

Assignment -4
Docker and kubernetes

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Student Roll Number	92172019104063
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
Microsoft Windows [Version 10.0.19044.1766]
(c) Microsoft Corporation. All rights reserved.

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
080f369ca59f: 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

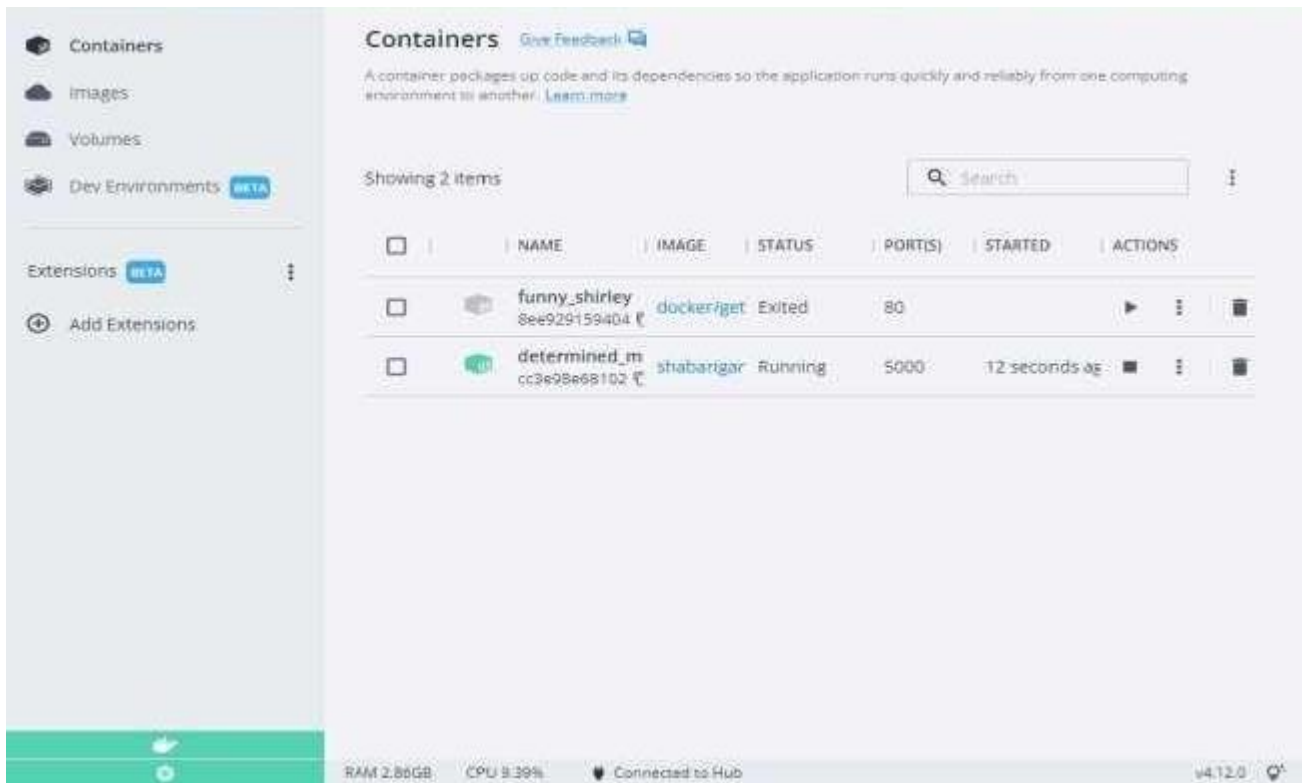
C:\Users\ADMIN>
```

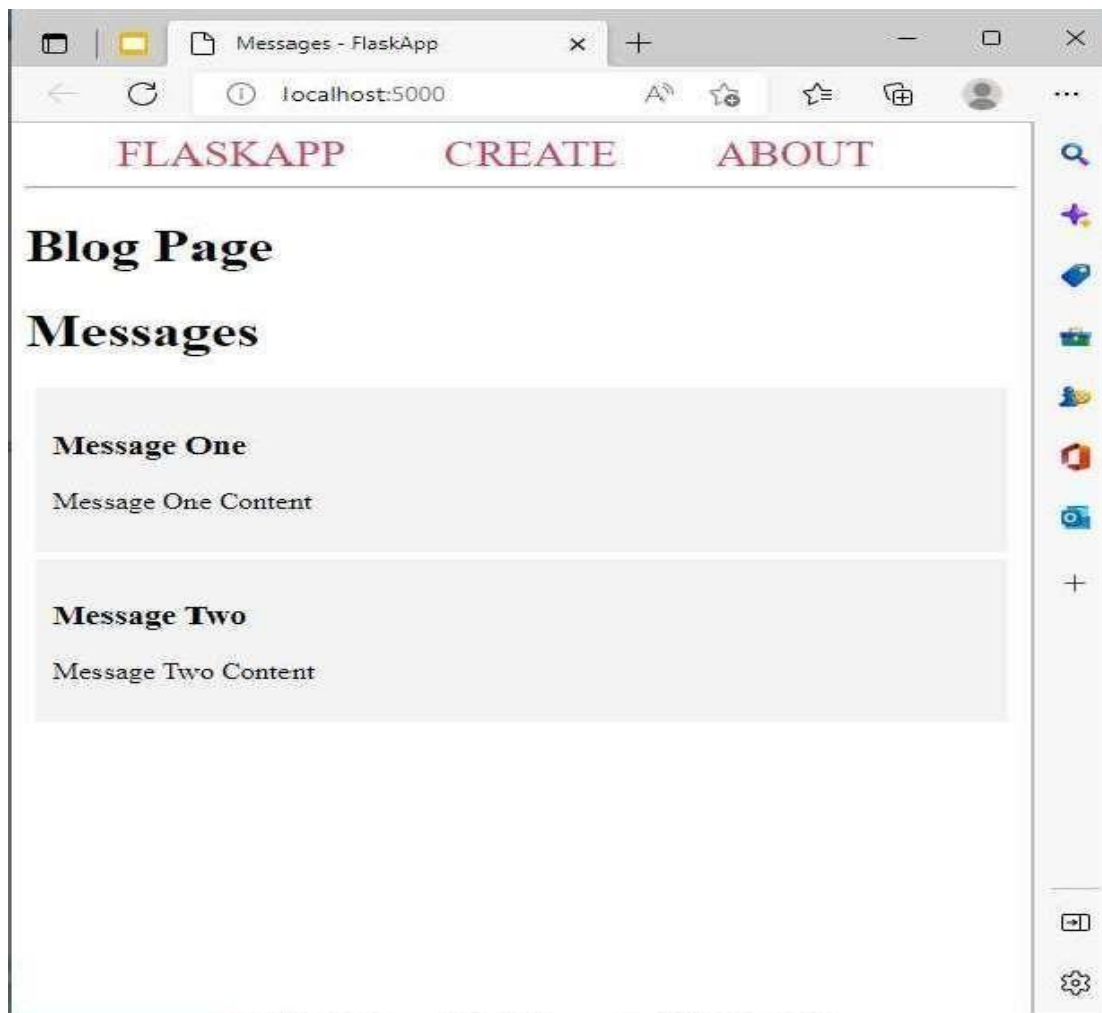
2) run it in docker playground

