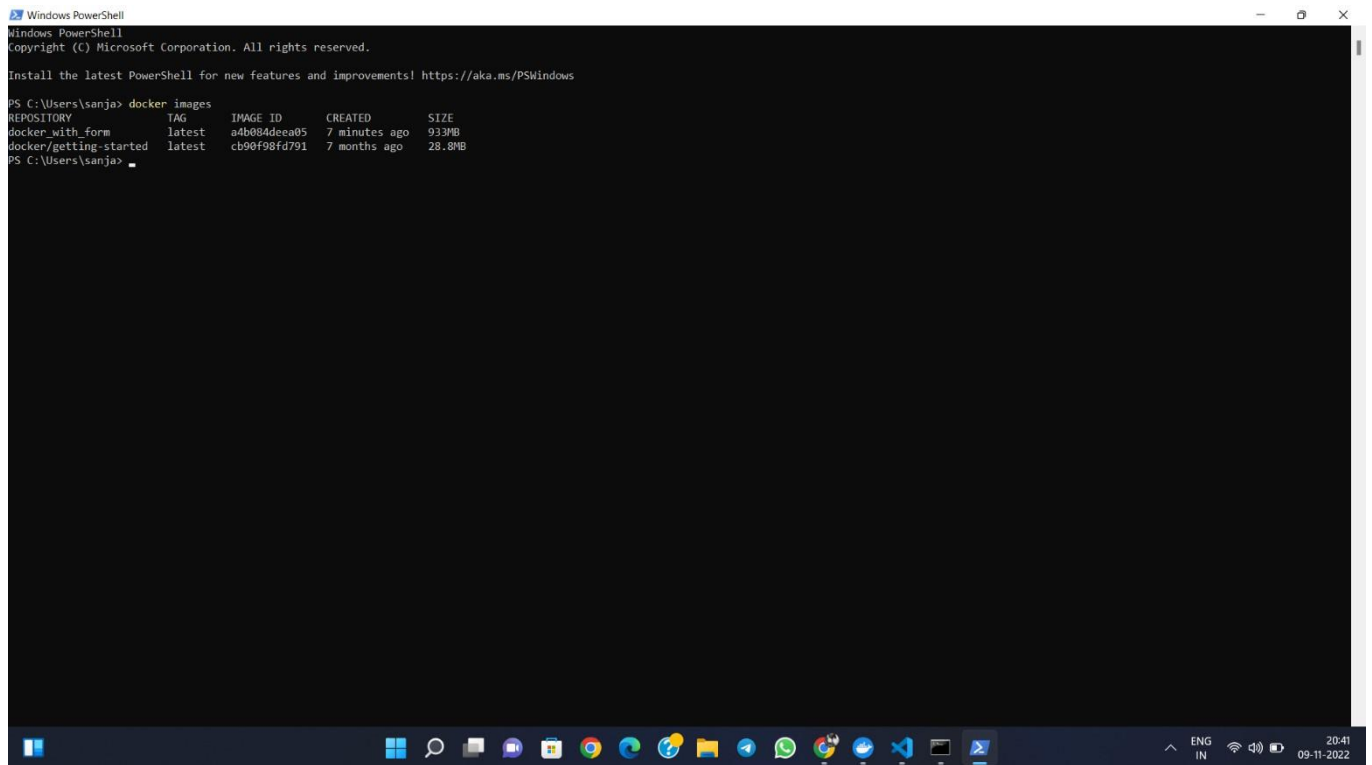


Assignment-4

Assignment Date	29 October 2022
Student Name	Pratheesh V R
Student Roll Number	610519104077
Maximum Marks	2 Marks

Question:

