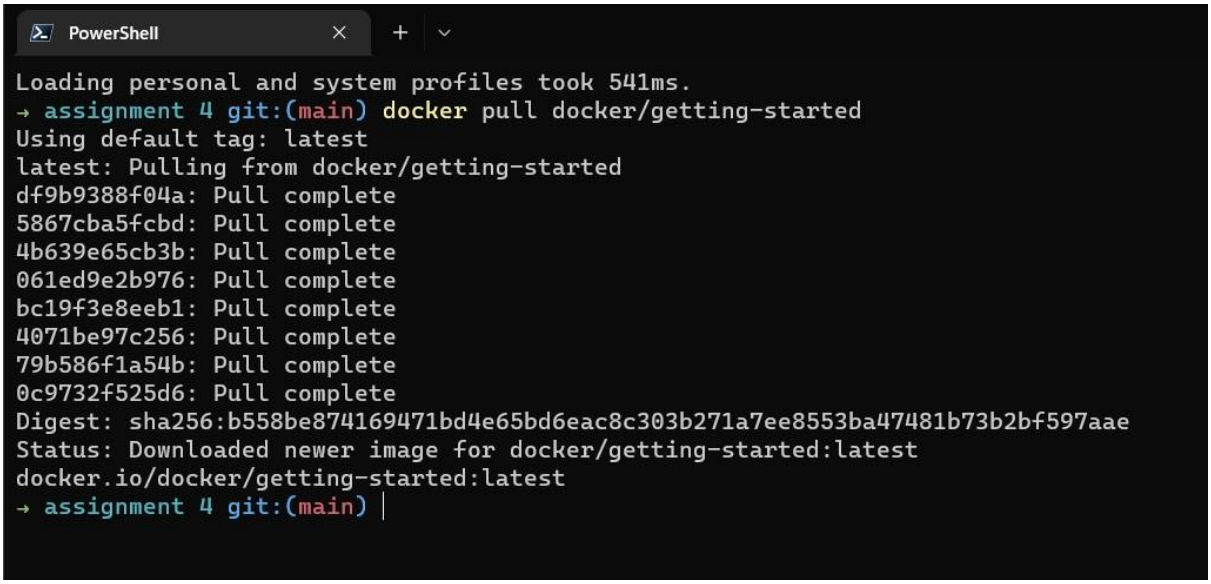
ASSIGNMENT – 4

DOCKER AND KUBERNETES

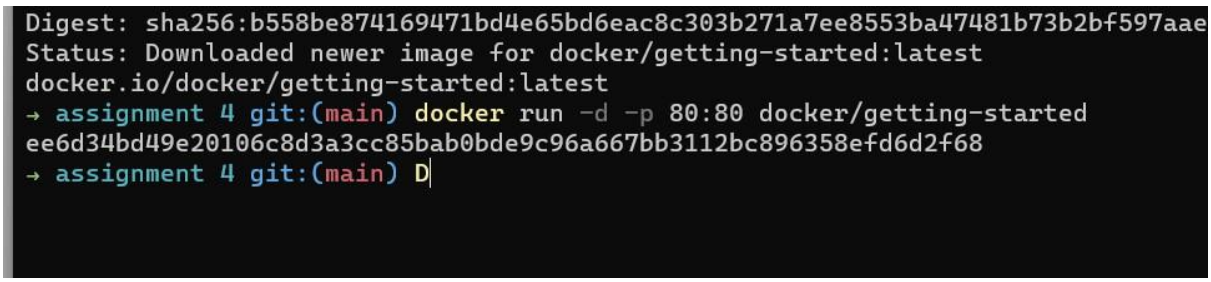
Project Name	Inventory Management for retailers
Team id	PNT2022TMID48534
Maximum Marks	2 marks

