

## ASSIGNMENT IV

Student Roll Number	194301
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Project Name	Customer care registry

### QUESTION: 1

1. Pull an image from docker hub and run it in docker playground.
2. Create a docker file for the jobportal application and deploy it in docker desktop application.
3. Create a IBM container registry and deploy hello world app.
  - i, Install Container registry and create namespace.
  - ii, Create IBM cloud login. Pull and Push image.
  - iii, Then IBM container registry.
  - iv, Create a kubernetes cluster in IBM cloud and deploy hello world image or jobportal image and also expose the same app to run in nodeport

### PROGRAM:

Deployment.yaml

apiVersion: apps/v1

kind: Deployment

metadata:

name: jobportal

spec:

replicas: 1

selector:

matchLabels:

app: flasknode

template:

metadata:

labels:

app: flasknode

spec:

containers:

- name: flasknode

image: icr.io/helloworld1/newhelloworld

imagePullPolicy: Always

ports:

- containerPort: 5000

Service.yaml

apiVersion: v1

kind: Service

metadata:

name: flask-node-deployment

spec:

ports:

- port: 5000

targetPort: 5000

selector:

app: flasknode

OUT PUT

The screenshot displays the DirectLab interface for managing a container instance. On the left, a sidebar shows the instance name '192.168.0.7 node1' and a '+ ADD NEW INSTANCE' button. The main panel shows the instance details for 'cdqf5qe3\_cdqfadu3tccg00c8ttt0'. It includes a 'CLOSE SESSION' button, an 'OPEN PORT' button, and a 'DELETE' button. The terminal output shows the following commands and results:

```
# is HIGHLY! discouraged. Any consequences of doing so are #
# completely the user's responsibilities. #
# #
# The FWD team. #
#####
[node1] (local) root@192.168.0.7 ~
$ docker pull alpine
Using default tag: latest
latest: Pulling from library/alpine
ca7dd9ec2225: Pull complete
Digest: sha256:b95359c2505145f16c6aa384f9cc74eeff78eb36d308ca4fd902eeeb0a0b161b
Status: Downloaded newer image for alpine:latest
docker.io/library/alpine:latest
[node1] (local) root@192.168.0.7 ~
$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
alpine latest bfe296a52501 4 days ago 5.54MB
[node1] (local) root@192.168.0.7 ~
$ docker run -p 5000:5000 alpine
[node1] (local) root@192.168.0.7 ~
```

```
C:\Windows\System32\cmd.exe

C:\job-portal-main>docker build -t helloworld .
[+] Building 6.8s (12/12) FINISHED
=> [internal] load build definition from Dockerfile
=> [internal] load .dockerignore
=> [internal] load Dockerfile
=> [internal] load metadata for docker.io/library/python:3.6
=> [auth] library/python:pull token for registry-1.docker.io
=> [1/4] FROM docker.io/library/python:3.6@sha256:f8022afaf8b25f0a2235a547d892591867aa802ba7faba0819d9f9188b6f6fc
=> [internal] load build context
=> [internal] transferring context: 687B
=> CACHED [2/6] WORKDIR /app
=> CACHED [3/6] ADD . /app
=> CACHED [4/6] COPY requirements.txt /app
=> CACHED [5/6] RUN python3 -m pip install -r requirements.txt
=> CACHED [6/6] RUN python3 -m pip install flask
=> exporting to image
=> writing image sha256:93cdceebbc92d5a862ac7b17088dc8a118ca7f13d08191ca8447de97728dc52
=> naming to docker.io/library/helloworld

C:\job-portal-main>docker images
'docker' is not recognized as an internal or external command,
operable program or batch file.

C:\job-portal-main>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
helloworld           latest              93cdceebbc92       5 hours ago        1.08GB
newone               latest              93cdceebbc92       5 hours ago        1.08GB
jobportal             latest              642a3a3d092e       6 hours ago        1.08GB
ritchard/helloworld  latest              f44eb69517a3       6 hours ago        1.08GB
httpd                 2.4.54             8653efc8c72d       24 hours ago       145MB
httpd                 latest              8653efc8c72d       24 hours ago       145MB
ritchard/httpd        latest              8653efc8c72d       24 hours ago       145MB
ubuntu               latest              a8780b586f44       13 days ago        77.9MB
centos                latest              5d8da3dc9764       14 months ago      231MB
ritchard/nitheshwari/centos latest              5d8da3dc9764       14 months ago      231MB

C:\job-portal-main>
```

```
C:\Users\nithe\AppData\Local\Programs\Python\Python310\job-portal>docker run -p 8080:8080 helloworld
* Serving Flask app 'app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: off
* Running on all addresses.
  WARNING: This is a development server. Do not use it in a production deployment.
* Running on http://172.17.0.2:5000/ (Press CTRL+C to quit)
```

