

Assignment -4

Student Name	Sanjith M
Student Roll Number	737819CSR173
Maximum Marks	2 Marks

Question-1:

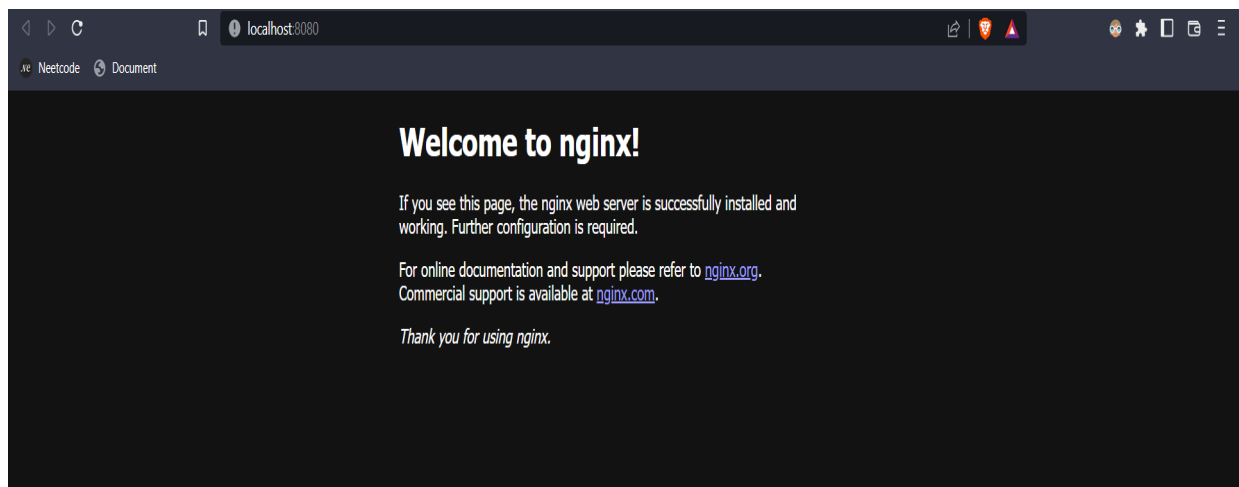
Pull an image from the docker hub and run it in the docker playground

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Sathasivam>docker images
REPOSITORY              TAG          IMAGE ID      CREATED        SIZE
flaskapp                 latest       5ac3396b84b1  2 hours ago    932MB
priyadharshini07/flaskapp latest       5ac3396b84b1  2 hours ago    932MB
cassandra                latest       8891c8497d8e  5 months ago   341MB
docker/getting-started   latest       cb90f98fd791  7 months ago   28.8MB

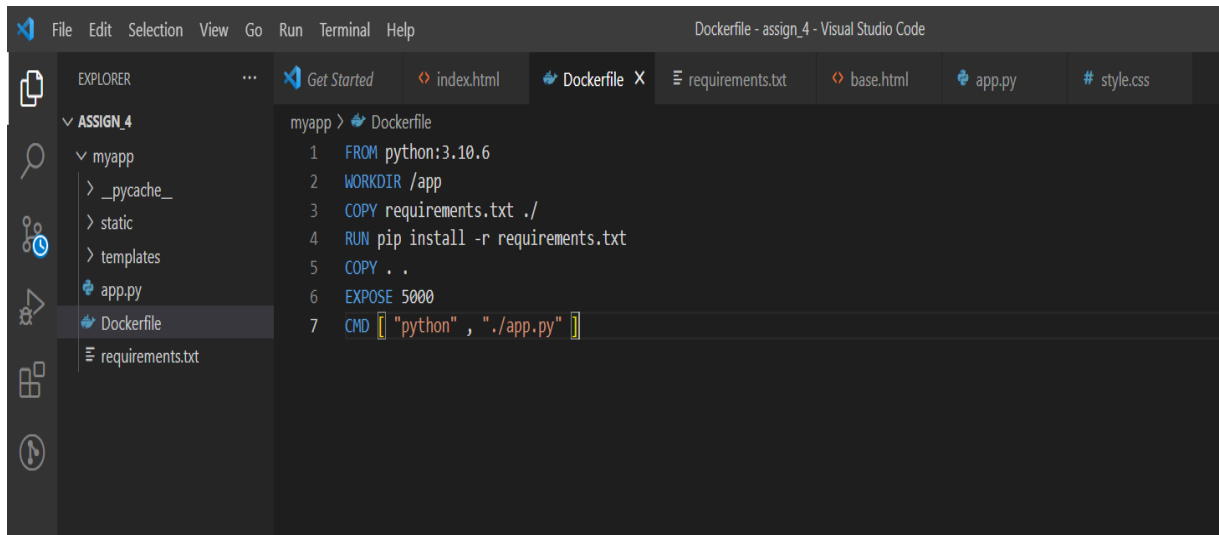
C:\Users\Sathasivam>docker pull nginx:alpine
alpine: Pulling from library/nginx
ca7dd9ec2225: Already exists
76a48b0f5898: Pull complete
2f12a0e7c01d: Pull complete
1a7b9b9bbef6: Pull complete
b704883c57af: Pull complete
4342b1ab302e: Pull complete
Digest: sha256:455c39afebd4d98ef26dd70284aa86e6810b0485af5f4f222b19b89758cabf1e
Status: Downloaded newer image for nginx:alpine
docker.io/library/nginx:alpine

