

ASSIGNMENT 4

Assignment Date	29 th October 2022
Student Name	G A Pranav Vardhan
Student Roll No.	19Z232
Maximum Marks	2 Marks

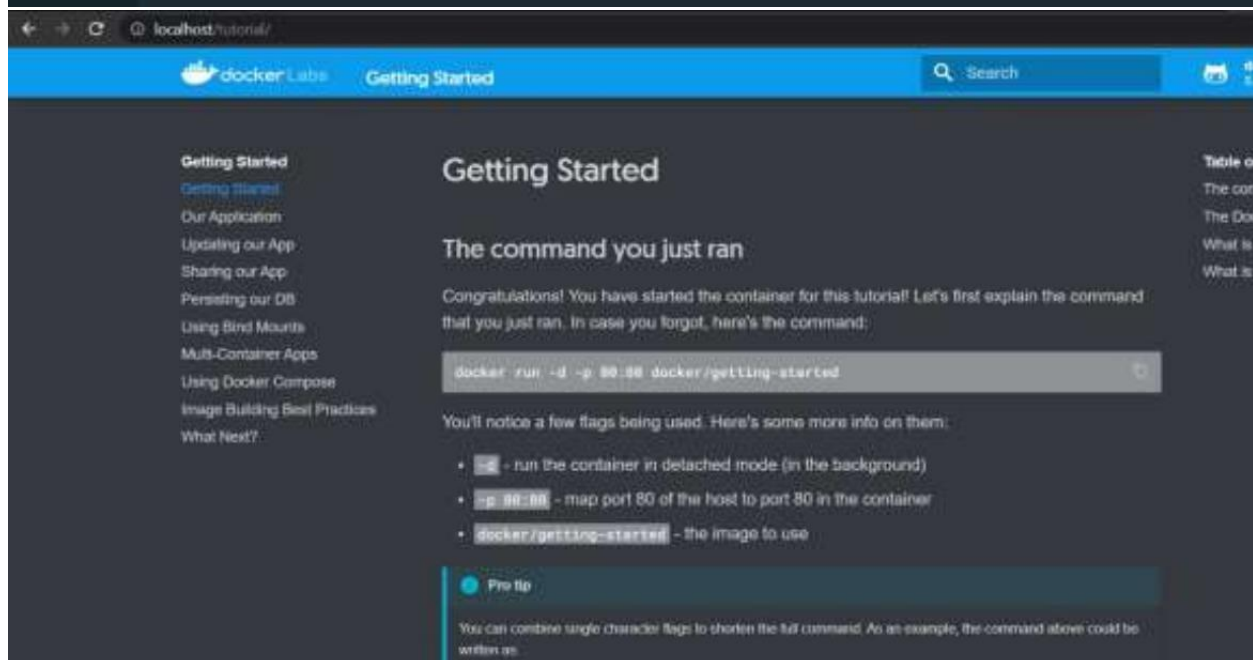
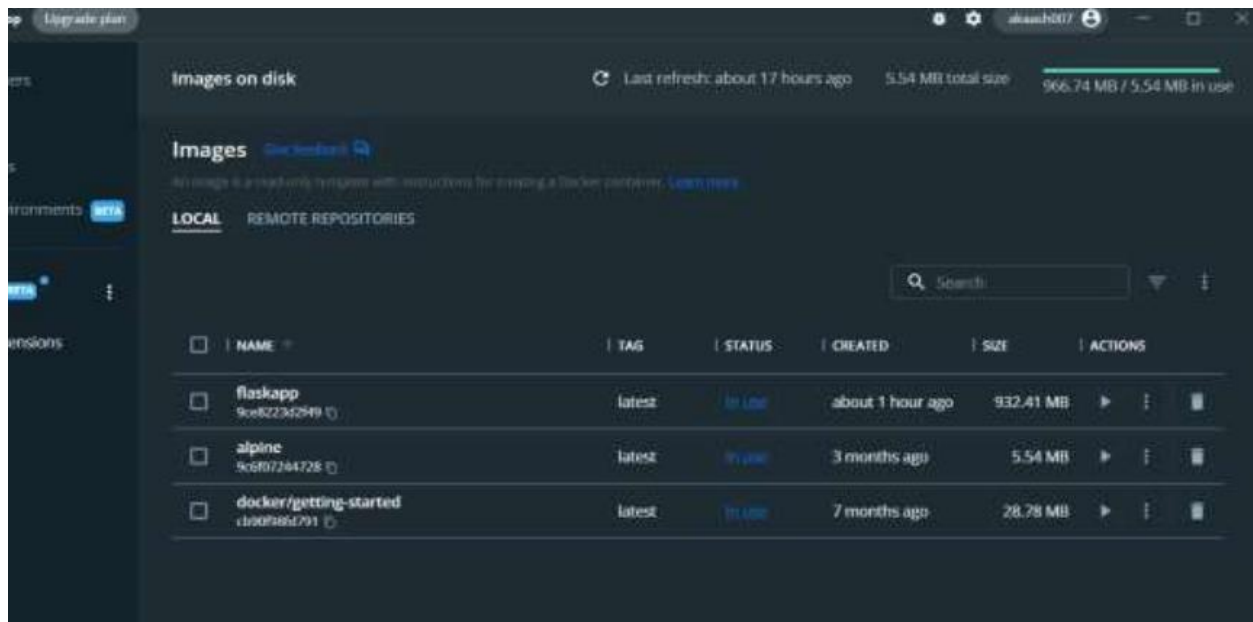
1. Pull an Image from docker hub and run it in docker playground

