

# SMART FASHION RECOMMENDATION APPLICATION

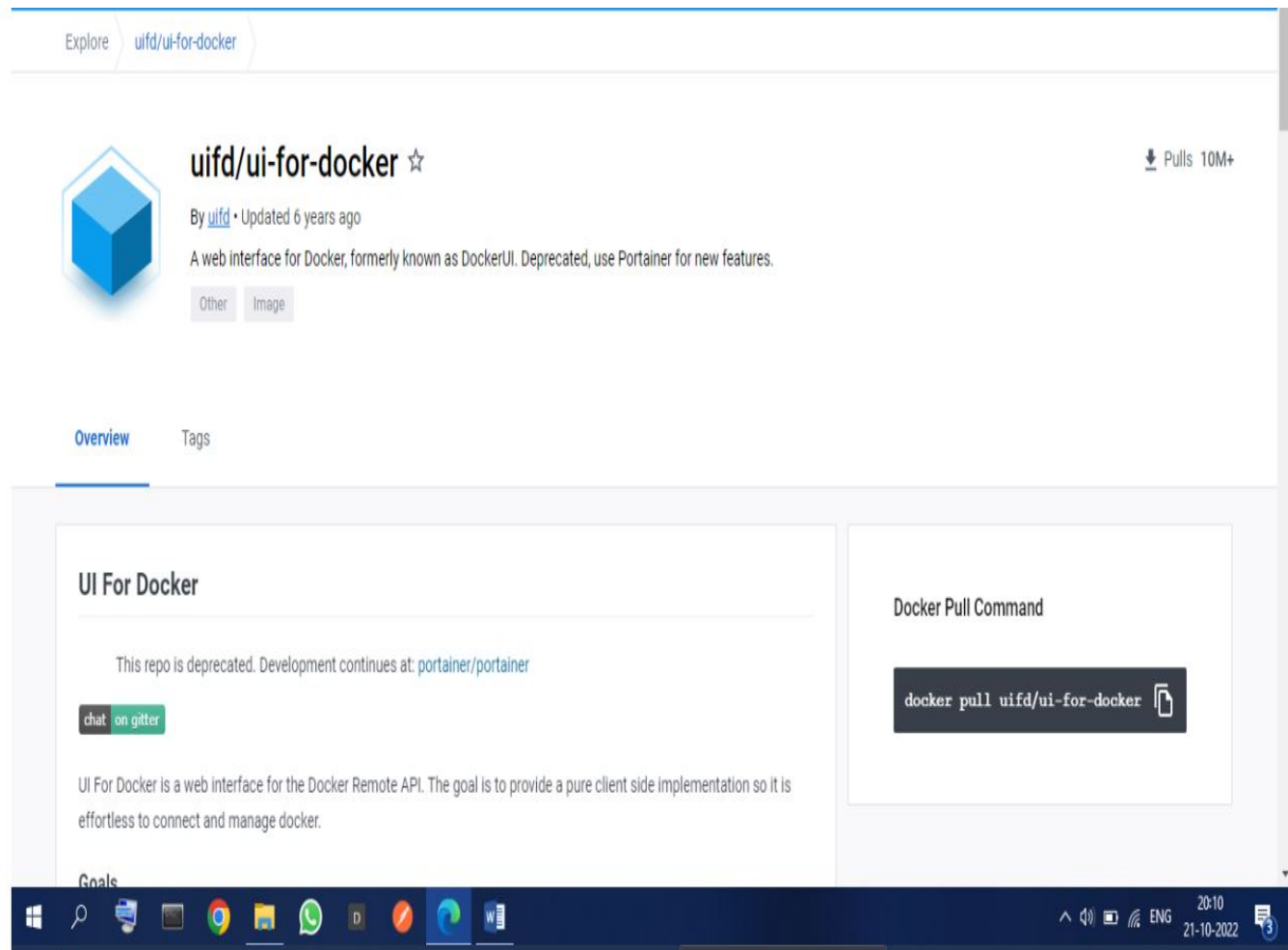
Assignment Number	4
Assignment Date	15 september 2022
Student Name	ENBA KUMAR R
Student Roll Number	510919106006
Maximum marks	2 MARKS

## Question:

1. Pull an Image from docker hub and run it in docker playground.
2. Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.
3. Create an IBM container registry and push a docker image of a flask application or job portal app.
4. Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in nodeport.


## Answers:

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



The screenshot shows the Docker Hub repository page for `uifd/ui-for-docker`. The repository is marked as deprecated, with a note stating "This repo is deprecated. Development continues at: [portainer/portainer](#)". The page includes a description: "A web interface for Docker, formerly known as DockerUI. Deprecated, use Portainer for new features." and a Docker Pull Command: `docker pull uifd/ui-for-docker`. The page also features a "chat on gitter" button and a "Goals" section.

Explore `uifd/ui-for-docker`

 **uifd/ui-for-docker** ☆ Pulls 10M+

By [uifd](#) • Updated 6 years ago

A web interface for Docker, formerly known as DockerUI. Deprecated, use Portainer for new features.

Other Image

Overview Tags

### UI For Docker

This repo is deprecated. Development continues at: [portainer/portainer](#)

[chat](#) [on gitter](#)

UI For Docker is a web interface for the Docker Remote API. The goal is to provide a pure client side implementation so it is effortless to connect and manage docker.

### Goals

### Docker Pull Command

```
docker pull uifd/ui-for-docker
```

Windows taskbar at the bottom shows the Start button, search icon, and several application icons including Chrome, File Explorer, WhatsApp, and Docker Desktop. The system tray on the right shows the date and time as 20:10 on 21-10-2022.

cd9an2u3\_cd9av060qau0008hbjs0

IP: 192.168.0.13 OPEN PORT

Memory CPU

SSH: ssh ip172-18-0-4-cd9an2u3tccg00fgf6k0@direct.labs.play-w

DELETE EDITOR

```
# This is a sandbox environment. Using personal credentials
# is HIGHLY discouraged. Any consequences of doing so are
# completely the user's responsibilities.
#
# The FWD team.
#####
[node1] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.13 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
c590dd163101ae795bdcea0eb1ddd98f6fe549cb5f24dacb9ff7c1931923fc0d
[node1] (local) root@192.168.0.13 ~
$
```

UI For Docker

Dashboard Containers Containers Network Images Networks Volumes Info Refresh

# UI For Docker


The UI for Docker container engine

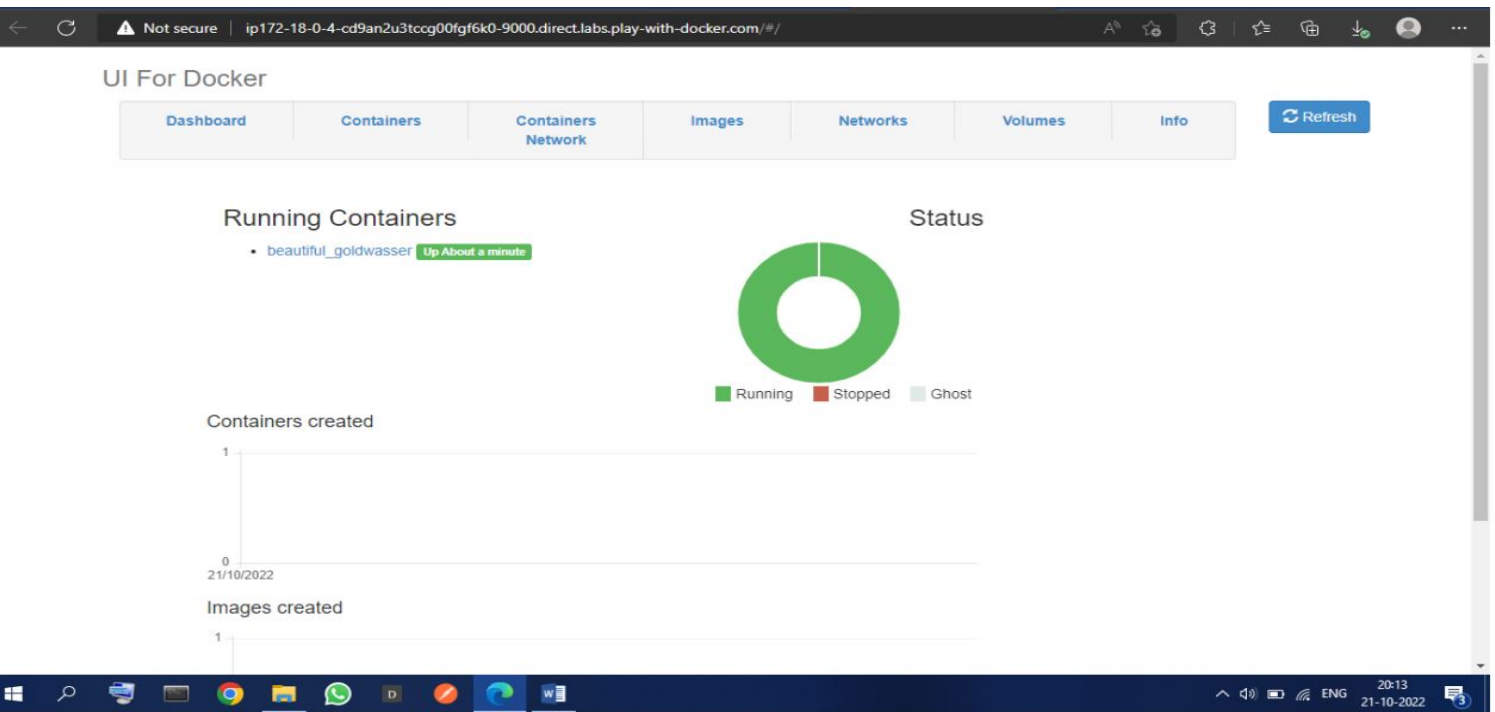
Learn more.