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



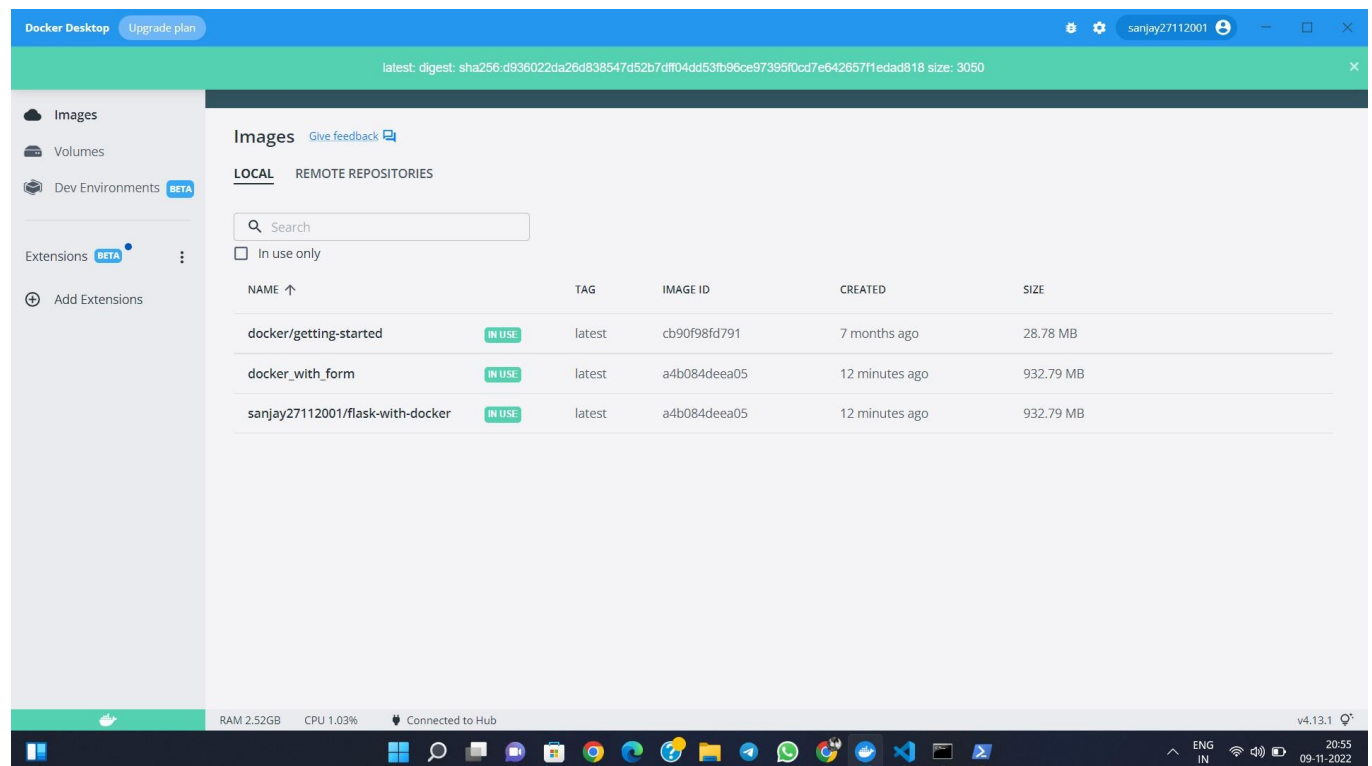
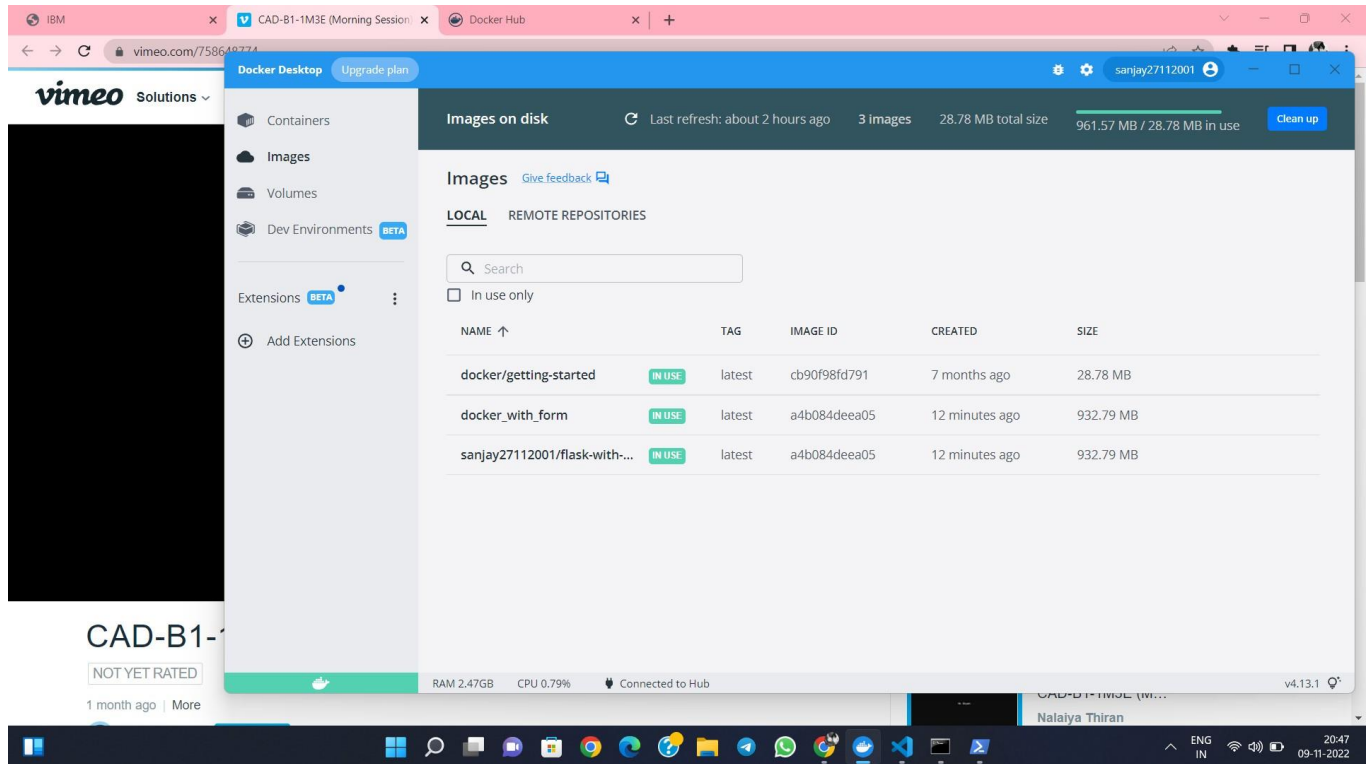
The screenshot shows a Windows PowerShell terminal window with the following content:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

