

## ASSIGNMENT – 4

### DOCKER AND KUBERNETES

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Student Roll Number	2116190801193
Maximum Marks	2 marks

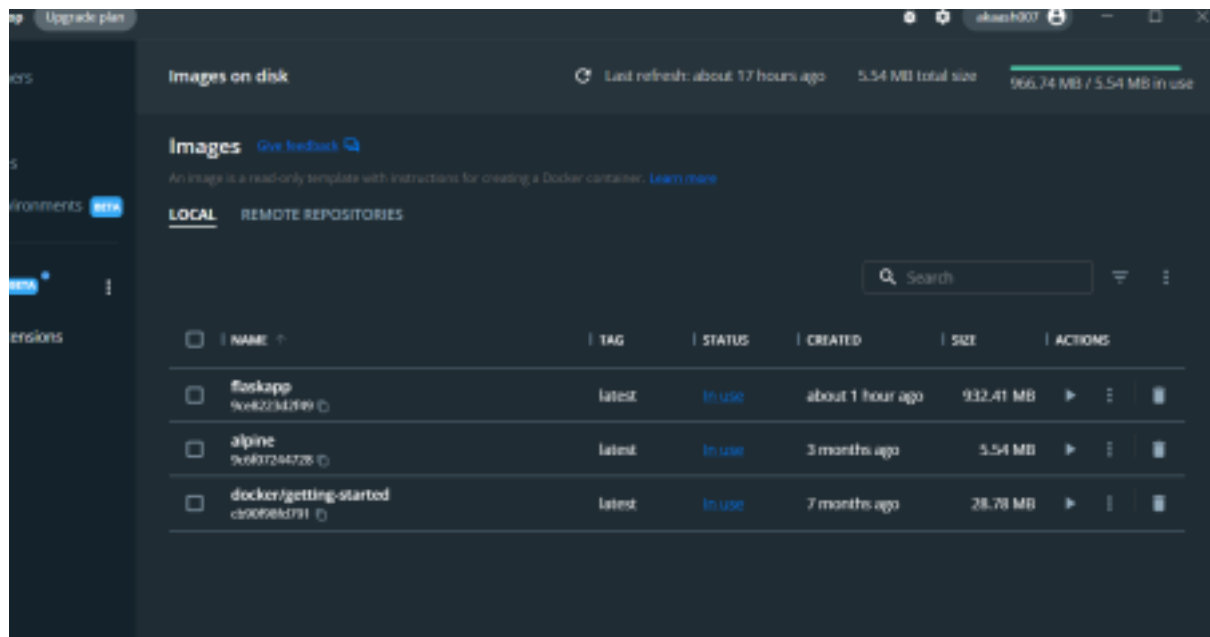
Question-1: pull an image from docker hub and run it in docker playground.

1) pull an image form docker hub

```
PowerShell
Loading personal and system profiles took 541ms.
+ assignment 4 git:(main) docker pull docker/getting-started
Using default tag: latest
latest: Pulling from docker/getting-started
df9b9388f04a: Pull complete
5867cba5fcbd: Pull complete
4b639e65cb3b: Pull complete
061ed9e2b976: Pull complete
bc19f3e8eeb1: Pull complete
4071be97c256: Pull complete
79b586f1a54b: Pull complete
0c9732f525d6: Pull complete
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aae
Status: Downloaded newer image for docker/getting-started:latest
docker.io/docker/getting-started:latest
+ assignment 4 git:(main) |
```

2)run it in docker playground

```
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aae
Status: Downloaded newer image for docker/getting-started:latest
docker.io/docker/getting-started:latest
+ assignment 4 git:(main) docker run -d -p 80:80 docker/getting-started
ee6d34bd49e20106c8d3a3cc85bab0bde9c96a667bb3112bc896358efd6d2f68
+ assignment 4 git:(main) D|
```



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

```

flaskapp git:(main) ✗ flask --help
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: 168-502-968
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

