

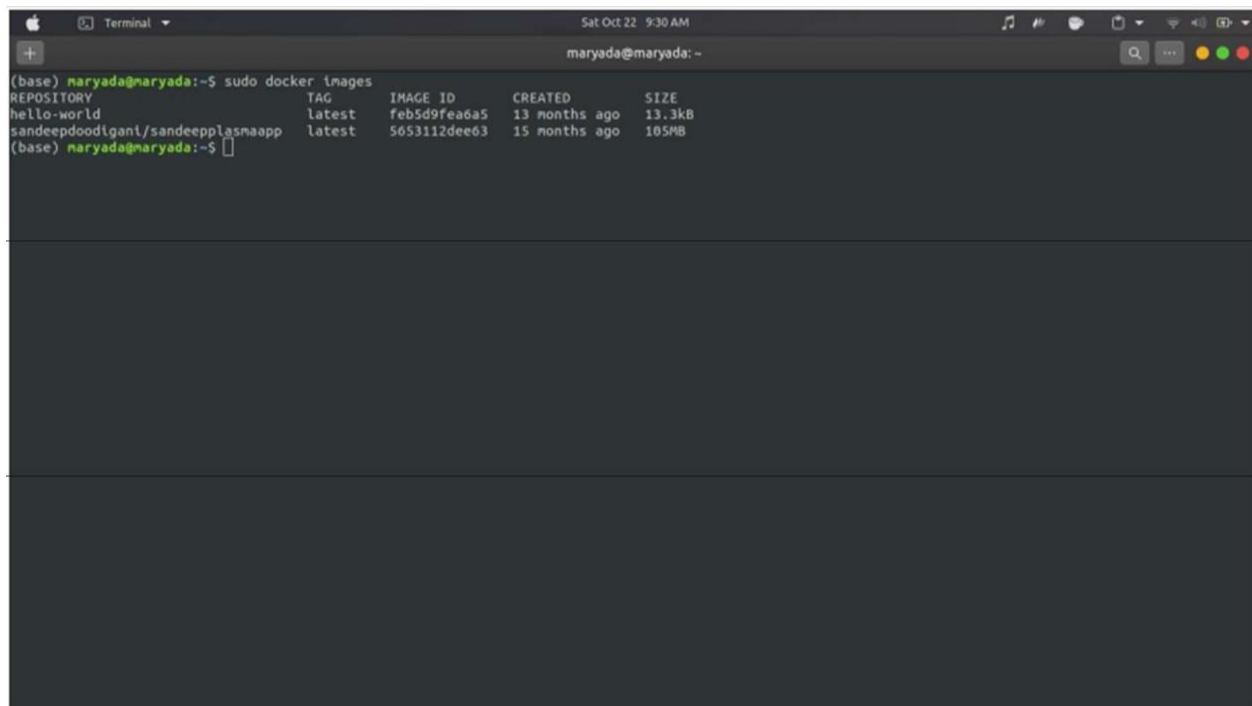
Assignment 4

Kubernetes / Docker

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

A screenshot of a macOS Terminal window. The title bar shows 'Terminal' and the date 'Sat Oct 22 9:30 AM'. The prompt is 'maryada@maryada: ~'. The user has entered the command 'sudo docker images'. The output is a table with 5 columns: REPOSITORY, TAG, IMAGE ID, CREATED, and SIZE. There are two rows of data: 'hello-world' with tag 'latest', image ID 'feb5d9fea6a5', created '13 months ago', and size '13.3kB'; and 'sandeepdoodigani/sandeepplasmaapp' with tag 'latest', image ID '5653112dee63', created '15 months ago', and size '105MB'.

```
(base) maryada@maryada:~$ sudo docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
hello-world         latest     feb5d9fea6a5  13 months ago 13.3kB
sandeepdoodigani/sandeepplasmaapp latest     5653112dee63  15 months ago 105MB
(base) maryada@maryada:~$
```

```
Terminal
Sat Oct 22 9:31 AM
maryada@maryada: ~
(base) maryada@maryada:~$ sudo docker run -p 8080:8080 sandeepdoodigani/sandeepplasmaapp
* Serving Flask app 'app' (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: off
* Running on all addresses.
WARNING: This is a development server. Do not use it in a production deployment.
* Running on http://172.17.0.2:8080/ (Press CTRL+C to quit)
```

Plasma Donor App

Home

127.0.0.1:8080/registration

Ranjith

ranjithmuthusamy44@gmail.com

08220413370

Namakkal

Infected

B Positive

Register

Type here to search

ENG 11:34 AM
IN 11/15/2022

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

Dockerfile:

FROM python:3.6

WORKDIR /app

ADD . /app

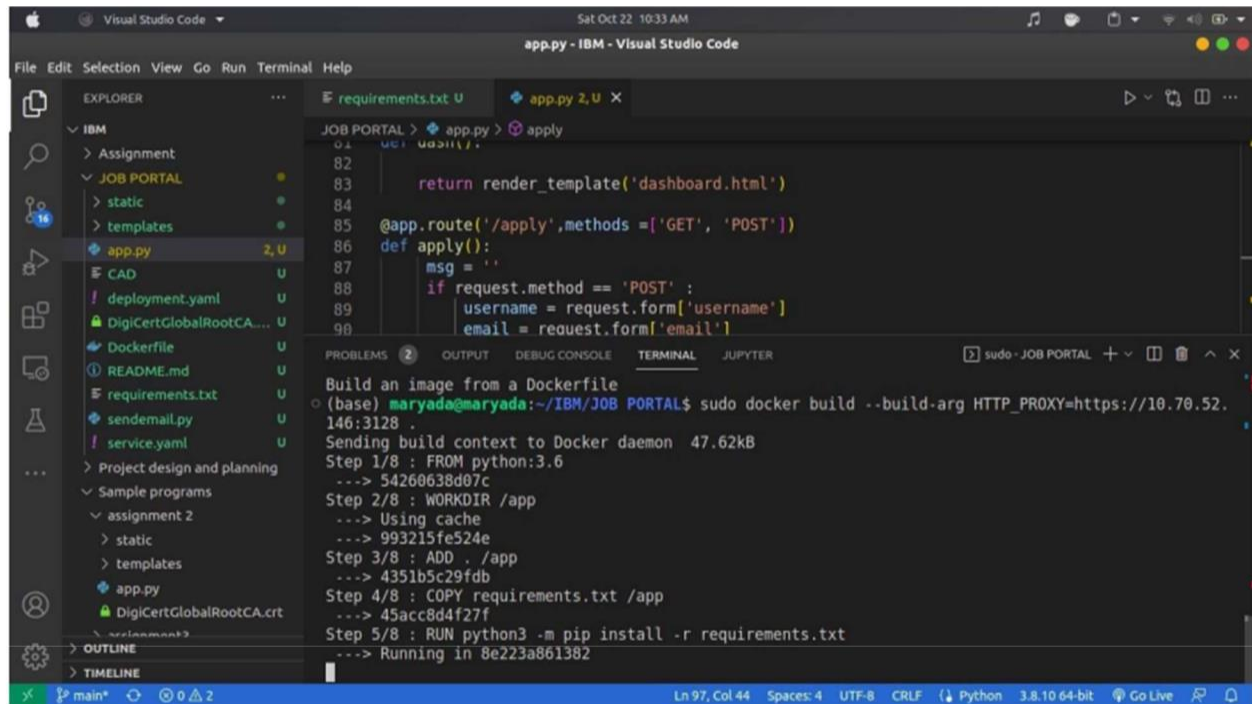
COPY requirements.txt /app

RUN python3 -m pip install -r requirements.txt

RUN python3 -m pip install ibm_db

EXPOSE 5000

CMD ["python", "app.py"]



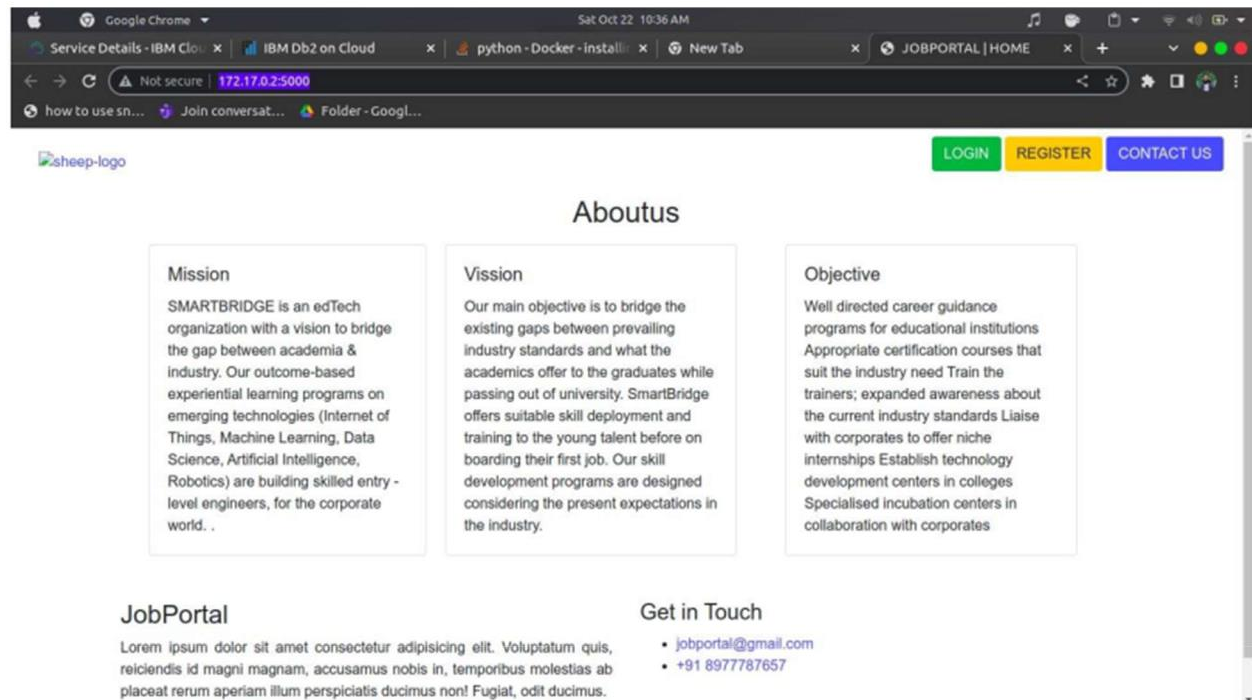
The screenshot shows the Visual Studio Code interface with the Explorer, Search, and Run and Debug panels. The Explorer panel shows the project structure with files like requirements.txt, app.py, and Dockerfile. The Search panel shows the contents of requirements.txt. The Run and Debug panel shows the output of the Docker build command, which includes the steps: FROM python:3.6, WORKDIR /app, ADD . /app, COPY requirements.txt /app, and RUN python3 -m pip install -r requirements.txt. The output also shows the build context being sent to the Docker daemon and the final image being built.

```
Build an image from a Dockerfile
(base) maryada@maryada:~/IBM/JOB PORTAL$ sudo docker build --build-arg HTTP_PROXY=https://10.70.52.146:3128 .
Sending build context to Docker daemon 47.62kB
Step 1/8 : FROM python:3.6
--> 54260638d07c
Step 2/8 : WORKDIR /app
--> Using cache
--> 993215fe524e
Step 3/8 : ADD . /app
--> 4351b5c29fdb
Step 4/8 : COPY requirements.txt /app
--> 45acc8d4f27f
Step 5/8 : RUN python3 -m pip install -r requirements.txt
--> Running in 8e223a861382
```

```
requirements.txt U app.py 2, U X
JOB PORTAL > app.py > apply
82
83 return render_template('dashboard.html')
84
85 @app.route('/apply', methods = ['GET', 'POST'])
86 def apply():
87     msg = ''
88     if request.method == 'POST':
89         username = request.form['username']
90         email = request.form['email']
```

```
Step 8/8 : CMD ["python","app.py"]
--> Running in e76a612bbca1
Removing intermediate container e76a612bbca1
--> 8b022ea43a31
Successfully built 8b022ea43a31

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix the
m
(base) maryada@maryada:~/IBM/JOB PORTAL$ sudo docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
<none> <none> 8b022ea43a31 12 seconds ago 1.08GB
<none> <none> 32695b39400c 26 minutes ago 902MB
python 3.6 54260638d07c 10 months ago 902MB
hello-world latest feb5d9fea6a5 13 months ago 13.3kB
sandeepdoodigani/sandeepplasmaapp latest 5653112dee63 15 months ago 105MB
(base) maryada@maryada:~/IBM/JOB PORTAL$
```



The screenshot shows the Visual Studio Code interface with a project named 'JOB PORTAL'. The file explorer on the left shows the project structure, including files like 'app.py', 'requirements.txt', 'Dockerfile', and 'service.yaml'. The main editor displays the code for 'app.py', which is a Flask application. The terminal at the bottom shows the command 'sudo docker run -p 8080:8080 8b022ea43a31' being executed, followed by the output of the application running on http://172.17.0.2:5000/.

```
app.py - IBM - Visual Studio Code

JOB PORTAL > app.py > apply
82 def apply():
83     return render_template('dashboard.html')
84
85 @app.route('/apply', methods = ['GET', 'POST'])
86 def apply():
87     msg = ''
88     if request.method == 'POST':
89         username = request.form['username']
90         email = request.form['email']

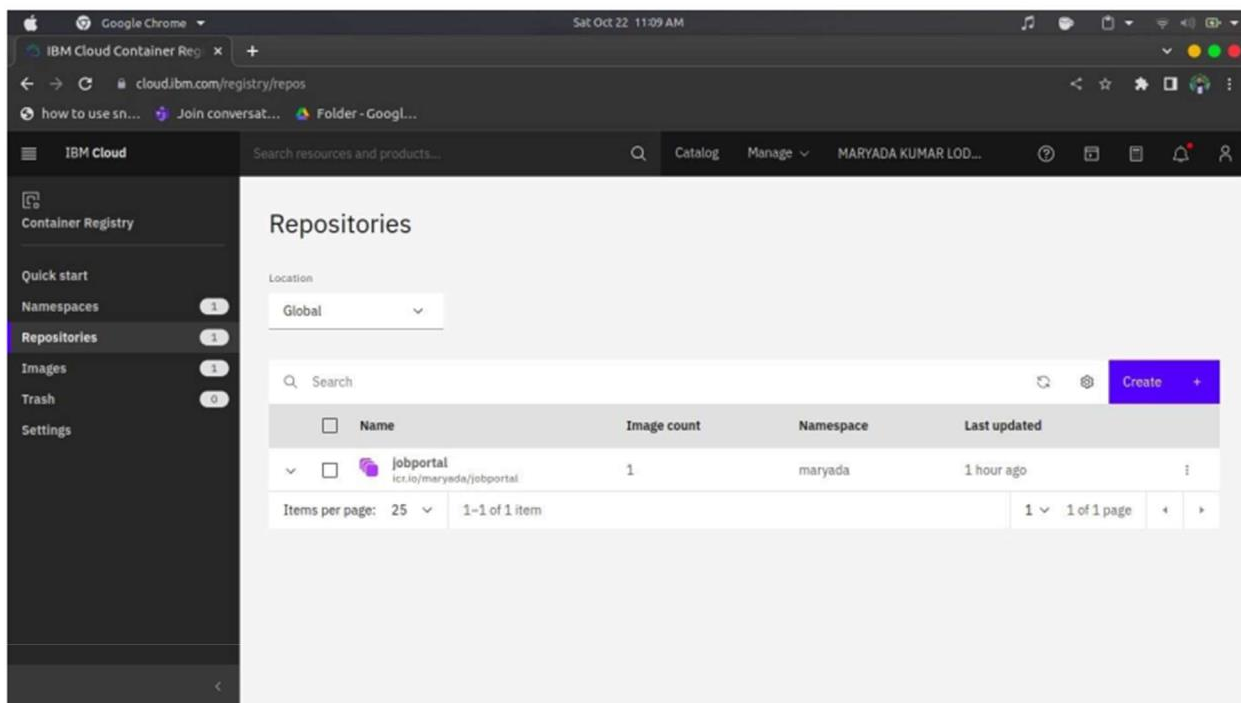
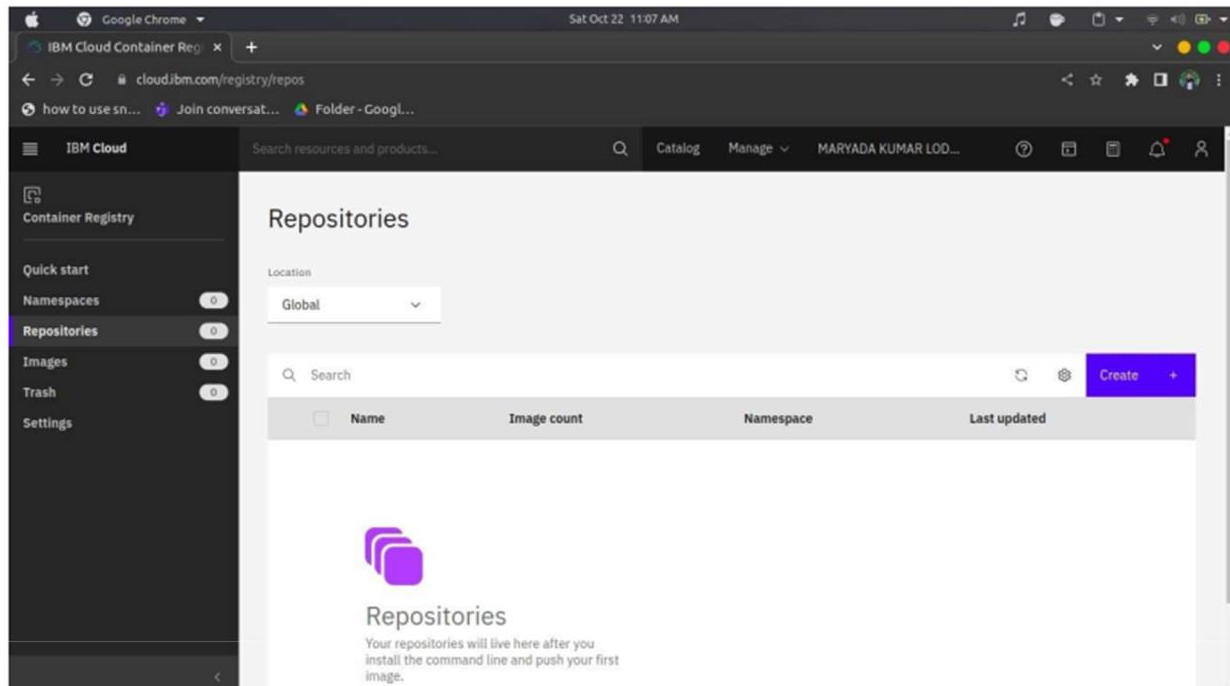
(base) maryada@maryada:~/IBM/JOB PORTAL$ sudo docker run -p 8080:8080 8b022ea43a31
* Serving Flask app 'app' (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: off
* Running on all addresses.
WARNING: This is a development server. Do not use it in a production deployment.
* Running on http://172.17.0.2:5000/ (Press CTRL+C to quit)
172.17.0.1 - - [22/Oct/2022 05:06:38] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [22/Oct/2022 05:06:38] "GET /css/style.css HTTP/1.1" 404 -
172.17.0.1 - - [22/Oct/2022 05:06:38] "GET /static/img/smartinternz.png HTTP/1.1" 404 -
172.17.0.1 - - [22/Oct/2022 05:06:38] "GET /assets/img/favicon-32x32.png HTTP/1.1" 404 -
```

