

ASSIGNMENT 4

Team Leader : SAJEETH GURU G P

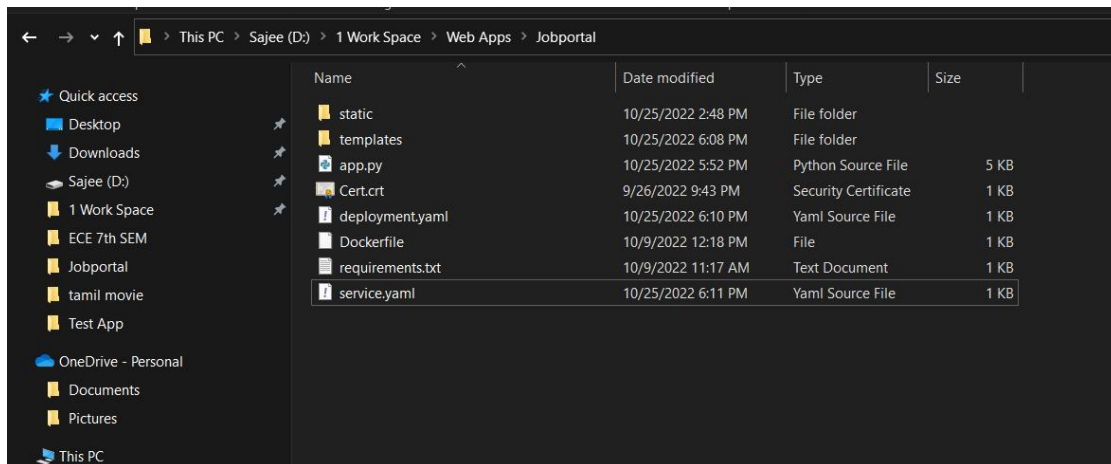
Team Member 1 : MADHAVAN S

Team Member 2 : ROHITH R

Team Member 3 : SAMSUL GHUDHA A S

1. Create a dockerfile for the jobportal application and deploy it in Docker desktop application.

=>Jobportal Working directory:



=>Dockerfile:

```
Dockerfile - Notepad
File Edit Format View Help
FROM python:3.6
WORKDIR /app
ADD . /app
COPY Templates /app/templates
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python","app.py"]
```

=>Deploy jobportal application to docker desktop:

```
Administrator: C:\Windows\System32\cmd.exe
D:\1 Work Space\Web Apps\jobportal>docker build -t jobportal .
[*] Building 2670.8s (13/13) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 32B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.6
-> [internal] load build context
-> => transferring context: 666B
-> [1/6] FROM docker.io/library/python:3.6@sha256:f8632afaf8c25f0d22354d547d892591867aa4026a7fa9a810d9f300a6f0fc
-> resolve docker.io/library/python:3.6@sha256:f8632afaf8c25f0d22354d547d892591867aa4026a7fa9a810d9f300a6f0fc
-> sha256:f8632afaf8c25f0d22354d547d892591867aa4026a7fa9a810d9f300a6f0fc 1.86kB / 1.86kB
-> sha256:0097a907a0ec079df5ac3187259c2de310f82214c0448e926393b376d3b60d 2.22kB / 2.22kB
-> sha256:54260638d07c5e3ad2d6e21fc889bbcb486a27634c8892086ff71f3f44b104 9.27kB / 9.27kB
-> sha256:06829c73b52692697d5c07a54f0bf3e921995a296c714b53a32ae67d19231fcd 5.19kB / 5.19kB
-> sha256:0e29546d941cd6389281121173a041b78665c1b95974f120009a0b77a6ee1 54.92kB / 54.92kB
-> sha256:c5b7ae361722f07beca5f35823ed21baa85d61d5d95cd5a95ab53d748cdd56 10.87kB / 10.87kB
-> sha256:6494e4811622b31c027ccac322ca63937fd805f569a03e6f15c01ade718793 54.57kB / 54.57kB
-> sha256:6f9f74896dfa93fe0172f594faba85e0bde8a041a0fef09112efc7e4d3c78f7 196.51kB / 196.51kB
-> sha256:5e361213efc06598e78d469208385c1644e2a37205e6a62ddad8231240c743 6.29kB / 6.29kB
-> extracting sha256:0e29546d941cd6389281121173a041b78665c1b95974f120009a0b77a6ee1 4.8s
-> extracting sha256:06829c73b52692697d5c07a54f0bf3e921995a296c714b53a32ae67d19231fcd 0.5s
-> extracting sha256:c5b7ae361722f07beca5f35823ed21baa85d61d5d95cd5a95ab53d748cdd56 1.4s
-> sha256:9fd4dc56334f2e6efad7e241bf5e7459c40ed185c5478676f41c124db96752 14.21kB / 14.21kB
-> sha256:404f0284ba0432ca522c0b9725b1c91fcea808bfeef8b0b243b2f31bab7 235B / 235B
-> sha256:c4f42bc2be53b990ebffc040c1df13ae53843ccc5f5d954a5684ba6169a3af 2.21kB / 2.21kB
-> extracting sha256:6494e4811622b31c027ccac322ca63937fd805f569a03e6f15c01ade718793 11.0s
-> extracting sha256:6f9f74896dfa93fe0172f594faba85e0bde8a041a0fef09112efc7e4d3c78f7 223.2s
-> extracting sha256:5e361213efc06598e78d469208385c1644e2a37205e6a62ddad8231240c743 40.7s
-> extracting sha256:9fd4dc56334f2e6efad7e241bf5e7459c40ed185c5478676f41c124db96752 24.6s
-> extracting sha256:404f0284ba0432ca522c0b9725b1c91fcea808bfeef8b0b243b2f31bab7 0.1s
-> extracting sha256:c4f42bc2be53b990ebffc040c1df13ae53843ccc5f5d954a5684ba6169a3af 7.7s
-> [auth] library/python:pull token for registry-1.docker.io
-> [auth] library/python:pull token for registry-1.docker.io
-> [2/6] WORKDIR /app
-> [3/6] ADD . /app
-> [4/6] COPY Templates /app/templates
-> [5/6] COPY requirements.txt /app
-> [6/6] RUN python3 -m pip install -r requirements.txt
-> exporting to image
-> writing image sha256:c4d6756d4dc2ae3094038de4b01da9e8781f2ce8f9bab8e0d3c2f4950607d99
-> naming to docker.io/library/jobportal

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

D:\1 Work Space\Web Apps\jobportal>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
jobportal latest c4d6756d4dc2 3 minutes ago 1.08GB
```

Administrator: C:\Windows\system32\cmd.exe - docker run -p 5000:5000 jobportal

REPOSITORY

TAG

IMAGE ID

CREATED

SIZE

Docker Desktop

Work Space\Web Apps\Jobportal\docker images

jobportal:latest

478c4f169585

Around a minute ago

1.08GB

Docker Desktop

Work Space\Web Apps\Jobportal\docker build -t jobportal .

[+] Building 646.2s (11/11) FINISHED

> [internal] load build definition from Dockerfile

> => transferring dockerfile: 32B

> [internal] load .dockerignore

> => transferring context: 2B

> [internal] load metadata for docker.io/library/python:3.6

> [internal] load build context

> => transferring context: 660B

> [1/6] FROM docker.io/library/python:3.6@sha256:f8652af8bc25f0d2235d45f4d89591067aa026a7fa0a819df

> CACHED [1/6] WORKDIR /app

> CACHED [1/6] ADD . /app

> CACHED [4/6] COPY templates /app/templates

> CACHED [5/6] COPY requirements.txt /app

> [6/6] RUN python3 -m pip install -r requirements.txt

> => exporting image

> => exporting layers

> => writing image sha256:478c4f169585d0d425f08f722ac4b3bf23f47e5360b5cfebd4d437fd1c53

> => naming to docker.io/library/jobportal

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

Docker Desktop

Work Space\Web Apps\Jobportal\docker images

jobportal:latest

478c4f169585

Around a minute ago

1.08GB

Docker Desktop

Work Space\Web Apps\Jobportal\docker run -p 5000:5000 jobportal

* 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 11:48:40] "GET / HTTP/1.1" 200 -

172.17.0.1 - - [22/Oct/2022 11:48:51] "GET /css/style.css HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:48:51] "GET /static/img/smartinternz.png HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:49:33] "GET /assets/img/favicon-32x32.png HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:49:43] "GET /login HTTP/1.1" 200 -

172.17.0.1 - - [22/Oct/2022 11:49:44] "GET /css/style.css HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:49:44] "GET /static/img/smartinternz.png HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:50:18] "POST /login HTTP/1.1" 200 -

172.17.0.1 - - [22/Oct/2022 11:50:18] "GET /static/img/smartinternz.png HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:50:18] "GET /css/style.css HTTP/1.1" 404 -

172.17.0.1 - - [22/Oct/2022 11:50:31] "GET /login HTTP/1.1" 200 -

sheep-logo

LOGIN

REGISTER

CONTACT US

Aboutus

Mission

JOBPORTAL is an edTech organization with a vision to bridge the gap between academia & industry. Our outcome-based experiential learning programs on emerging technologies (Internet of Things, Machine Learning, Data Science, Artificial Intelligence, Robotics) are building skilled entry - level engineers, for the corporate world. .

Vission

Our main objective is to bridge the existing gaps between prevailing industry standards and what the academics offer to the graduates while passing out of university. Jobportal offers suitable skill deployment and training to the young talent before on boarding their first job. Our skill development programs are designed

=>Pushing image to docker hub

```
C:\Windows\System32\cmd.exe

D:\1 Work Space\Web Apps\Jobportal>docker image tag jobportal sajeethguru/sajee:jobportal

D:\1 Work Space\Web Apps\Jobportal>docker push sajeethguru/sajee:jobportal
The push refers to repository [docker.io/sajeethguru/sajee]
be54ef4e97eb: Pushed
3de59cda81ee: Layer already exists
cf207e85158: Layer already exists
fcd4017df3: Layer already exists
bb49da2eeef9: Layer already exists
aad4808c19f6: Layer already exists
8ba9f690ebba: Layer already exists
3e60f5d9ef9f: Layer already exists
1e18e7e1fcc2: Layer already exists
c3a0d593ed24: Retrying in 1 second
26a59dc63be4: Retrying in 1 second
8bf4d2b0de72: Retrying in 1 second
31892cc314cb: Retrying in 1 second
11936051f93b: Retrying in 1 second
get/http: TLS handshake timeout

D:\1 Work Space\Web Apps\Jobportal>docker push sajeethguru/sajee:jobportal
The push refers to repository [docker.io/sajeethguru/sajee]
get "https://registry-1.docker.io/v2/": Failed to lookup host: registry-1.docker.io

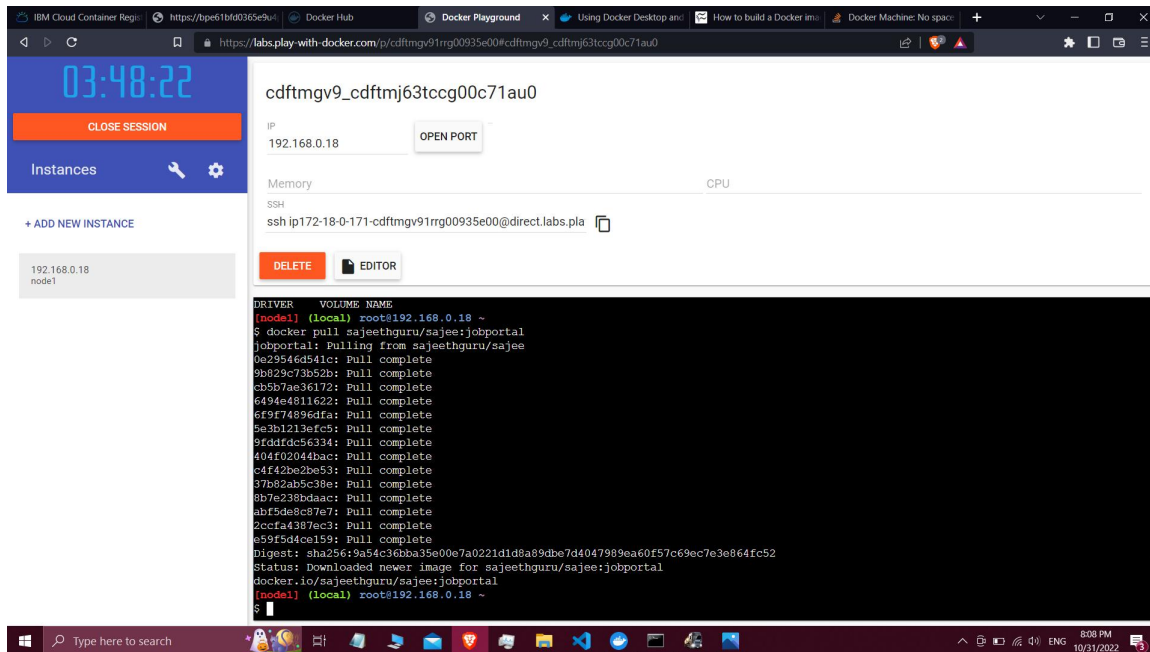
D:\1 Work Space\Web Apps\Jobportal>docker image tag jobportal sajeethguru/sajee:jobportal

D:\1 Work Space\Web Apps\Jobportal>docker push sajeethguru/sajee:jobportal
The push refers to repository [docker.io/sajeethguru/sajee]
get "https://registry-1.docker.io/v2/": Failed to lookup host: registry-1.docker.io

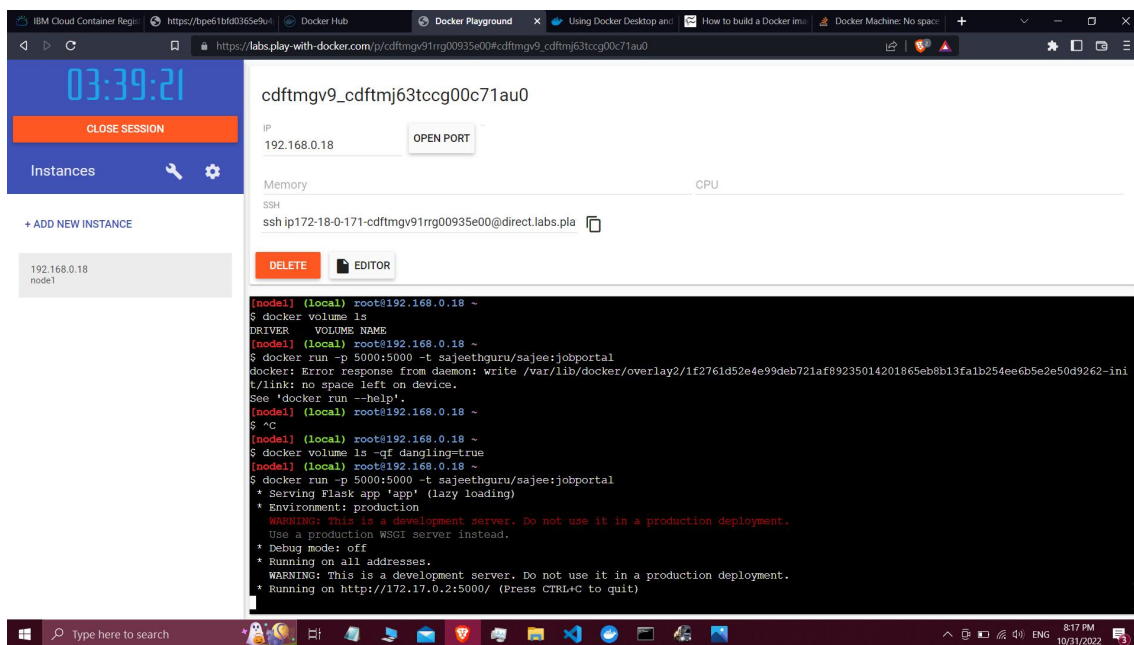
D:\1 Work Space\Web Apps\Jobportal>docker image push sajeethguru/sajee:jobportal
The push refers to repository [docker.io/sajeethguru/sajee]
be54ef4e97eb: Layer already exists
3de59cda81ee: Layer already exists
cf207e85158: Layer already exists
fcd4017df3: Layer already exists
bb49da2eeef9: Layer already exists
aad4808c19f6: Layer already exists
8ba9f690ebba: Layer already exists
3e60f5d9ef9f: Layer already exists
1e18e7e1fcc2: Layer already exists
c3a0d593ed24: Layer already exists
26a59dc63be4: Layer already exists
8bf4d2b0de72: Layer already exists
31892cc314cb: Layer already exists
11936051f93b: Layer already exists
jobportal: digest: sha256:5a4c436bba35e08e7a0221d1d8a89d8e7d4047989ea69f5c7c69cc7e1e864fc52 size: 3262

D:\1 Work Space\Web Apps\Jobportal>
```

=> Pulling the jobportal image from docker hub in docker playground:



=> Running the pulled image:



OPEN PORT

Memory

CPU

SSH

ssh ip172-18-0-171-cdfmgv91rrg00935e00@direct.labs.pla

DELETE

EDITOR

```
$ docker run -p 5000:5000 -t sajeethguru/sajee:jobportal
* 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)
172.18.0.1 - - [31/Oct/2022 14:48:04] "GET / HTTP/1.1" 200 -
172.18.0.1 - - [31/Oct/2022 14:48:04] "GET /css/style.css HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:48:05] "GET /static/img/smartinternz.png HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:48:14] "GET /assets/img/favicon-32x32.png HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:48:38] "GET /login HTTP/1.1" 200 -
172.18.0.1 - - [31/Oct/2022 14:48:39] "GET /css/style.css HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:48:40] "GET /static/img/smartinternz.png HTTP/1.1" 404 -
{"USERNAME": "maddy", "EMAIL": "maddy@gmail.com", "PASSWORD": "mk"}
172.18.0.1 - - [31/Oct/2022 14:48:56] "POST /login HTTP/1.1" 200 -
172.18.0.1 - - [31/Oct/2022 14:48:57] "GET /css/style.css HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:48:59] "GET /static/img/smartinternz.png HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:49:07] "GET /logout HTTP/1.1" 200 -
172.18.0.1 - - [31/Oct/2022 14:49:07] "GET /css/style.css HTTP/1.1" 404 -
172.18.0.1 - - [31/Oct/2022 14:49:09] "GET /static/img/smartinternz.png HTTP/1.1" 404 -
```

JOBPORTAL | HOME

Not secure | http://ip172-18-0-171-cdfmgv...

sheep-logo

LOGINREGISTERCONTACT US

Aboutus

Mission

JOBPORTAL is an edTech organization with a vision to bridge the gap between academia & industry. Our outcome-based experiential learning programs on emerging technologies (Internet of Things, Machine Learning, Data Science, Artificial Intelligence, Robotics) are building skilled entry-level engineers, for the corporate world..