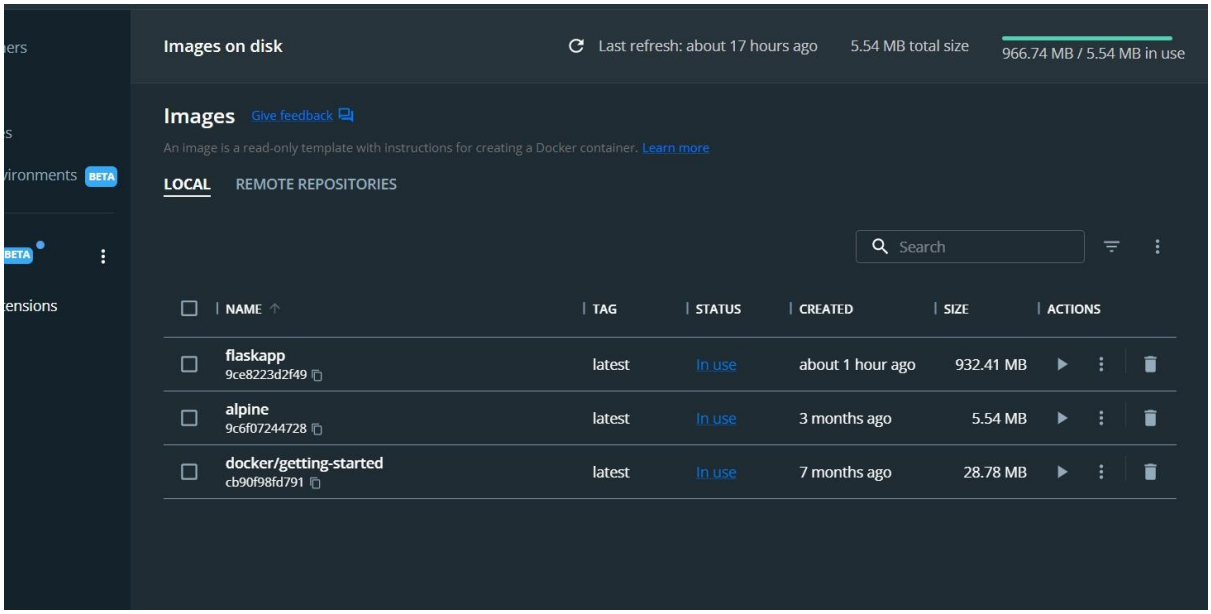
Question-1: pull an image from docker hub and run it in docker playground.

