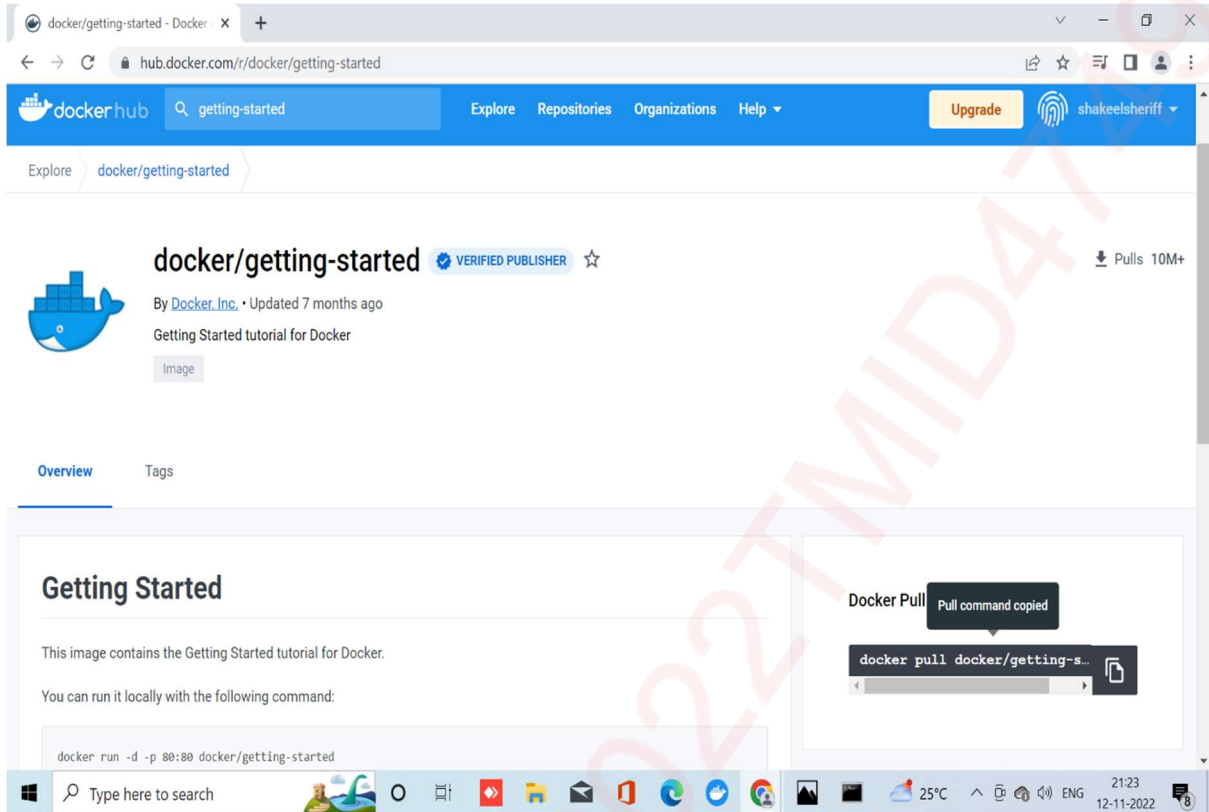


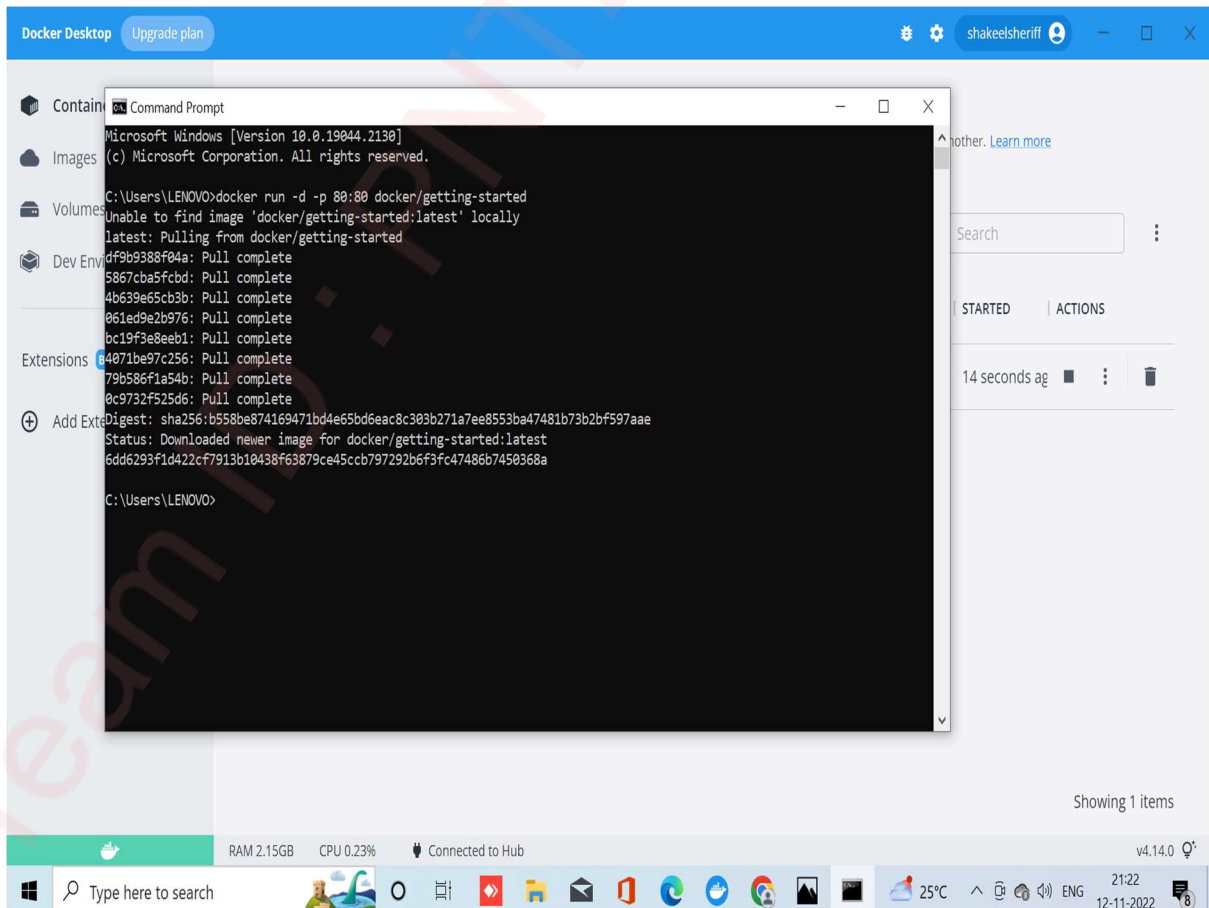
Assignment-4(M.SHAKEEL SHERIFF-910019106037)

TASK-1) Pull an image from dockerhub and run it in Docker Playground

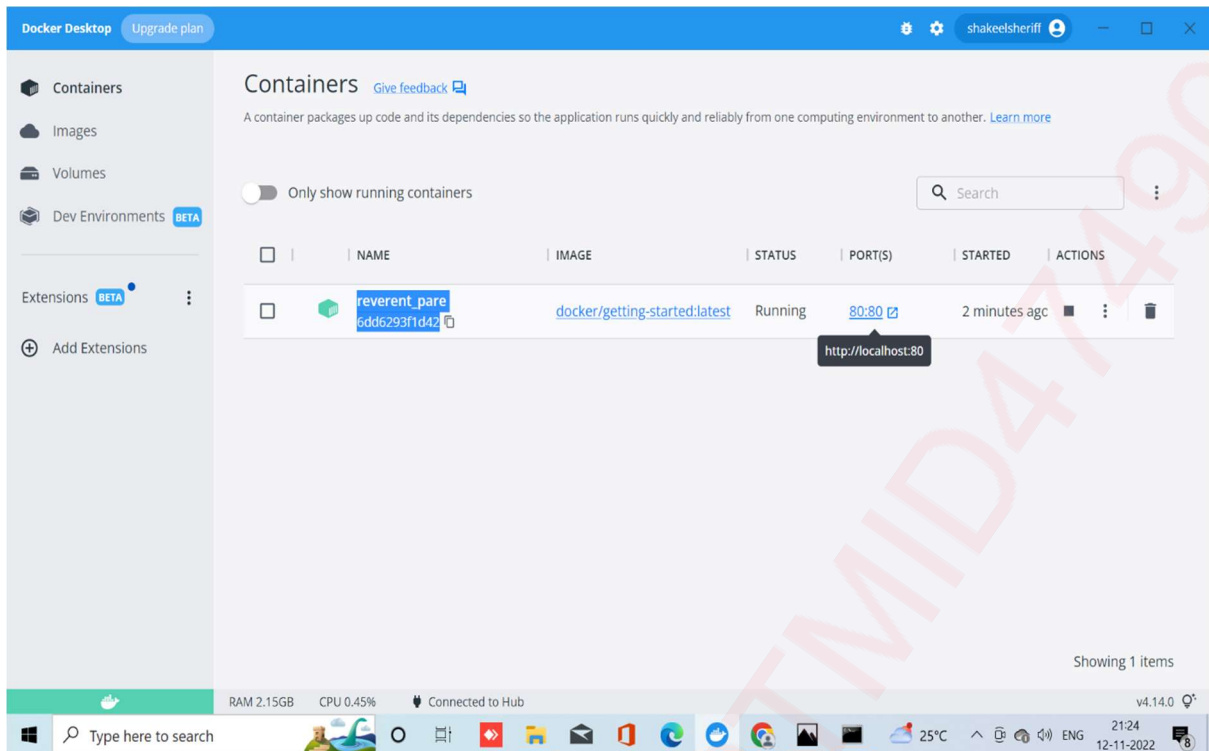
- **PULL AN IMAGE FROM DOCKER HUB VIA COPIYING COMMAND**



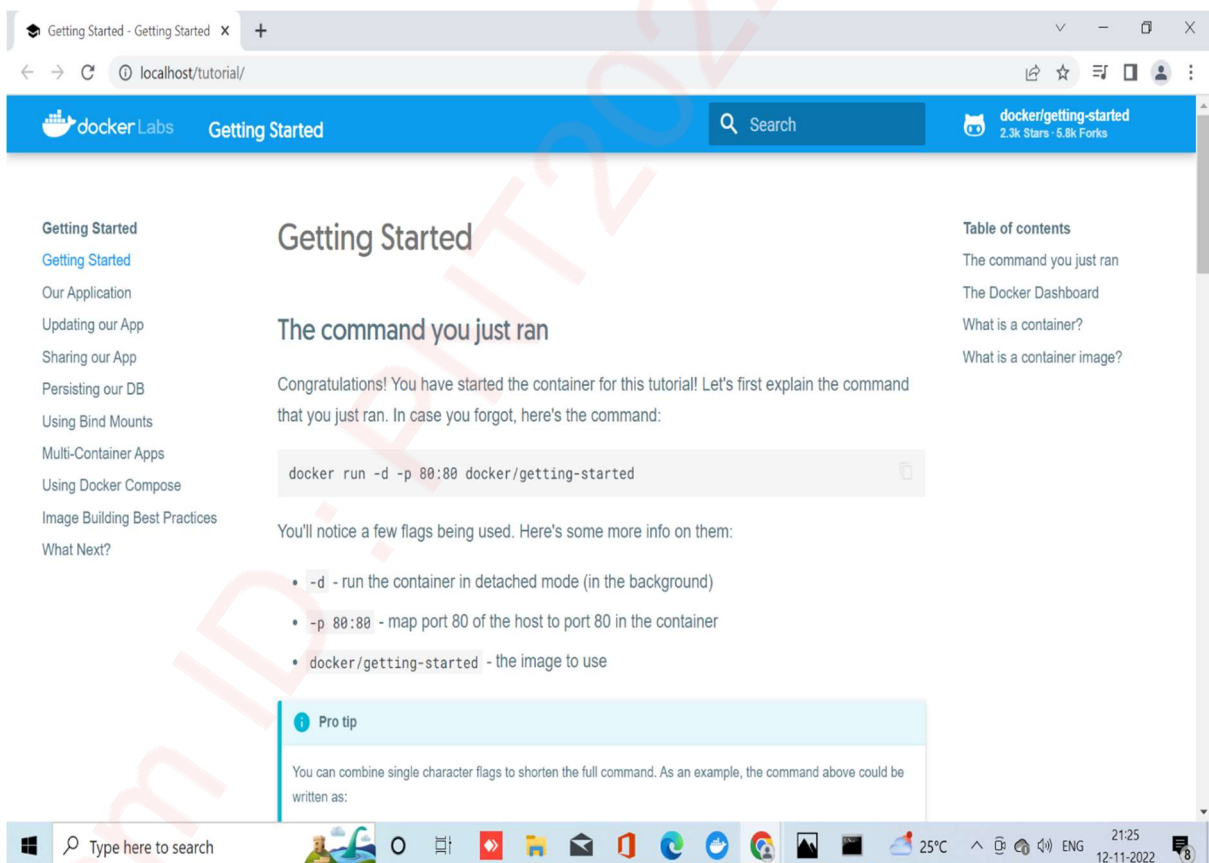
- **PASTE AND RUN THE COMMAND IN CMD TO PULL THE IMAGE**



- **IMAGE IS RUNNING IN DOCKER DESKTOP**



- **IMAGE IS RUNNING IN LOCALHOST**

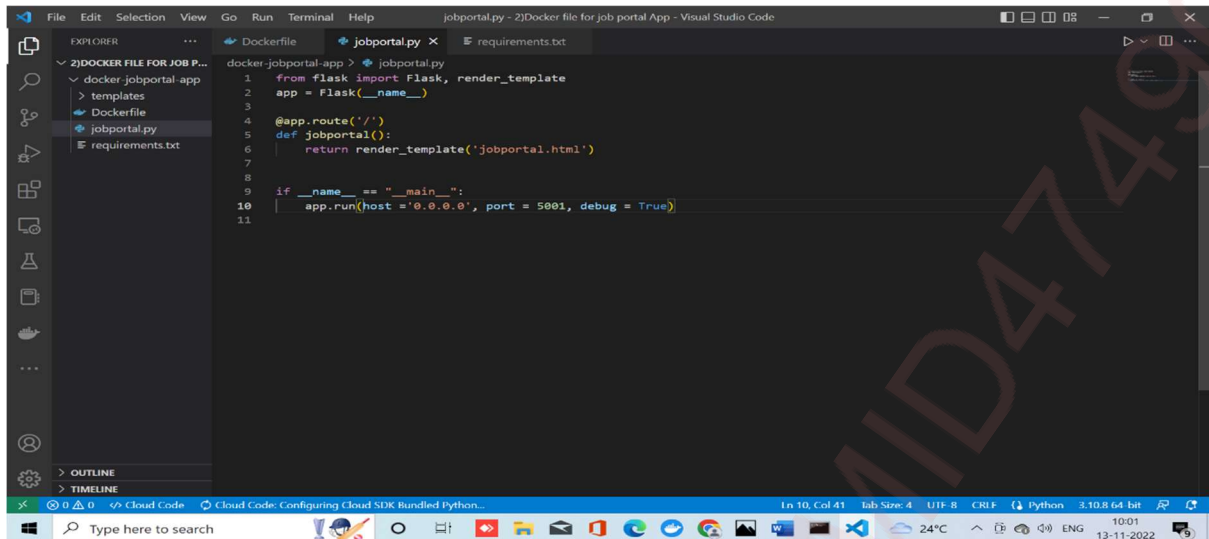


TASK-1 SUCCESSFULLY COMPLETED!

Assignment-4(M.SHAKEEL SHERIFF-910019106037)

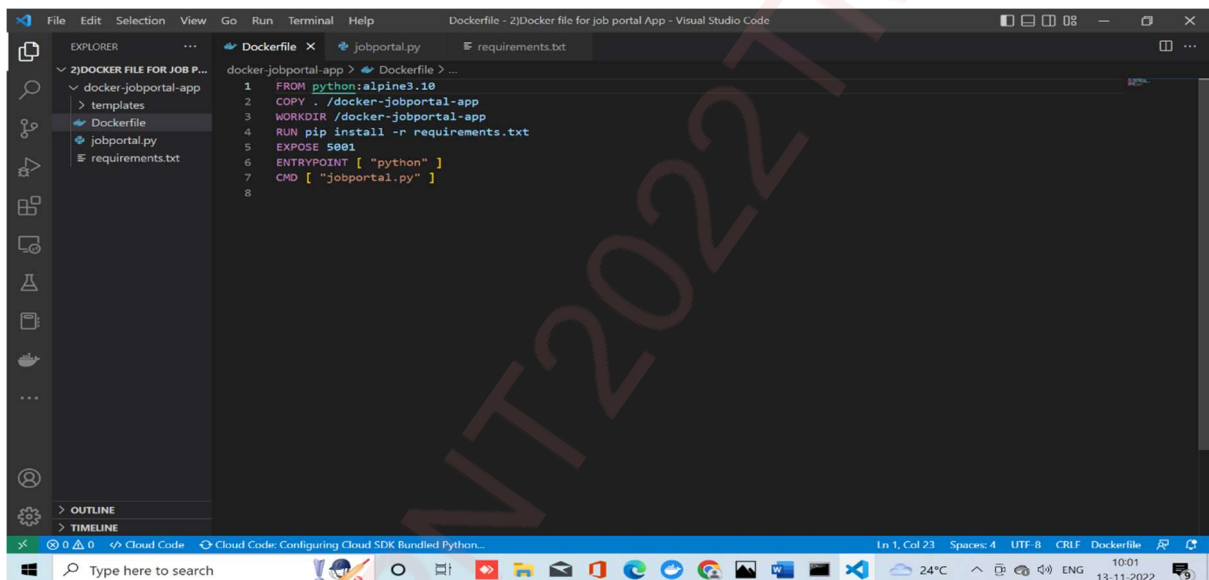
TASK-2) Create a Dockerfile for job portal app and deploy it in docker desktop

- CREATE A FLASK APP FOR JOB PORTAL AND ADD DOCKER FILE AND NECESSARY REQUIREMENTS



The screenshot shows the Visual Studio Code editor with a project named 'jobportal.py - 2J Docker file for job portal App'. The Explorer sidebar on the left shows the file structure: '2J DOCKER FILE FOR JOB P...', 'docker-jobportal-app', 'templates', 'jobportal.py', and 'requirements.txt'. The main editor displays the 'jobportal.py' file with the following code:

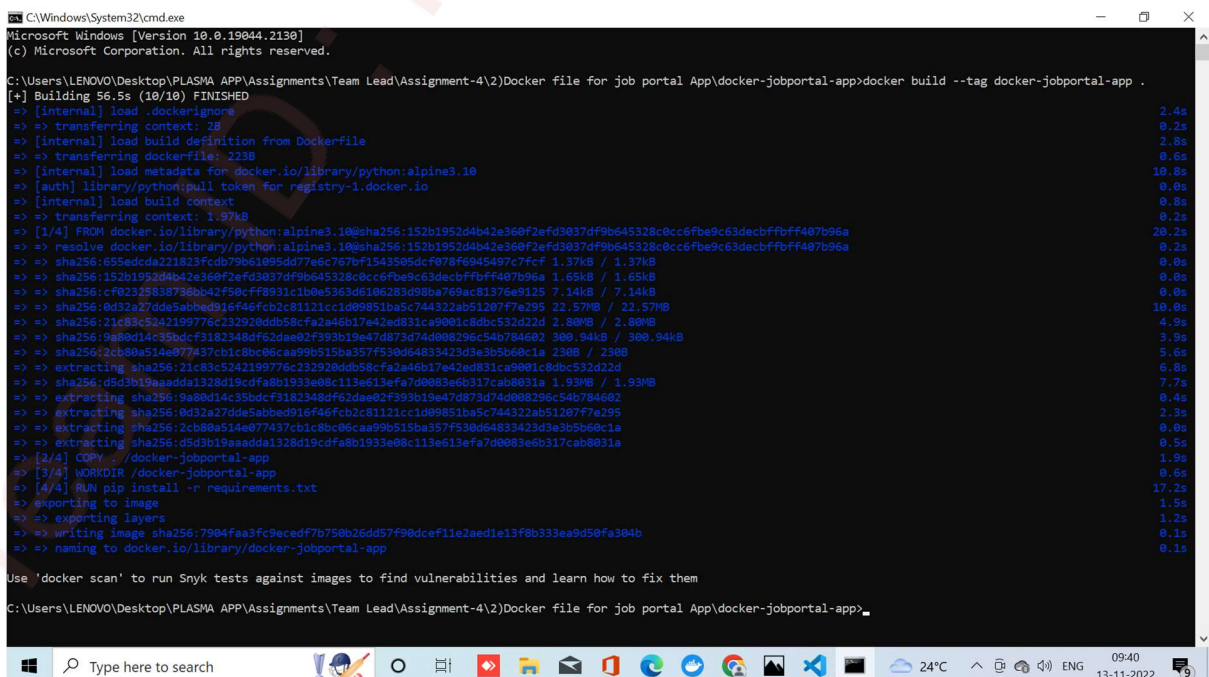
```
1 from flask import Flask, render_template
2 app = Flask(__name__)
3
4 @app.route('/')
5 def jobportal():
6     return render_template('jobportal.html')
7
8
9 if __name__ == '__main__':
10     app.run(host='0.0.0.0', port=5001, debug=True)
```



The screenshot shows the Visual Studio Code editor with the same project. The Explorer sidebar shows the file structure: '2J DOCKER FILE FOR JOB P...', 'docker-jobportal-app', 'templates', 'jobportal.py', and 'requirements.txt'. The main editor displays the 'Dockerfile' file with the following code:

```
1 FROM python:alpine3.10
2 COPY . /docker-jobportal-app
3 WORKDIR /docker-jobportal-app
4 RUN pip install -r requirements.txt
5 EXPOSE 5001
6 ENTRYPOINT [ "python" ]
7 CMD [ "jobportal.py" ]
```

- BUILD A DOCKER IMAGE IN DOCKER DESKTOP FOR JOB PORTAL APP USING CMD



The screenshot shows a Windows command prompt window with the following text:

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

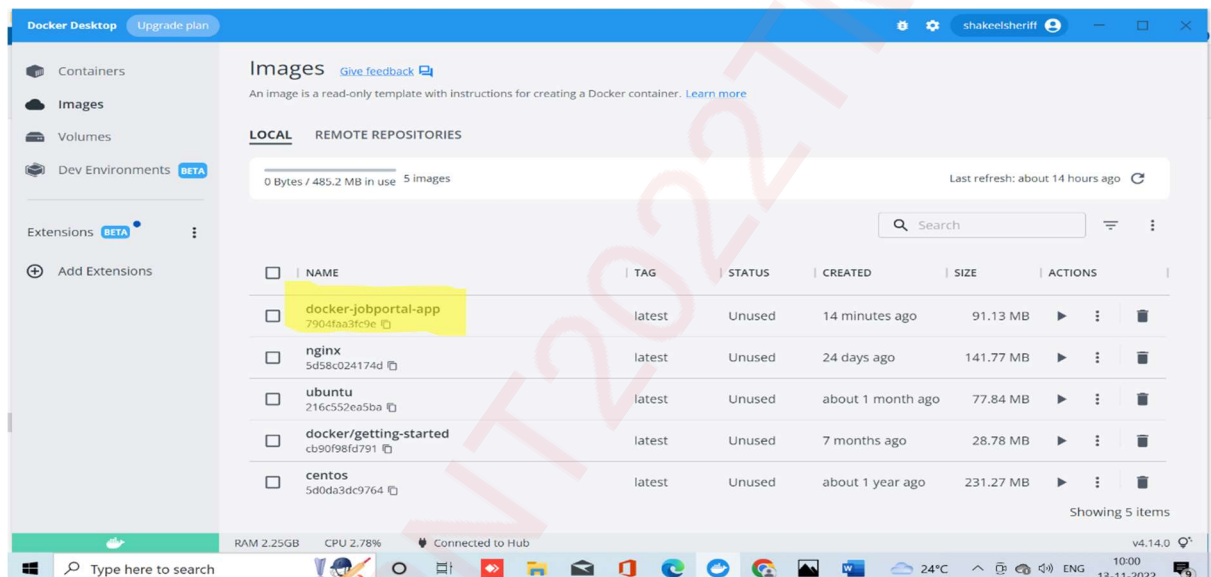
C:\Users\LENOVO\Desktop\PLASMA APP\Assignments\Team Lead\Assignment-4\2\Docker file for job portal App\docker-jobportal-app>docker build --tag docker-jobportal-app .
[*] Building 56.5s (10/10) FINISHED
=> [internal] load .dockerignore
=> transferring context: 2B
=> [internal] load build definition from Dockerfile
=> transferring dockerfile: 223B
=> [internal] load metadata for docker.io/library/python:alpine3.10
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load build context
=> transferring context: 1.97kB
=> [1/4] FROM docker.io/library/python:alpine3.10@sha256:152b1952d4b42e360f2efd3037df9b645328c0cc6f9e9c63decbbf407b96a
=> resolve docker.io/library/python:alpine3.10@sha256:152b1952d4b42e360f2efd3037df9b645328c0cc6f9e9c63decbbf407b96a
=> sha256:655edcda21823fcd79b61095dd77e6c767bf1543505dcf08f6945497c7fcf 1.37kB / 1.37kB
=> sha256:152b1952d4b42e360f2efd3037df9b645328c0cc6f9e9c63decbbf407b96a 1.65kB / 1.65kB
=> sha256:c9b225838738b42f50c7f8931c1b0e5363d6106283d98ba769ac8137e9125 7.14kB / 7.14kB
=> sha256:0d32a27dde5abbed91646fcb2c81121cc1d08951ba5c744322ab51207f7e295 22.57kB / 22.57kB
=> sha256:21e83c5242199776c2320d0db58cfa2a46b17e42ed831c98081c8db531d2d 2.80kB / 2.80kB
=> sha256:9a80d14c35bdcf3182348df62dae02f393b19e47d873d74d088296c54b784602 300.94kB / 300.94kB
=> sha256:2cb88a514e077437cb1c8bc06caa99b515ba357f530d64833423d3a3b5b60c1a 230B / 230B
=> extracting sha256:21c83c5242199776c2320d0db58cfa2a46b17e42ed831c98081c8db531d2d 5.8kB / 5.8kB
=> sha256:d5d3b19aaadda1328d19cdfa8b1933e08c113e613efa7d088317cab8031a 1.93kB / 1.93kB
=> extracting sha256:9a80d14c35bdcf3182348df62dae02f393b19e47d873d74d088296c54b784602 0.4kB / 0.4kB
=> extracting sha256:0d32a27dde5abbed91646fcb2c81121cc1d08951ba5c744322ab51207f7e295 2.3kB / 2.3kB
=> extracting sha256:2cb88a514e077437cb1c8bc06caa99b515ba357f530d64833423d3a3b5b60c1a 0.0kB / 0.0kB
=> extracting sha256:d5d3b19aaadda1328d19cdfa8b1933e08c113e613efa7d088317cab8031a 0.5kB / 0.5kB
=> [2/4] COPY . /docker-jobportal-app
=> [3/4] WORKDIR /docker-jobportal-app
=> [4/4] RUN pip install -r requirements.txt
=> exporting image
=> exporting layers
=> writing image sha256:7984faa3fc9cedf7b750b26d57f90dce11e2aed1e13f8b33ee9d50fa304b
=> naming to docker.io/library/docker-jobportal-app
=> exporting image sha256:7984faa3fc9cedf7b750b26d57f90dce11e2aed1e13f8b33ee9d50fa304b

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

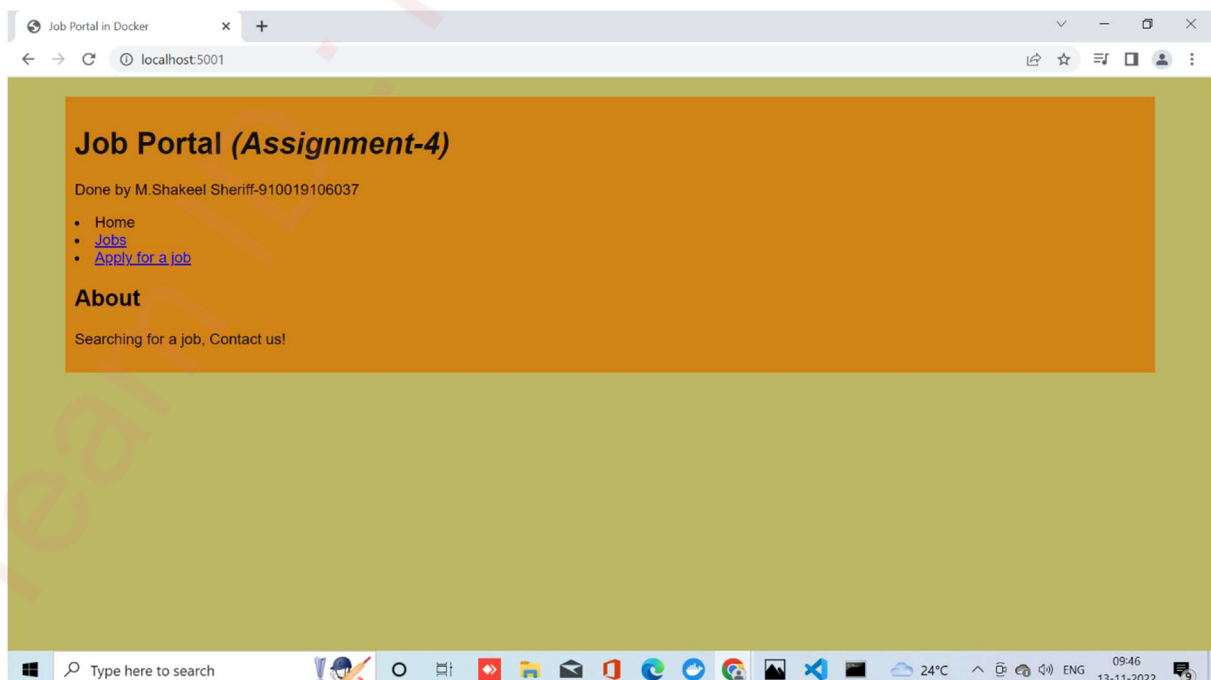
C:\Users\LENOVO\Desktop\PLASMA APP\Assignments\Team Lead\Assignment-4\2\Docker file for job portal App\docker-jobportal-app>
```

- **RUN THE JOB PORTAL APP DOCKER IMAGE USING CMD**

```
C:\Windows\System32\cmd.exe - docker run --name docker-jobportal-app -p 5001:5001 docker-jobportal-app
C:\Users\LENOVO\Desktop\PLASMA APP\Assignments\Team Lead\Assignment-4\2)\Docker file for job portal App\docker-jobportal-app>docker run --name docker-jobportal-app -p 5001:5001 docker-jobportal-app
* Serving Flask app 'jobportal'
* 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://127.0.0.1:5001
* Running on http://172.17.0.2:5001
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 137-022-707
172.17.0.1 - - [13/Nov/2022 04:14:59] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [13/Nov/2022 04:15:00] "GET /favicon.ico HTTP/1.1" 404 -
172.17.0.1 - - [13/Nov/2022 04:15:16] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [13/Nov/2022 04:15:16] "GET /favicon.ico HTTP/1.1" 404 -
```



- **CHECK IN LOCALHOST:5001 FOR JOB PORTAL APP IN DOCKER**

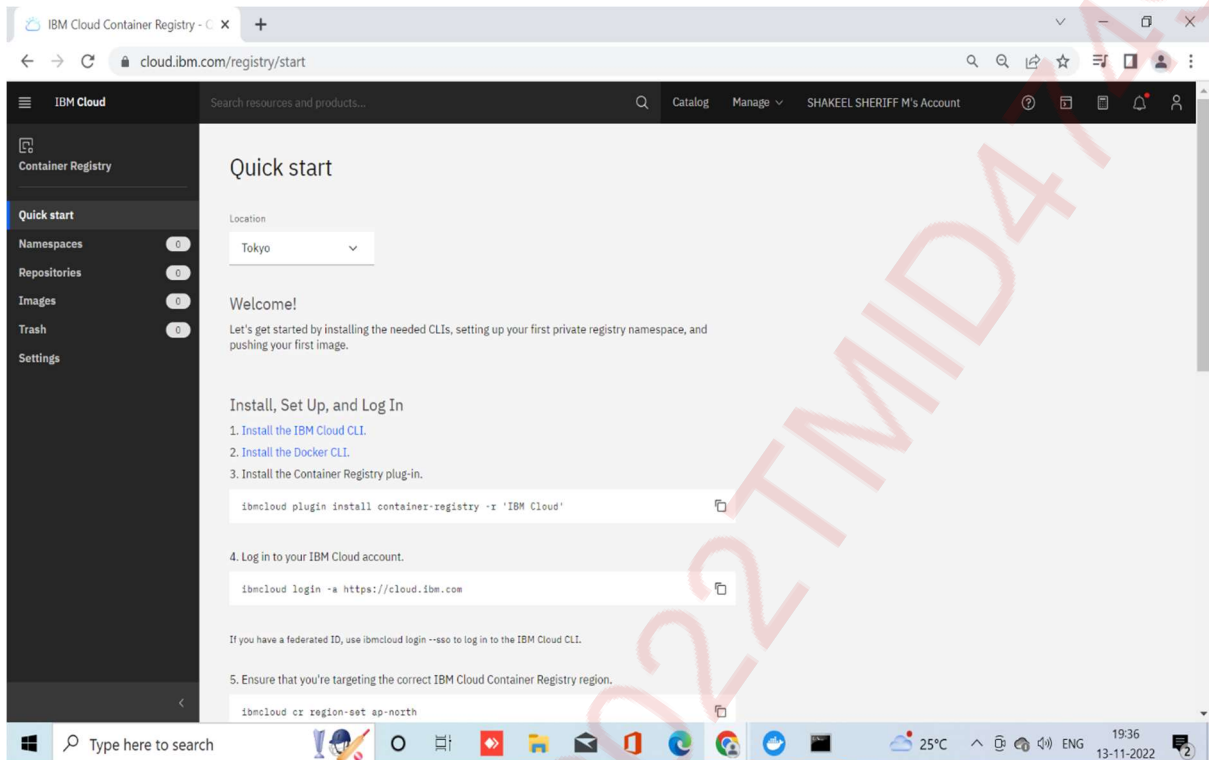


TASK-2 COMPLETED SUCCESSFULLY!

Assignment-4(M.SHAKEEL SHERIFF-910019106037)

TASK-3) Push the Docker image for job portal to IBM Container Registry

- **LOGIN TO IBM CLOUD AND CREATE IBM CONTAINER REGISTRY**



- **LOGIN TO IBM CLOUD CLI USING CMD**



- LOGIN TO DOCKER CLI AND PUSH THE IMAGE TO IBM CONTAINER REGISTRY

```
Command Prompt
C:\Users\LENOVO>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.

OK

C:\Users\LENOVO>docker tag docker-jobportal-app jp.icr.io/jobportalapp/docker-jobportal-app:latest

C:\Users\LENOVO>docker push jp.icr.io/jobportalapp/docker-jobportal-app:latest
The push refers to repository [jp.icr.io/jobportalapp/docker-jobportal-app]
5f0a616a5975: Pushed
5f70bf18a086: Pushed
5d05430c03ec: Pushed
4e633e2489a3: Pushed
798f2bf6d71c: Pushed
e1c1f46b85cc: Pushed
057be770731c: Pushed
1b3ee35aacca: Pushed
latest: digest: sha256:d8990a948f65dcfd37dc04b037f5755acc63aeca96e684c38a532b6d5504728b size: 1993

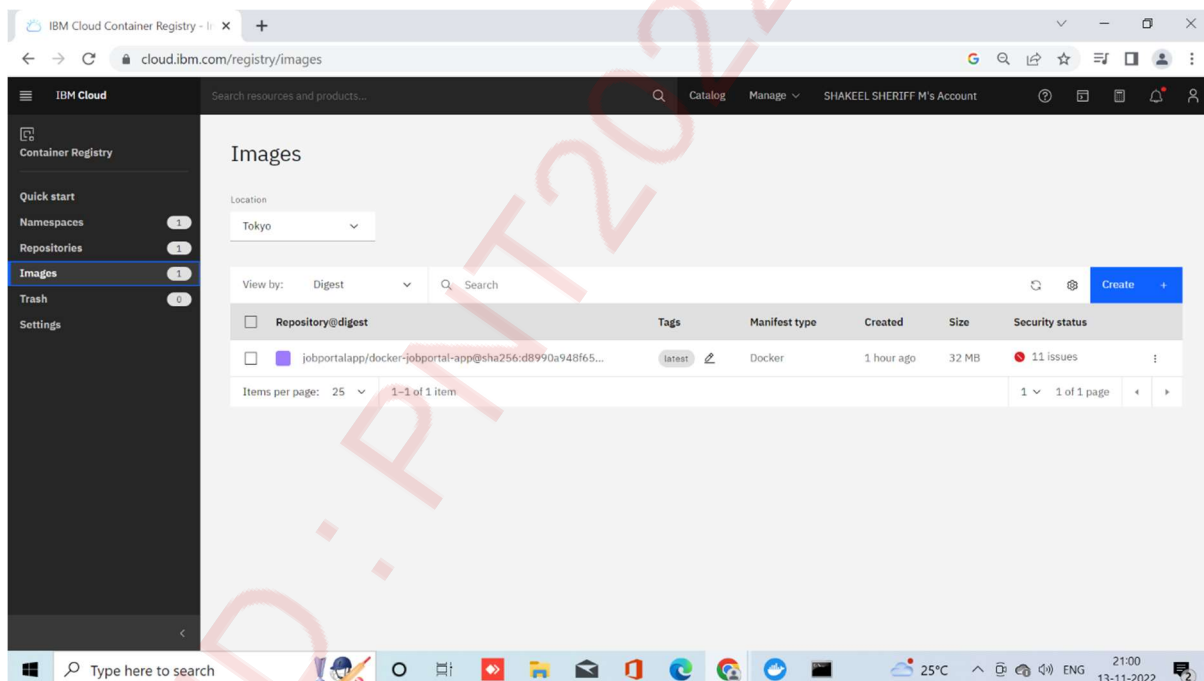
C:\Users\LENOVO>ibmcloud cr image-list
listing images...

Repository                                Tag      Digest                                Namespace   Created    Size    Security status
jp.icr.io/jobportalapp/docker-jobportal-app latest    d8990a948f65                                jobportalapp 1 hour ago 32 MB    -

OK

C:\Users\LENOVO>
```

- OUTPUT IN IBM CONTAINER REGISTRY

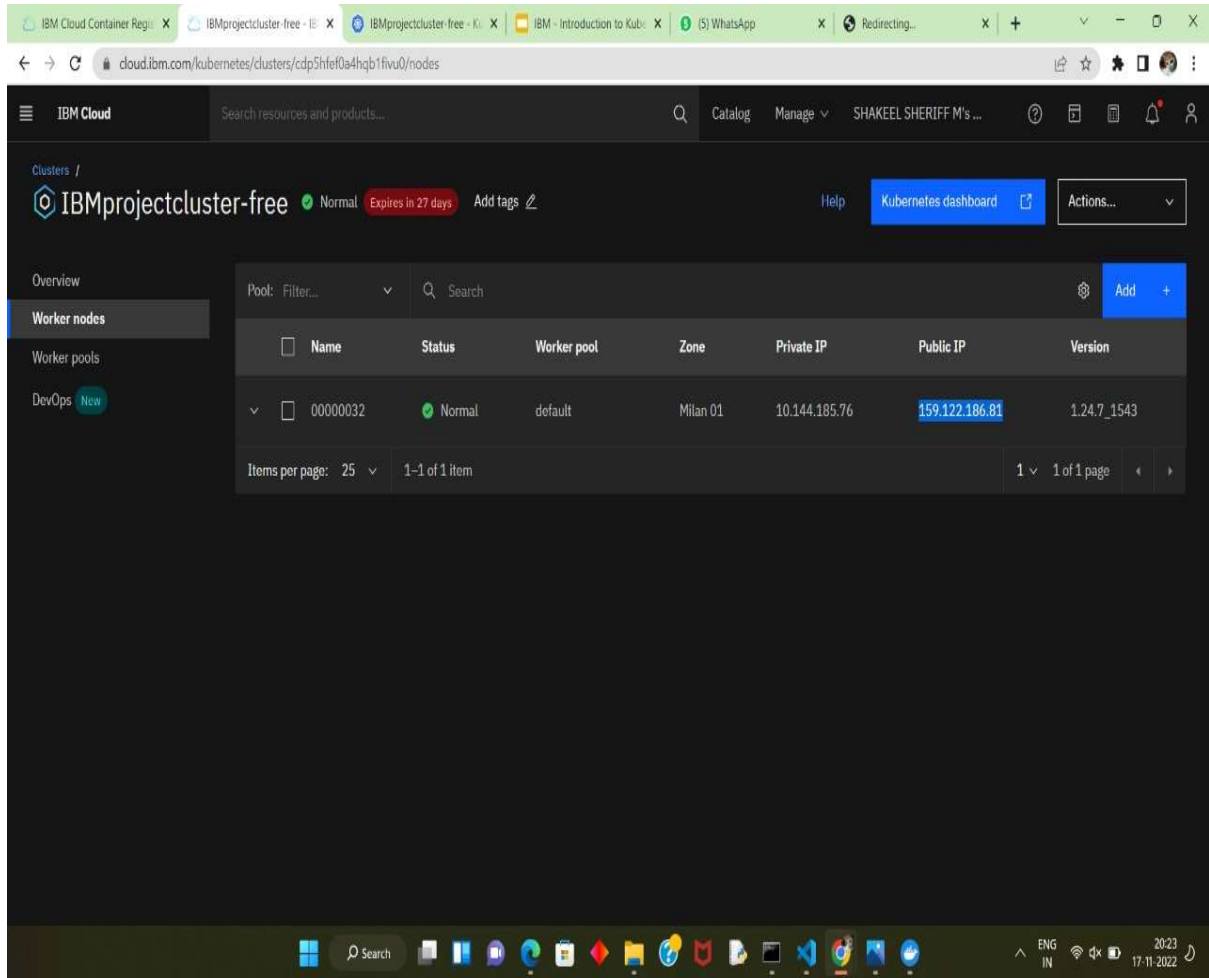


TASK-3 COMPLETED SUCCESSFULLY!

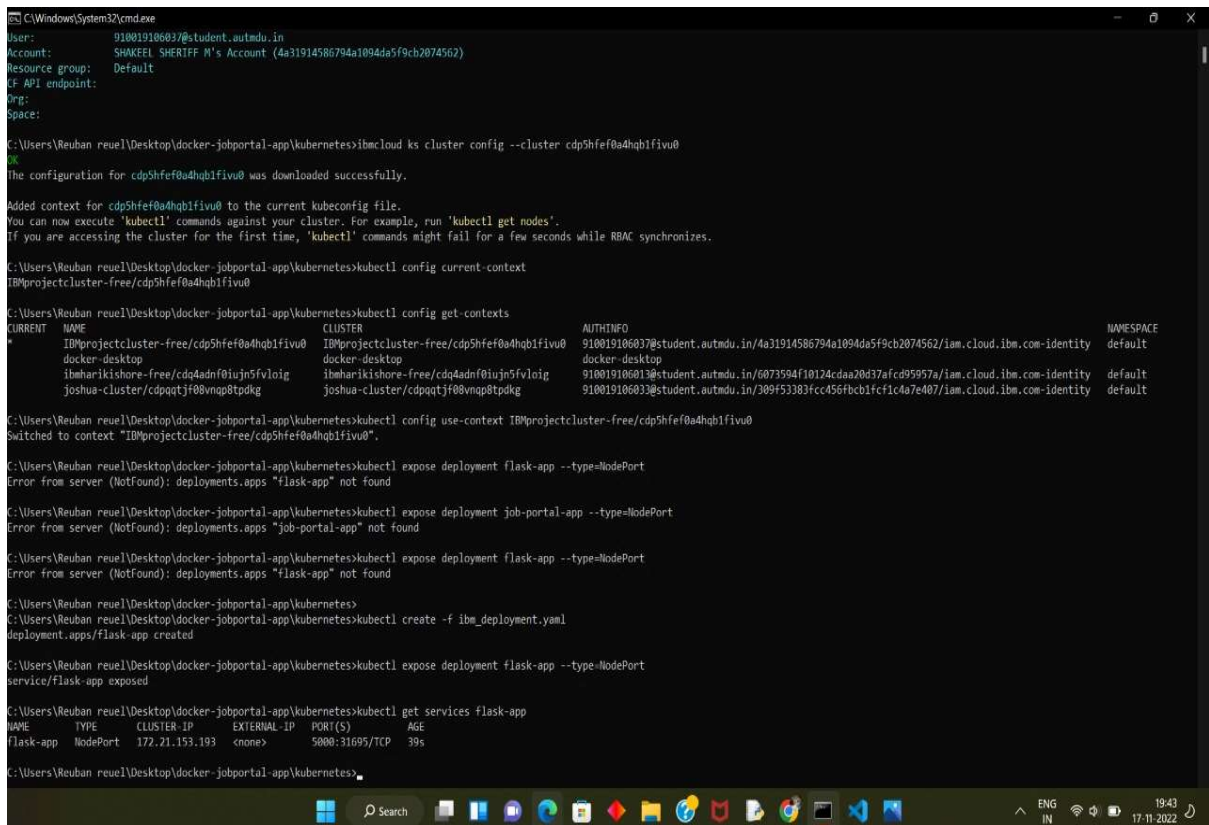