Pulling image from docker hub –

```
PowerShell
Loading personal and system profiles took 541ms.
→ assignment 4 git:(main) docker pull docker/getting-started
Using default tag: latest
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: Pull complete
0c9732f525d6: Pull complete
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aae
Status: Downloaded newer image for docker/getting-started:latest
docker.io/docker/getting-started:latest
→ assignment 4 git:(main) |
```

Running on docker playground -

```
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aae
Status: Downloaded newer image for docker/getting-started:latest
docker.io/docker/getting-started:latest
→ assignment 4 git:(main) docker run -d -p 80:80 docker/getting-started
ee6d34bd49e20106c8d3a3cc85bab0bde9c96a667bb3112bc896358efd6d2f68
→ assignment 4 git:(main) D|
```



2. Create a docker file for the job portal application and deploy it in docker application.

Docker file –

```
1 FROM python:3.8-buster
2
3 WORKDIR /app
4
5 COPY requirements.txt /app/
6
7 RUN pip install -r requirements.txt
8
9 COPY . /app/
10
11 RUN cp .env.dev.sample .env
12
13 EXPOSE 8000
14
15 RUN chmod +x entrypoint.sh
16
17 CMD ["sh", "entrypoint.sh"]
```

Deployment in docker application –

```
PowerShell
+ Flaskapp git:(main) > docker build -t Flaskapp .
[+] Building 200.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 170B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.8-buster
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load build context
=> => transferring context: 2.56kB
=> [1/8] FROM docker.io/library/python:3.8-buster
=> resolve docker.io/library/python:3.8-buster
=> sha256:d22a46308618281661f469d7777ba5c8b1b613a6b0bc7d113b90740908c494 8.53kB / 8.53kB
=> sha256:3e9dd13e3be7a6e174471776f87f693e7a1700731f8706a493260966031f6e4 5.18kB / 5.18kB
=> sha256:4e9c9528c8b5216119e8e07b4361a7792e7b1d4a553a8c1540a01508838e57db 10.40kB / 10.40kB
=> sha256:703e7efb7e4a2a2a8721b6c6388b11a693e0779a20bd19677c883e4a91033 2.15kB / 2.15kB
=> sha256:8d1f943eaa7b1ce856fbc072e7790836b0b0760176b79c36d5777ac13fca 2.22kB / 2.22kB
=> sha256:1d7156cc8d48c165c9661d37bc16de73001f1be430c179506028f99a91a2e 55.61kB / 55.61kB
=> sha256:51a087279cd164e8ab93b1d2b36e758e11a0c3e406a0e78d1603a9bde1001a 54.50kB / 54.50kB
=> sha256:d90983117513b71b170f1701e13918d1e4a6611c7988c9538e8a2a138e3442a 196.79kB / 196.79kB
=> extracting sha256:1d7156cc8d48c165c9661d37bc16de73001f1be430c179506028f99a91a2e
=> sha256:d90983117513b71b170f1701e13918d1e4a6611c7988c9538e8a2a138e3442a 8.20kB / 8.20kB
=> extracting sha256:3e9dd13e3be7a6e174471776f87f693e7a1700731f8706a493260966031f6e4
=> extracting sha256:4e9c9528c8b5216119e8e07b4361a7792e7b1d4a553a8c1540a01508838e57db