```
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>
```

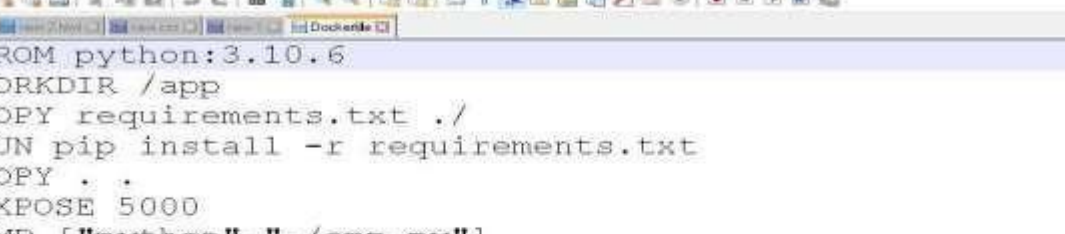




Question-2:

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

1) Creating a docker file for the jobportal application



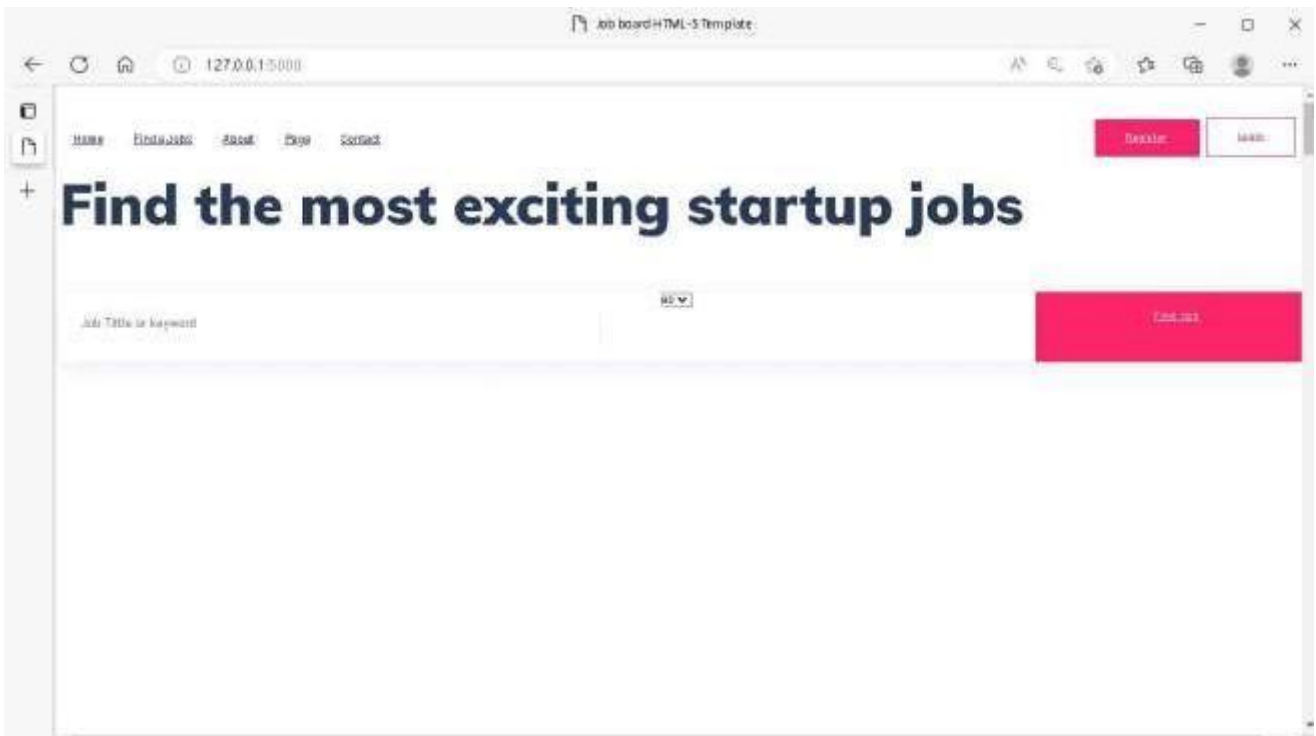
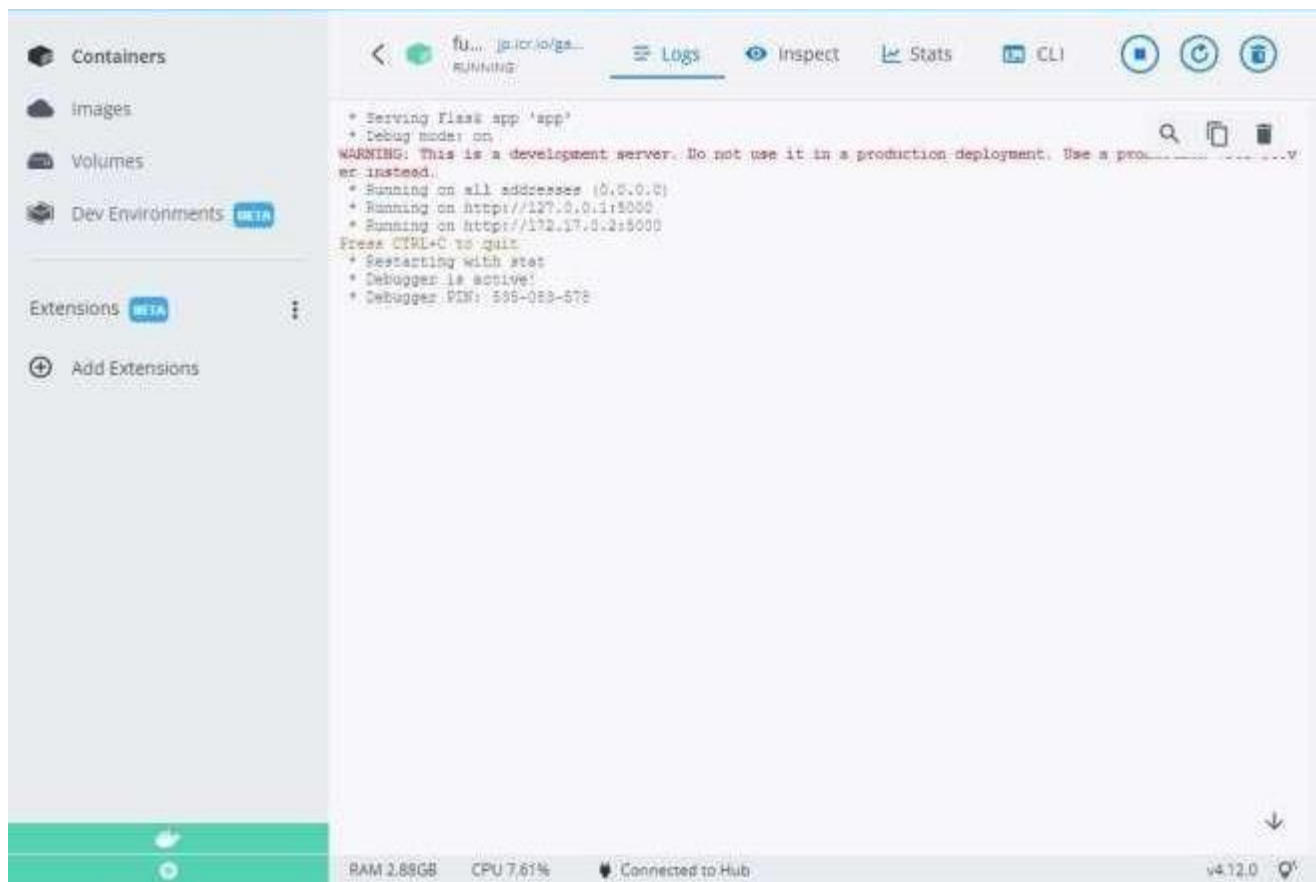
The screenshot shows a Notepad++ window with the title "C:\Users\gaur\Desktop\jeb_gaur\dockerfile - Notepad++". The menu bar includes File, Edit, Search, View, Encoding, Language, Settings, Tools, Macro, Run, Plugins, Window, and Help. The toolbar contains various icons for file operations and editing. The text area displays the following Dockerfile content:

```
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
```

The Windows taskbar at the bottom shows the search bar with the text "to search", several application icons, and the system clock displaying "11:51" and "ENG".

2) deploy in in dokcer application

[illegible]



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) deployhelloworld or jobportal

```
C:\Windows\system32\cmd.exe
54ac05a6fa8b: Retrying in 1 second
8d51c618126f: Retrying in 1 second
9ff6e4d46744: Waiting
a30d1d47b5a1: Waiting
055ed1b74428: Waiting
Failed to lookup host: jp.lcr.io

C:\Users\ganesh\Desktop\job_portal>docker push jp.lcr.io/ganesh/job/job_portal
Using default tag: latest
The push refers to repository [jp.lcr.io/ganesh/job/job_portal]
1503b1584025: layer already exists
80e94195e186: Pushed
48c2a744c12b: layer already exists
9b72c7835466: layer already exists
bfc1deb0136e: layer already exists
1f123106024c: layer already exists
3d6eb1152931: Pushed
190796cdf3b1: Pushed
54ac05a6fa8b: Retrying in 1 second
8d51c618126f: Pushed
9ff6e4d46744: Pushed
a30d1d47b5a1: Pushed
055ed1b74428: Pushing [=====] 89.88MB/124MB
^C
C:\Users\ganesh\Desktop\job_portal>docker push jp.lcr.io/ganesh/job/job_portal
Using default tag: latest
The push refers to repository [jp.lcr.io/ganesh/job/job_portal]
1503b1584025: layer already exists
80e94195e186: layer already exists
48c2a744c12b: layer already exists
9b72c7835466: layer already exists
bfc1deb0136e: layer already exists
1f123106024c: layer already exists
3d6eb1152931: layer already exists
190796cdf3b1: layer already exists
54ac05a6fa8b: Pushed
8d51c618126f: layer already exists
9ff6e4d46744: layer already exists
a30d1d47b5a1: layer already exists
055ed1b74428: Pushed
latest: digest: sha256:e93189a7c97eeb9200660a54e896cf61a96ede039998c8c7a2147a7962fc207 size: 3952

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


IBM Cloud

Container Registry

Quick start

Namespaces 16

Repositories 2

Images 2

Trash 0

Settings

Repositories

Location: Tokyo

Search

Create +

<input type="checkbox"/>	Name	Image count	Namespace	Last updated
<input type="checkbox"/>	job_portal jpior.io/ganeshjob/job_portal	1	ganeshjob	1 day
<input type="checkbox"/>	docker_with_flask_form jpior.io/newnamespace/docker_with_flask_form	1	newnamespace	4 days

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IBM Cloud

Search resources and products...

