

QUESTION 1:

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

```
#####  
# WARNING!!!! #  
# 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@192.168.0.18 ~  
$ docker pull hello-world  
Using default tag: latest  
latest: Pulling from library/hello-world  
2db29710123e: Pull complete  
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951abla6f352a06974245fe7  
Status: Downloaded newer image for hello-world:latest  
docker.io/library/hello-world:latest  
[node1] (local) root@192.168.0.18 ~  
$
```

```
Hello from Docker!  
This message shows that your installation appears to be working correctly.  
  
To generate this message, Docker took the following steps:  
1. The Docker client contacted the Docker daemon.  
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.  
   (amd64)  
3. The Docker daemon created a new container from that image which runs the  
   executable that produces the output you are currently reading.  
4. The Docker daemon streamed that output to the Docker client, which sent it  
   to your terminal.  
  
To try something more ambitious, you can run an Ubuntu container with:  
$ docker run -it ubuntu bash  
  
Share images, automate workflows, and more with a free Docker ID:  
https://hub.docker.com/  
  
For more examples and ideas, visit:  
https://docs.docker.com/get-started/  
  
[node1] (local) root@192.168.0.18 ~  
$
```

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

```
FROM jobportal:latest  
WORKDIR ~/Desktop/  
ADD . jobportal/  
WORKDIR ~/Desktop/jobportal  
RUN pip install -r requirements  
RUN chmod +x app.sh  
CMD ["/bin/sh","app.sh"]
```

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

```
C:\Windows\system32>ibmcloud cr namespace-add 8080ns
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace '8080ns' in resource group 'Default' for account MOHANASUNDARAM K's Account in registry icr.io...

Successfully added namespace '8080ns'

OK
```

```
C:\Windows\system32>docker tag hello-world:latest icr.io/8080ns/repo:1

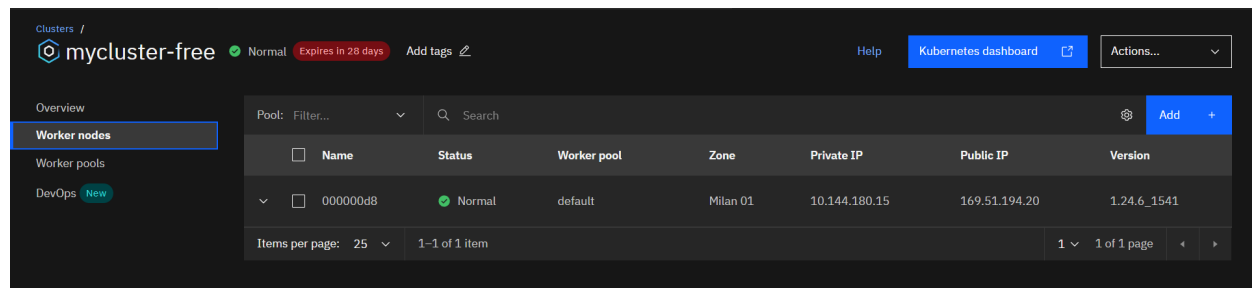
C:\Windows\system32>docker push icr.io/8080ns/repo:1
The push refers to repository [icr.io/8080ns/repo]
e07ee1baac5f: Pushed
1: digest: sha256:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525

C:\Windows\system32>ibmcloud cr image-list
Listing images...

Repository          Tag    Digest          Namespace    Created    Size    Security status
icr.io/8080ns/repo  1      f54a58bc1aac    8080ns       1 year ago 2.5 kB  -

OK
```

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 nodeport.



The screenshot shows the IBM Cloud Clusters dashboard for a cluster named 'mycluster-free'. The cluster is in a 'Normal' state and expires in 28 days. The 'Worker nodes' tab is selected, displaying a table with one worker node.

Name	Status	Worker pool	Zone	Private IP	Public IP	Version
000000d8	Normal	default	Milan 01	10.144.180.15	169.51.194.20	1.24.6_1541

At the bottom of the table, it indicates 'Items per page: 25' and '1-1 of 1 item'.