

ASSIGNMENT-IV

DOCKER & KUBERNETES

Student Name	Priyadharshini
Student Roll Number	731719205015
Maximum Marks	2 Marks

app.py

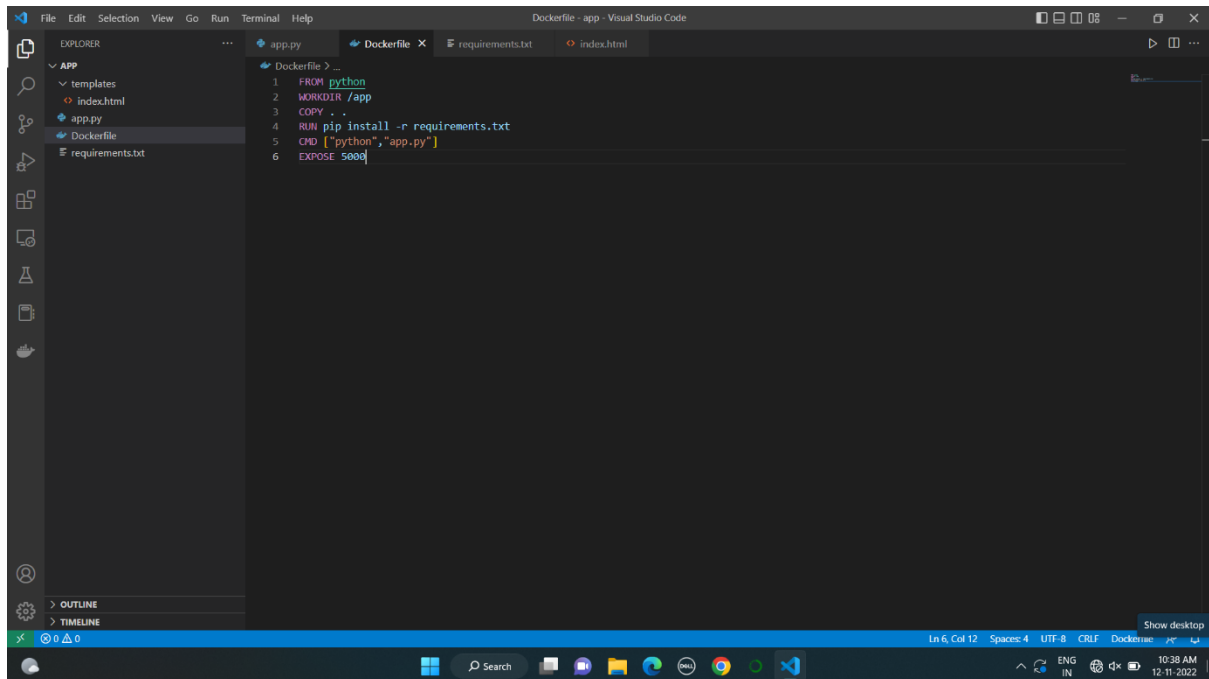
The screenshot displays a development environment with Visual Studio Code on the left and a web browser on the right. In VS Code, the file explorer on the left shows a project named 'APP' with files 'index.html', 'app.py', 'Dockerfile', and 'requirements.txt'. The main editor window shows the content of 'app.py', which is a Flask application. The code defines a home route that returns the text '///SKILL AND JOB RECOMMENDER///'. Below the code editor, the terminal window shows the command 'python app.py' being executed, with output indicating the Flask app is running on port 5000. The web browser on the right is open to the address '127.0.0.1:5000' and displays the text '///SKILL AND JOB RECOMMENDER///'.

```
1 from flask import Flask
2 import os
3 app = Flask(__name__)
4
5 @app.route("/")
6 def home():
7     return("///SKILL AND JOB RECOMMENDER///")
8
9 if __name__ == "__main__":
10     port = os.environ.get("PORT", 5000)
11     app.run(port=port, host="0.0.0.0")
12
```

PS C:\Users\DELL\Documents\workspace\app> python app.py
* Serving Flask app 'app'
* Debug mode: off
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://192.168.42.2:5000
Press CTRL+C to quit
127.0.0.1 - - [12/Nov/2022 19:18:32] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [12/Nov/2022 19:18:32] "GET /favicon.ico HTTP/1.1" 404 -

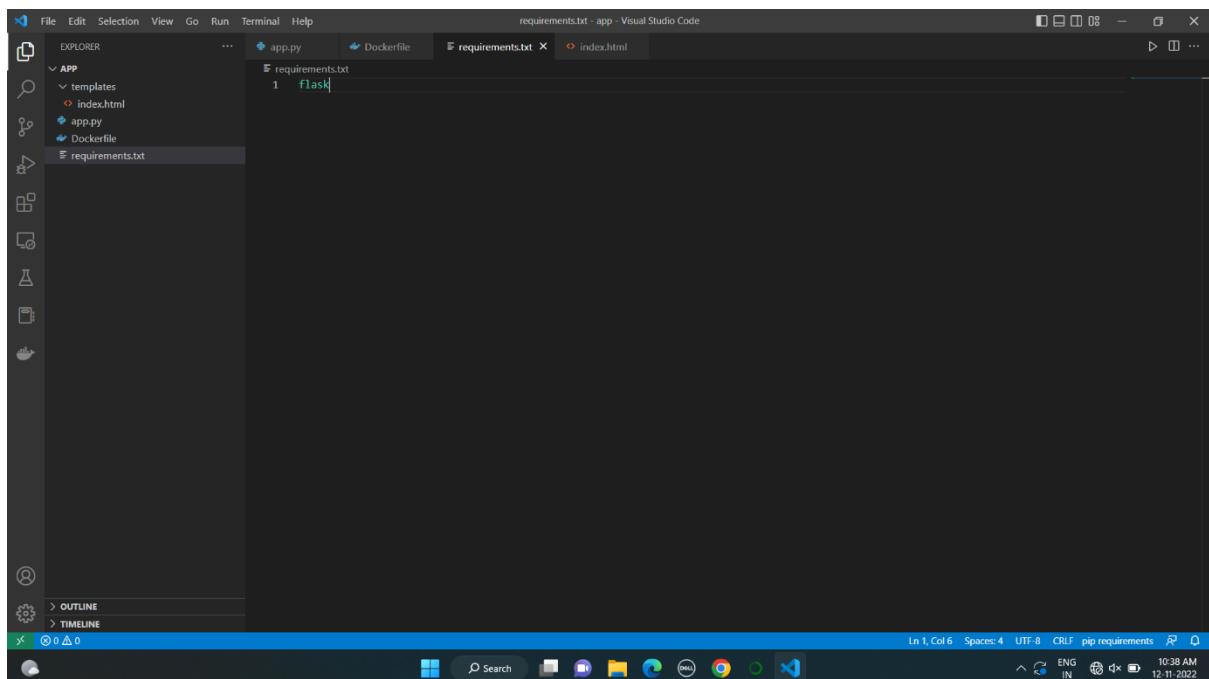
///SKILL AND JOB RECOMMENDER///

Dockerfile



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

Requirements.txt



```
1 flask
```

Docker hub

The screenshot shows the Docker Hub interface for the repository `priya015/helloapp`. The page includes a search bar, navigation links (Explore, Repositories, Organizations, Help), and a user profile section for `priya015`. The repository details section shows the description: "a quick hello world application in flask on port 5000". The "Tags and scans" section indicates that the repository is empty. The "Automated Builds" section provides instructions on how to connect to GitHub or Bitbucket for automatic builds. The "Docker commands" section shows the command to push a new tag to the repository.

Wasm is a fast, light alternative to Linux containers – try it out today in the Docker+Wasm Technical Preview

dockerhub Search Docker Hub Explore Repositories Organizations Help Upgrade priya015

priya015 Repositories helloapp Using 0 of 1 private repositories. Get more

General Tags Builds Collaborators Webhooks Settings

priya015/helloapp

Description
a quick hello world application in flask on port 5000
Last pushed: a minute ago

Docker commands Public View
To push a new tag to this repository,
`docker push priya015/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

23°C Cloudy Search 07:13 PM 12-11-2022

The screenshot shows the Docker Hub interface for the repository `priya015/helloapp`. The page includes a search bar, navigation links (Explore, Repositories, Organizations, Help), and a user profile section for `priya015`. The repository details section shows the description: "a quick hello world application in flask on port 5000". The "Tags and scans" section shows a list of tags, including the `latest` tag. The "Automated Builds" section provides instructions on how to connect to GitHub or Bitbucket for automatic builds. The "Docker commands" section shows the command to push a new tag to the repository.

Wasm is a fast, light alternative to Linux containers – try it out today in the Docker+Wasm Technical Preview

dockerhub Search Docker Hub Explore Repositories Organizations Help Upgrade priya015

priya015 Repositories helloapp Using 0 of 1 private repositories. Get more

General Tags Builds Collaborators Webhooks Settings

priya015/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 priya015/helloapp:tagname`

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

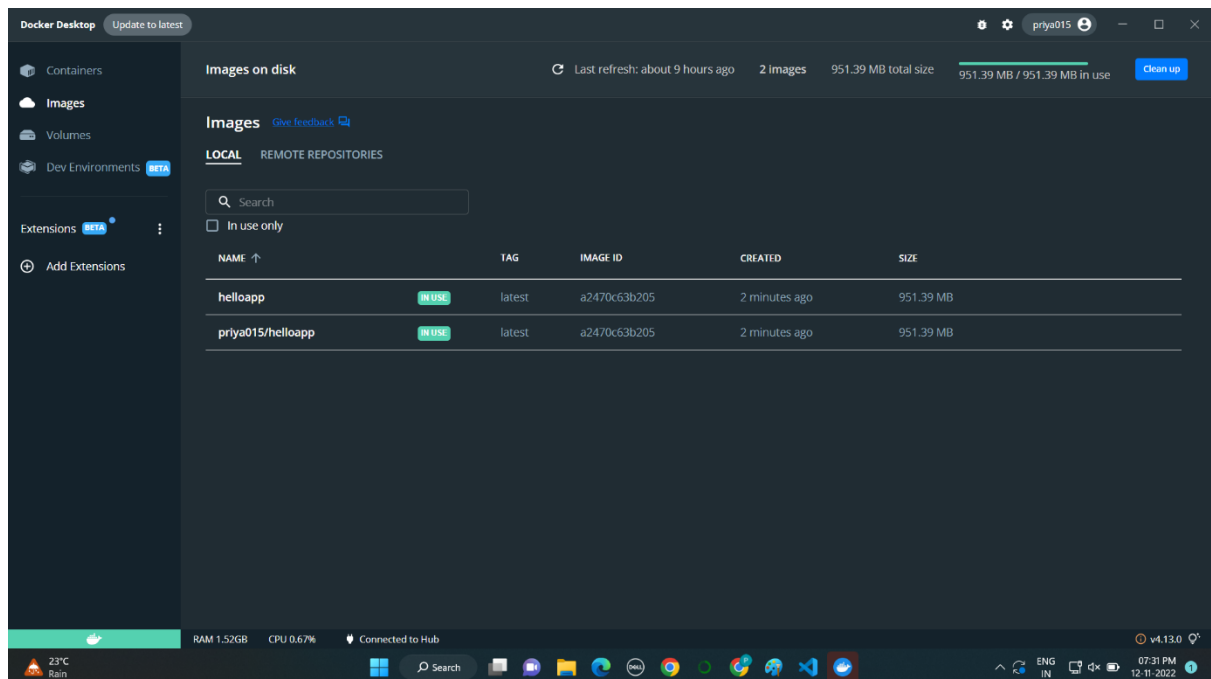
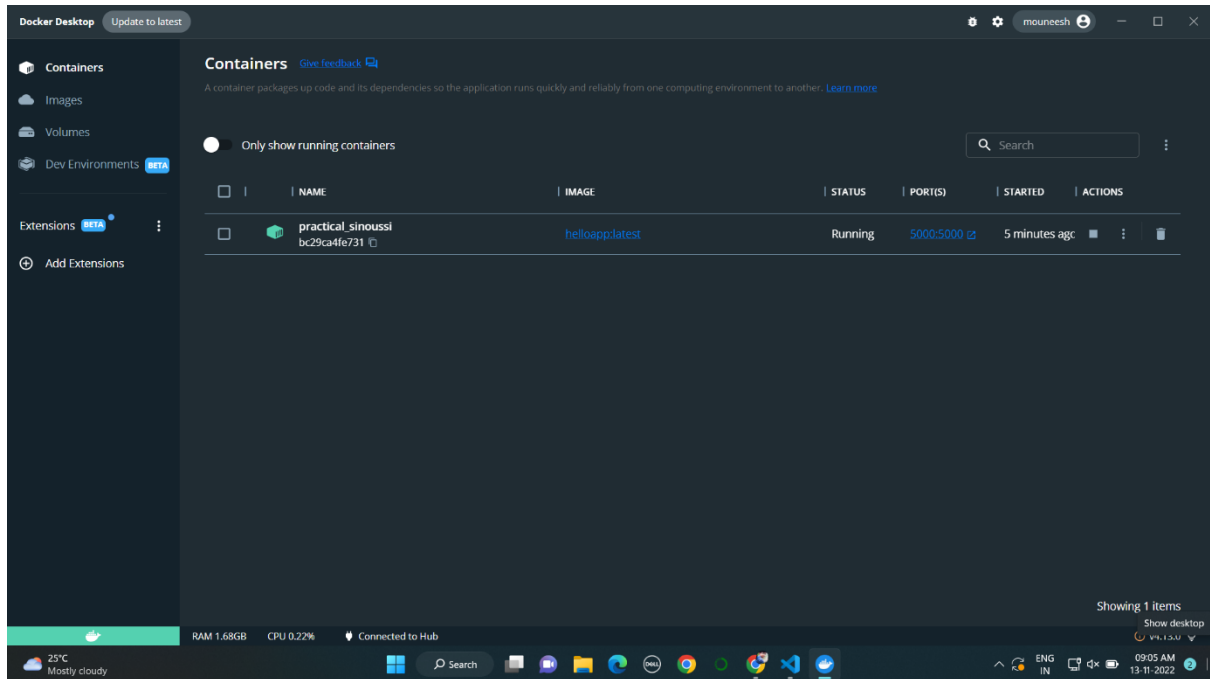
Tag	OS	Type	Pulled	Pushed
latest	linux	Image	—	a few seconds ago

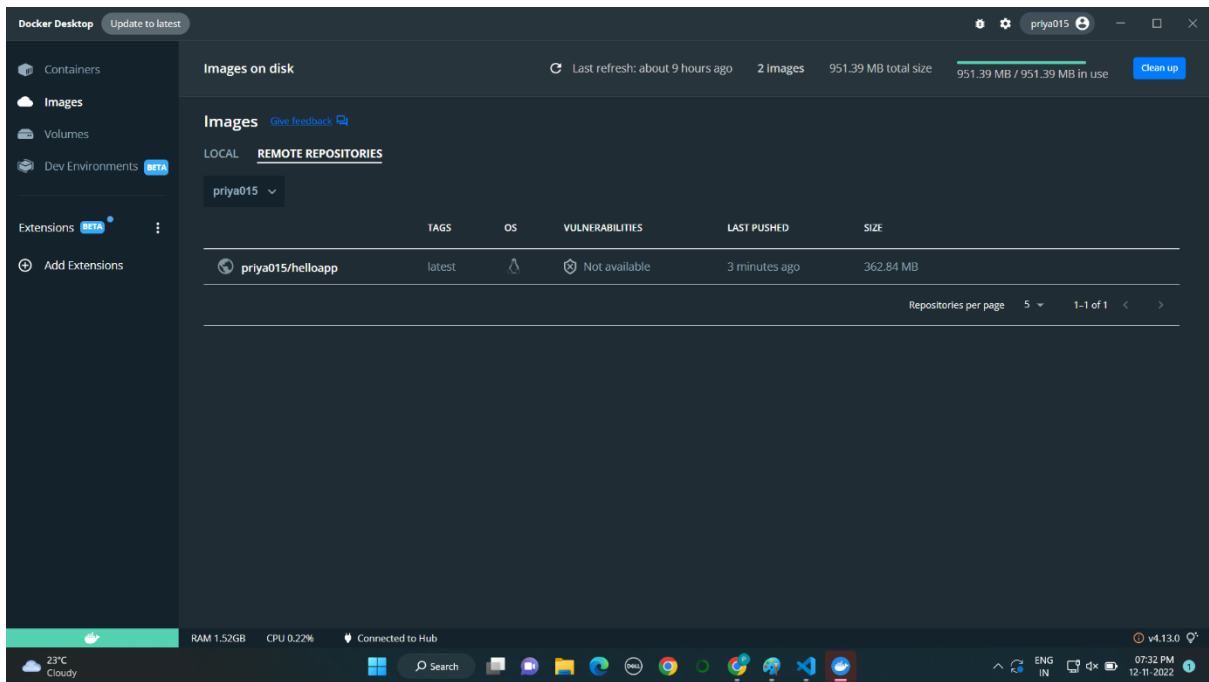
[See all](#) [Go to Advanced Image Management](#)