=> extracting sha256:51a087279cd164e8ab93b1d2b36e758e11a0c3e406a0e78d1603a9bde1001a
=> sha256:c71af6377099ad45c5431340304e92b15bb200f0057ea21c0ac0a1d2b1a3 10.42kB / 10.42kB
=> sha256:8d0a10b5c78a551e88c33cd11bae1c0790846365494a15e8a285011aa40b 23kB / 23kB
=> sha256:4114b2fe8223d19dd1c1559091aa80f21661a7c85a11c6d6c0dc44f16ded1e 7.89kB / 7.89kB
=> extracting sha256:d90983117513b71b170f1701e13918d1e4a6611c7988c9538e8a2a138e3442a
=> extracting sha256:d90983117513b71b170f1701e13918d1e4a6611c7988c9538e8a2a138e3442a
```

```

PowerShell
>>> sha256:f4c7b728c85316129e8c67b1362a7782c7b1aa555ab81544a01568878667d6 18.83MB / 18.83MB 23.4s
>>> sha256:788efcf47e04a9a4622b0c8338b875a687e9977b3246d19a77c8b1e0aa91052 2.35kB / 2.35kB 0.0s
>>> sha256:8d1f943ceaf3b3c93d3c892ce795036b0401700170b19c3e08d377a813fca 2.22kB / 2.22kB 0.0s
>>> sha256:1871568c8d365c9b36c3892ce795036b0401700170b19c3e08d377a813fca 2.22kB / 2.22kB 0.0s
>>> sha256:51aa972729cf187e9b93b1829b752e11aa9e688abe40b1807c05de1001a 54.53MB / 54.53MB 18.0s
>>> sha256:d68983117333b731870bf1701ef57242a6613c7988c5535d62a159e840a 196.79MB / 196.79MB 280.0s
>>> extracting sha256:1871568c8d365c9b36c3892ce795036b0401700170b19c3e08d377a813fca 2.3s
>>> sha256:d68983117333b731870bf1701ef57242a6613c7988c5535d62a159e840a 6.19MB / 6.19MB 81.7s
>>> extracting sha256:3e96d13e5b79aef174cf21776f374b5c7e1700321c770aa99268806031f0a4 0.2s
>>> extracting sha256:f4c7b728c85316129e8c67b1362a7782c7b1aa555ab81544a01568878667d6 0.3s
>>> extracting sha256:51aa972729cf187e9b93b1829b752e11aa9e688abe40b1807c05de1001a 3.0s
>>> sha256:c71a7c375159aa9d5f43c1848586d7e2b35b6b104f0657e22c6a31385a5 10.02MB / 10.02MB 180.1s
>>> sha256:88a1363c70435f88c3b5cfcd13f8aa1c87008f6385f4f435b08a135413da49b 23kB / 23kB 82.3s
>>> sha256:4334b3cf837d194dc1c1350083aa88f21601a7c35a31c6da8c8d40f0bed3c 3.60MB / 3.60MB 48.6s
>>> extracting sha256:d68983117333b731870bf1701ef57242a6613c7988c5535d62a159e840a 7.4s
>>> extracting sha256:d68983117333b731870bf1701ef57242a6613c7988c5535d62a159e840a 8.3s
>>> extracting sha256:c71a7c375159aa9d5f43c1848586d7e2b35b6b104f0657e22c6a31385a5 0.0s
>>> extracting sha256:88a1363c70435f88c3b5cfcd13f8aa1c87008f6385f4f435b08a135413da49b 0.0s
>>> extracting sha256:4334b3cf837d194dc1c1350083aa88f21601a7c35a31c6da8c8d40f0bed3c 0.7s
>>> [2/5] WORKDIR /app 1.1s
>>> [3/5] COPY requirements.txt ./ 0.0s
>>> [4/5] RUN pip install -r requirements.txt 4.5s
>>> [5/5] CMD 0.1s
>>> exporting to image 0.2s
>>> => exporting layers 0.3s
>>> writing image sha256:9ea2232f149cc12a4f77c9b82656f4ec1f4a4a14e0a577a97b388a3718911e 0.0s
>>> => naming to docker.io/library/flashtapp 0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
+ flashtapp git:(main) |