Catalog Manage Ganesh S's Account

Container Registry

Quick start

Namespaces 16

Repositories 2

Images 2

Trash 0

Settings

Images

Location: Tokyo

View by: Digest Search

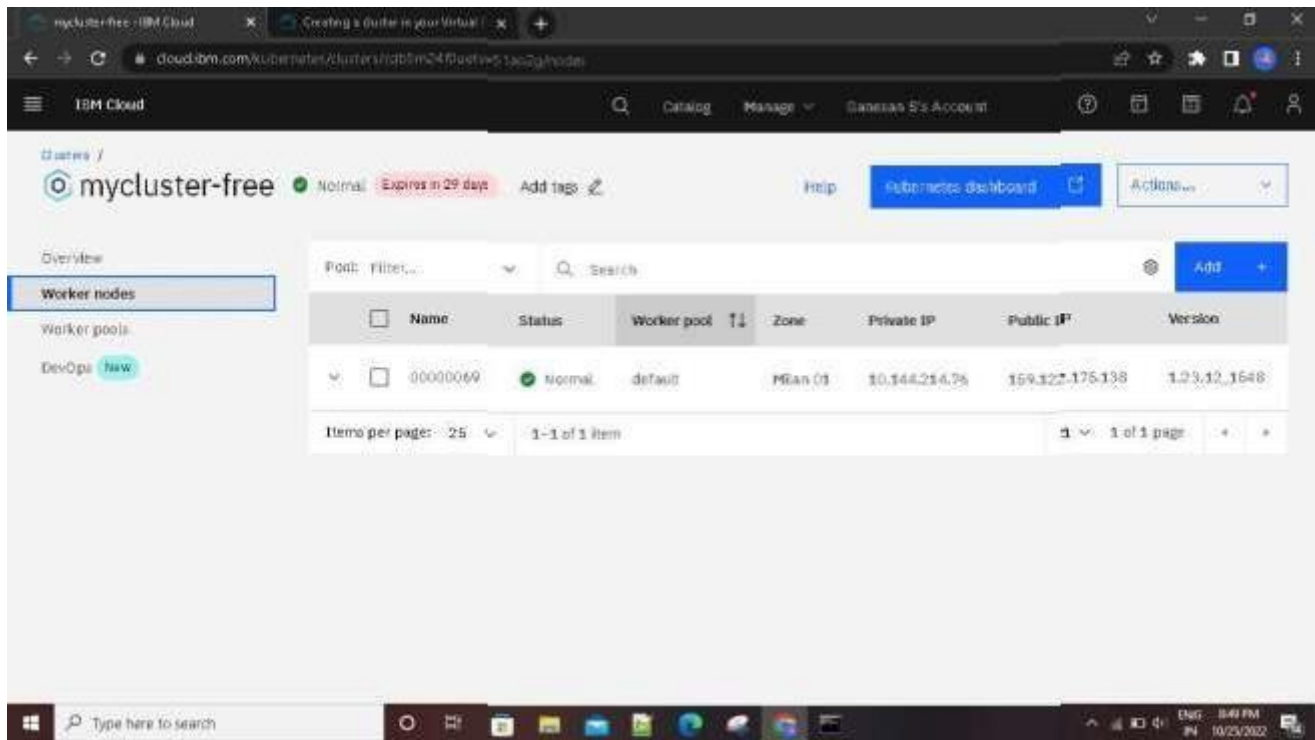
Create +

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size	Security status
<input type="checkbox"/>	ganeshjob/job_portal@sha256:e93189a7d97e...	latest	Docker	1 day ago	356 MB	21 issues
<input type="checkbox"/>	newnamespace/docker_with_flask_form@sha256:cd1126873afl...	latest	Docker	4 days ago	356 MB	23 issues

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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 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>
```



The screenshot shows the Kubernetes dashboard interface. On the left, a sidebar menu lists various Kubernetes resources: Workloads, Jobs, Daemon Sets, Deployments, Jobs, Replica Sets, Replication Controllers, Stateful Sets, and Services. The 'Pods' tab is selected, displaying a table of pods. The table has columns for Name, READY, STATUS, IP, and RESTARTS. Two pods are listed: 'kubernetes-dashboard' and 'kubernetes-logging'. The 'kubernetes-dashboard' pod is in a 'Running' state with a 'Ready' status. The 'kubernetes-logging' pod is in a 'Running' state with a 'Ready' status. Below the table, there are two charts: 'CPU Usage' and 'Memory Usage'. The 'CPU Usage' chart shows a green bar representing the CPU usage of the pods. The 'Memory Usage' chart shows a blue bar representing the memory usage of the pods. The dashboard also includes a 'Persistent Volume Claims' section at the bottom.

Name	READY	STATUS	IP	RESTARTS
kubernetes-dashboard	1/1	Running	10.0.0.1	0
kubernetes-logging	1/1	Running	10.0.0.2	0



```
s from flask-app-cont... * in flask-app-7944
```

```
Running Flask app 'app'
Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
Running on all addresses (0.0.0.0)
Running on http://127.0.0.1:5000
Running on http://172.30.23.11:5000
Press CTRL-C to quit
Starting with stat
Debugger is active!
Debugger PIN: 118-437-340
```

```

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 kubernetesh-dashboard get deploy
^C
C:\Windows\system32\kubectl -n kubernetesh-dashboard get deploy
No resources found in kubernetesh-dashboard namespace.
C:\Windows\system32\kubectl -n kubernetesh-dashboard get deploy
No resources found in kubernetesh-dashboard namespace.
C:\Windows\system32\kubectl proxy
Starting to serve on 127.0.0.1:8001
^C
C:\Windows\system32\kubectl -n kubernetesh-dashboard get deploy
^C
C:\Windows\system32\kubectl -n kubernetesh-dashboard get deploy
No resources found in kubernetesh-dashboard namespace.
C:\Windows\system32\kubectl -n kubernetesh-dashboard get pods
No resources found in kubernetesh-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  Ingress *                80          27m
C:\Windows\system32\kubectl get svc
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP    PORT(S)      AGE

```