C:\Users\Sathasivam>docker run --name nginx-run -d -p 8080:80 nginx:alpine
0105579d2f43e44a3d4cbb7cd8062f9c13b6790c7a66bdfefef9bce0ecf1629f
```



Question 2:

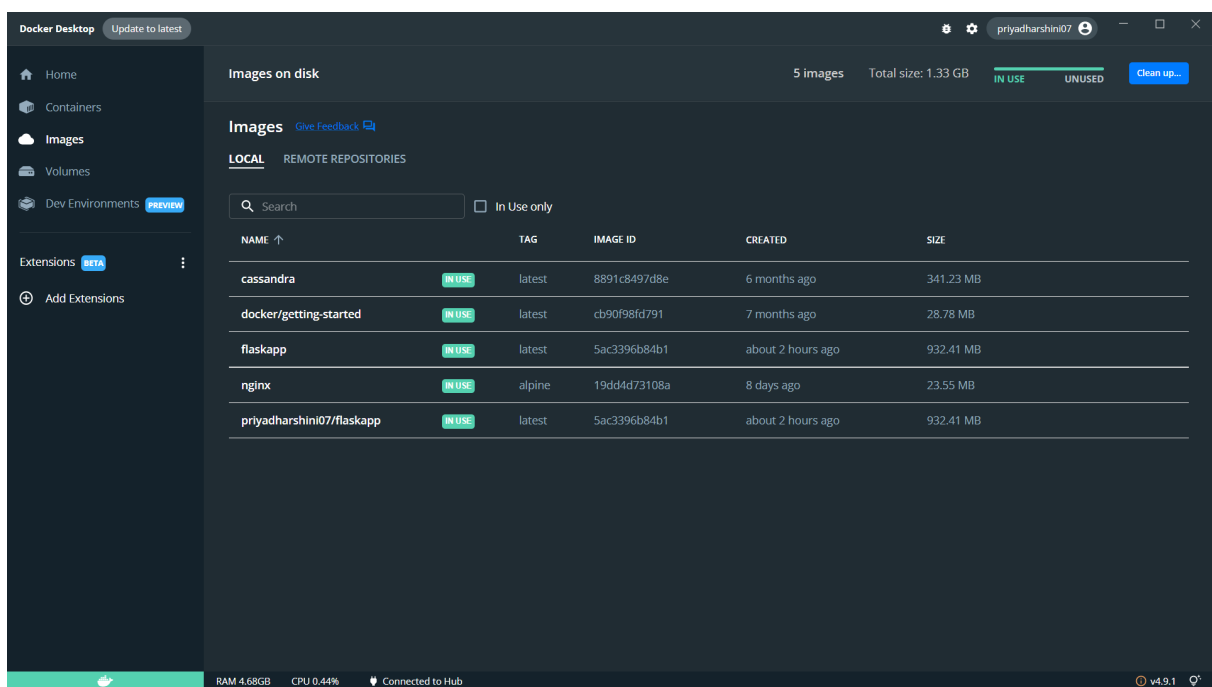
Create a docker file for the helloworld or job portal application and deploy it in docker desktop



The screenshot shows the Visual Studio Code editor with a Dockerfile open. The Dockerfile contains the following instructions:

```
myapp > Dockerfile
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"]
```

The Explorer sidebar on the left shows the project structure for 'ASSIGN_4', including a 'myapp' directory with files like 'app.py', 'Dockerfile', and 'requirements.txt'.



The screenshot shows the Docker Desktop interface. The 'Images' tab is selected, displaying a list of Docker images stored locally. The table below summarizes the images shown.

NAME	TAG	IMAGE ID	CREATED	SIZE
cassandra	latest	8891c8497d8e	6 months ago	341.23 MB
docker/getting-started	latest	cb90f98fd791	7 months ago	28.78 MB
flaskapp	latest	5ac3396b84b1	about 2 hours ago	932.41 MB
nginx	alpine	19dd4d73108a	8 days ago	23.55 MB
priyadharshini07/flaskapp	latest	5ac3396b84b1	about 2 hours ago	932.41 MB

At the top of the 'Images' section, it indicates '5 images' and 'Total size: 1.33 GB'. A progress bar shows 'IN USE' and 'UNUSED' status. The bottom status bar shows 'RAM 4.68GB', 'CPU 0.44%', and 'Connected to Hub'.

Question 3:

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

```
cmd Command Prompt
C:\Users\Sathasivam>ibmcloud cr namespace-add ibm_assign
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'ibm_assign' in resource group 'Default' for account Priyadharshini S's Account in registry jp.icr.io...
Successfully added namespace 'ibm_assign'

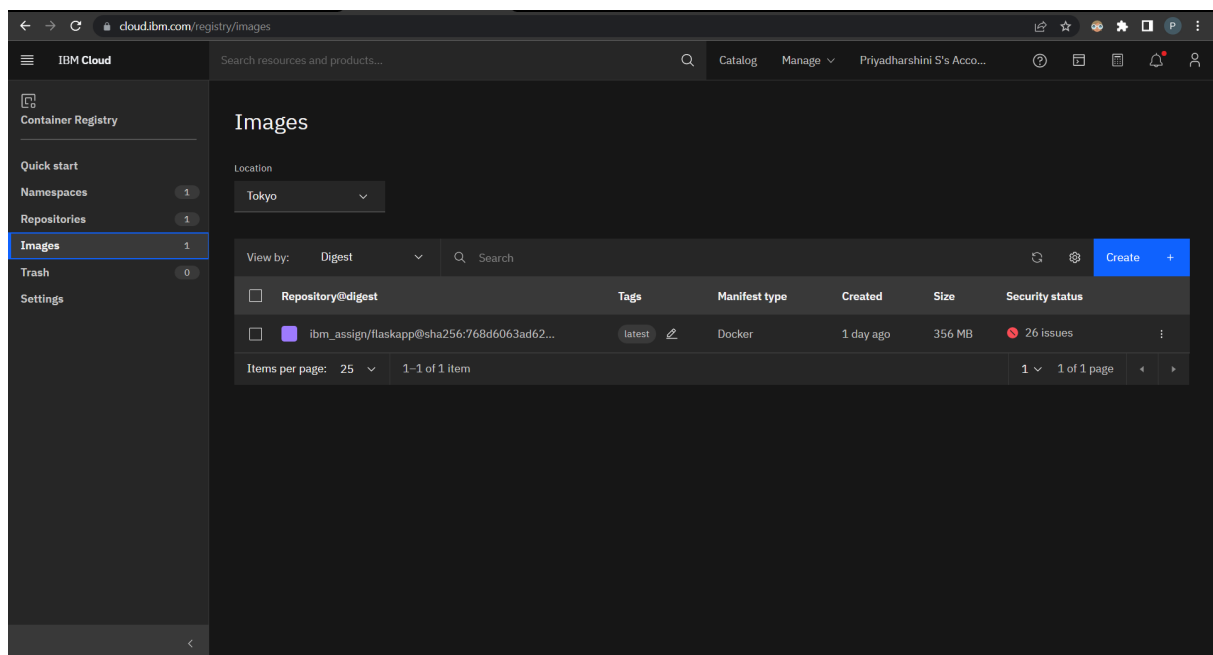
C:\Users\Sathasivam>ibmcloud cr namespace-list -v
Listing namespaces for account 'Priyadharshini S's Account' in registry 'jp.icr.io'...