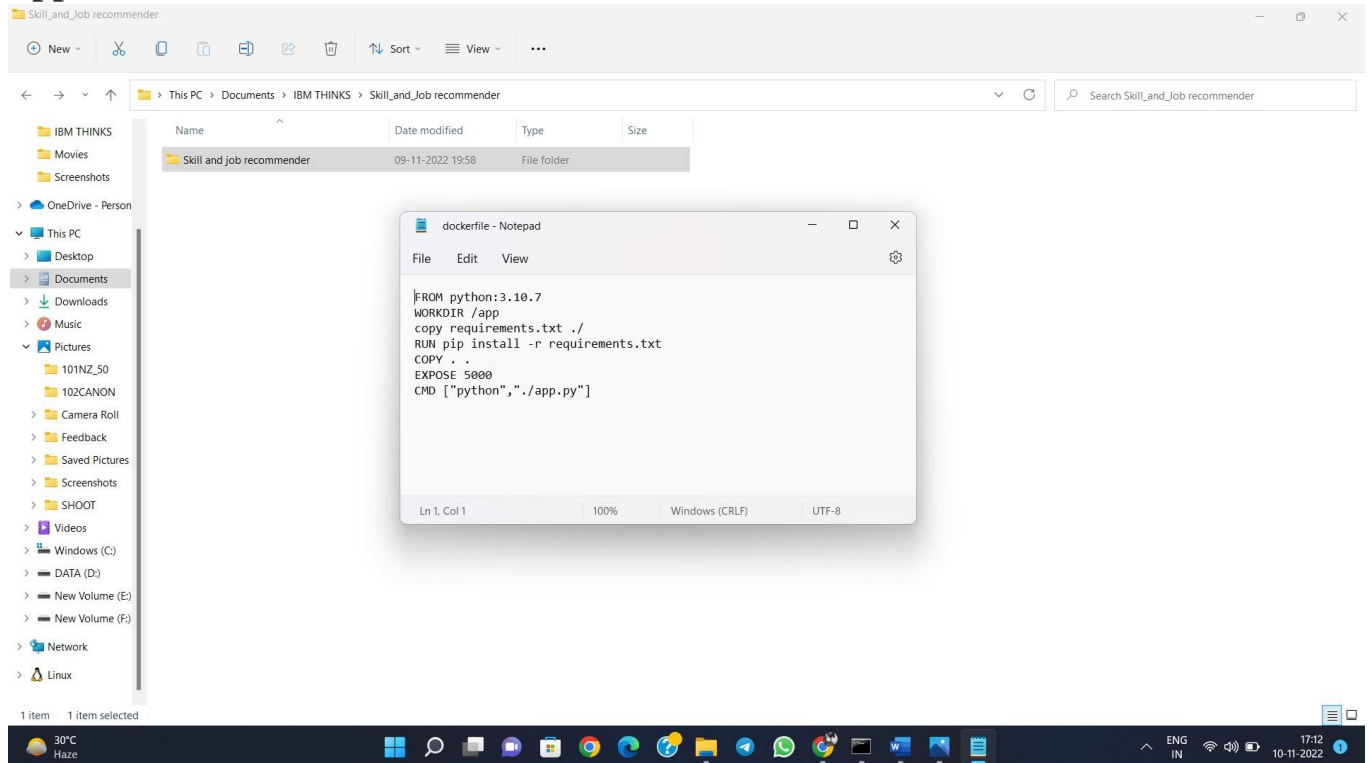
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\sanja> docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
docker_with_form     latest             a4b084deea05       7 minutes ago      933MB
docker/getting-started latest             cb90f98fd791       7 months ago       28.8MB
PS C:\Users\sanja>
```

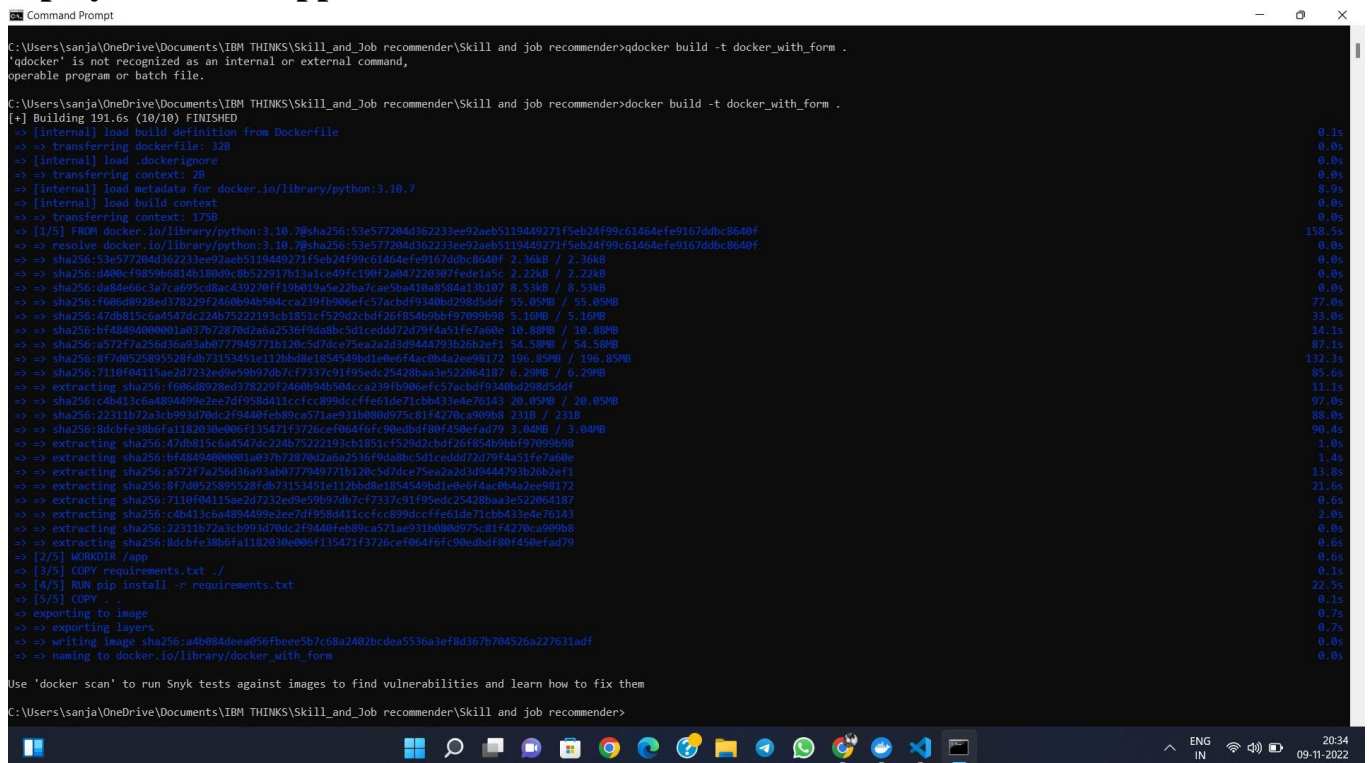
The terminal window is titled "Windows PowerShell" and shows the output of the `docker images` command. The output lists two Docker images: `docker_with_form` (latest tag, 933MB) and `docker/getting-started` (latest tag, 28.8MB). The Windows taskbar is visible at the bottom of the screen.



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



Deploy in docker application



Running in docker desktop