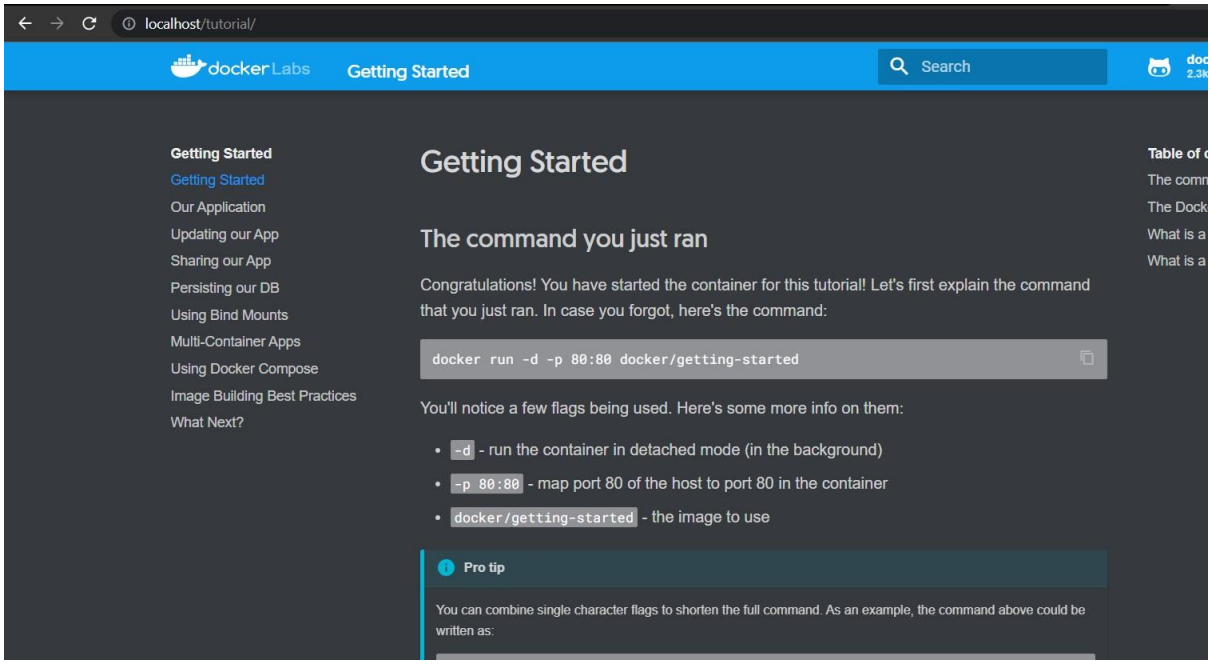
1) pull an image form docker hub



2)runt it in docker playground

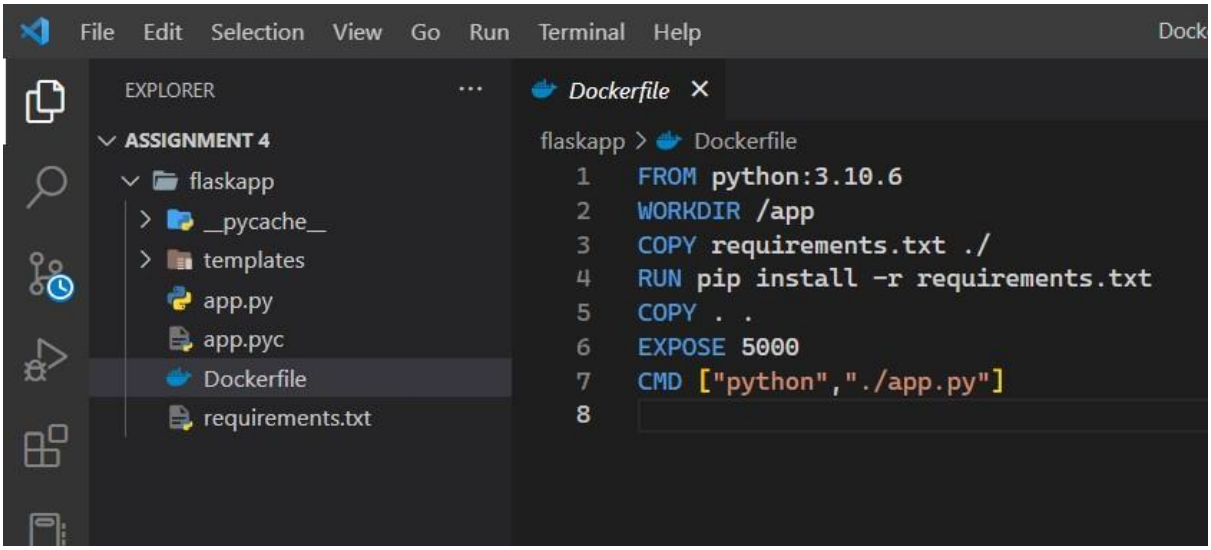



Images on disk
Last refresh: about 17 hours ago
5.54 MB total size
966.74 MB / 5.54 MB in use
Images
Give feedback
An image is a read-only template with instructions for creating a Docker container. Learn more
LOCAL
REMOTE REPOSITORIES
Search
NAME
TAG
STATUS
CREATED
SIZE
ACTIONS
flaskapp
9ce8223d2f49
latest
In use
about 1 hour ago
932.41 MB
alpine
9c6f07244728
latest
In use
3 months ago
5.54 MB
docker/getting-started
cb90f98fd791
latest
In use
7 months ago
28.78 MB


localhost/tutorial/
docker Labs
Getting Started
Search
Getting Started
Getting Started
Our Application
Updating our App
Sharing our App
Persisting our DB
Using Bind Mounts
Multi-Container Apps
Using Docker Compose
Image Building Best Practices
What Next?
Getting Started
The command you just ran
Congratulations! You have started the container for this tutorial! Let's first explain the command that you just ran. In case you forgot, here's the command:
docker run -d -p 80:80 docker/getting-started
You'll notice a few flags being used. Here's some more info on them:
-d - run the container in detached mode (in the background)
-p 80:80 - map port 80 of the host to port 80 in the container
docker/getting-started - the image to use
Pro tip
You can combine single character flags to shorten the full command. As an example, the command above could be written as:

Question-2: Create a docker file for the job portal application and deploy it in docker application.

