

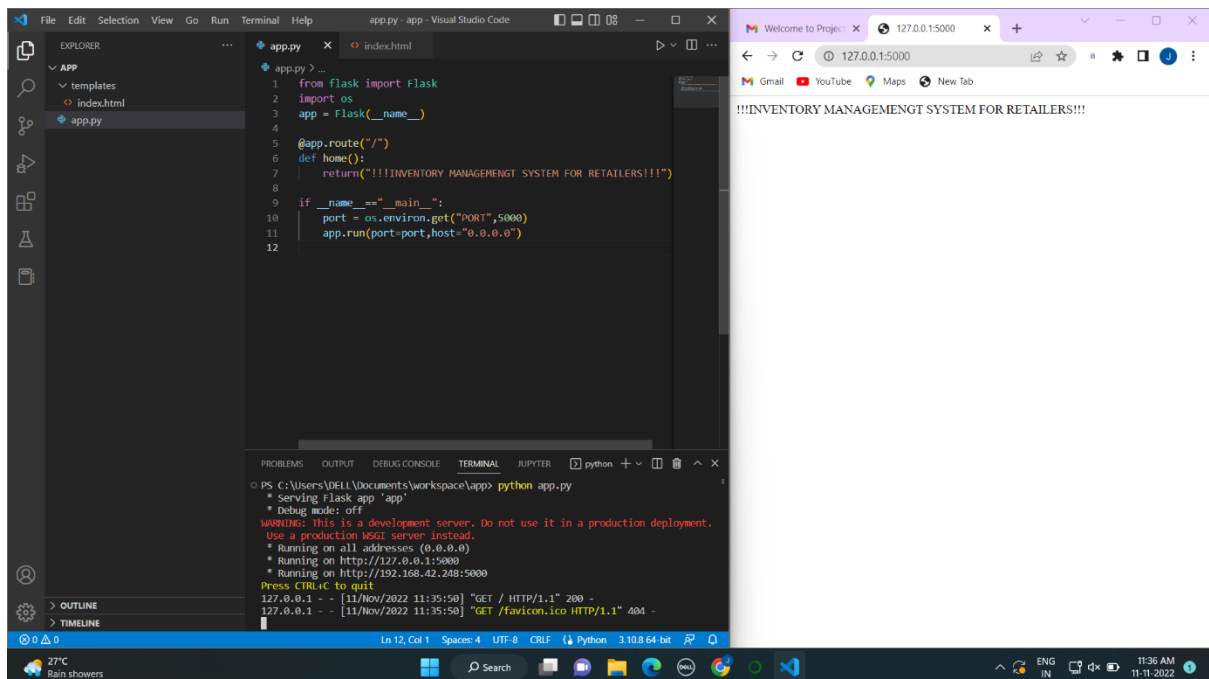
# ASSIGNMENT – 4

## DOCKER & KUBERNETES

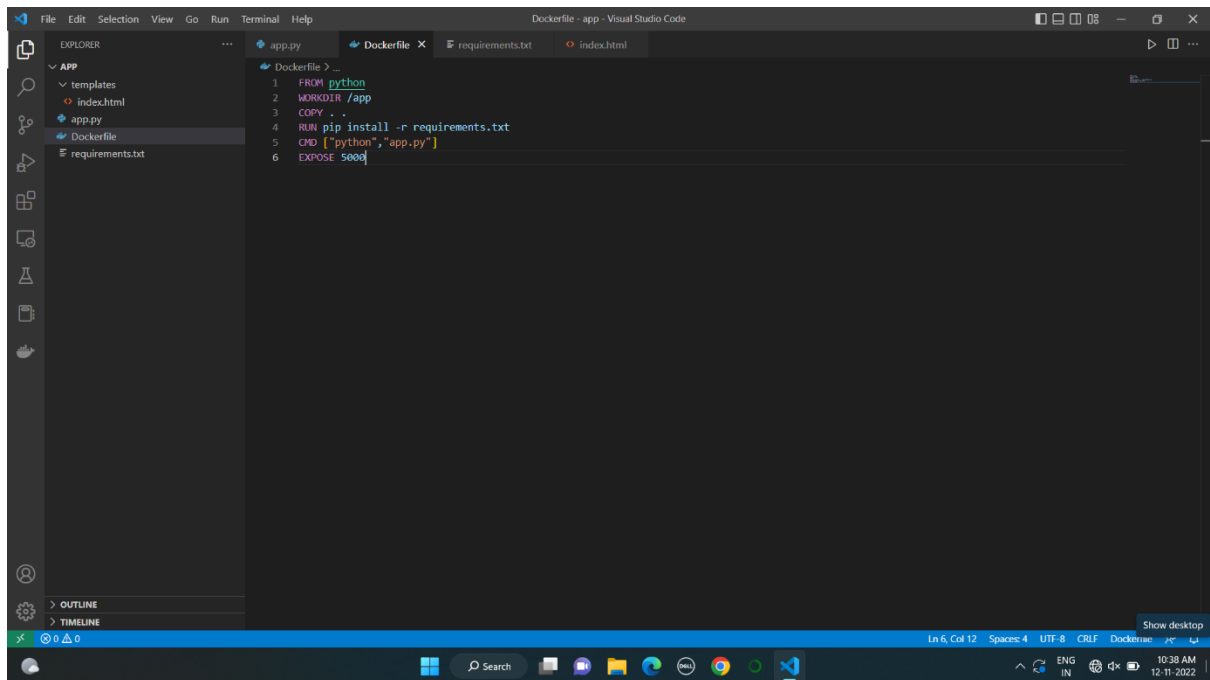
Student Name	Devi T
Student Roll Number	731719205003
Maximum Marks	2 Marks