```

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](#)

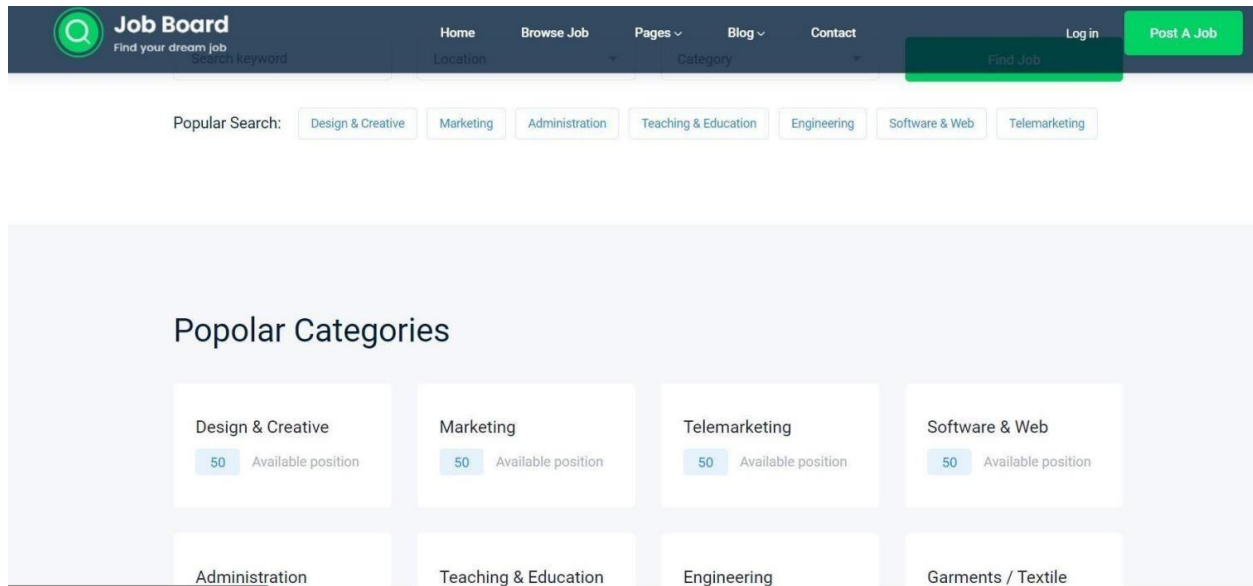
Only show running containers

Search

	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	 agitated_neumann 918d20882039 	icr.io/helloapp/ibm:latest	Exited (137)	49160:8080 		  
<input type="checkbox"/>	 jolly_turing b62c0712bdd3 	jobportalapplication:latest	Running	1234:8000 	4 minutes ago	  

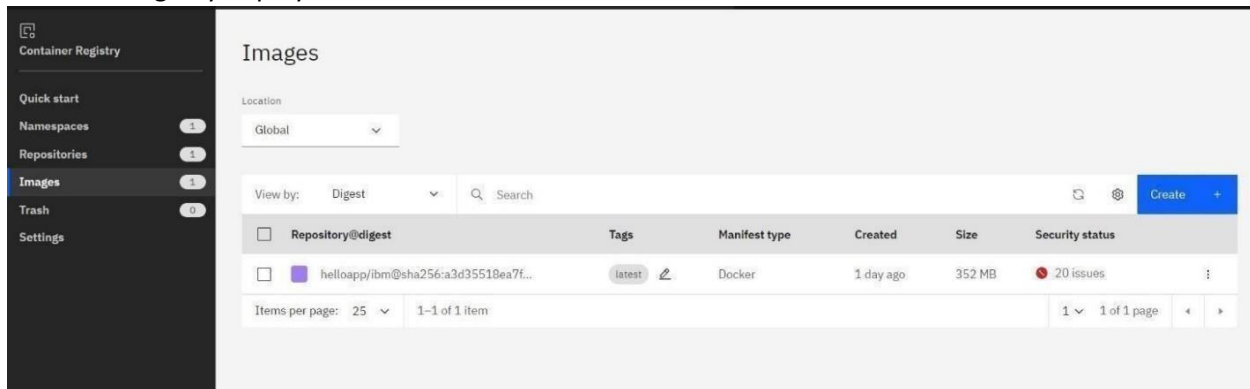
Showing 2 items

OUTPUT –

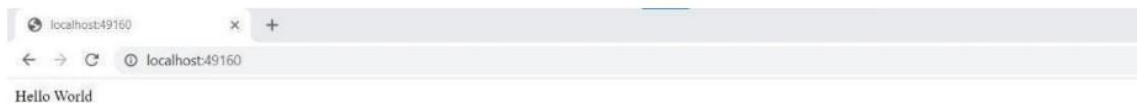


3. Create a IBM container registry and deploy hello-world app or job portal app.

Container registry deployment –

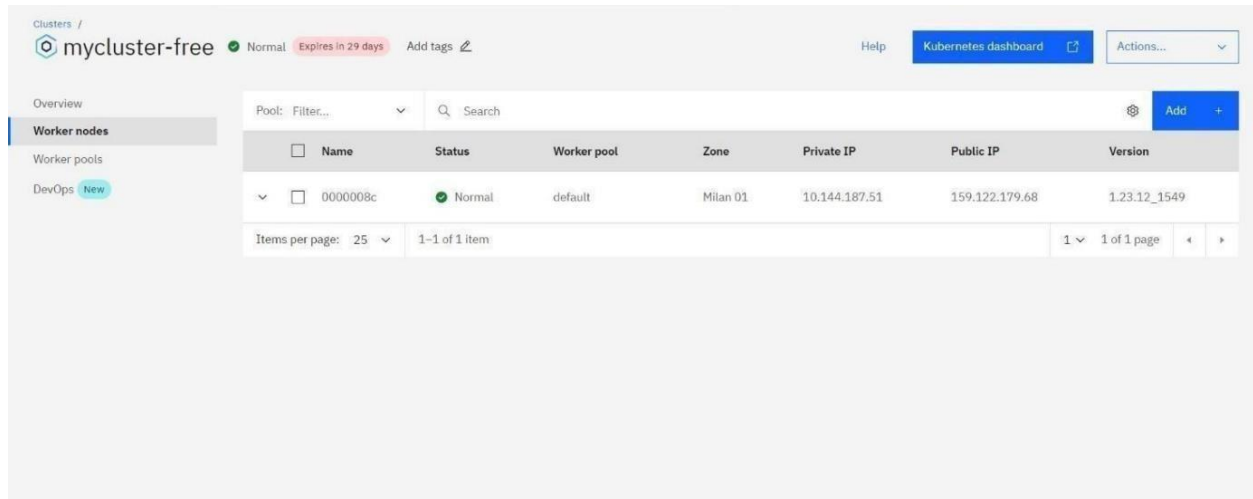


OUTPUT –

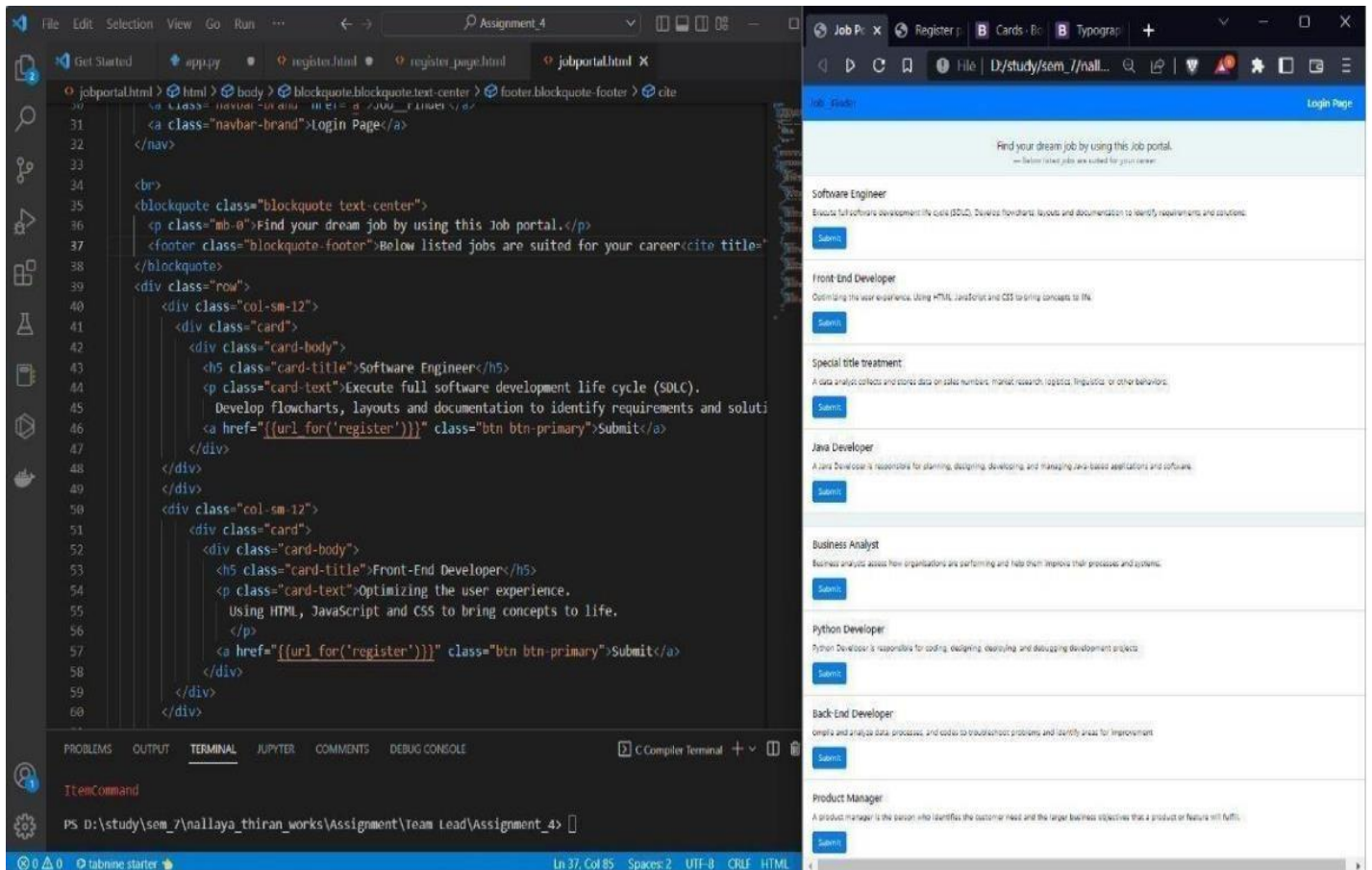


4. Create a Kubernetes cluster in IBM cloud and deploy hello world image or job portal image and also expose the same app to run in node port.

Creating Kubernetes cluster in IBM cloud –



OUTPUT –



Exposing the same app to run in node port –

```
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 deploy
^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 127.0.0.1:8081
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
^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      27s

C:\Windows\system32>kubectl get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
```