1)Creating a docker file for the job portal application

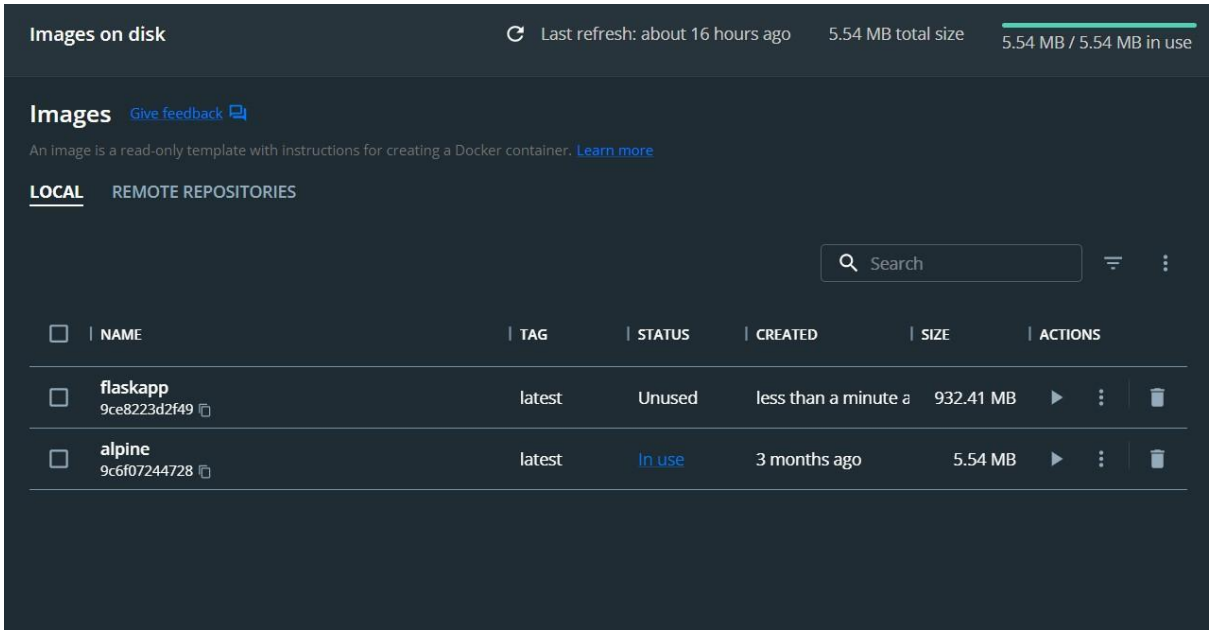


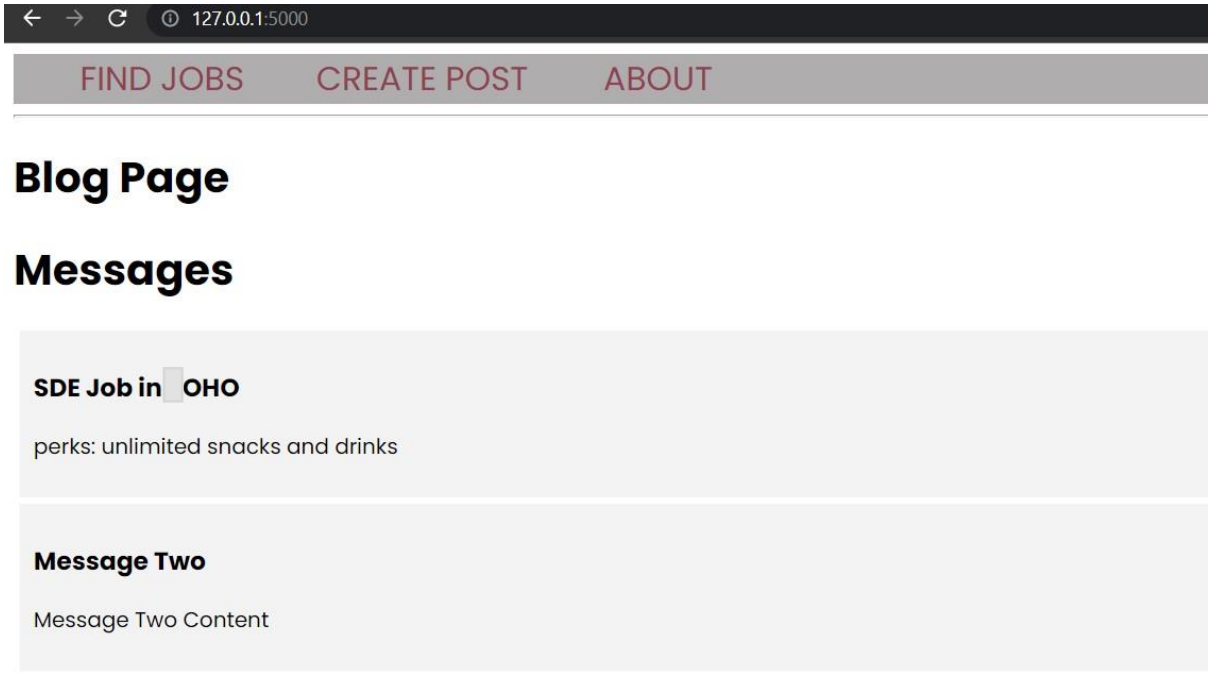

```
unable to prepare context: path "flaskapp" not found
→ flaskapp git:(main) ✗ flask --debug
Usage: flask [OPTIONS] COMMAND [ARGS]...
Try 'flask --help' for help.

Error: Missing command.
→ flaskapp git:(main) ✗ flask --debug run
 * 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 http://127.0.0.1:5000
Press CTRL+C to quit
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 160-502-960
127.0.0.1 - - [05/Nov/2022 10:54:17] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [05/Nov/2022 10:54:18] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [05/Nov/2022 10:54:20] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [05/Nov/2022 10:54:23] "GET /create/ HTTP/1.1" 200 -
127.0.0.1 - - [05/Nov/2022 10:54:26] "GET /create/ HTTP/1.1" 200 -
```

