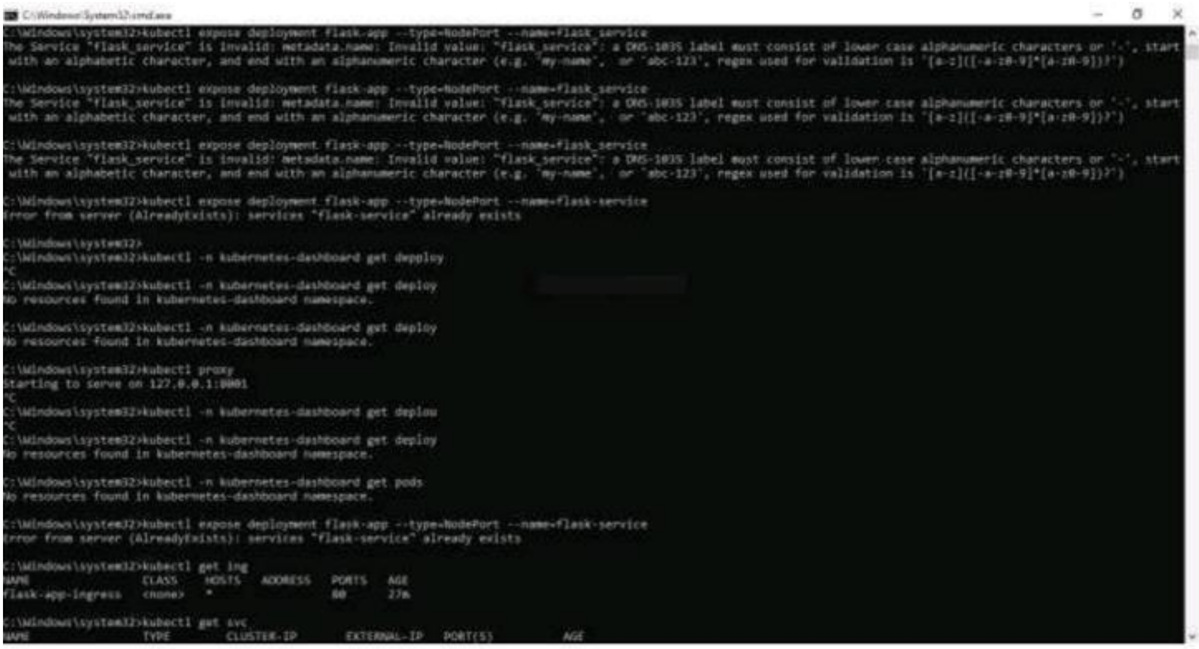




4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.




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>


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 depploy
^C
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 127.0.0.1:8001
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deplou
^C
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 <none> * 80 27m
C:\Windows\system32>kubectl get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE