

ASSIGNMENT 4

Assignment Date	29 th October 2022
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Maximum Marks	2 Marks

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

Pulling image from 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) |
```

Running on 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|
```

Upgrade plan

Images on disk

Last refresh: about 17 hours ago

5.54 MB total size

966.74 MB / 5.54 MB in use

Images

an image is a read-only filesystem with instructions for creating a Docker container. [Learn more](#)

LOCAL

REMOTE REPOSITORIES

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	NAME	TAG	STATUS	CREATED	SIZE	ACTIONS
<input type="checkbox"/>	flaskapp 9ce822362949	latest	In Use	about 1 hour ago	932.41 MB	▶ ⋮ 🗑
<input type="checkbox"/>	alpine 9c607244728	latest	In Use	3 months ago	5.54 MB	▶ ⋮ 🗑
<input type="checkbox"/>	docker/getting-started c19089c791	latest	In Use	7 months ago	28.78 MB	▶ ⋮ 🗑

localhost/tutorial/

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Getting Started

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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:

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

Docker file –

```
1 FROM python:3.8-buster
2
3 WORKDIR /app
4
5 COPY requirements.txt /app/
6
7 RUN pip install -r requirements.txt
8
9 COPY . /app/
10
11 RUN cp .env.dev.sample .env
12
13 EXPOSE 8000
14
15 RUN chmod +x entrypoint.sh
16
17 CMD ["sh", "entrypoint.sh"]
```

Deployment in docker application –

```
PowerShell
+ Flaskapp git:(main) > docker build -t Flaskapp .
[+] Building 200.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 170B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.8-buster
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load build context
=> => transferring context: 2.56kB
=> [1/8] FROM docker.io/library/python:3.8-buster
=> resolve docker.io/library/python:3.8-buster
=> sha256:d22a46308618281661f469d7777ba5c8b1b613a6b0bc7d113b90748948c494 8.53kB / 8.53kB
=> sha256:3e9dd13e3be7a6e17447176f87f693e7a1700731f8706a493268966031f6e4 5.18kB / 5.18kB
=> sha256:4e9c9528c8b216119e8e07b4361a7793e7b1d4a553a8c1540a01588838e57db 10.43kB / 10.43kB
=> sha256:703e7efb7e4a2a2a8721b6c6388b11a693e0779a20bd19677c883e4a91033 2.15kB / 2.15kB
=> sha256:8d1f943eaa7b1ce856fbc072e77e0836b0b0760176b79c36d5777ac13fca 2.22kB / 2.22kB
=> sha256:1d7156cc8d48c165c9661d37bc16d47301f1be430c179506028f99a91a2e 55.61kB / 55.61kB
=> sha256:31a087279cd164e8ab93b1d2b36e758e11a0c3e406a0e78d1603a98da1001a 54.58kB / 54.58kB
=> sha256:d96983117513b71b170f1701e139161e4a6611c7988c6538e8a2a138e3442a 196.79kB / 196.79kB
=> extracting sha256:1d7156cc8d48c165c9661d37bc16d47301f1be430c179506028f99a91a2e
=> sha256:d96983117513b71b170f1701e139161e4a6611c7988c6538e8a2a138e3442a 8.20kB / 8.20kB
=> extracting sha256:3e9dd13e3be7a6e17447176f87f693e7a1700731f8706a493268966031f6e4
=> extracting sha256:4e9c9528c8b216119e8e07b4361a7793e7b1d4a553a8c1540a01588838e57db
=> extracting sha256:703e7efb7e4a2a2a8721b6c6388b11a693e0779a20bd19677c883e4a91033
=> sha256:8d1f943eaa7b1ce856fbc072e77e0836b0b0760176b79c36d5777ac13fca 2.15kB / 2.15kB
=> sha256:1d7156cc8d48c165c9661d37bc16d47301f1be430c179506028f99a91a2e 7.04kB / 7.04kB
=> extracting sha256:d96983117513b71b170f1701e139161e4a6611c7988c6538e8a2a138e3442a
=> sha256:d96983117513b71b170f1701e139161e4a6611c7988c6538e8a2a138e3442a 0.1kB
```