Containers

Images

Volumes

Dev Environments

Extensions

Add Extensions

Images on disk

Last refresh: about 22 hours ago 222.98 MB total size 1.89 GB / 222.98 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
<div>helloworld</div> <div>93cdceebbc92</div>	latest	In use	about 5 hours ago	1.08 GB	<div></div> <div></div> <div></div>
<div>newone</div> <div>93cdceebbc92</div>	latest	In use	about 5 hours ago	1.08 GB	<div></div> <div></div> <div></div>
<div>jobportal</div> <div>642a3a3d092e</div>	latest	In use	about 6 hours ago	1.08 GB	<div></div> <div></div> <div></div>
<div>ritchard/helloworld</div> <div>f44eb69517a3</div>	latest	In use	about 6 hours ago	1.08 GB	<div></div> <div></div> <div></div>
<div>httpd</div> <div>8653efc8c72d</div>	2.4.54	In use	1 day ago	145.19 MB	<div></div> <div></div> <div></div>
<div>httpd</div> <div>8653efc8c72d</div>	latest	In use	1 day ago	145.19 MB	<div></div> <div></div> <div></div>
<div>ritchard/httpd</div> <div>8653efc8c72d</div>	latest	In use	1 day ago	145.19 MB	<div></div> <div></div> <div></div>
<div>ubuntu</div> <div></div>					<div></div> <div></div> <div></div>