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

app.py



# Dockerfile

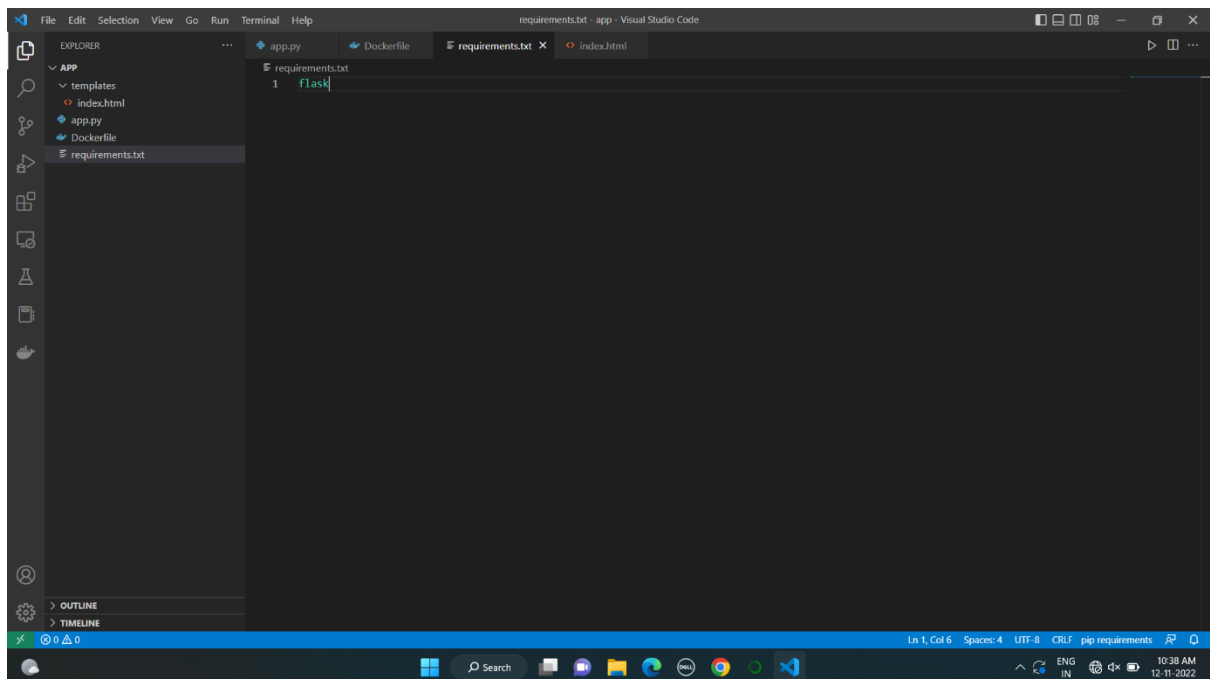


A screenshot of the Visual Studio Code editor interface. The Explorer sidebar on the left shows a project named 'APP' with files 'index.html', 'app.py', 'Dockerfile', and 'requirements.txt'. The 'Dockerfile' is selected and open in the main editor. The Dockerfile contains the following instructions:

```
1 FROM python
2 WORKDIR /app
3 COPY . .
4 RUN pip install -r requirements.txt
5 CMD ["python", "app.py"]
6 EXPOSE 5000
```

The status bar at the bottom indicates 'Ln 6, Col 12', 'Spaces: 4', 'UTF-8', 'CRLF', and 'Dockerfile'.

# Requirements.txt



A screenshot of the Visual Studio Code editor interface. The Explorer sidebar on the left shows the same project 'APP' with 'requirements.txt' selected and open in the main editor. The requirements.txt file contains the following text:

```
1 flask
```

The status bar at the bottom indicates 'Ln 1, Col 6', 'Spaces: 4', 'UTF-8', 'CRLF', and 'pip requirements'.