Assignment-4(M.SHAKEEL SHERIFF-910019106037)

TASK-4): Create Kubernetes cluster in IBM cloud and deploy job portal app in Kubernetes cluster

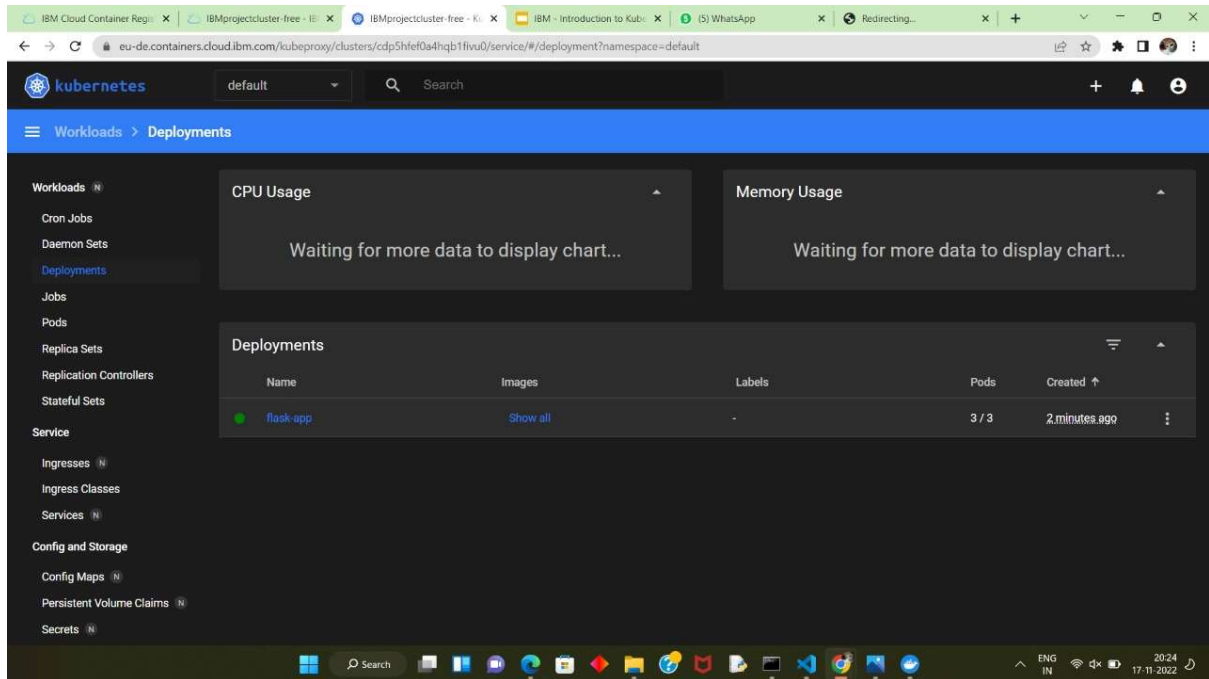
- **Create Kubernetes Cluster in IBM Cloud**



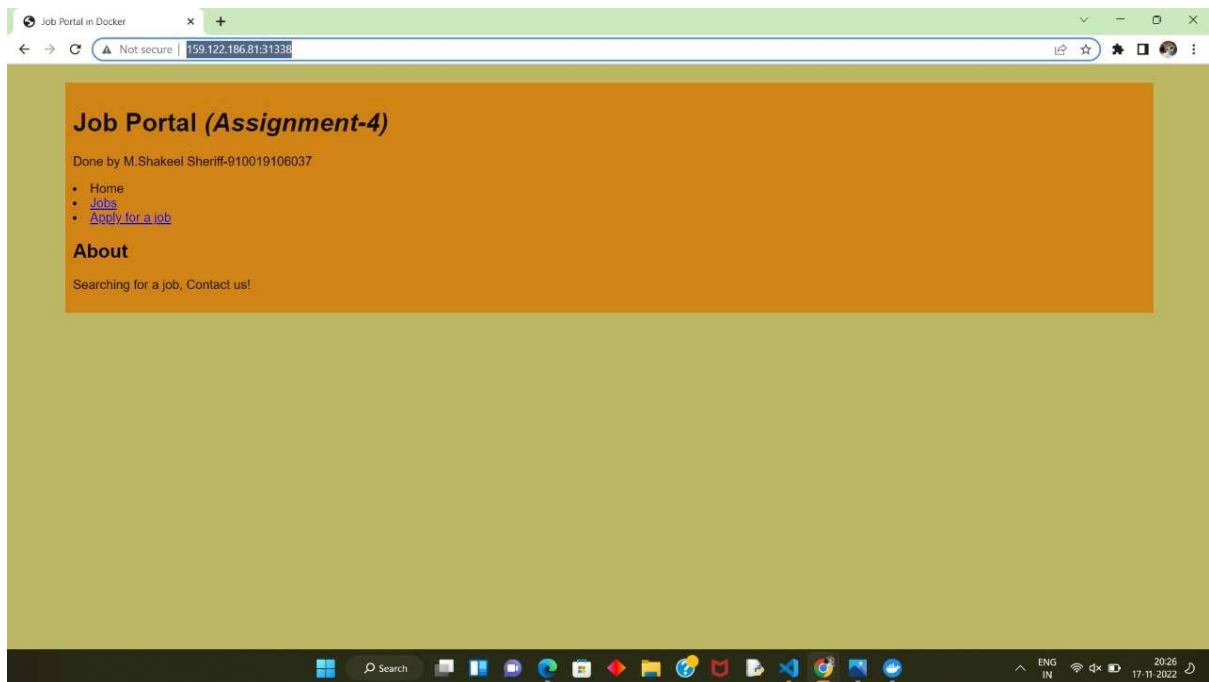
- **Deploy job-portal-app in Kubernetes Cluster using CMD**



- **Generate NodePort Link and check in IBM Kubernetes Dashboard**



- **Check for job portal in Node Link**



TASK-4) COMPLETED SUCESSFULLY!