Showing 10 items

RAM 1.52GB CPU 0.39%

Connected to Hub

v4.13.1

```
Microsoft Windows [Version 10.0.22000.1219]
(c) Microsoft Corporation. All rights reserved.

C:\Users\91936>ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
 11.90 MiB / 11.90 MiB [=====] 100.00% 1m0s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\91936\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\91936>
```

```
C:\Users\91936>ibmcloud cr region-set global
The region is set to 'global', the registry is 'icr.io'.

OK

C:\Users\91936>ibmcloud cr namespace-add newhelloworld
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace 'newhelloworld' in resource group 'Default' for account Ritchard M's Account in registry icr.io...

Successfully added namespace 'newhelloworld'

OK

C:\Users\91936>
```

```
Microsoft Windows [Version 10.0.22000.1219]
(c) Microsoft Corporation. All rights reserved.

C:\Users\91936>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> ritchardmahimai@student.aut.edu.in

Password>
Authenticating...
OK

Targeted account Ritchard M's Account (c0e796459feb45e1a6bb8a7ebfec54ab)

Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
Targeted region us-south

API endpoint: https://cloud.ibm.com
Region: us-south
User: ritchardmahimai@student.aut.edu.in
Account: Ritchard M's Account (c0e796459feb45e1a6bb8a7ebfec54ab)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\91936>
```

```
Command Prompt
12676416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\91936\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\91936>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> ritchardmahimai@student.autmd.edu.in

Password>
Authenticating...
OK

Targeted account Ritchard M's Account (c0e796459feb45e1a6bb8a7ebfec54ab)

Select a region (or press enter to skip):
1. eu-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
Targeted region us-south

API endpoint: https://cloud.ibm.com
Region: us-south
User: ritchardmahimai@student.autmd.edu.in
Account: Ritchard M's Account (c0e796459feb45e1a6bb8a7ebfec54ab)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\91936>
```

```
Command Prompt
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.
OK

C:\Users\91936>docker pull sandeepdoodigani/jobportalapp
Using default tag: latest
latest: Pulling from sandeepdoodigani/jobportalapp
0e29546d541c: Already exists
e8822c72b52b: Already exists
c8b77ae36172: Already exists
649d4e4811622: Already exists
6f9f74896dfa: Already exists
be3b1213efc5: Already exists
9fddfd636334: Already exists
a84f9004b4ac: Already exists
c4f42be2be93: Already exists
236c90db64e: Pull complete
86df5f9cfbe4: Pull complete
b8a57da07333: Pull complete
96d74d4156fd: Downloading [==>] 3.753MB/89.51MB
778a951e5719: Download complete
OK

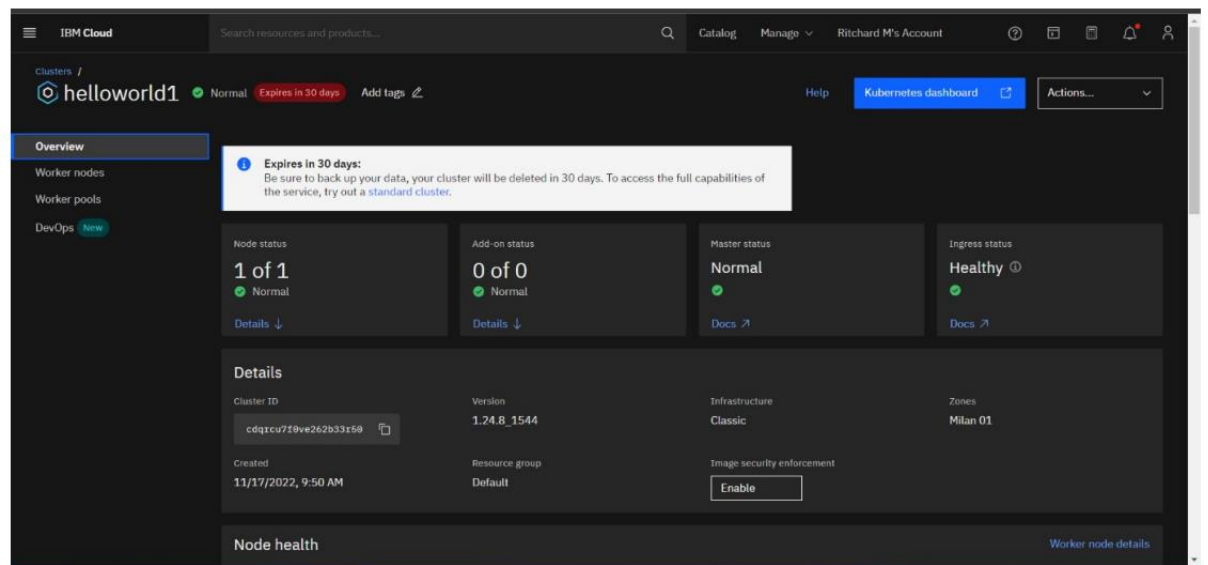
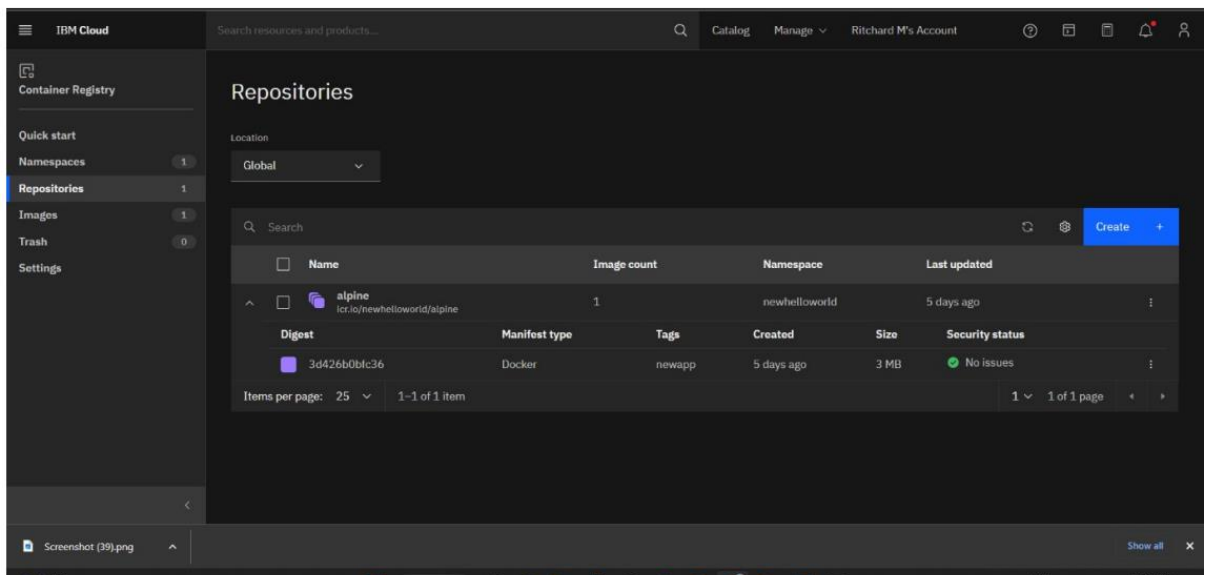
C:\Users\91936>docker pull alpine
Using default tag: latest
latest: Pulling from library/alpine
ca7dd9ec2225: Pull complete
Digest: sha256:b95359c25b5145f16c6aa384f9cc74eeff78eb36d308ca4fd902eeeb0a0b161b
Status: Downloaded newer image for alpine:latest
docker.io/library/alpine:latest

C:\Users\91936>docker tag hello-world icr.io/newhelloworld/alpine:new
Error response from daemon: No such image: hello-world:latest

C:\Users\91936>docker tag alpine icr.io/newhelloworld/alpine:newapp

C:\Users\91936>docker push icr.io/newhelloworld/alpine:newapp
The push refers to repository [icr.io/newhelloworld/alpine]
e5e13b0c77cb: Pushed
newapp: digest: sha256:3d426b0bfc361d6e8303f51459f17782b219dece42a1c7fe463b6014b189c86d size: 528

C:\Users\91936>
```