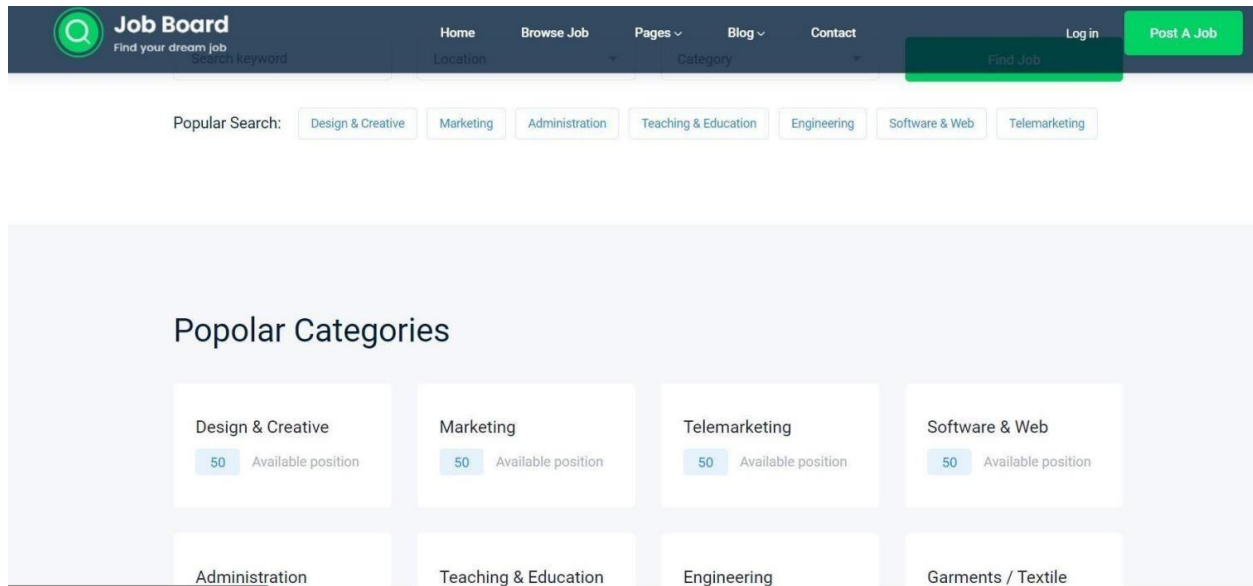
```

PowerShell
>>> sha256:f4c7b728c85316129e8c67b1362a7782c7b1aa555ab8154aa01568878667d6 18.83MB / 18.83MB 23.4s
>>> sha256:788eef47e70eac9a822b08c338b875a687e9977b329ed7e977c8b1e0aa91052 2.35kB / 2.35kB 0.0s
>>> sha256:8d1f943ceaf3b3c93d3c892ce795036b0401700170b19c3e08d377a013fca 2.22kB / 2.22kB 0.0s
>>> sha256:1871568c8d365c968f36c389231829b752e11aa5b6f88abef40b1807c05de1001a 55.53MB / 55.53MB 70.0s
>>> sha256:51aa972729c187c8b973b1829b752e11aa5b6f88abef40b1807c05de1001a 55.53MB / 55.53MB 70.0s
>>> sha256:d86983117333b73170370f1701ef57242a6613c7988c553504c2a159c840a 196.79MB / 196.79MB 280.0s
>>> extracting sha256:1871568c8d365c968f36c389231829b752e11aa5b6f88abef40b1807c05de1001a 2.3s
>>> sha256:d86983117333b73170370f1701ef57242a6613c7988c553504c2a159c840a 6.19MB / 6.19MB 81.7s
>>> extracting sha256:3e96d13e35e7a0e1174c211776f374b35c7e1700321c7709aa99268856031f0e4 0.2s
>>> extracting sha256:f4c7b728c85316129e8c67b1362a7782c7b1aa555ab8154aa01568878667d6 0.3s
>>> extracting sha256:51aa972729c187c8b973b1829b752e11aa5b6f88abef40b1807c05de1001a 3.0s
