

Assignment 4

Assignment date	10th november 2022
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Maximum Marks	2 Marks

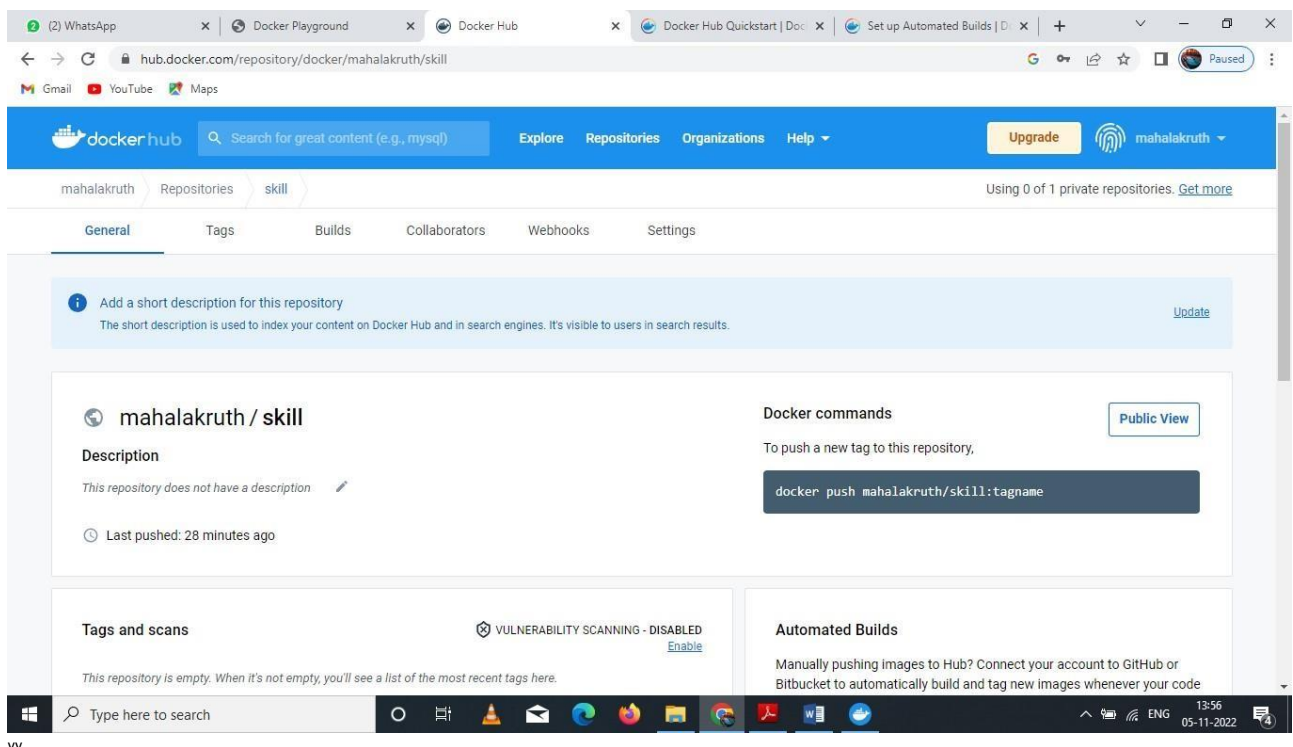
Question 1:

Pull an image from docker hub and run it on docker playground.

Solution 1:

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

```
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
```



Docker playground:

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:26:45, a 'CLOSE SESSION' button, and an 'Instances' section. Below this, there's a '+ ADD NEW INSTANCE' button and a list of instances, including '192.168.0.18 node1'. The main area displays details for the instance 'cdj1c1m0_cdj1cam0qau000fq8ud0', including its IP (192.168.0.18), memory usage (1.47% / 3.906GiB), CPU usage (0.57%), and an SSH command. Below this, there's a terminal window showing the following commands and output:

```
$ docker pull jenkins
Using default tag: latest
Error response from daemon: manifest for jenkins:latest not found: manifest unknown: manifest unknown
[node1] (local) root@192.168.0.18 ~
$ docker jenkins
docker: 'jenkins' is not a docker command.
See 'docker --help'
[node1] (local) root@192.168.0.18 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1c749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.18 ~
$
```