2)deploy in in docker application

```
PowerShell
→ flaskapp git:(main) ✗ docker build -t flaskapp  .
[+] Building 200.2s (11/11) FINISHED
 => [internal] load build definition from Dockerfile                                                0.1s
 => => transferring dockerfile: 179B                                                                0.0s
 => [internal] load .dockerignore                                                                   0.1s
 => => transferring context: 2B                                                                     0.0s
 => [internal] load metadata for docker.io/library/python:3.10.6                                    4.3s
 => [auth] library/python:pull token for registry-1.docker.io                                       0.0s
 => [internal] load build context                                                                   0.1s
 => => transferring context: 8.56kB                                                                 0.0s
 => [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6  189.5s
 => => resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa  0.0s
 => => sha256:d25a66380b10283603ff696d7777bba5cdb1b9126fb0be7d118b9574946bcf84 8.53kB / 8.53kB       0.0s
 => => sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 5.16MB / 5.16MB      10.5s
 => => sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 10.88MB / 10.88MB    23.4s
 => => sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa91052 2.35kB / 2.35kB      0.0s
 => => sha256:8d1f943ceaaf3b3ce05df5c0926e7958836b048b700176bf9c56d8f37ac13fca 2.22kB / 2.22kB      0.0s
 => => sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 55.01MB / 55.01MB    70.5s
 => => sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a 54.58MB / 54.58MB    78.0s
 => => sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB  180.0s
 => => extracting sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e           2.3s
 => => sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB      81.7s
 => => extracting sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4           0.2s
 => => extracting sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6           0.3s
 => => extracting sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a           3.0s
 => => sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB  106.1s
 => => sha256:864a10b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 234B / 234B        82.1s
 => => sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB    86.6s
 => => extracting sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a           7.4s
 => => extracting sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c           0.3s
```