# Docker hub

The screenshot shows the Docker Hub interface for the repository `dev003/helloapp`. The page includes a description, Docker commands, and sections for tags and scans. The description states it is a quick hello world application in Flask on port 5000. The Docker commands section shows the command `docker push dev003/helloapp:tagname`. The tags and scans section indicates that vulnerability scanning is disabled and the repository is currently empty.

Wasm is a fast, light alternative to Linux containers — try it out today in the [Docker+Wasm Technical Preview](#)

dev003 / helloapp

**Description**  
a quick hello world application in Flask on port 5000  
Last pushed: a few seconds ago

**Docker commands**  
To push a new tag to this repository,  
`docker push dev003/helloapp:tagname`

**Tags and scans**  
VULNERABILITY SCANNING - DISABLED  
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.

This screenshot shows the same Docker Hub repository page, but now it displays a table of tags. The table lists one tag, 'latest', which was pushed 4 minutes ago. The 'Tags and scans' section now shows 'This repository contains 1 tag(s)'.

dev003 / helloapp

**Description**  
a quick hello world application in Flask on port 5000  
Last pushed: 4 minutes ago

**Docker commands**  
To push a new tag to this repository,  
`docker push dev003/helloapp:tagname`

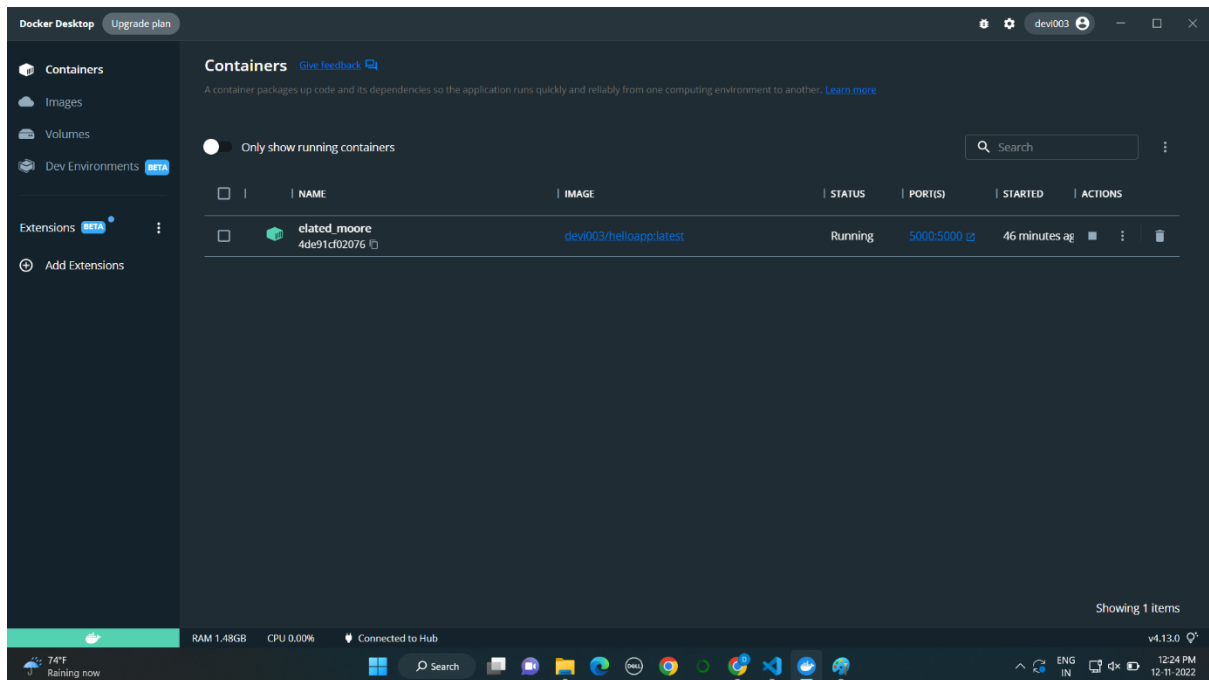
**Tags and scans**  
VULNERABILITY SCANNING - DISABLED  
This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
latest	linux	Image	—	4 minutes 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.