Running Containers

- beautiful\_goldwasser Up About a minute

Status



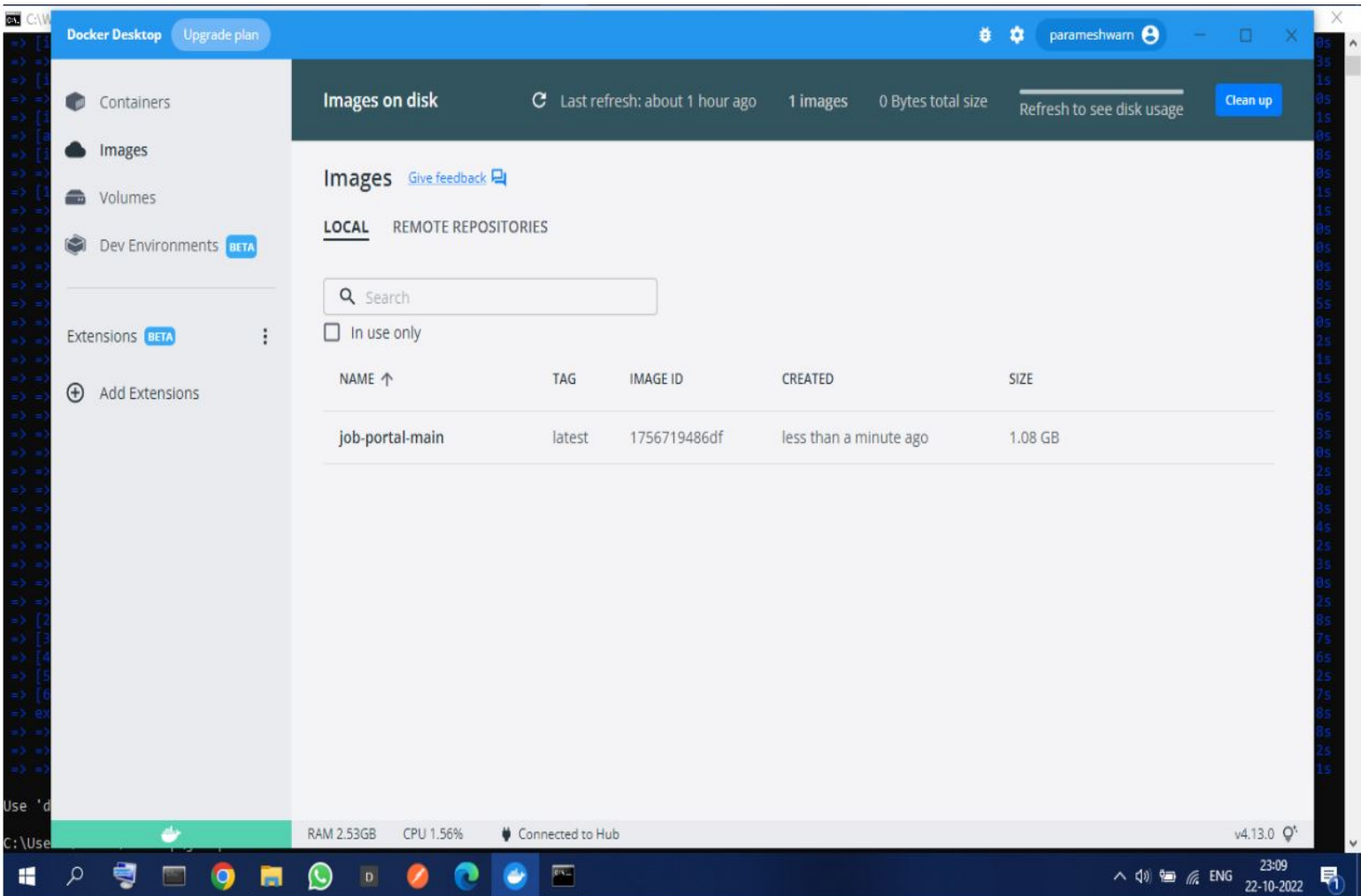


## 2. Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.

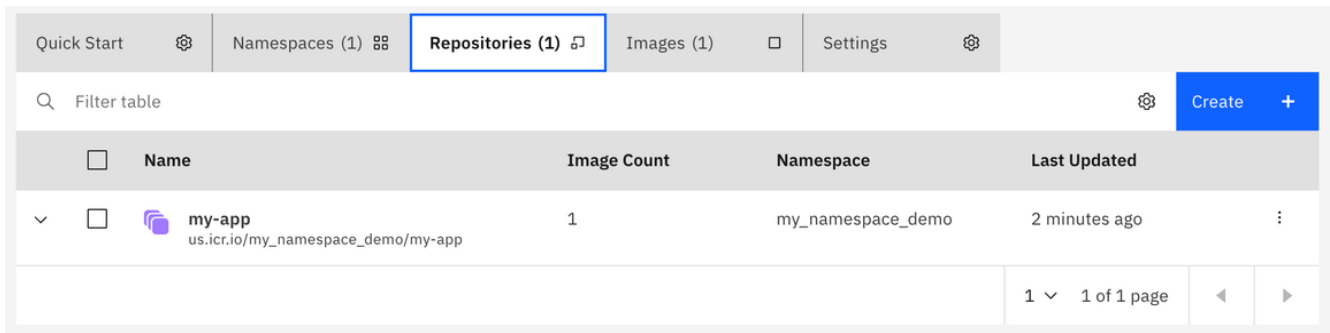
```
C:\Windows\System32\cmd.exe
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 32B
-> [internal] load .dockerignore
-> => transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.6
-> [auth] library/python:pull token for registry-1.docker.io
-> [internal] load build context
-> => transferring context: 687B
-> [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25fed22354d547d892591067aa4026a7fa9a6819df9f300af6fc
-> resolve docker.io/library/python:3.6@sha256:f8652afaf88c25fed22354d547d892591067aa4026a7fa9a6819df9f300af6fc
-> sha256:f8652afaf88c25fed22354d547d892591067aa4026a7fa9a6819df9f300af6fc 1.86kB / 1.86kB
-> sha256:d097a4907a8ec079d4f5ac31872359c1de510f82214c0448e926393b376d3b60d 2.22kB / 2.22kB
-> sha256:54250638d07c5e3ad24c6e21fc889abbca86a27634c0892086ff71f3f44b104 9.27kB / 9.27kB
-> sha256:0e2954ed541c0bd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 54.92MB / 54.92MB
-> sha256:9b829c73b52b92b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd 5.15MB / 5.15MB
-> sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 18.87MB / 18.87MB
-> sha256:6494e4811622b31c027ccac322ca463937fd805f569a93e6f15c01aade718793 54.57MB / 54.57MB
-> sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fef09112efc7e4d3c78f7 196.51MB / 196.51MB
-> sha256:5e3b1213efc56598e78bd602983945c164de2a37205e06a62dada823124dc743 6.29MB / 6.29MB
-> extracting sha256:0e2954ed541c0bd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3
-> sha256:9fddfd56334f2e6efad7e241bf5e7459c40ed105c5478676f41c1244bd96752 14.21MB / 14.21MB
-> extracting sha256:9b829c73b52b92b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd 2.33
-> extracting sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 4.05
-> sha256:404f02044bac0432ca522cbb9f254b1c91fcea6806bfeef0be0b243b2f31bab7 2358 / 2358
-> sha256:c4f42be2be53b900ebff040c1df13de538434ccc5f5d954a56084a6169a3a3f 2.21MB / 2.21MB
-> extracting sha256:6494e4811622b31c027ccac322ca463937fd805f569a93e6f15c01aade718793 203.85
-> extracting sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fef09112efc7e4d3c78f7 27.35
-> extracting sha256:5e3b1213efc56598e78bd602983945c164de2a37205e06a62dada823124dc743 8.25
-> extracting sha256:9fddfd56334f2e6efad7e241bf5e7459c40ed105c5478676f41c1244bd96752 11.35
-> extracting sha256:404f02044bac0432ca522cbb9f254b1c91fcea6806bfeef0be0b243b2f31bab7 0.05
-> extracting sha256:c4f42be2be53b900ebff040c1df13de538434ccc5f5d954a56084a6169a3a3f 2.25