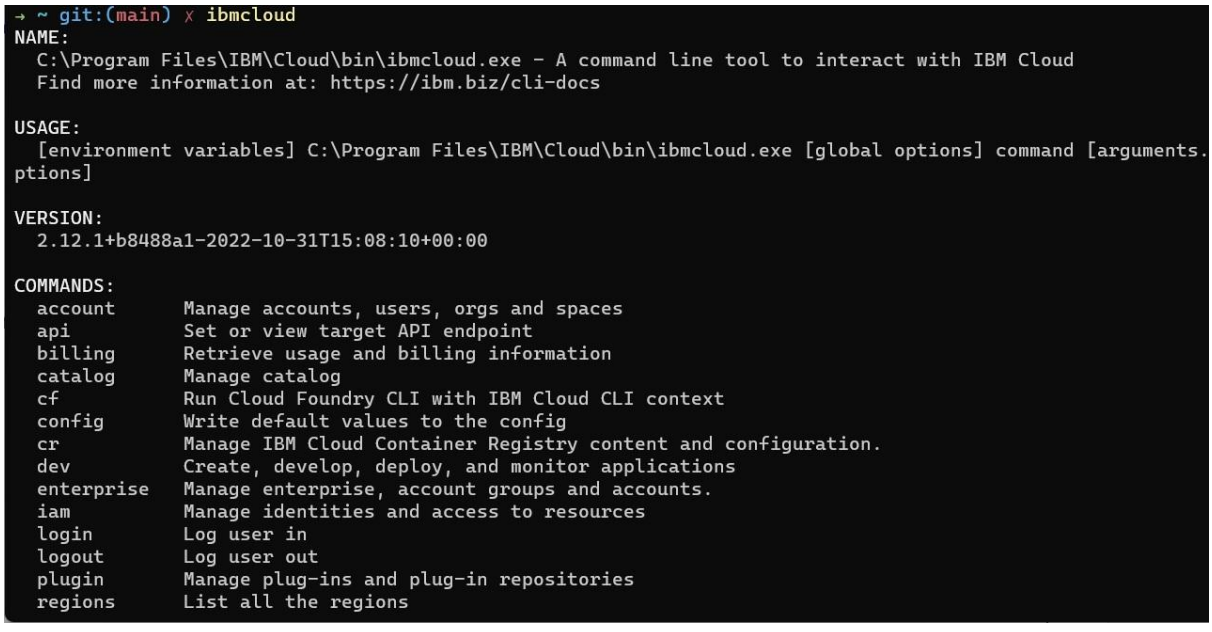

PowerShell
=> => sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 10.88MB / 10.88MB 23.4s
=> => sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a2a0d29677cb03e6aa91052 2.35kB / 2.35kB 0.0s
=> => sha256:8d1f943ceaaf3b3ce05df5c0926e7958836b048b700176bf9c56d8f37ac13fca 2.22kB / 2.22kB 0.0s
=> => sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 55.01MB / 55.01MB 70.5s
=> => sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a 54.58MB / 54.58MB 78.0s
=> => sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB 180.0s
=> => extracting sha256:1671565cc8df8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 2.3s
=> => sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB 81.7s
=> => extracting sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 0.2s
=> => extracting sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 0.3s
=> => extracting sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babef0bf1043c08de1901a 3.0s
=> => sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB 106.1s
=> => sha256:864a10b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 234B / 234B 82.1s
=> => sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB 86.6s
=> => extracting sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 7.4s
=> => extracting sha256:d8092d56ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 0.3s
=> => extracting sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 0.8s
=> => extracting sha256:864a10b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 0.0s
=> => extracting sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 0.3s
=> [2/5] WORKDIR /app 1.1s
=> [3/5] COPY requirements.txt ./ 0.0s
=> [4/5] RUN pip install -r requirements.txt 4.9s
=> [5/5] COPY . . 0.1s
=> exporting to image 0.2s
=> => exporting layers 0.2s
=> => writing image sha256:9ce8223d2f49cc126af77c5b826056fccf1f446e84e6e67fa97b58be5718931e 0.0s
=> => naming to docker.io/library/flaskapp 0.0s
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
→ flaskapp git:(main)


Images on disk
Last refresh: about 16 hours ago
5.54 MB total size
5.54 MB / 5.54 MB in use
Images
Give feedback
An image is a read-only template with instructions for creating a Docker container. Learn more
LOCAL
REMOTE REPOSITORIES
Search
NAME
TAG
STATUS
CREATED
SIZE
ACTIONS
flaskapp
9ce8223d2f49
latest
Unused
less than a minute a
932.41 MB
alpine
9c6f07244728
latest
In use
3 months ago
5.54 MB