# Docker



**Docker Desktop** Upgrade plan

**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

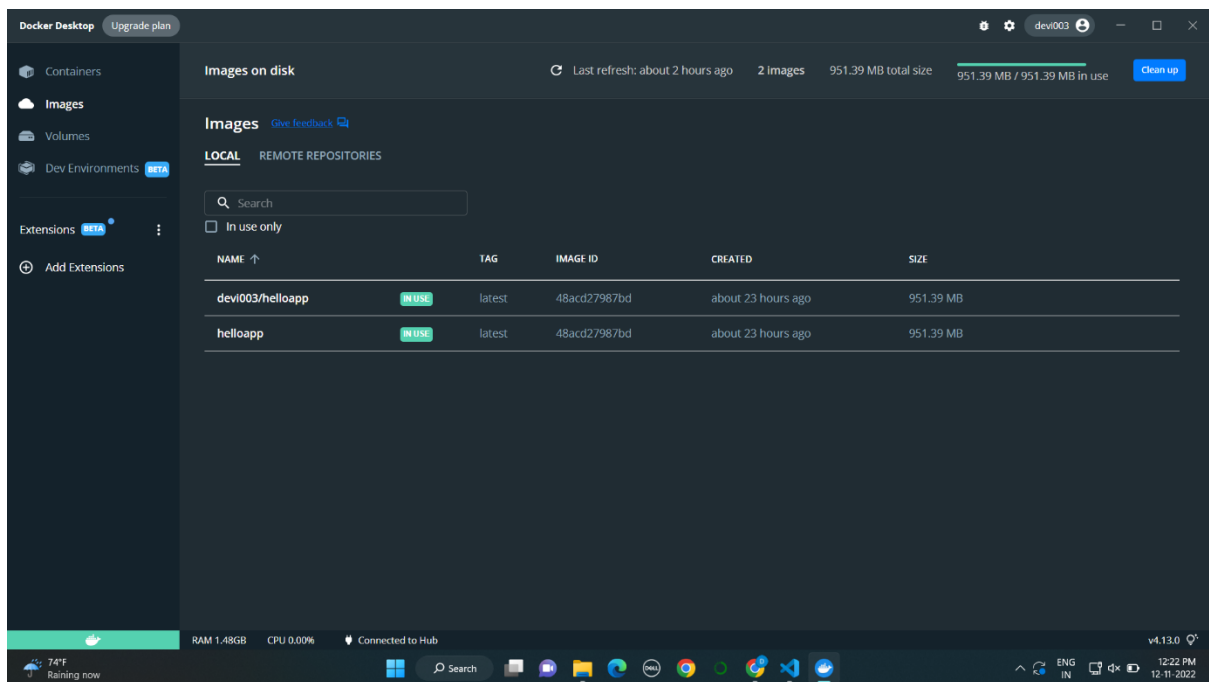
Search

	NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>	elated_moore 4de91cf02076	devi003/helloapp:latest	Running	5000:5000	46 minutes ago	