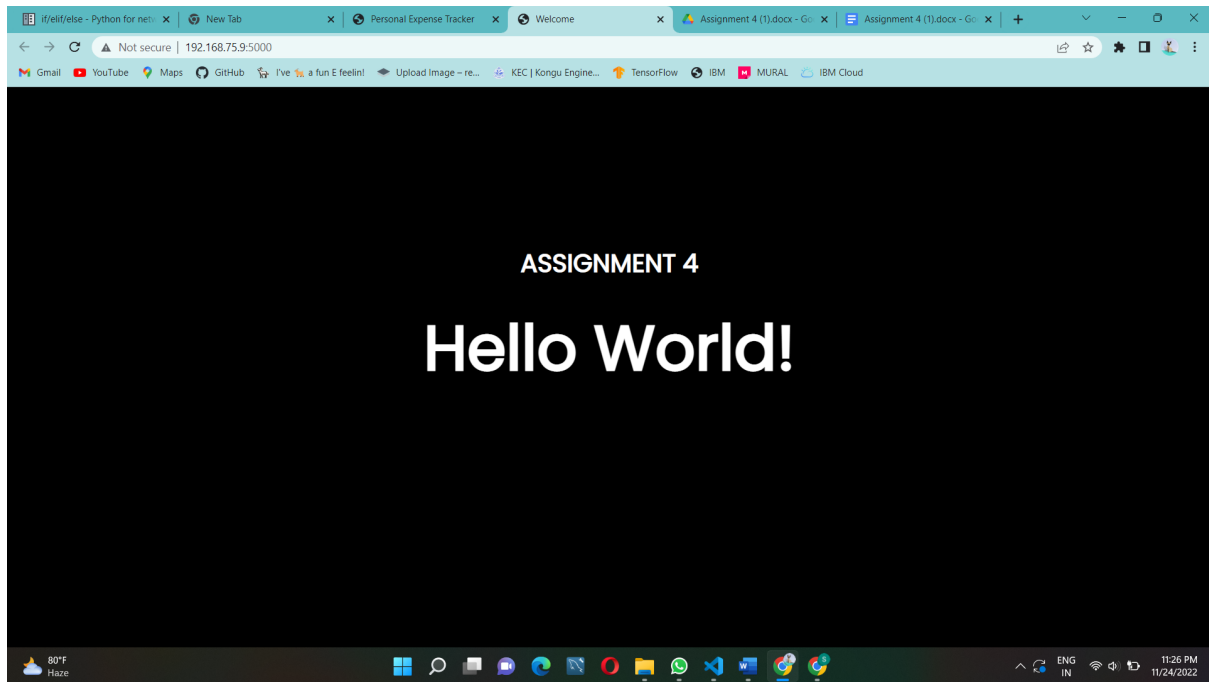
Namespace Resource Group Created
ibm_assign Default 52 seconds ago

C:\Users\Sathasivam>docker tag flaskapp jp.icr.io/ibm_assign/flaskapp:latest

C:\Users\Sathasivam>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
flaskapp latest 5ac3396b84b1 29 hours ago 932MB
priyadharshini07/flaskapp latest 5ac3396b84b1 29 hours ago 932MB
jp.icr.io/ibm_assign/flaskapp latest 5ac3396b84b1 29 hours ago 932MB
jp.icr.io/ibm_assignment/flaskapp latest 5ac3396b84b1 29 hours ago 932MB
nginx alpine 19dd4d73108a 9 days ago 23.5MB
cassandra latest 8891c8497d8e 5 months ago 341MB
docker/getting-started latest cb90f98fd791 7 months ago 28.8MB