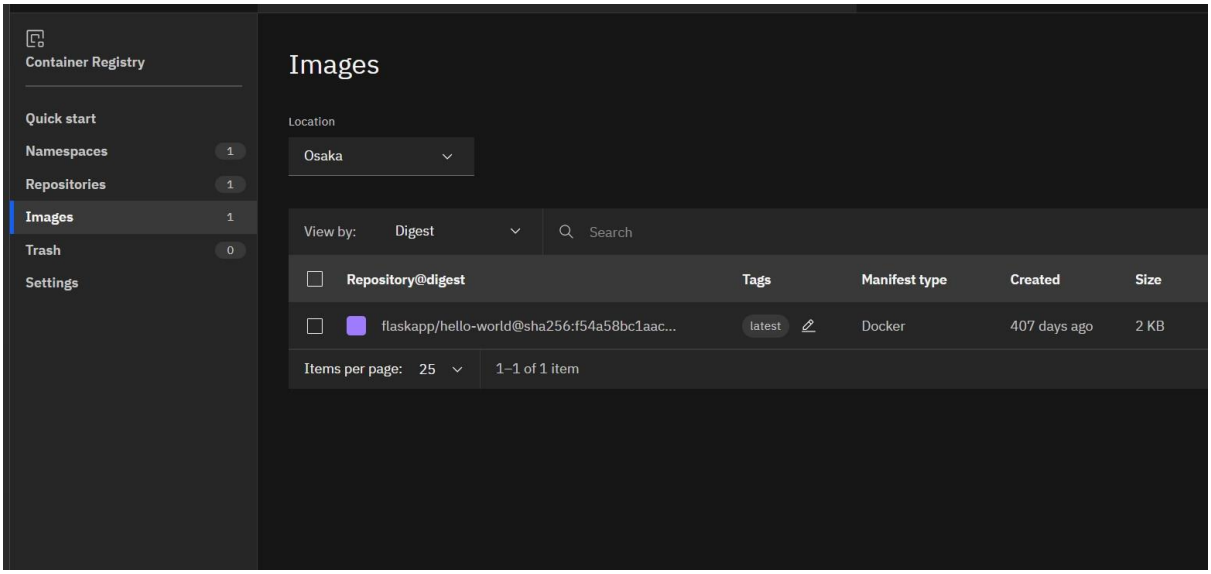


Question-3:Create a IBM container registry and deploy hello world app or jobportalapp 1)