```
Command Prompt - docker run -p 5000:5000 docker_with_form

[Internal] load metadata for docker.io/library/python:3.10.7
[Internal] load build context
[>> transferring context: 175B
[1/5] FROM docker.io/library/python:3.10.7@sha256:53e577204d362233ee92aeb5119449271f5eb24f99c6146defe9167ddbc8640f
[>> resolve docker.io/library/python:3.10.7@sha256:53e577204d362233ee92aeb5119449271f5eb24f99c6146defe9167ddbc8640f
[>> sha256:53e577204d362233ee92aeb5119449271f5eb24f99c6146defe9167ddbc8640f 2.36kB / 2.36kB
[>> sha256:d400cf98596814b18049c8b522917b131e40f9c190f2a047220307f0de1a5c 2.22kB / 2.22kB
[>> sha256:d584e66c3a7ca95cd8ac439270ff19b019a5e22ba7cae5ba410a8584a13b107 8.53kB / 8.53kB
[>> sha256:f606d9328ed378229f2460b04b504cca239f906eefc57acbd9340bd298d5ddf 55.05MB / 55.05MB
[>> sha256:47db815c6a547dc224b75222193cb1851cf529d2cbdf26f854b9bbf97099b98 5.16MB / 5.16MB
[>> sha256:bf48494000001a037b72870d2a6a2536f9da8bc5d1ceddd72d79f4a51fe7a60e 10.88MB / 10.88MB
[>> sha256:a572f7a256d36a93ab077949771b120c5d7dce75ea2a2d3d9444793b26b2ef1 54.58MB / 54.58MB
[>> sha256:8f7d0525895528f0b73153451e112bbd8e1854549bd1e0e6f4ac0b4a2ee98172 196.85MB / 196.85MB
[>> sha256:7110f04115ae207232e09e59b970b7cfc7337c91f95edc25420ba3c522064187 6.29MB / 6.29MB
[>> extracting sha256:f606d9328ed378229f2460b04b504cca239f906eefc57acbd9340bd298d5ddf
[>> sha256:cdb413c6a4894499e2ee7df958d411ccfcc899dcccfe61de71cbb433e4e76143 20.05MB / 20.05MB
[>> sha256:22311b72a3cb993d70dc2f9440feb89ca571ae931b080d975c81f4270ca909b8 231B / 231B
[>> sha256:8dcbf830b6fa182030e006f135471f3726cef064f6fc90edbdff80f450efad79 3.04MB / 3.04MB
[>> extracting sha256:47db815c6a547dc224b75222193cb1851cf529d2cbdf26f854b9bbf97099b98
[>> extracting sha256:bf48494000001a037b72870d2a6a2536f9da8bc5d1ceddd72d79f4a51fe7a60e
[>> extracting sha256:a572f7a256d36a93ab077949771b120c5d7dce75ea2a2d3d9444793b26b2ef1
[>> extracting sha256:8f7d0525895528f0b73153451e112bbd8e1854549bd1e0e6f4ac0b4a2ee98172
[>> extracting sha256:7110f04115ae207232e09e59b970b7cfc7337c91f95edc25420ba3c522064187
[>> extracting sha256:cdb413c6a4894499e2ee7df958d411ccfcc899dcccfe61de71cbb433e4e76143
[>> extracting sha256:22311b72a3cb993d70dc2f9440feb89ca571ae931b080d975c81f4270ca909b8
[>> extracting sha256:8dcbf830b6fa182030e006f135471f3726cef064f6fc90edbdff80f450efad79
[2/5] WORKDIR /app
[3/5] COPY requirements.txt ./
[4/5] RUN pip install -r requirements.txt
[5/5] COPY . .
[>> exporting to image
[>> exporting layers
[>> writing image sha256:a4b084deea056fbee5b7c68a2402bcdea5536a3ef8d367b704526a227631adf
[>> naming to docker.io/library/docker_with_form

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

C:\Users\sanja\OneDrive\Documents\IBM THINKS\Skill_and_Job recommender\Skill and job recommender>docker run -p 5000:5000 docker_with_form
* 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://172.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [09/Nov/2022 15:06:52] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [09/Nov/2022 15:06:52] "GET /favicon.ico HTTP/1.1" 200 -
```

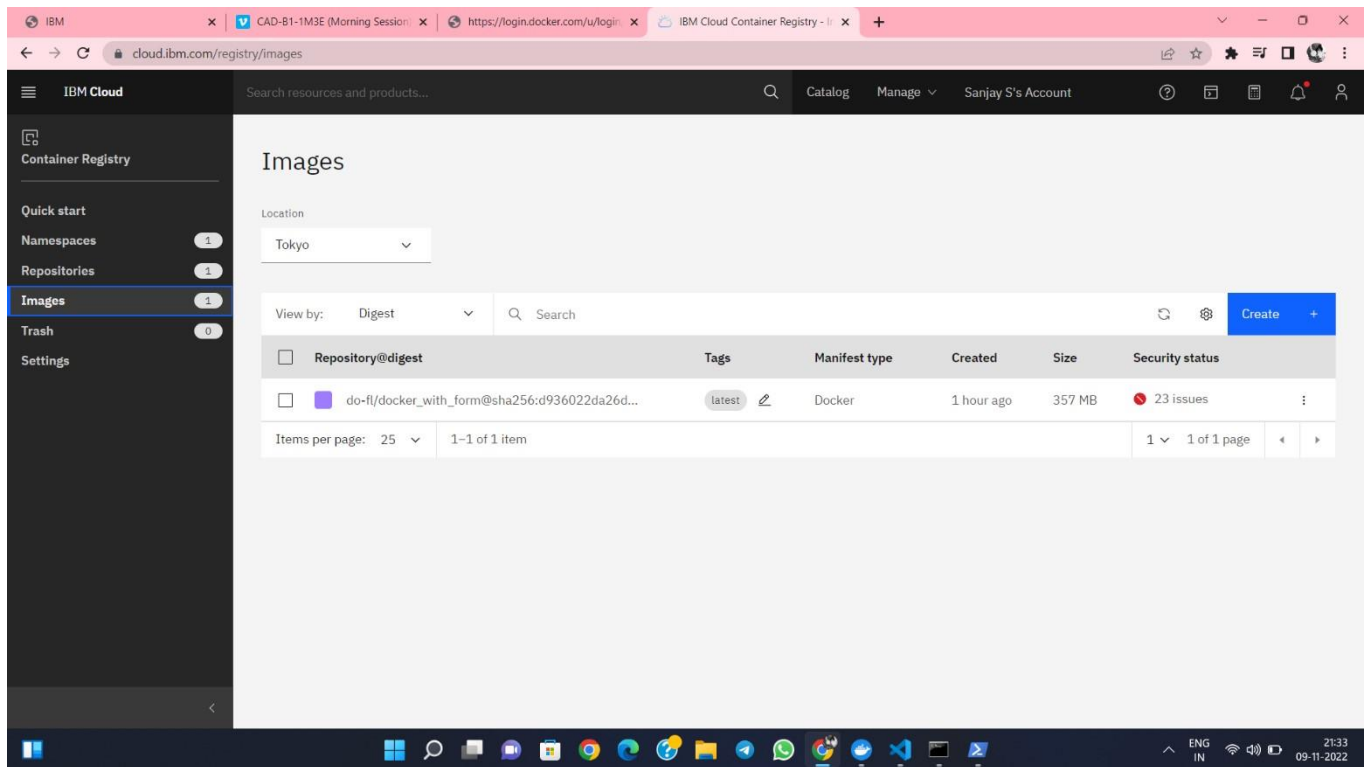
3. Create a IBM container registry and deploy hello world app or job portal app.