Showing 1 items

RAM 1.48GB CPU 0.00% Connected to Hub v4.13.0

74°F Raining now



**Docker Desktop** Upgrade plan

**Images on disk** Last refresh: about 2 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

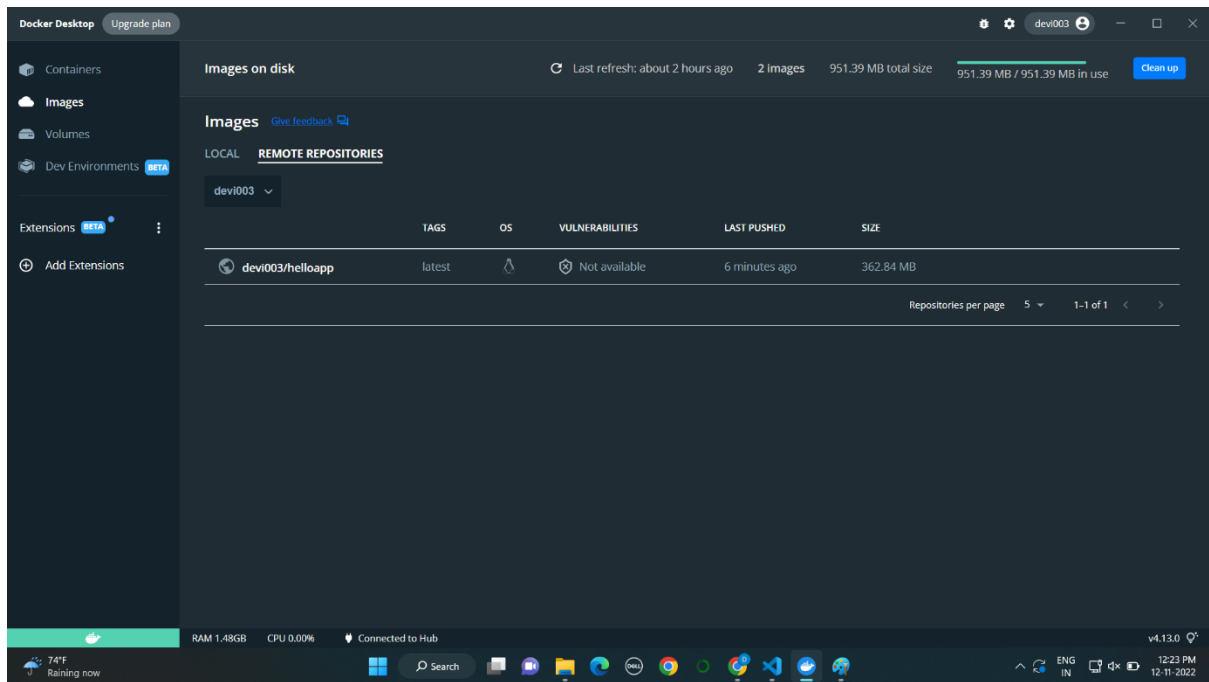
Search

☐ In use only

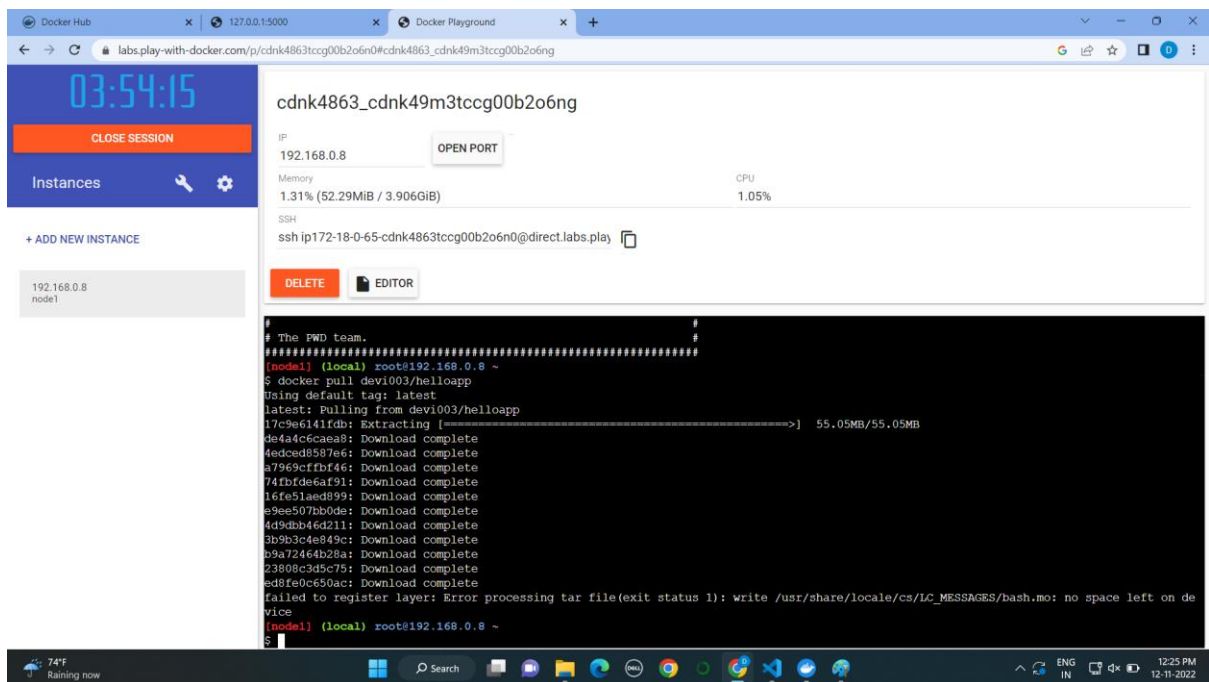
NAME	TAG	IMAGE ID	CREATED	SIZE
devi003/helloapp	latest	48acd27987bd	about 23 hours ago	951.39 MB
helloapp	latest	48acd27987bd	about 23 hours ago	951.39 MB