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

The screenshot shows a terminal window with the following commands and output:

```
maryada@maryada: ~/Downloads/Bluemix_CLI
11936051f93b: Waiting
unauthorized: The login credentials are not valid, or your IBM Cloud account is
not active.
(base) maryada@maryada:~/Downloads/Bluemix_CLI$ docker tag 8b022ea43a31 i cr.io/
maryada/jobportal
(base) maryada@maryada:~/Downloads/Bluemix_CLI$ docker push i cr.io/maryada/job
portal
Using default tag: latest
The push refers to repository [i cr.io/maryada/jobportal]
Quota: 38b18ee3d02d: Pushed
7ba6b7893bdf: Pushing 7.772MB/178.4MB
Name: 2372dde217ce: Pushed
2dee82f5509e: Pushed
Repository: 626d8736495f: Pushed
Image: aa4c808c19f6: Waiting
Image: 8ba9f690e8ba: Waiting
Image: 3e607d59ef9f: Waiting
Image: 1e18e7e1fcc2: Waiting
Image: c3a0d593ed24: Waiting
Image: 26a504ed3be4: Waiting
Image: 8bf42db0de72: Waiting
Image: 31892cc314cb: Waiting
Image: 11936051f93b: Waiting
```

The background shows the IBM Cloud Container Registry interface, which is a web-based console for managing container images. It includes a 'Create' button and a 'Last updated' section.



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.