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

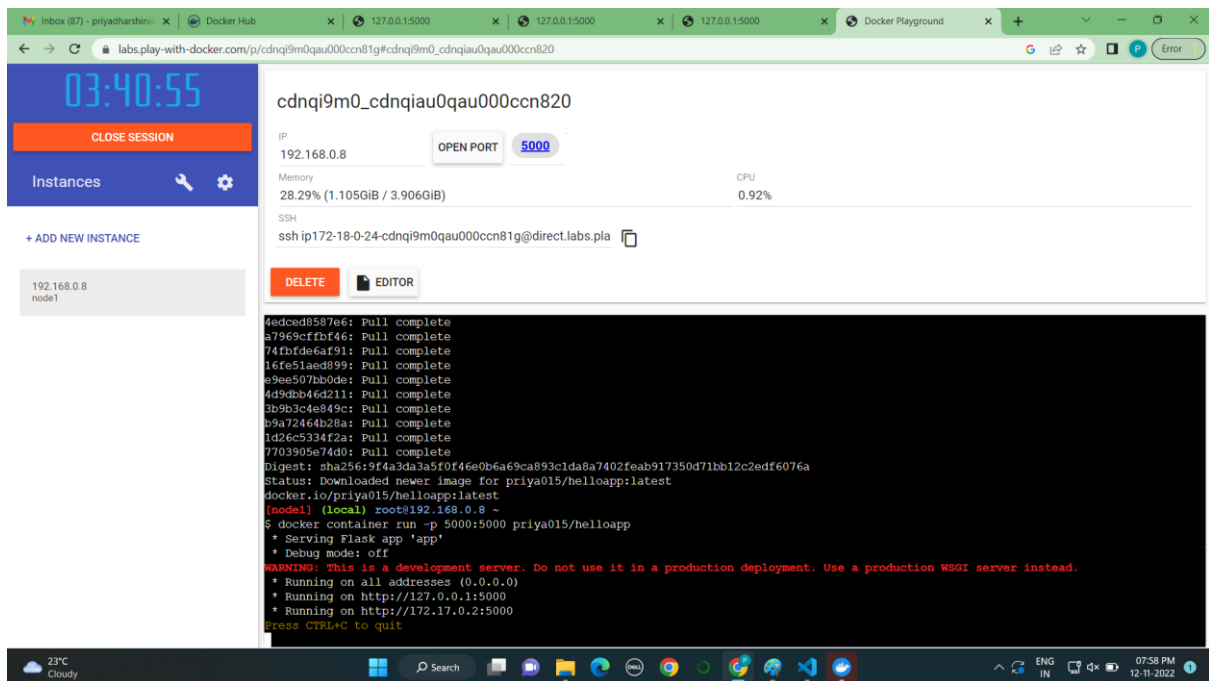
23°C Rain Search 07:30 PM 12-11-2022

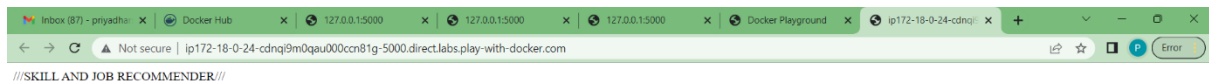
Docker