Vission

Our main objective is to bridge the existing gaps between prevailing industry standards and what the academics offer to the graduates while passing out of university. Jobportal offers suitable skill deployment and training to the young talent before on boarding their first job. Our skill development programs are designed

Type here to search

8:19 PM 10/31/2022

3.Create a IBM Container Registry and deploy jobportal app:

=>Pushing image to Container registry:

```
Administrator C:\Windows\System32\cmd.exe
D:\1 Work Space\Web Apps\Jobportal>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> 810019106068@smartinternz.com

Password>
Authenticating...
OK

Targeted account Sajeeth Guru G P's Account (6d963594c60f4f6e89d33f009aac2bde)

Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 1
Targeted region au-syd

API endpoint: https://cloud.ibm.com
Region: au-syd
User: 810019106068@smartinternz.com
Account: Sajeeth Guru G P's Account (6d963594c60f4f6e89d33f009aac2bde)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

D:\1 Work Space\Web Apps\Jobportal>ibmcloud cr region-set ap-south
The region is set to 'ap-south', the registry is 'au.icr.io'.

OK

D:\1 Work Space\Web Apps\Jobportal>ibmcloud cr login
Logging 'docker' in to 'au.icr.io'...
Logged in to 'au.icr.io'.

OK

D:\1 Work Space\Web Apps\Jobportal>ibmcloud cr image-list
Listing images...

Repository          Tag      Digest          Namespace    Created      Size    Security status
au.icr.io/sajeeth/loginapp  latest  a7f272edbfdd    sajeeth      3 weeks ago  435 MB  -

OK

D:\1 Work Space\Web Apps\Jobportal>docker tag jobportal au.icr.io/sajeeth/jobportal

D:\1 Work Space\Web Apps\Jobportal>docker push au.icr.io/sajeeth/jobportal
Using default tag: latest
The push refers to repository [au.icr.io/sajeeth/jobportal]
bc54ef4e97eb: Retrying in 1 second
3de59cda81ee: Retrying in 1 second
cf207e865158: Pushing [=====] 41.98kB
afe94017dff3: Retrying in 1 second
bb49da2eeef9: Retrying in 1 second
aa4c908c19f6: Retrying in 10 seconds
8b9f69e0ba: Retrying in 1 second
2ee07d59ef9f: Retrying in 10 seconds
1e18e7e1fcc2: Retrying in 1 second
c3a0d593ed24: Retrying in 14 seconds
26a504e63bed: Retrying in 14 seconds
8bf42db0de72: Waiting
31892cc314cb: Waiting
119360931f93b: Waiting
Failed to lookup host: au.icr.io

D:\1 Work Space\Web Apps\Jobportal>
```



```
Administrator: C:\Windows\System32\cmd.exe
The push refers to repository [au.icr.io/sajeeth/jobportal]
be54ef4e97eb: Layer already exists
3de59cda81ee: Layer already exists
cf207e865158: Layer already exists
afe94017df3: Layer already exists
bb49da2eeef9: Layer already exists
aa4c808c19f6: Layer already exists
8ba9f690e8ba: Layer already exists
3e607d59ef9f: Layer already exists
1e18e7elfcc2: Layer already exists
c3a0d992ed24: Pushed
26a594e63be4: Retrying in 1 second
8bf42db0de72: Layer already exists
31892cc314cb: Layer already exists
11936051f93b: Pushing [=====>] 123.9MB/123.9MB
net/http: TLS handshake timeout

D:\1 Work Space\Web Apps\Jobportal>docker push au.icr.io/sajeeth/jobportal
Using default tag: latest
The push refers to repository [au.icr.io/sajeeth/jobportal]
be54ef4e97eb: Layer already exists
3de59cda81ee: Layer already exists
cf207e865158: Layer already exists
afe94017df3: Layer already exists
bb49da2eeef9: Layer already exists
aa4c808c19f6: Layer already exists
8ba9f690e8ba: Layer already exists
3e607d59ef9f: Layer already exists
1e18e7elfcc2: Layer already exists
c3a0d992ed24: Layer already exists
26a594e63be4: Pushed
8bf42db0de72: Layer already exists
31892cc314cb: Layer already exists
11936051f93b: Pushed
latest: digest: sha256:9a54c36bba35e00e7a0221d1d8a89dbe7d4047989ea60f57c69ec7e3e864fc52 size: 3262

D:\1 Work Space\Web Apps\Jobportal>docker cr images
docker: 'cr' is not a docker command.
See 'docker --help'

D:\1 Work Space\Web Apps\Jobportal>ibmcloud cr image-list
Listing images...

Repository          Tag      Digest          Namespace   Created      Size      Security status
au.icr.io/sajeeth/jobportal  latest  9a54c36bba35   sajeeth     4 days ago   435 MB   -
au.icr.io/sajeeth/loginapp   latest  a7f272edbdfd   sajeeth     3 weeks ago  435 MB   -

OK

D:\1 Work Space\Web Apps\Jobportal>
```