-> [2/6] WORKDIR /app
-> [3/6] ADD . /app
-> [4/6] COPY requirements.txt /app
-> [5/6] RUN python3 -m pip install -r requirements.txt
-> [6/6] RUN python3 -m pip install ibm_db
-> exporting to image
-> exporting layers
-> writing image sha256:1756719486df002fad5dae305c5221513f2ff2d1b40a8d242b22a28af0379f19
-> naming to docker.io/library/job-portal-main

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

C:\Users\VK-PC\Desktop\job-portal-main>
```



3. Create an IBM container registry and push a docker image of a flask application or job portal app.



```
Activities Terminal Sun 21:25
rgunkar@rgunkar-Inspiron-3551: ~/Desktop/flask_docker_demo

File Edit View Search Terminal Help
Collecting Jinja2>=2.10.1 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/65/e0/eb35e762802015cab1ccee04e8a277b03f1d8e53da3ec3106882ec42558b/Jinja2-2.10.3-py3-none-any.whl (125kB)
Collecting itsdangerous>=0.24 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/76/ae/44b03b253d6fade317f32c24d100b3b35c2239807046a4c953c7b89fa49e/itsdangerous-1.1.0-py2.py3-none-any.whl
Collecting click>=5.1 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/fa/37/45185cb5abb30d7257104c434fe0b07e5a195a6847506c074527aa599ec/Click-7.0-py2.py3-none-any.whl (81kB)
Collecting MarkupSafe>=0.23 (from Jinja2>=2.10.1->flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/b9/2e/64db92e53b86efccfaea71321f597fa2e1b2bd3853d8ce658568f7a13094/MarkupSafe-1.1.1.tar.gz
Building wheels for collected packages: MarkupSafe
  Building wheel for MarkupSafe (setup.py): started
  Building wheel for MarkupSafe (setup.py): finished with status 'done'
  Stored in directory: /root/.cache/pip/wheels/f2/aa/04/0edf07a1b8a5f5f1aed7580fffb69ce8972edc16a505916a77
Successfully built MarkupSafe
Installing collected packages: Werkzeug, MarkupSafe, Jinja2, itsdangerous, click, flask
Successfully installed Jinja2-2.10.3 MarkupSafe-1.1.1 Werkzeug-0.16.0 click-7.0 flask-1.1.1 itsdangerous-1.1.0
You are using pip version 19.0.1, however version 19.3.1 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
Removing intermediate container 4dfb0c38b166
---> 9d770042eaa4
Step 5/7 : EXPOSE 5001
---> Running in fb71c5bc1336
Removing intermediate container fb71c5bc1336
---> fia4f6e0259f
Step 6/7 : ENTRYPOINT [ "python" ]
---> Running in e2dea689ae42
Removing intermediate container e2dea689ae42
---> 8d73c854809a
Step 7/7 : CMD [ "demo.py" ]
---> Running in 4cc028df4bd6
Removing intermediate container 4cc028df4bd6
---> f53a787f955b
Successfully built f53a787f955b
Successfully tagged flask-docker-demo-app:latest
(base) rgunkar@rgunkar-Inspiron-3551:~/Desktop/flask_docker_demo$
```

4. Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in nodeport.

## 1. Push an image to IBM Cloud Container Registry

To push an image, we first must have an image to push. We have prepared several Dockerfiles in this repository that will create the images. We will be running the images, and creating new ones, in the later labs.

This lab uses the Container Registry built in to IBM Cloud, but the image can be created and uploaded to any standard Docker registry to which your cluster has access.

2. Change directory to Lab 1:

```
cd "Lab 1"
```

3. Log in to the IBM Cloud CLI:

```
ibmcloud login
```

To specify an IBM Cloud region, include the API endpoint.

Note: If you have a federated ID, use `ibmcloud login --sso` to log in to the IBM



Cloud CLI. You know you have a federated ID when the login fails without the `--sso` and succeeds with the `--sso` option.

4. In order to upload images to the IBM Cloud Container Registry, you first need to create a namespace with the following command:

```
ibmcloud cr namespace-add <my_namespace>
```

5. Build the container image with a `1` tag and push the image to the IBM Cloud Registry:

```
ibmcloud cr build --tag us.icr.io/<my_namespace>/hello-world:1 .
```

6. Verify the image is built:

```
ibmcloud cr images
```

7. If you created your cluster at the beginning of this, make sure it's ready for use.

- i. Run `ibmcloud ks clusters` and make sure that your cluster is in "Normal" state.
- ii. Use `ibmcloud ks workers --cluster <yourclustername>`, and make sure that all workers are in "Normal" state with "Ready" status.
- iii. Make a note of the public IP of the worker.

You are now ready to use Kubernetes to deploy the hello-world application.

## 2. Deploy your application

1. Run `ibmcloud ks cluster config --cluster <yourclustername>`.

Start by running your image as a deployment:

```
kubectl create deployment hello-world-deployment  
--image=us.icr.io/<my_namespace>/hello-world:1
```

This action will take a bit of time. To check the status of your deployment, you can use

```
kubectl get pods.
```

You should see output similar to the following:

```
=> kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
hello-world-562211614-0g2kd	0/1	ContainerCreating	0	1m

2. Once the status reads `Running`, expose that deployment as a service, accessed through the IP of the worker nodes. The example for this course listens on port 8080. Run:

```
kubectl expose deployment/hello-world-deployment --type=NodePort --port=8080  
--name=hello-world-service --target-port=8080
```

3. To find the port used on that worker node, examine your new service:

```
kubectl describe service hello-world-service
```

Take note of the "NodePort:" line as `<nodeport>`

4. Run `ibmcloud ks worker ls --cluster <name-of-cluster>`, and note the public IP as `<public-IP>`.

5. You can now access your container/service using `curl <public-IP>:<nodeport>` (or your favorite web browser). If you see, "Hello world! Your app is up and running in a cluster!" you're done!

When you're all done, you can either use this deployment in the [next lab of this course](#), or you can remove the deployment and thus stop taking the course.

1. To remove the deployment and service, use `kubectl delete all -l app=hello-world-deployment`.