Docker UI:

The screenshot shows the Docker UI interface. At the top, there's a navigation bar with tabs for 'Dashboard', 'Containers', 'Containers Network', 'Images', 'Networks', 'Volumes', and 'Info'. A 'Refresh' button is also present. The main area is divided into three sections: 'Running Containers' (showing 'serene_keller' up 17 seconds), 'Status' (a donut chart showing 100% Running, 0% Stopped, and 0% Ghost), and 'Containers created' (a line graph showing 1 container created on 04/11/2022). Below this, there's a section for 'Images created' showing 1 image created.

Question 2:

Create a docker file for the job portal app or hello world app and deploy it in docker desktop app.

Solution 2:

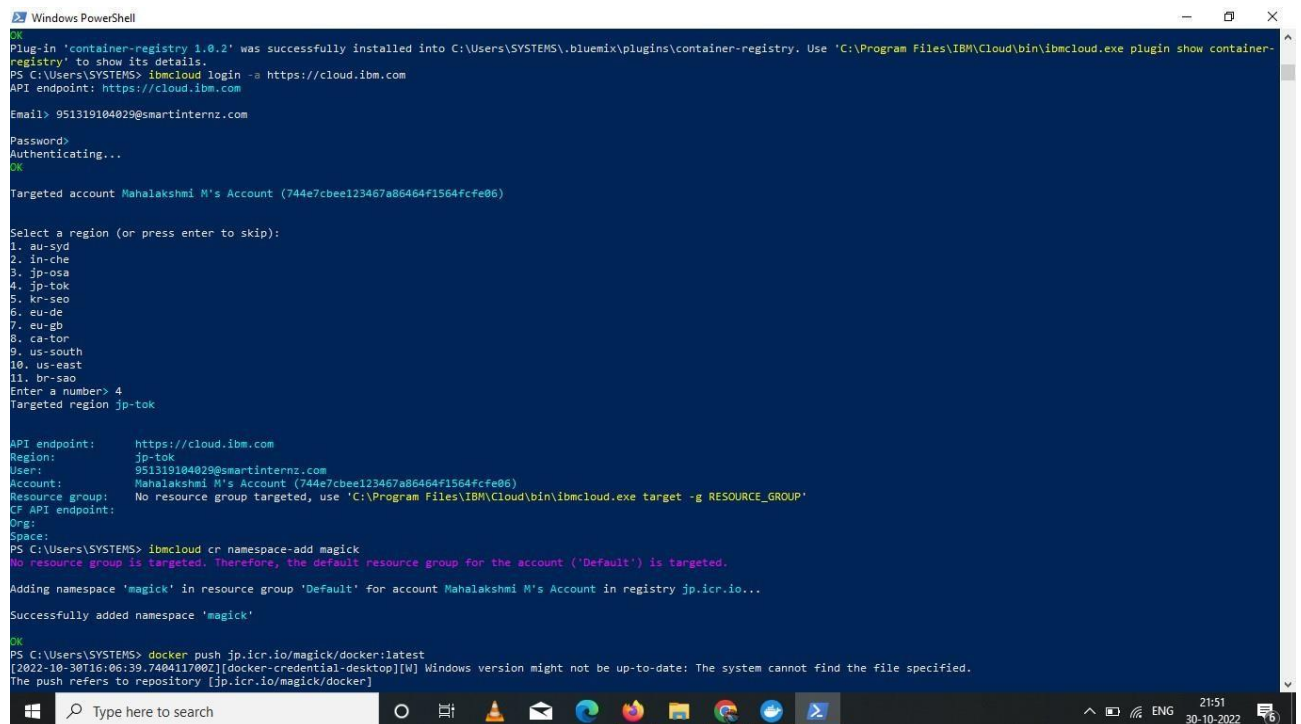
DockerFile

Dockerfile - Notepad

File Edit Format View Help

```
FROM python:3.8
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python", "app.py"]
```