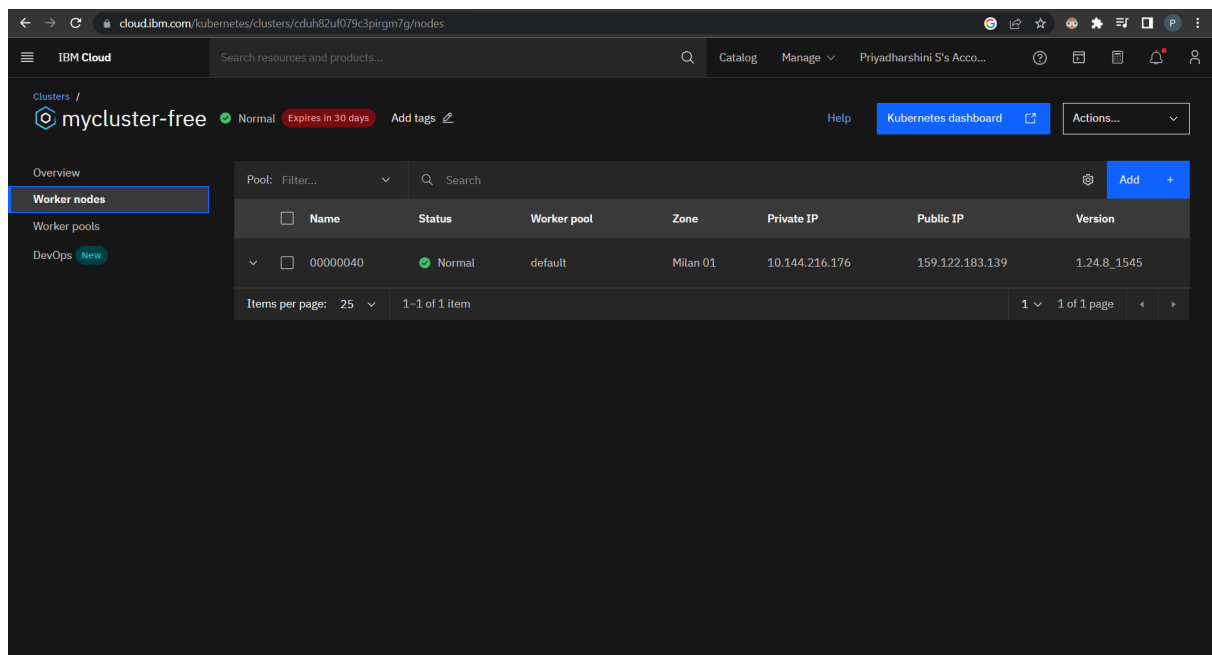
C:\Users\Sathasivam>docker push jp.icr.io/ibm_assign/flaskapp
Using default tag: latest
The push refers to repository [jp.icr.io/ibm_assign/flaskapp]
d4be76e3c4f2: Pushed
9b298652ec3c: Pushed
38abcb2bf660: Pushed
9e4ac0e7b95f: Pushed
bfc1de8136e: Pushed
1f123186824c: Pushed
8d6eb1152911: Pushed
100796cdf3b1: Pushed
54acb5a6fa0b: Pushed
8d51c618126f: Pushed
9ff6e4d46744: Pushed
a89d1d47b5a1: Pushed
655ed1b7a428: Pushed
latest: digest: sha256:768d6063ad627c60778fbf5ff90da387432e837361fd91313e9b8482c0c58a71 size: 3051
```





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.



eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cduh82uf079c3pirgm7g/service/#/workloads?namespace=default

kubernetes default Search

Workloads

Workloads ^N

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

Service

- Ingresses ^N
- Ingress Classes
- Services ^N

Config and Storage

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

Cluster

Workload Status

Deployments: Running: 1

Pods: Running: 1

Replica Sets: Running: 1

Deployments

Name	Images	Labels	Pods	Created ↑
flask-app	Show all	-	1 / 1	19 minutes ago

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑
flask-app-74f64d6899-4gc9j	Show all	Show all	10.144.216.176	Running	0	2.00m	37.75Mi	19 minutes ago

```
C:\Users\Sathasivam>kubectl describe deployments flask-app
Name:          flask-app
Namespace:     default
CreationTimestamp: Wed, 23 Nov 2022 00:59:59 +0530
Labels:        <none>
Annotations:   deployment.kubernetes.io/revision: 1
Selector:      app=flask-app
Replicas:      1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType:  RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=flask-app
  Containers:
    flask-app-container:
      Image:      jp.icr.io/ibm_assign/flaskapp:latest
      Port:      5000/TCP
      Host Port:  0/TCP
      Environment: <none>
      Mounts:      <none>
      Volumes:     <none>
  Conditions:
    Type           Status  Reason
    ----           -
    Available       True    MinimumReplicasAvailable
    Progressing     True    NewReplicaSetAvailable
  OldReplicaSets:  <none>
  NewReplicaSet:   flask-app-74f64d6899 (1/1 replicas created)
Events:
  Type    Reason      Age    From          Message
  ----    -
  Normal  ScalingReplicaSet  21m   deployment-controller  Scaled up replica set flask-app-74f64d6899 to 1
C:\Users\Sathasivam>
```