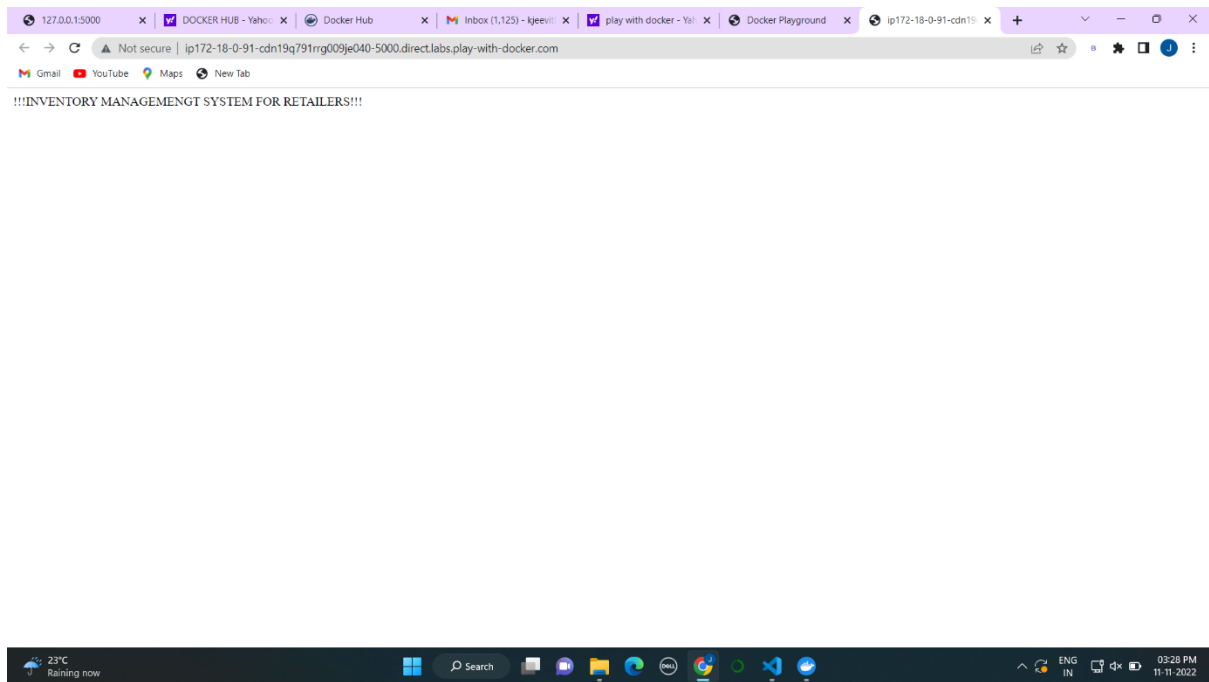
RAM 1.48GB CPU 0.00% Connected to Hub v4.13.0