Bulid Docker image



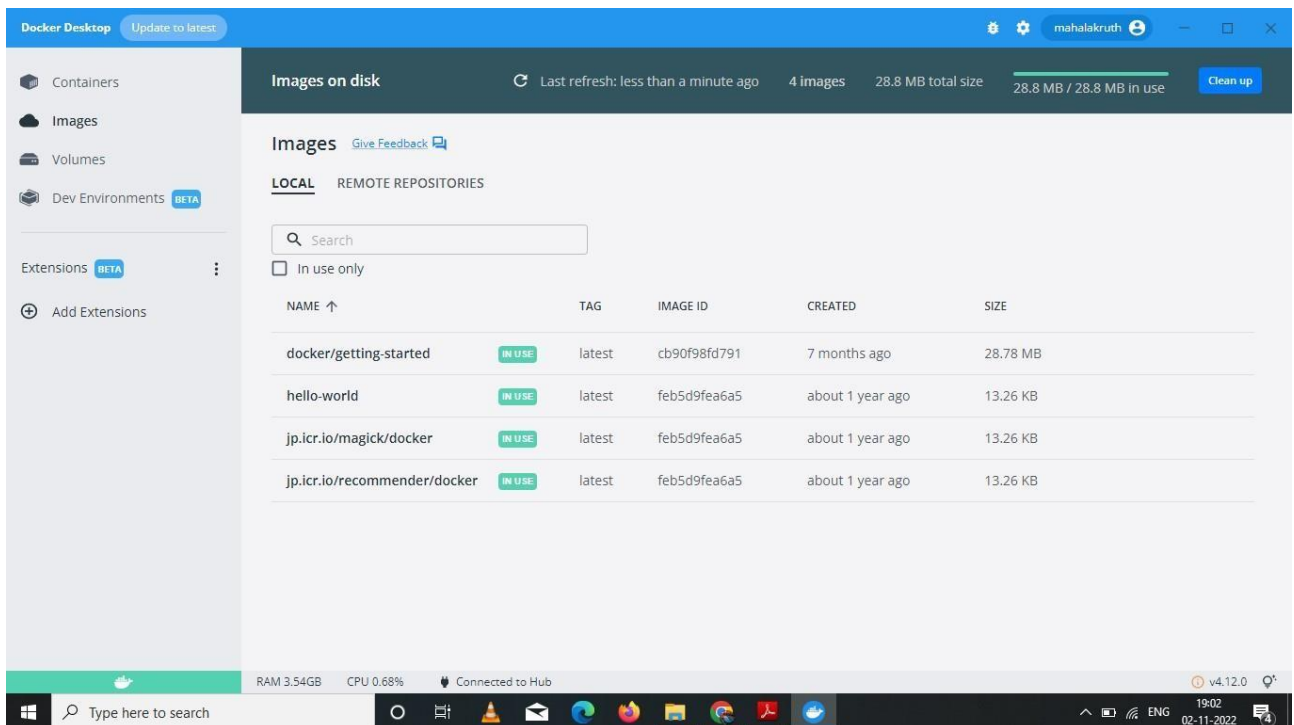
```
Windows PowerShell
PS C:\Users\SYSTEMS> ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com
Email> 951319104029@smartinternz.com
Password>
Authenticating...
OK
Targeted account Mahalakshmi M's Account (744e7cbee123467a86464f1564fce06)

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> 4
Targeted region jp-tok

API endpoint: https://cloud.ibm.com
Region: jp-tok
User: 951319104029@smartinternz.com
Account: Mahalakshmi M's Account (744e7cbee123467a86464f1564fce06)
Resource group: No resource group targeted, use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:
PS C:\Users\SYSTEMS> ibmcloud cr namespace-add magick
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'magick' in resource group 'Default' for account Mahalakshmi M's Account in registry jp.icr.io...
Successfully added namespace 'magick'

OK
PS C:\Users\SYSTEMS> docker push jp.icr.io/magick/docker:latest
[2022-10-30T16:06:39.740411700Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the file specified.
The push refers to repository [jp.icr.io/magick/docker]
```