IBM Cloud

Search resources and products...

CatalogManageRitchard M's Account

Clusters /

helloworld1NormalExpires in 30 daysAdd tags

HelpKubernetes dashboardActions...

OverviewWorker nodesWorker poolsDevOps

Pool: Filter...Search

Name	Status	Worker pool	Zone	Private IP	Public IP	Version
000000e5	Normal	default	Milan 01	10.144.194.190	169.51.207.220	1.24.7_1543

ID

kube-cdgrcu7f0ve262b33r50-helloworld1-default-000000e5

Status

--

Flavor

Free - 2 vCPUs 4GB RAM

Private VLAN

2218181

Public VLAN

2218179

Items per page: 251-1 of 1 item11 of 1 page

kubernetes

default

Search

Create

Workloads

Cron Jobs

Daemon Sets

Deployments

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Replica Sets

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Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Create from input

Create from file

Create from form

App name \*

helloworld1

11 / 24

Container image \*

icr.io/newhelloworld/alpine@sha256:3d426b0bfc361d6e8303f51459f17782b219d

Number of pods \*

1

Service \*

None

Namespace \*

default

DeployPreviewCancelShow advanced options


An 'app' label with this value will be added to the Deployment and Service that get deployed. [Learn more](#)

Enter the URL of a public image on any registry, or a private image hosted on Docker Hub or Google Container Registry. [Learn more](#)


A Deployment will be created to maintain the desired number of pods across your cluster. [Learn more](#)




Optionally, an internal or external Service can be defined to map an incoming Port to a target Port seen by the container. [Learn more](#)

Namespaces let you partition resources into logically named groups. [Learn more](#)

kubernetes

default

Search



Overview

Workloads

Cron Jobs

Daemon Sets

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Replica Sets

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Services


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Config Maps

Persistent Volume Claims


Workloads

Workload Status




Pending: 1

Deployments



Pending: 1


Pods



Pending: 1

Replica Sets

Deployments

Name	Images	Labels	Pods	Created
 <a href="#">helloworld1</a>	<a href="#">Show all</a>	<a href="#">Show all</a>	0 / 1	6 seconds ago