```
Windows PowerShell

Unauthorized: The login credentials are not valid, or your IBM Cloud account is not active.
PS C:\Users\sanja> ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
FAILED
Failed to 'docker login' to 'jp.icr.io' with error: Error saving credentials: error storing credentials - err: exit status 1, out: 'getting entitlement: request to https://accounts-api.s.us-east-1.aws.dckr.io/v2/
/Users/sanjay27112001/orgs/?page_size=2147483647 failed with status 403: {'message': 'access is forbidden with a JMT issued from a personal access token', 'errinfo': {}}'
.

PS C:\Users\sanja> ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
logged in to 'jp.icr.io'.

OK
PS C:\Users\sanja> docker push jp.icr.io/do-fl/docker_with_form:latest
The push refers to repository [jp.icr.io/do-fl/docker_with_form]
708e448083b7: Preparing
2d116cd9a8cf: Preparing
f5307bc62802: Preparing
2f59fa15ea7: Preparing
cf39b0e400ea: Preparing
703b971c0b90: Waiting
d172a9e6f9e6: Waiting
0c7daf9a72c8: Waiting
75ba02937496: Waiting
288cf3a40e32: Waiting
186da837555d: Waiting
955c9335e041: Waiting
8e079fee2186: Waiting
```



Deploy hello world or job portal

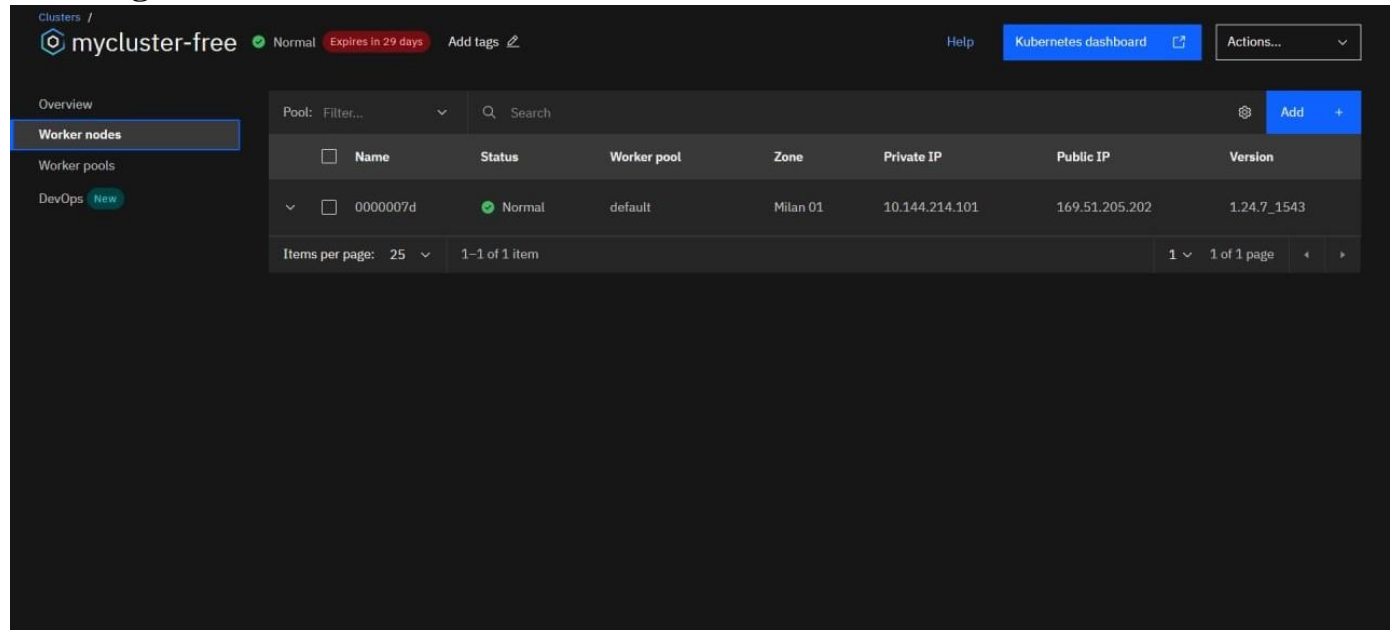
```
Windows PowerShell
Unauthorized: The login credentials are not valid, or your IBM Cloud account is not active.
PS C:\Users\sanja> ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
FAILED
Failed to 'docker login' to 'jp.icr.io' with error: Error saving credentials - err: exit status 1, out: 'getting entitlement: request to https://accounts-api.s.us-east-1.aws.dckr.io/v2/users/sanjay27112001/orgs/?page_size=2147483647 failed with status 403: {"message":"access is forbidden with a JWT issued from a personal access token","errinfo":{}}'