>>> sha256:c71a7c375755aa90c5f43c3485086d52b3356b204c0857e022c6a3c3855 10.82MB / 10.82MB 180.1s
>>> sha256:88a1383c70435f3a8c3b5cfcd13fbaee1c87008f6385f4a35c00a135413da40b 23kB / 23kB 82.3s
>>> sha256:4334b3c4873a1940c1c3300873aa8b21601a7c35a31c0da8c80c40f0ed3c 3.60MB / 3.60MB 48.6s
>>> extracting sha256:d86983117333b73170370f1701ef57242a6613c7988c553504c2a159c840a 7.4s
>>> extracting sha256:d86983117333b73170370f1701ef57242a6613c7988c553504c2a159c840a 8.3s
>>> extracting sha256:c71a7c375755aa90c5f43c3485086d52b3356b204c0857e022c6a3c3855 8.3s
>>> extracting sha256:88a1383c70435f3a8c3b5cfcd13fbaee1c87008f6385f4a35c00a135413da40b 0.0s
>>> extracting sha256:4334b3c4873a1940c1c3300873aa8b21601a7c35a31c0da8c80c40f0ed3c 0.7s
>>> [2/5] WORKDIR /app 1.1s
>>> [3/5] COPY requirements.txt ./ 0.0s
>>> [4/5] RUN pip install -r requirements.txt 4.5s
>>> [5/5] CMD 0.1s
>>> exporting to image 0.2s
>>> => exporting layers 0.3s
>>> writing image sha256:9ea2232f740ec128a177c9b82656f9c1f40a3a46e877a97b388e3718911e 0.0s
>>> => moving to docker.io/library/flashtapp 0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
$ flashtapp git:(main) |

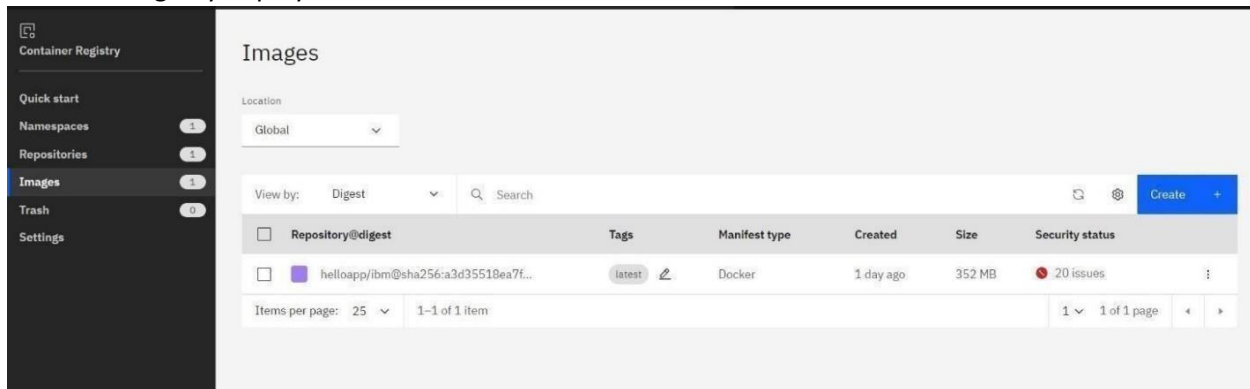
```