74°F Raining now

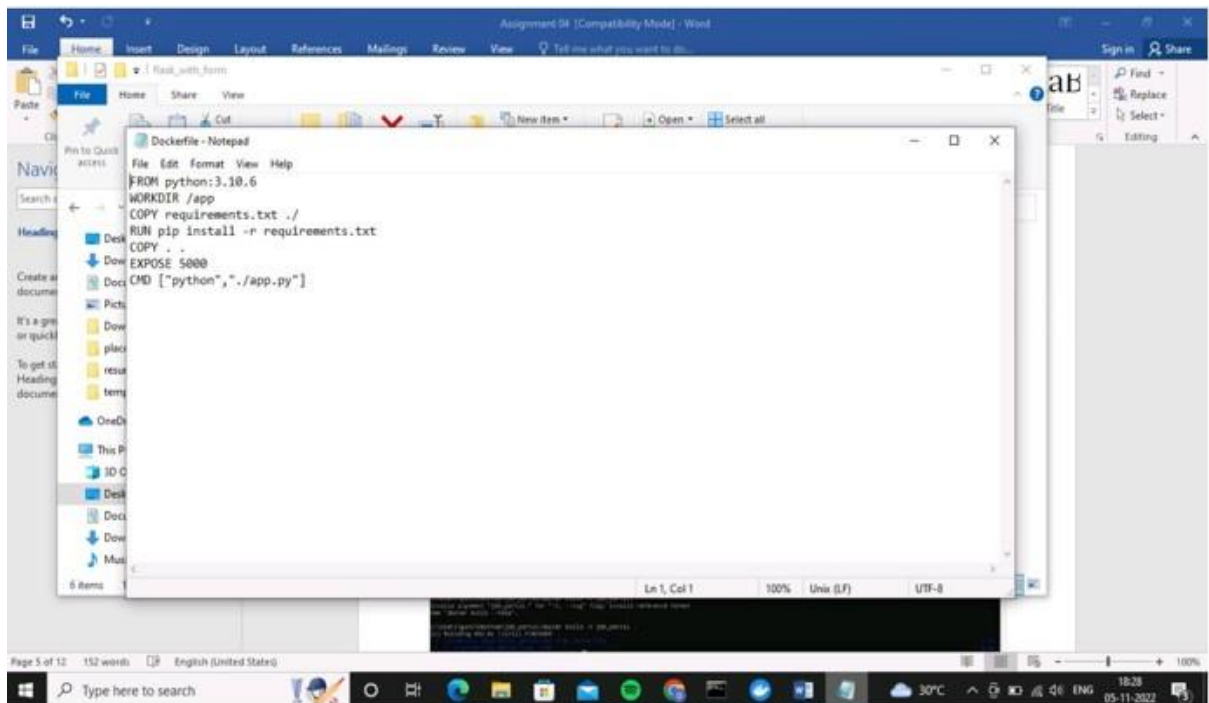


## DockerPlayground



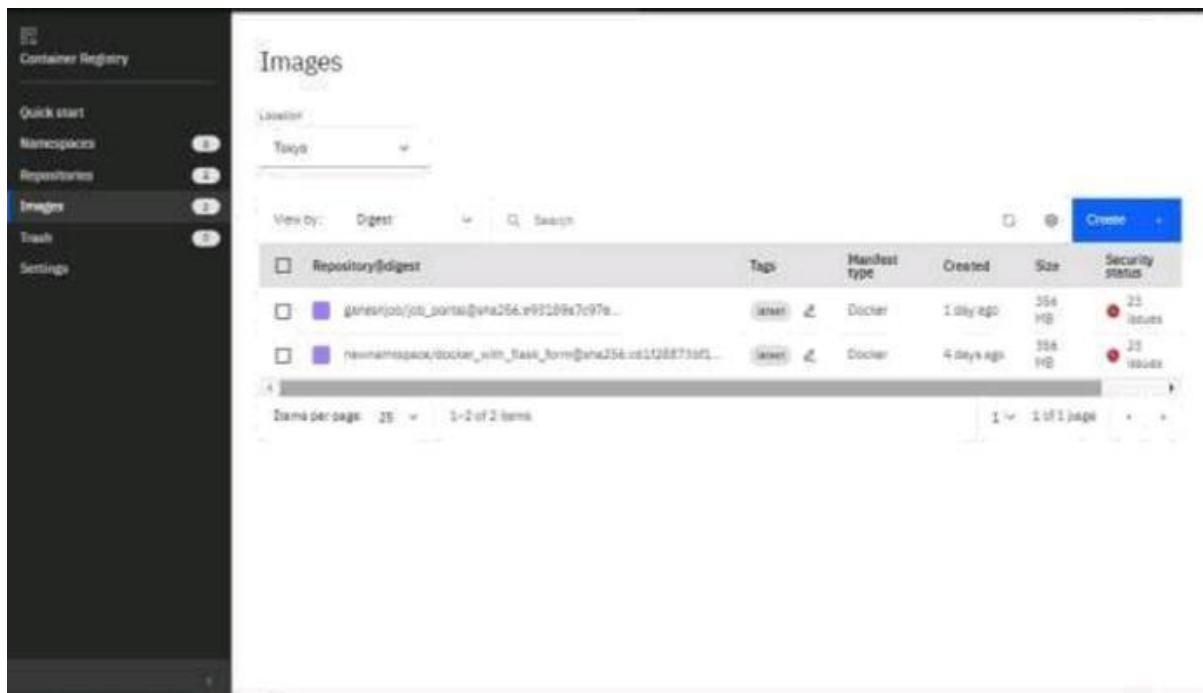
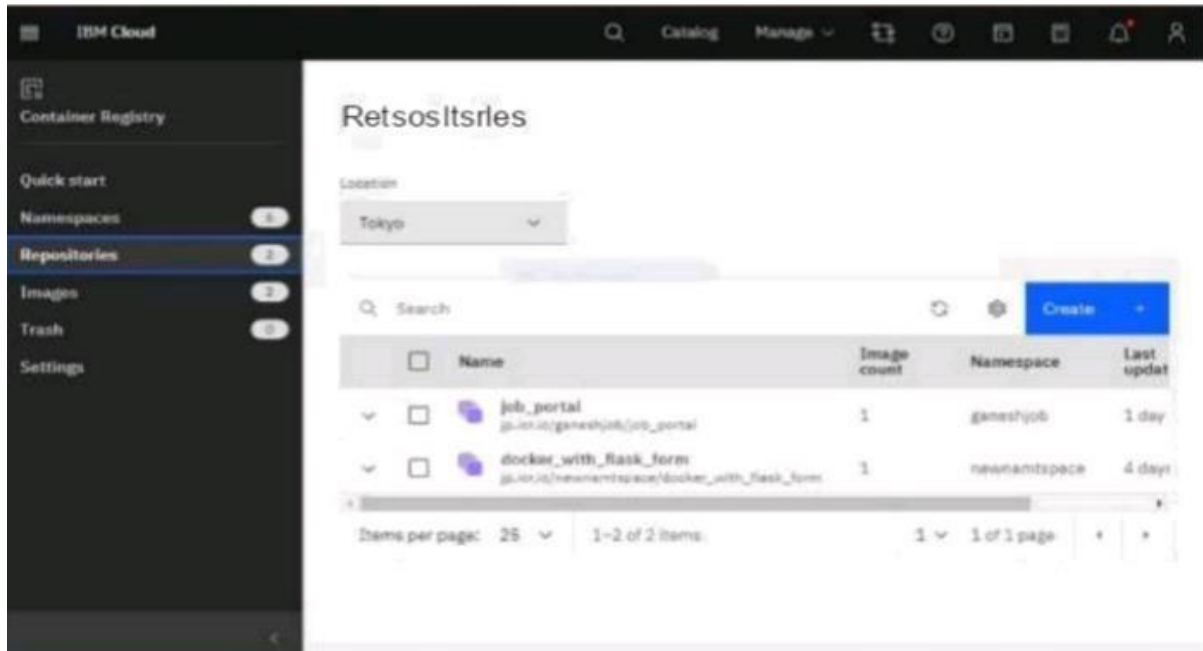