```

flaskapp git:(main) ✗ docker build -t flaskapp .
[+] Building 280.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 179B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.10.6
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load build context
=> => transferring context: 8.56kB
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa
=> resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa
=> sha256:d25a66388b10283683ff696d7777bba5cbb1b9126fb0be7d118b95749946bcf34 8.53kB / 8.53kB
=> sha256:3e94d13e55e7a4ef17f421376f57fb95c7e1786931f8784aa99268968d81f6e4 5.14MB / 5.14MB
=> sha256:fa9c7528c685216129e8e67bf362a7782e7b1daa585ab85546a4158838657d6 10.3s / 10.3s
=> sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a248d29677cb03e6aa91852 2.35kB / 2.35kB
=> sha256:8d1f943ceaa43b1ce83d43c9926e7958834b948b780170b4f9c56d8f17ac134ca 2.23kB / 2.23kB
=> sha256:1671565cc8d4f8c365c9b661d3fbc164e73d81f1b0430c6179588428f99a9da2e 55.01MB / 55.01MB
=> sha256:53ad872f8cd164c8eb93b182b28e758e11acc8ef68babe48bf1843c88de1901a 54.58MB / 54.58MB
=> sha256:d6b983117333b718374f1701ef593dd2a4a6613c7988c6553be8e2a158e6448a 196.79MB / 196.79MB
=> extracting sha256:1671565cc8d4f8c365c9b661d3fbc164e73d81f1b0430c6179588428f99a9da2e 2.3s
=> sha256:d8992d56ded5476fe7c382256eb4dc6ff495aa8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB
=> extracting sha256:3e94d13e55e7a4ef17f421376f57fb95c7e1786931f8784aa99268968d81f6e4 0.2s
=> extracting sha256:fa9c7528c685216129e8e67bf362a7782e7b1daa585ab85546a4158838657d6 0.3s
=> extracting sha256:53ad872f8cd164c8eb93b182b28e758e11acc8ef68babe48bf1843c88de1901a 3.0s
=> sha256:c71af637d59adc44c5fd3c348504d4f82b35bb6294f0857ea22c6ac8a1d285a5 20.02MB / 20.02MB
=> sha256:864a18b3c794553e88cb5fcd12fbaae1c0798bf6165f08a35e84a285413da4eb 234B / 234B
=> sha256:4334b2fe8293d19ddc1c359893aae88f21601a7c85a31c6da6c8dcb8fb6ed3c 3.04MB / 3.04MB
=> extracting sha256:d8b983117533b718374f1701ef593dd2a4a6613c7988c6553be8e2a158e6448a 7.4s
=> extracting sha256:d8992d56ded5476fe7c382256eb4dc6ff495aa8fb4dd28aa18dbcb7581e24a6c 0.3s

```

```
PowerShell
>> sha256:fa9c7528c685216129e8e67b4362a7782e7b1daa585ab85546a41588830657d6 10.88MB / 10.88MB 23.4s
>> sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a248d29677c843e6aa91852 2.35kB / 2.35kB 0.0s
>> sha256:8d1f943ceaaaf3b3ce85df5c8926e7958816b048b708176b49c5688f37ac134ca 2.22kB / 2.22kB 0.0s
>> sha256:1671565cc8df8c365c9b661d3fbc164e73d81f1b0438c6179588428f99a9da2e 55.81MB / 55.81MB 78.5s
>> sha256:53ad872f9cd16fc8eb93b182b28e758e11acc8ef68babe8bf1043c88de1981a 54.58MB / 54.58MB 78.0s
>> sha256:d68983117533b718374f1791ef393dd2afa6413c7980c6553be8e2a158e6448a 196.79MB / 196.79MB 180.0s
>> extracting sha256:1671565cc8df8c365c9b661d3fbc164e73d81f1b0438c6179588428f99a9da2e 2.3s
>> sha256:d8892d56ded5476fe7c382256eb4dc64f495ae8fb8dd28aa18dbc8b7581e28a6c 6.29MB / 6.29MB 81.7s
>> extracting sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 0.2s
>> extracting sha256:fa9c7528c685216129e8e67b4362a7782e7b1daa585ab85546a41588830657d6 0.3s
>> extracting sha256:53ad872f9cd16fc8eb93b182b28e758e11acc8ef68babe8bf1043c88de1981a 3.0s
>> sha256:c71afc637d59adc44c5fd3c348584df82b35bbb204f0857ea22c6ac8a1d285a5 20.82MB / 20.82MB 186.1s
>> sha256:864a18b3c784553e88cb5fcd12fbaee1c87848f6365f8fa35e84a285413da48b 234B / 234B 82.1s
>> sha256:4334b2fe8293d19ddc1c3559093aae88f21681a7c85a31c6da6c8dc48fb6ed3c 3.84MB / 3.84MB 86.6s
>> extracting sha256:d8892d56ded5476fe7c382256eb4dc64f495ae8fb8dd28aa18dbc8b7581e28a6c 7.4s
>> extracting sha256:d8892d56ded5476fe7c382256eb4dc64f495ae8fb8dd28aa18dbc8b7581e28a6c 0.3s
>> extracting sha256:c71afc637d59adc44c5fd3c348584df82b35bbb204f0857ea22c6ac8a1d285a5 0.8s
>> extracting sha256:864a18b3c784553e88cb5fcd12fbaee1c87848f6365f8fa35e84a285413da48b 0.0s
>> extracting sha256:4334b2fe8293d19ddc1c3559093aae88f21681a7c85a31c6da6c8dc48fb6ed3c 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 sha256:9ce8223d2f49cc126af77c5b826856fccf1f446e84e6e67fa97b58be5718931e 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
<input type="checkbox"/>	flaskapp 9ce8223d2f49	latest	Unused	less than a minute a	932.41 MB	<div></div> <div></div> <div></div>
<input type="checkbox"/>	alpine 9ce8223d2f49	latest	In use	3 months ago	5.54 MB	<div></div> <div></div> <div></div>