create a IBM container registry

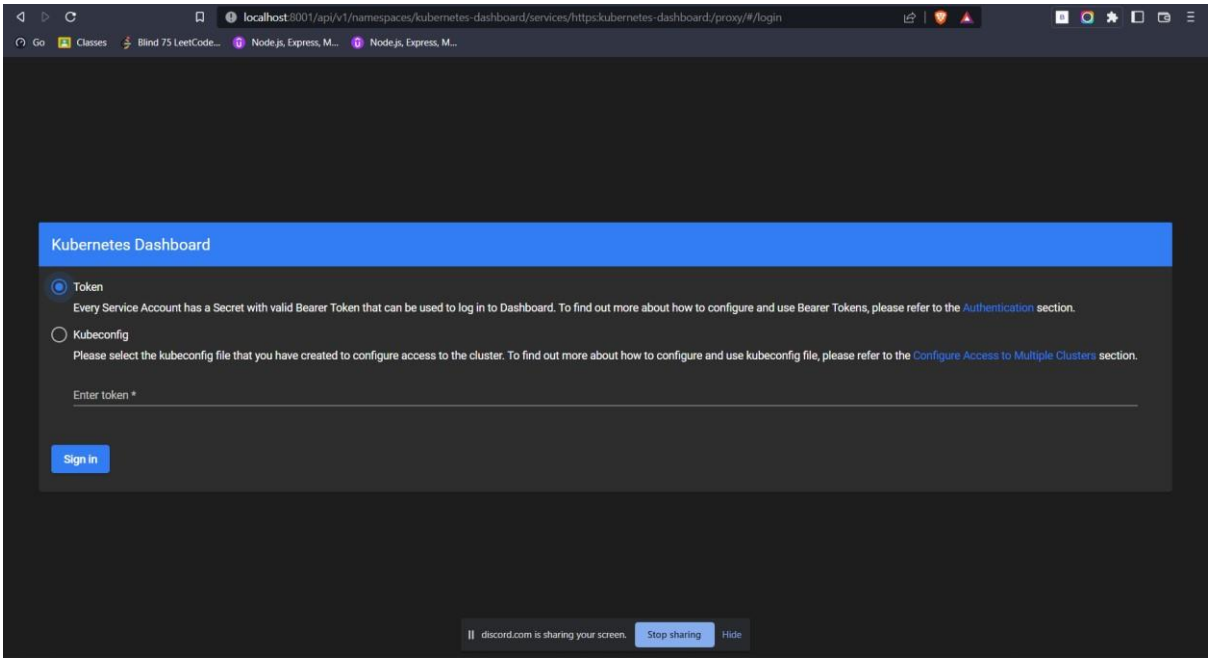


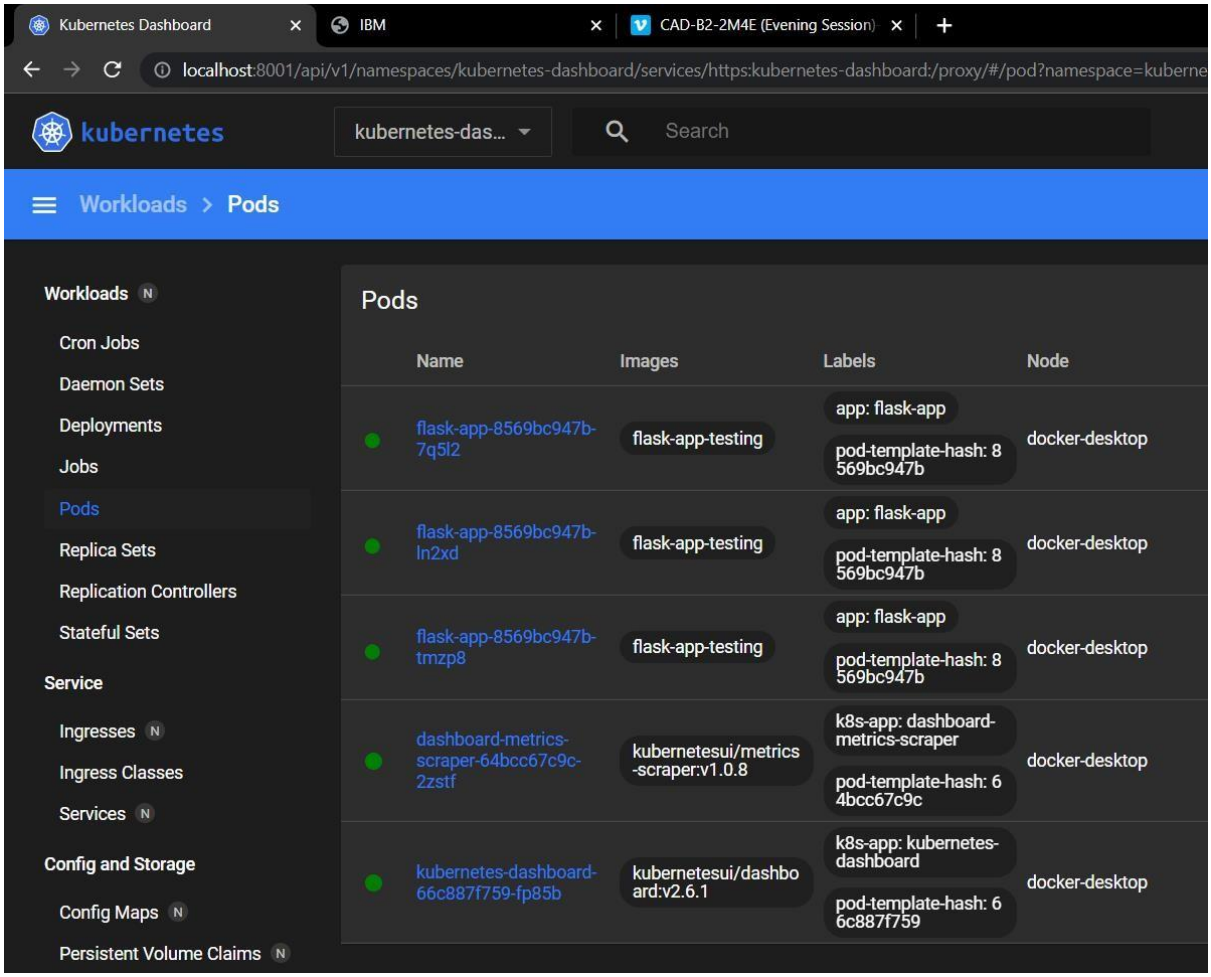
2)deploy hello world or job portal



Question-4: Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in note port

1)Creating a Kubernetes cluster in IBM cloud




Kubernetes Dashboard
IBM
CAD-B2-2M4E (Evening Session)
localhost:8001/api/v1/namespaces/kubernetes-dashboard/services/https:kubernetes-dashboard:/proxy/#/pod?namespace=kuberne
kubernetes
kubernetes-das...
Search
Workloads > Pods
Workloads N
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses N
Ingress Classes
Services N
Config and Storage
Config Maps N
Persistent Volume Claims N
Pods
Name
Images
Labels
Node
flask-app-8569bc947b-7q5l2
flask-app-testing
app: flask-app
pod-template-hash: 8569bc947b
docker-desktop
flask-app-8569bc947b-ln2xd
flask-app-testing
app: flask-app
pod-template-hash: 8569bc947b
docker-desktop
flask-app-8569bc947b-tmzp8
flask-app-testing
app: flask-app
pod-template-hash: 8569bc947b
docker-desktop
dashboard-metrics-scraper-64bcc67c9c-2zstf
kubernetesui/metrics-scraper:v1.0.8
k8s-app: dashboard-metrics-scraper
pod-template-hash: 64bcc67c9c
docker-desktop
kubernetes-dashboard-66c887f759-fp85b
kubernetesui/dashboard:v2.6.1
k8s-app: kubernetes-dashboard
pod-template-hash: 66c887f759
docker-desktop