4. Create a Kubernetes cluster in IBM cloud and deploy jobportal image and also expose the same app to run in nodeportal:

=> deploying and exposing jobportal image into kubernetes cluster:

```
Administrator: C:\Windows\System32\cmd.exe
API endpoint: https://cloud.ibm.com
Region: au-syd

Email> 810019106068@smartinternz.com

Password>
Authenticating...
OK

Targeted account Sajeeth Guru G P's Account (6d963594c60f4f6e89d33f009aac2bde)

API endpoint: https://cloud.ibm.com
Region: au-syd
User: 810019106068@smartinternz.com
Account: Sajeeth Guru G P's Account (6d963594c60f4f6e89d33f009aac2bde)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

D:\1 Work Space\Web Apps\Jobportal>ibmcloud ks cluster config -c cdbc2d9f007rmkanc67g
OK
The configuration for cdbc2d9f007rmkanc67g was downloaded successfully.

Added context for cdbc2d9f007rmkanc67g to the current kubeconfig file.
You can now execute 'kubectl' commands against your cluster. For example, run 'kubectl get nodes'.
If you are accessing the cluster for the first time, 'kubectl' commands might fail for a few seconds while RBAC synchronizes.

D:\1 Work Space\Web Apps\Jobportal>kubectl create -f deployment.yaml
deployment.apps/jobportal created

D:\1 Work Space\Web Apps\Jobportal>kubectl create -f service.yaml
service/jobportal created

D:\1 Work Space\Web Apps\Jobportal>
```


=>Running the app in nodeport:

The image shows two side-by-side browser windows. The left window displays the Kubernetes dashboard at <https://eu-de.containers.cloud.ibm.com/kube...>. The dashboard is in the 'Workloads' section, showing a 'Running: 1' status. The left sidebar lists various Kubernetes resources: Workloads (Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, Replication Controllers, Stateful Sets), Service (Ingresses, Services), and Config and Storage (Config Maps, Persistent Volume Claims, Secrets, Storage Classes). The main content area shows 'Replica Sets' with a table containing one entry: 'jobportal' with a green status icon and a 'Show all' link. Below this, the 'Pods' section shows a table with one entry: 'jobportal-6d59c9fbb7-b5v56' with a green status icon and 'Show all' and 'Show a' links. The 'Replica Sets' section also shows one entry: 'jobportal-6d59c9fbb7' with a green status icon and a 'Show all' link.

The right window displays the 'JOBPORTAL | HOME' web application at <http://159.122.187.194:30428>. The page has a dark header with the 'sheep-logo' and navigation buttons: 'LOGIN', 'REGISTER', and 'CONTACT US'. The main content area is titled 'Aboutus' and contains two sections: 'Mission' and 'Vission' (sic). The 'Mission' section states: 'JOBPORTAL is an edTech organization with a vision to bridge the gap between academia & industry. Our outcome-based experiential learning programs on emerging technologies (Internet of Things, Machine Learning, Data Science, Artificial Intelligence, Robotics) are building skilled entry - level engineers, for the corporate world. .'. The 'Vission' section states: 'Our main objective is to bridge the existing gaps between prevailing industry standards and what the academics offer to the graduates while passing out of university. Jobportal offers suitable skill deployment and training to the young talent before on boarding their first job. Our skill development programs are designed'.