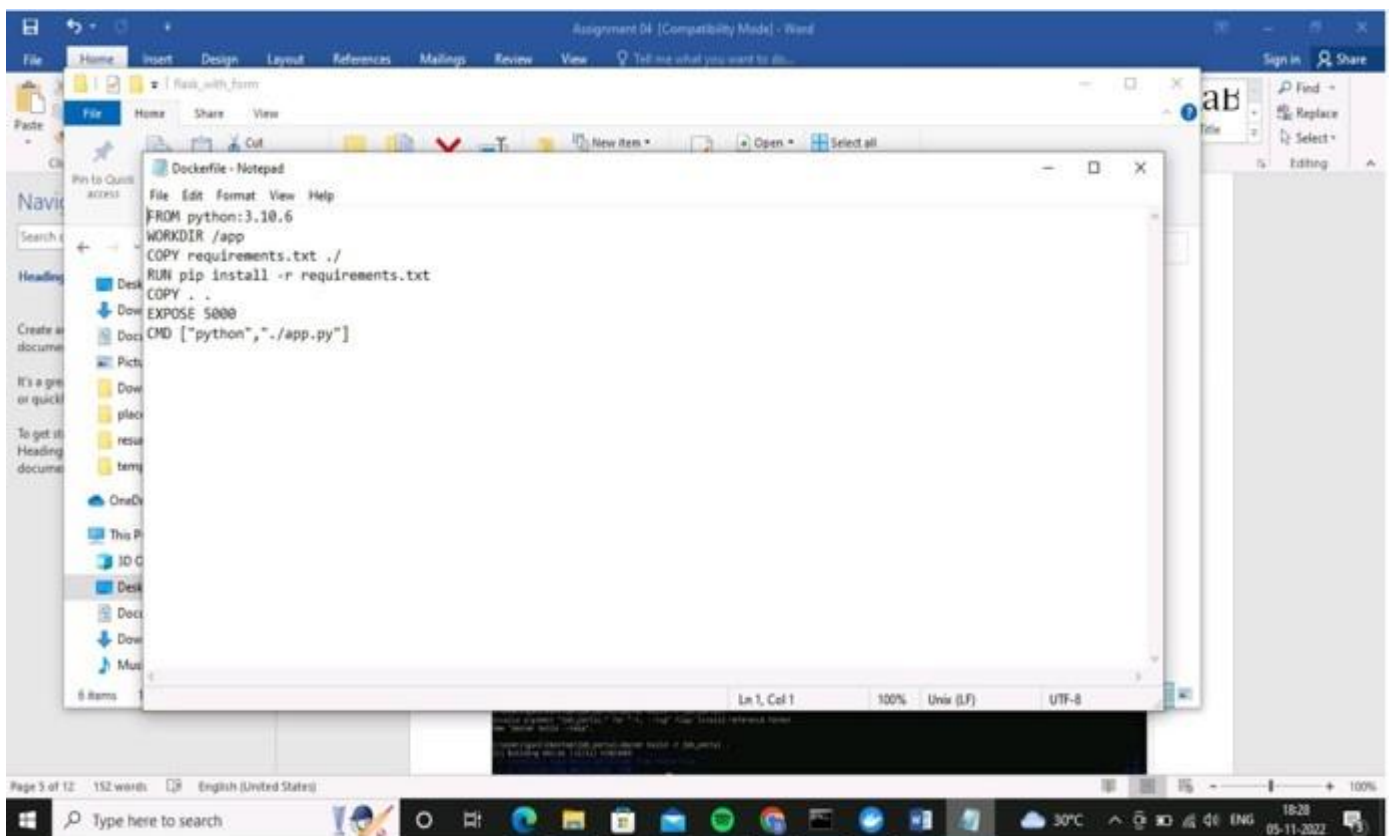


Dockerplayground





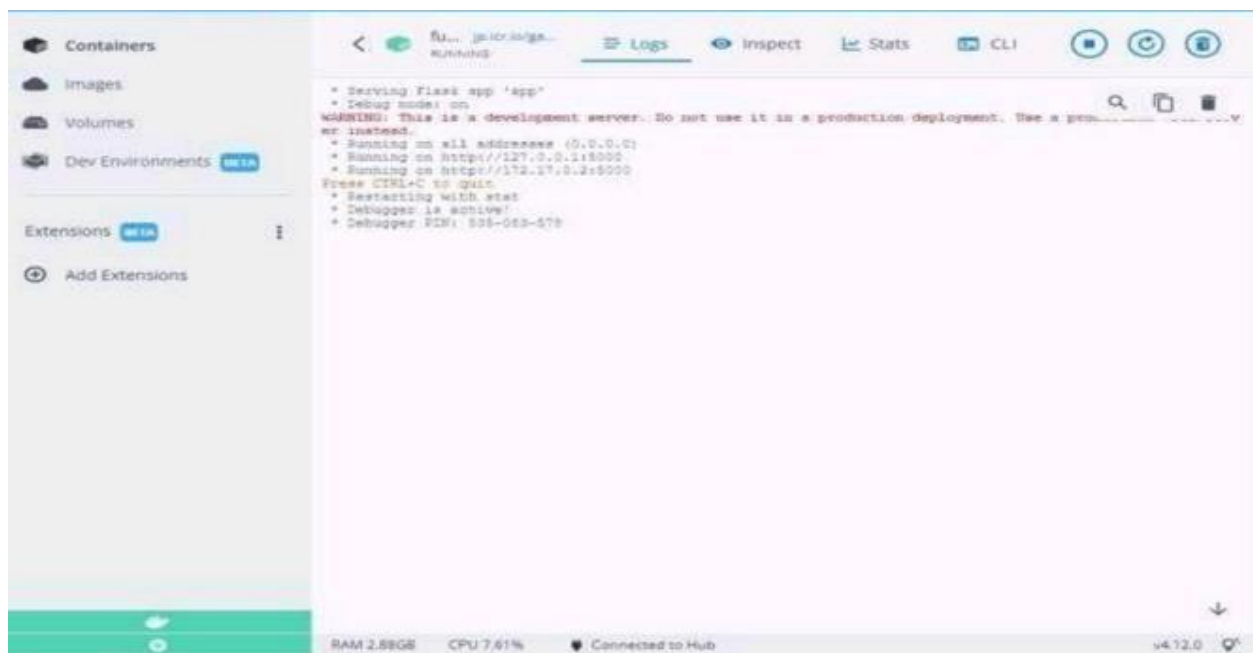
2. Create a docker file for the jobportal application and deploy it in Docker desktop application.