PS C:\Users\sanja> ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.

OK
PS C:\Users\sanja> docker push jp.icr.io/do-fl/docker_with_form:latest
The push refers to repository [jp.icr.io/do-fl/docker_with_form]
708e4d48083b7: Pushed
2d116cd9a8cf: Pushed
f5307bc62862: Pushed
2f59fa15bea7: Pushed
cf399be408ea: Pushed
793b971ccb99: Pushed
d172a9e6f9e6: Pushed
0c7daf9a72c8: Pushed
79ba02937496: Pushed
288cf3a4e32: Pushed
186da837555d: Pushed
955c9335e041: Pushed
8e079fee2186: Pushed
latest: digest: sha256:d936022da26d838547d52b7dff04dd53fb96ce97395f0cd7e642657f1edad818 size: 3050
PS C:\Users\sanja>
```

4. Create a Kubernetes cluster in IBM cloud and deploy hello world image or job portal image and also expose the same app to run in node port.

Creating a Kubernetes cluster in IBM cloud



The screenshot shows the IBM Cloud Clusters dashboard for a cluster named 'mycluster-free'. The cluster is in a 'Normal' state and expires in 29 days. The 'Worker nodes' tab is selected, showing a table with one worker node.

Name	Status	Worker pool	Zone	Private IP	Public IP	Version
0000007d	Normal	default	Milan 01	10.144.214.101	169.51.205.202	1.24.7_1543

Expose the same app to run in noteport

```
C:\Users\RISHI>cd C:\Users\RISHI\Desktop\Assignment-4\assignment4
C:\Users\RISHI\Desktop\Assignment-4\assignment4>kubectl apply -f kubernetes/deployment.yaml
error: the path "kubernetes/deployment.yaml" does not exist


C:\Users\RISHI\Desktop\Assignment-4\assignment4>ibmcloud ks cluster config --cluster cd1tlpof0uv2a9hfiubg
The configuration for cd1tlpof0uv2a9hfiubg was downloaded successfully.

Added context for cd1tlpof0uv2a9hfiubg 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.


C:\Users\RISHI\Desktop\Assignment-4\assignment4>kubectl apply -f kubernetes/flask_deployment.yaml
error: the path "kubernetes/flask_deployment.yaml" does not exist



C:\Users\RISHI\Desktop\Assignment-4\assignment4>kubectl apply -f kubernetes/flask_deployment.yaml
deployment.apps/flask-app created

C:\Users\RISHI\Desktop\Assignment-4\assignment4>kubectl
```

 **kubernetes**

default

 Search

+

Workloads > Pods

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage






Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
 flask-app-5c85fdb465-fqx8b	Show all	Show all	10.144.214.101	ErrImageNev 0	-	-	-	5 minutes ago
 flask-app-5c85fdb465-gvv9x	Show all	Show all	10.144.214.101	ErrImageNev 0	-	-	-	5 minutes ago
 flask-app-5c85fdb465-wmrb6	Show all	Show all	10.144.214.101	ErrImageNev 0	-	-	-	5 minutes ago
 flask-app-5c85fdb465-xq/5h	Show all	Show all	10.144.214.101	ErrImageNev 0	-	-	-	5 minutes ago
 flask-app-5c85fdb465-zqpb9	Show all	Show all	10.144.214.101	ErrImageNev 0	-	-	-	5 minutes ago