OUTPUT –

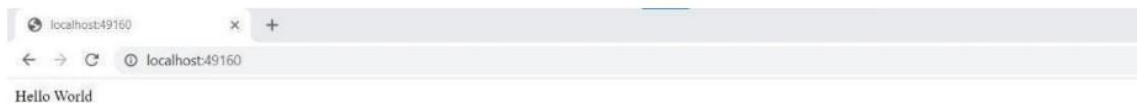


3. Create a IBM container registry and deploy hello-world app or job portal app.

Container registry deployment –

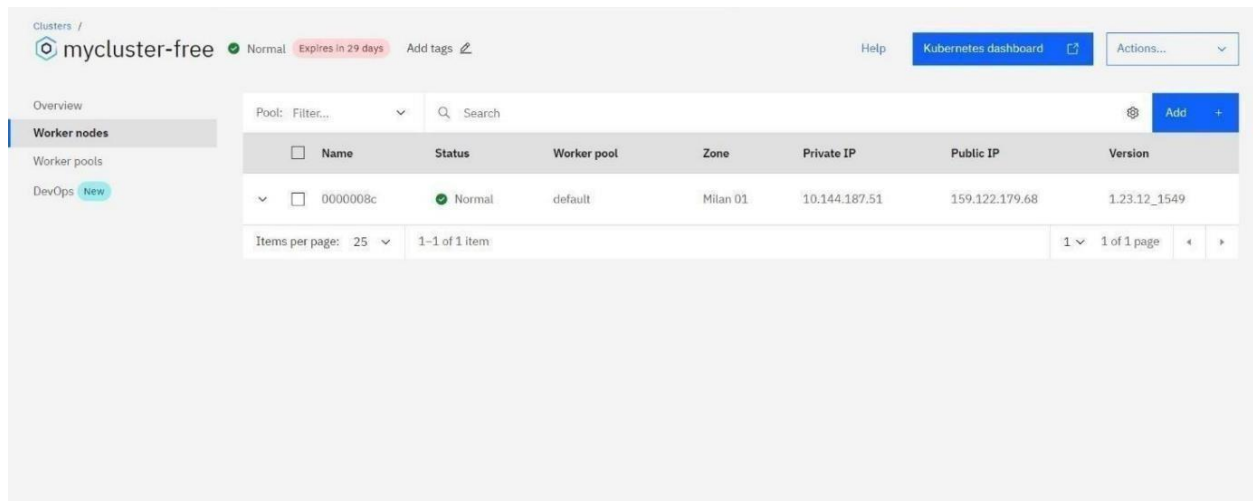


OUTPUT –

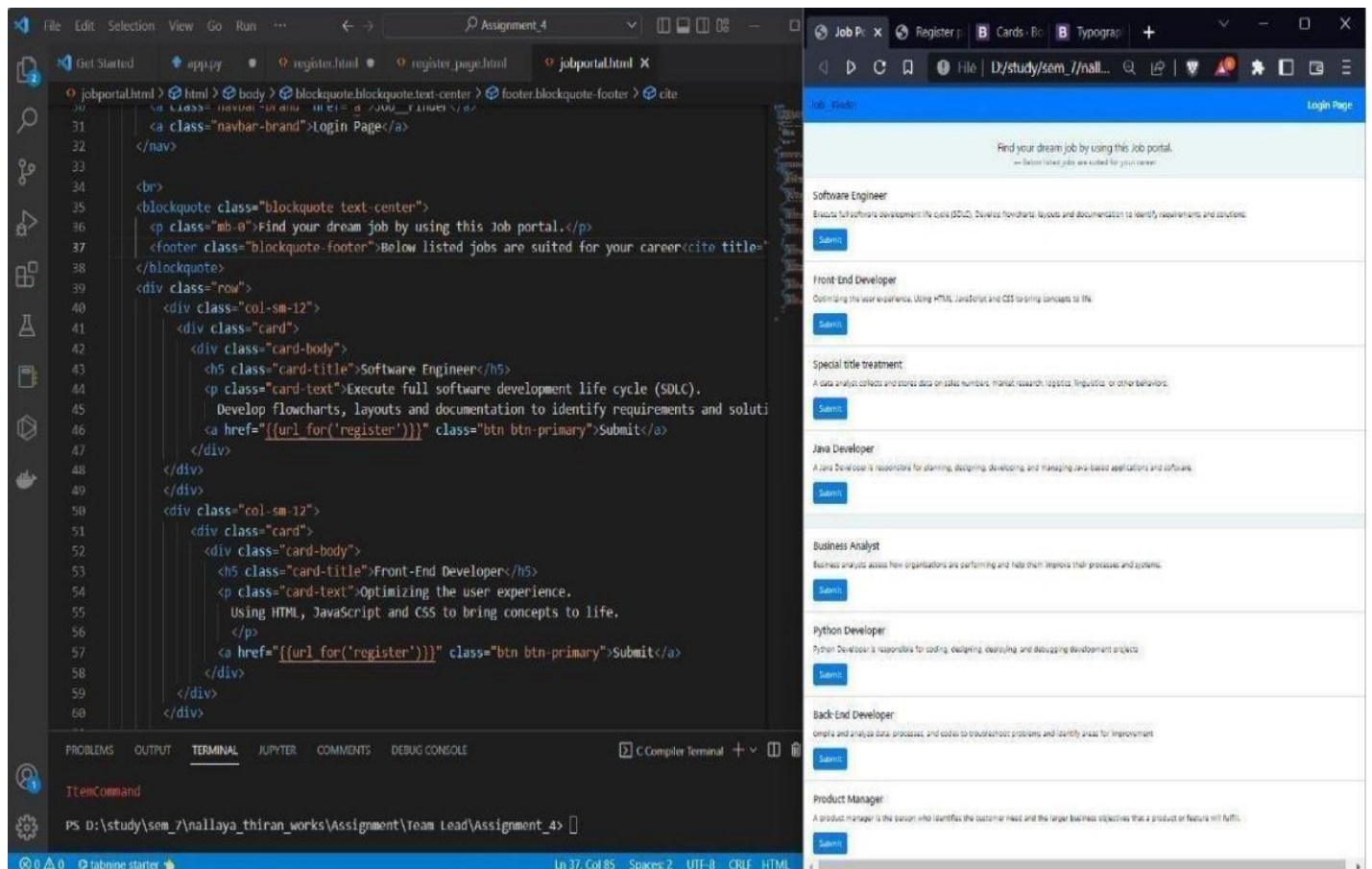


4. Create a Kubernetes cluster in IBM cloud and deploy hello world image or job portal image and also expose the same app to run in node port.

Creating Kubernetes cluster in IBM cloud –



OUTPUT –



Exposing the same app to run in node port –

```
C:\Windows\System32\cmd.exe
10/16/2022 12:28 PM 3,721 windows shortcut.txt
08/25/2022 08:40 PM 2,897 YouTube.lnk
24 File(s) 804,677,196 bytes
9 Dir(s) 79,221,886,976 bytes free

C:\Users\gani\Desktop>cd deploy
The system cannot find the path specified.

C:\Users\gani\Desktop>kubectl apply -f kubernetes/depoly.yaml
error: the path "kubernetes/depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f depoly.yaml
error: the path "depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f C:\Users\gani\Desktop\deploy.yaml
deployment.apps/flask-app created

C:\Users\gani\Desktop>
```



```
C:\Windows\System32\cmd.exe
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")

C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")

C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")

C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
error from server (AlreadyExists): services "flask-service" already exists

C:\Windows\system32>
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.

C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.

C:\Windows\system32>kubectl proxy
Starting to serve on 127.0.0.1:8081
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.

C:\Windows\system32>kubectl -n kubernetes-dashboard get pods
No resources found in kubernetes-dashboard namespace.

C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
error from server (AlreadyExists): services "flask-service" already exists

C:\Windows\system32>kubectl get ing
NAME CLASS  HOSTS  ADDRESS  PORTS  AGE
flask-app/ingress <none>  *      80      27s

C:\Windows\system32>kubectl get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
```