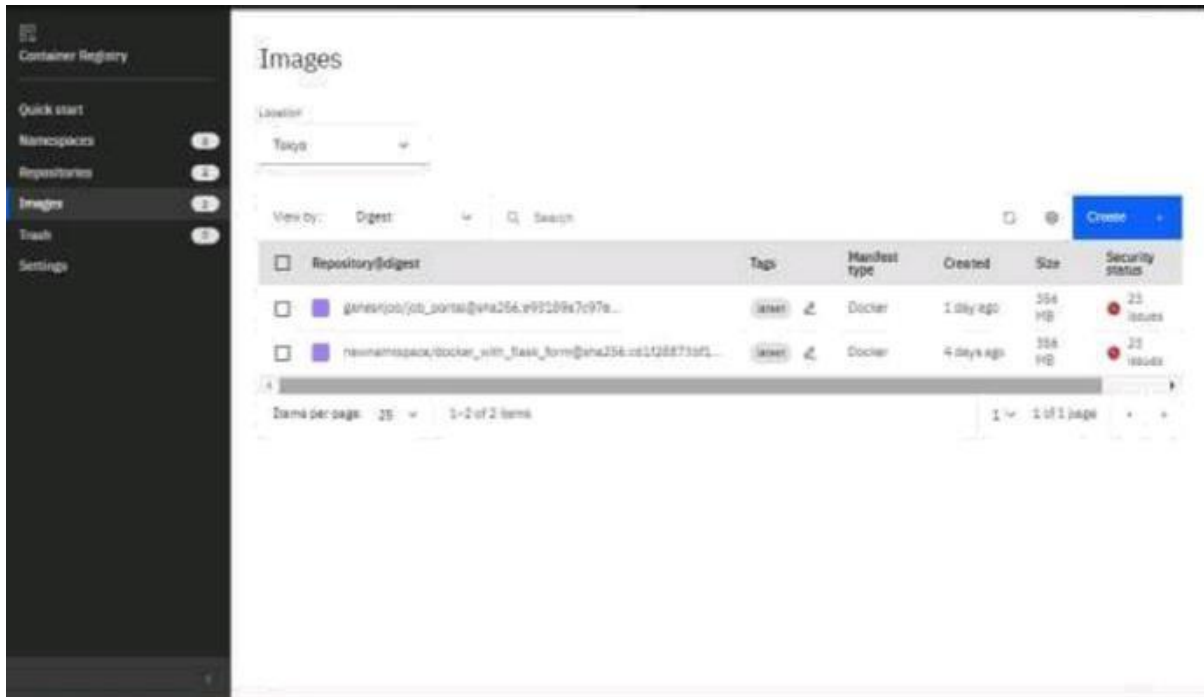
Deploy in docker application



Running in docker desktop



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



Deploy helloworld or jobportal

```
C:\Windows\system32\cmd.exe
3a4cb5a6fa8b: Retrying in 1 second
0d51c618126f: Retrying in 1 second
0ff6e4d6744: Waiting
090d1d4705a1: Waiting
055ed1b74420: Waiting
Failed to lookup host: jp.icr.io

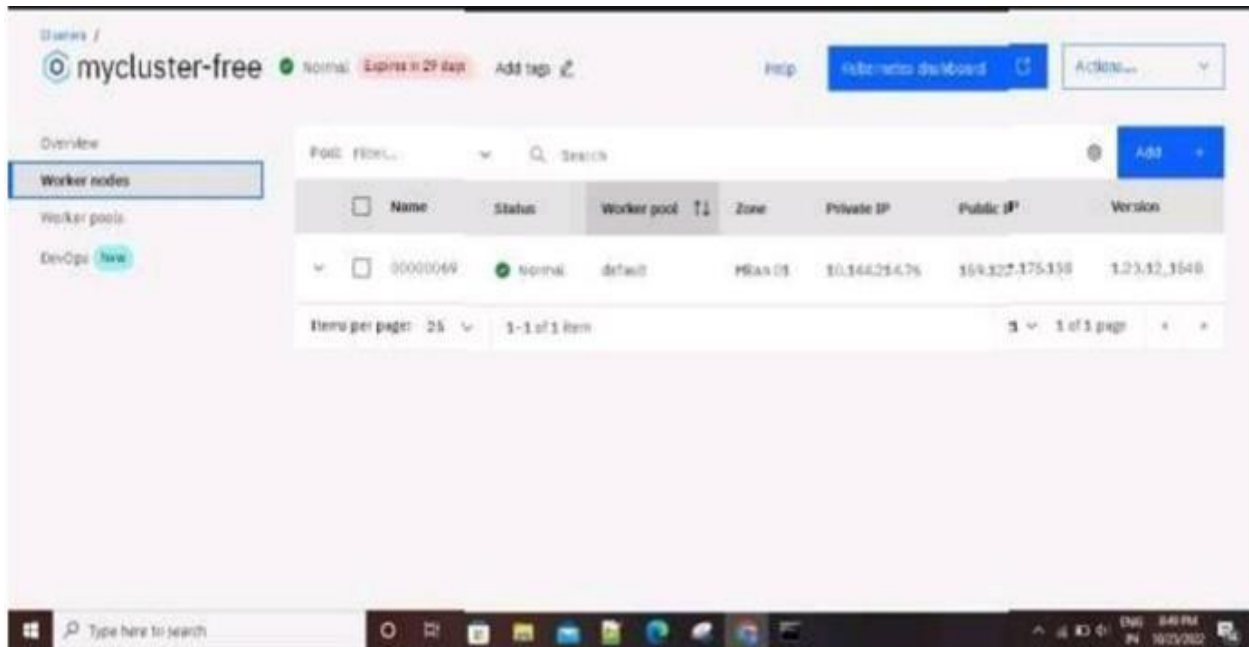
C:\Users\ganesh\Desktop\job_portal>docker push jp.icr.io/ganesh/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganesh/job_portal]
15eb1504625: Layer already exists
09e94105e106: Pushed
48c2a74c12b: Layer already exists
0b72c7015466: Layer already exists
0fc1d600136d: Layer already exists
1c123106024c: Layer already exists
1b06b1152931: Pushed
100796cdf3b1: Pushed
3a4cb5a6fa8b: Retrying in 1 second
0d51c618126f: Pushed
0ff6e4d6744: Pushed
090d1d4705a1: Pushed
055ed1b74420: Pushing [=====] 99.8MB/124MB
OK

C:\Users\ganesh\Desktop\job_portal>docker push jp.icr.io/ganesh/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganesh/job_portal]
15eb1504625: Layer already exists
09e94105e106: Layer already exists
48c2a74c12b: Layer already exists
0b72c7015466: Layer already exists
0fc1d600136d: Layer already exists
1c123106024c: Layer already exists
1b06b1152931: Layer already exists
100796cdf3b1: Layer already exists
3a4cb5a6fa8b: Pushed
0d51c618126f: Layer already exists
0ff6e4d6744: Layer already exists
090d1d4705a1: Layer already exists
055ed1b74420: Pushed
latest: digest: sha256:e91109a7c97aeb0908660a54e09c6f61a9bde0309908c87a21a7a79d1fc207 size: 3952

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

Creating a kubernetes cluster in ibm cloud



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>
```

```

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 127.0.0.1:8001
^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       *          *             80        27m
C:\Windows\system32\kubectl get svc
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE

```