Deploy it on Docker hub



```
Command Prompt
New version 2.12.1 is available.
Change logs: https://github.com/IBM-Cloud/ibm-cloud-cli-release/releases/tag/v2.12.1
TIP: use 'ibmcloud config --check-version=false' to disable update check.

Do you want to update? [y/N] > y

Installing version '2.12.1'...
Downloading...
14.95 MiB / 14.95 MiB [=====] 100.00% 24s
<no value> bytes downloaded
Saved in C:\Users\SYSTEMS\bluemix\tmp\bx_2240656887\IBM_Cloud_CLI_2.12.1_amd64.exe

C:\Users\SYSTEMS>
```

Tested it using Docker playground

The screenshot shows a web browser window with multiple tabs. The active tab is 'labs.play-with-docker.com/p/cdj1c1m0qau000fq8ubg#cdj1c1m0_cdj1cam0qau000fq8ud0'. The page displays a Docker instance named 'cdj1c1m0_cdj1cam0qau000fq8ud0' with IP '192.168.0.18'. The instance is running on a node with 1.23% memory (49.01MiB / 3.906GiB) and 0.46% CPU usage. A terminal window is open, showing the following commands and output:

```
# 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 mahalakruth/skill
Using default tag: latest
Error response from daemon: manifest for mahalakruth/skill:latest not found: manifest unknown: manifest unknown
[node1] (local) root@192.168.0.18 ~
$ docker --version
Docker version 20.10.17, build 100c701
[node1] (local) root@192.168.0.18 ~
$ docker -v
Docker version 20.10.17, build 100c701
[node1] (local) root@192.168.0.18 ~
$ dock
```

Question 3:

Create an IBM container registry and deploy helloworld app or job portal app.

Solution 3:

My image link: au.icr.io/hello-world-app/hello-world

The screenshot shows a Command Prompt window with the following commands and output:

```
C:\Users\Monashree>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% 5s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Monashree\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry'
to show its details.

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

Email> 2019115055@smartinternz.com

Password>
Authenticating...
OK

Targeted account Monashree K's Account (302198646cc145ea8bc880cfb0a0d15d)

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
892f036fd35: Pushing [=====] 110.5MB/529MB
d1dec9917839: Pushing [=====] 79.9MB/152MB

API endpoint: https://cloud.ibm.com
d9d07d783dd5: Pushing [=====] 67.45MB/124.1MB
d1dec9917839: Pushing [=====] 69.67MB/152MB
```

```
C:\Windows\System32\cmd.exe - docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world

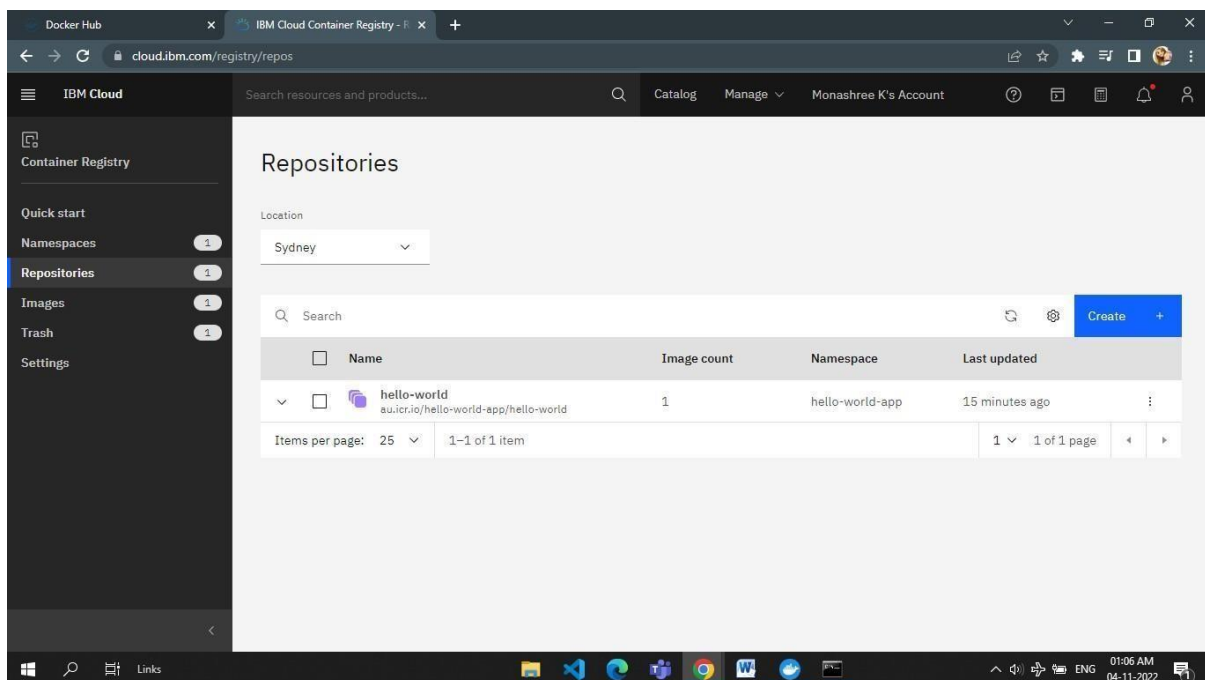
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc069: Pushed
006e0930f5e: Pushed
4bb20ce8724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1569e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/helloworldapp
882fd36bfd35: Mounted from hello-world-app/helloworldapp
d1dc9917839: Mounted from hello-world-app/helloworldapp
d38edf99e1dd: Mounted from hello-world-app/helloworldapp
4ed121b04368: Mounted from hello-world-app/helloworldapp
d9d07d703dd5: Mounted from hello-world-app/helloworldapp
latest: digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>ibmcloud cr image-list
Listing images...

Repository                                Tag      Digest      Namespace    Created      Size      Security status
au.icr.io/hello-world-app/hello-world    latest   0036fe145662 hello-world-app 12 minutes ago 356 MB    -

OK

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
* Serving Flask app "app"
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://172.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [03/Nov/2022 19:35:58] "GET / HTTP/1.1" 200 -
```



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 nodeport.

Solution 4:

<https://raw.githubusercontent.com/itsmona14/IBM-Assignment-cloud/main/deployment.yaml>

```

apiVersion: v1 kind: Service
metadata: name: hello-world-
deployment
spec: ports:
  - port: 5000
    targetPort: 5000
  selector:
    app: hello-world
--- apiVersion: apps/v1 kind:
Deployment metadata: name:
hello-world-deployment
spec:
  replicas: 1 selector:
    matchLabels:
      app: hello-world
  template:
    metadata:
      labels: app:
        hello-world
    spec: containers:
      - name: hello-world image:
        au.icr.io/hello-world-app/hello-
        world imagePullPolicy: Always
        ports:
          - containerPort: 5000

```

mycluster-free - IBM Cloud

cloud.ibm.com/kubernetes/clusters/cdi1j33f0a6mchav5kig/overview

IBM Cloud Search resources and products...

Clusters / mycluster-free Normal Expires in 29 days Add tags Help Kubernetes dashboard Actions...

Overview

- Worker nodes
- Worker pools
- DevOps New

Expires in 29 days:
Be sure to back up your data, your cluster will be deleted in 29 days. To access the full capabilities of the service, try out a [standard cluster](#).

Node status	Add-on status	Master status	Ingress status
1 of 1 Normal	0 of 0 Normal	Normal Normal	Unknown
Details	Details	Docs	Docs

Details

Cluster ID cdi1j33f0a6mchav5kig	Version 1.24.7_1542	Infrastructure Classic	Zones Milan 01
Created 04/11/2022, 01:12	Resource group Default	Image security enforcement Enable	

Windows taskbar: 01:37 PM 04-11-2022