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

1) create a IBM container registry

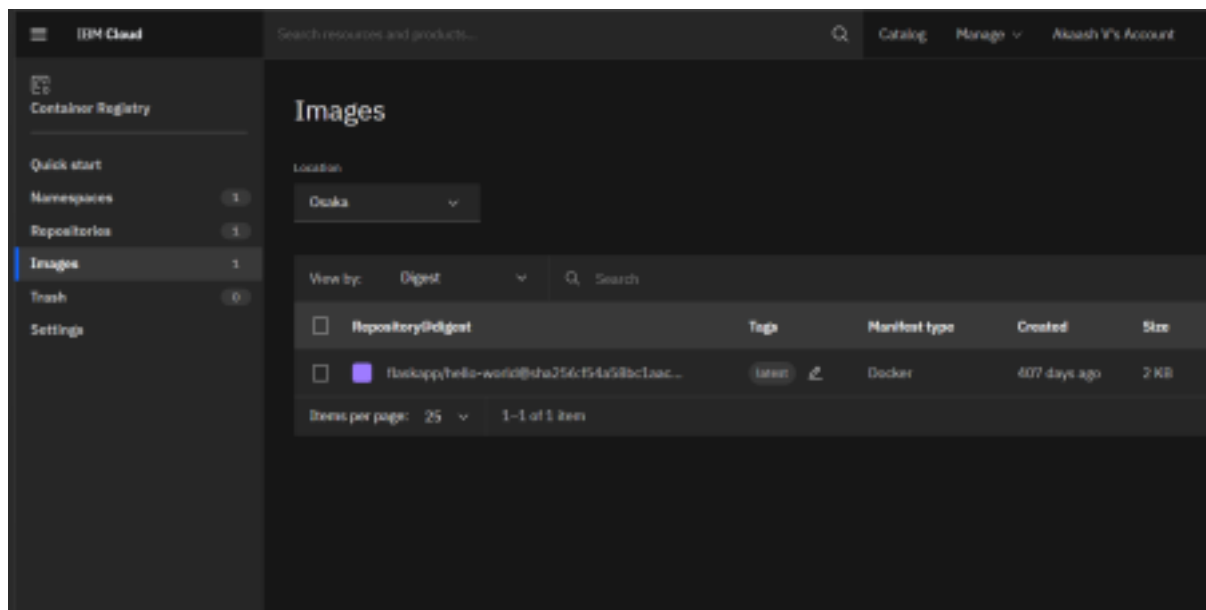
```
+ - git:(main) x ibmcloud
NAME:
  C:\Program Files\IBM\Cloud\bin\ibmcloud.exe - A command line tool to interact with IBM Cloud
  Find more information at: https://ibm.biz/cli-docs

USAGE:
  [environment variables] C:\Program Files\IBM\Cloud\bin\ibmcloud.exe [global options] command [arguments.
ptions]

VERSION:
  2.12.1+b8488a1-2022-10-31T15:08:10+00:00

COMMANDS:
  account      Manage accounts, users, orgs and spaces
  api          Set or view target API endpoint
  billing      Retrieve usage and billing information
  catalog      Manage catalog
  cf           Run Cloud Foundry CLI with IBM Cloud CLI context
  config       Write default values to the config
  cr           Manage IBM Cloud Container Registry content and configuration.
  dev          Create, develop, deploy, and monitor applications
  enterprise   Manage enterprise, account groups and accounts.
  iam         Manage identities and access to resources
  login        Log user in
  logout       Log user out
  plugin       Manage plug-ins and plug-in repositories
  regions      List all the regions
```

2) deploy hello world or jobportal



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