2. Create a dockerfile for the jobportal application and deploy it in docker desktop application.





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





```

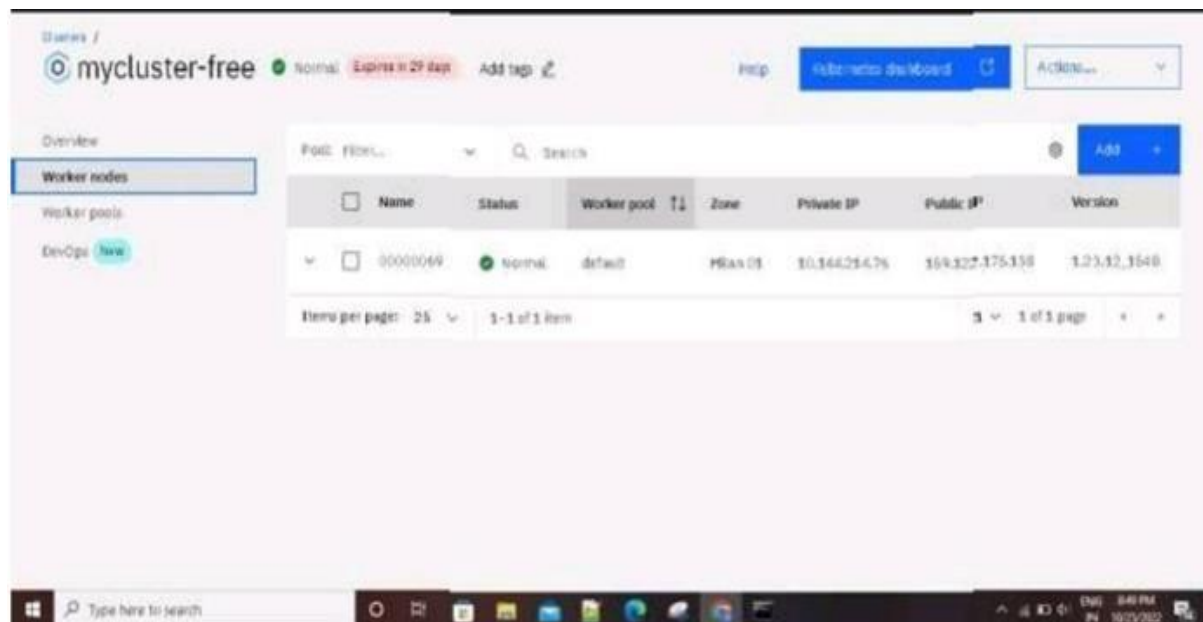
C:\Windows\system32\cmd.exe
54cb546f40b: Retrying in 1 second
8d51c610120f: Retrying in 1 second
9ff6e4d6744: Waiting
a9b0d4706a1: Waiting
a55ed1074420: Waiting
Failed to lookup host: jp.lcr.in

C:\Users\gan1\Desktop\job_portal>docker push jp.lcr.in/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.lcr.in/ganeshjob/job_portal]
15eb150a025: Layer already exists
9ae941b5e100: Pushed
48c2a7e4c12b: Layer already exists
9072c705446: Layer already exists
9fc1de00106e: Layer already exists
1f127106024c: Layer already exists
3d4eb1152931: Pushed
100796cdf3b1: Pushed
54cb546f40b: Retrying in 1 second
8d51c610120f: Pushed
9ff6e4d6744: Pushed
a9b0d4706a1: Pushed
a55ed1074420: Pushing [=====] | 99.80MB/124MB
^C
C:\Users\gan1\Desktop\job_portal>docker push jp.lcr.in/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.lcr.in/ganeshjob/job_portal]
15eb150a025: Layer already exists
9ae941b5e100: Layer already exists
48c2a7e4c12b: Layer already exists
9072c705446: Layer already exists
9fc1de00106e: Layer already exists
1f127106024c: Layer already exists
3d4eb1152931: Layer already exists
100796cdf3b1: Layer already exists
54cb546f40b: Pushed
8d51c610120f: Layer already exists
9ff6e4d6744: Layer already exists
a9b0d4706a1: Layer already exists
a55ed1074420: Pushed
latest: digest: sha256:e91109a7c97eeb95086668a54e090cf61eadeda039908c87a2147a7961fc207 size: 3952

C:\Users\gan1\Desktop\job_portal>
C:\Users\gan1\Desktop\job_portal>

```

#### 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 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 127.0.0.1:9001

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
```

