

# ASSIGNMENT 4

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

03:48:16

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.28  
node1

cdmtu463\_cdmtu8u3tccg009qe5fg

IP  
192.168.0.28

OPEN PORT

Memory  
28.97% (1.132GiB / 3.906GiB)

CPU  
0.19%

SSH  
ssh ip172-18-0-24-cdmtu463tccg009qe5dg@direct.labs.play-with-d

DELETE EDITOR

```
[node1] (local) root@192.168.0.28 ~
$ docker run -it --name "my-docker-container" node bash
Unable to find image 'node:latest' locally
latest: Pulling from library/node
17c9e6141fdb: Pull complete
de4a4c6c8a8: Pull complete
4e4e4d8587e6: Pull complete
a7969cfff46: Pull complete
74fbfde6af91: Pull complete
babbacf2d498: Pull complete
bd2943500448: Pull complete
98eaae01c196: Pull complete
61339482de65: Pull complete
Digest: sha256:6da4e30e3952e460fe4ad256e46a8b79acce46dd596bbe4ef882d5ec0d1ef6cb
Status: Downloaded newer image for node:latest
root@cab4c48a9779:/#
```

03:47:34

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.28  
node1

cdmtu463\_cdmtu8u3tccg009qe5fg

IP  
192.168.0.28

OPEN PORT

Memory  
28.64% (1.119GiB / 3.906GiB)

CPU  
0.12%

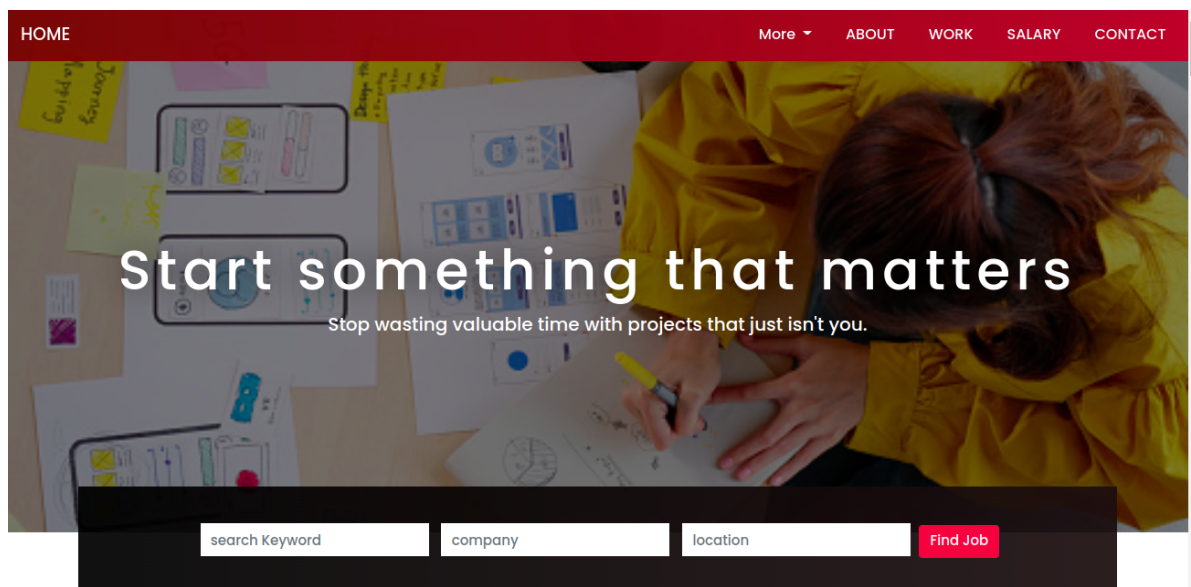
SSH  
ssh ip172-18-0-24-cdmtu463tccg009qe5dg@direct.labs.play-with-d

DELETE EDITOR

```
a7969cfff46: Pull complete
74fbfde6af91: Pull complete
babbacf2d498: Pull complete
bd2943500448: Pull complete
98eaae01c196: Pull complete
61339482de65: Pull complete
Digest: sha256:6da4e30e3952e460fe4ad256e46a8b79acce46dd596bbe4ef882d5ec0d1ef6cb
Status: Downloaded newer image for node:latest
root@cab4c48a9779:/# exit
exit
[node1] (local) root@192.168.0.28 ~
$ docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS   NAMES
cab4c48a9779   node      "docker-entrypoint.s..." 54 seconds ago Exited (0) 20 seconds ago   my-docker-container
[node1] (local) root@192.168.0.28 ~
$
```

## 2. Create a docker file for the jobportal application and deploy it in Docker desktop application.

```
PROBLEMS OUTPUT TERMINAL GITLENS JUPYTER DEBUG CONSOLE
Remote branch:
main tracked
● user@user-Latitude-3520:~/Desktop/IBM/assignment-4/task 2/JobApplication$ cd ..
○ user@user-Latitude-3520:~/Desktop/IBM/assignment-4/task 2$ docker compose up --build
[+] Building 11.9s (8/8) FINISHED
=> [internal] load build definition from Dockerfilenginx 0.0s
=> => transferring dockerfile: 138B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/nginx:latest 4.3s
=> [1/3] FROM docker.io/library/nginx:latest@sha256:943c25b4b66b332184d5ba6bb18234273551593016c0e0ae906bab 6.9s
=> resolve docker.io/library/nginx:latest@sha256:943c25b4b66b332184d5ba6bb18234273551593016c0e0ae906bab 0.0s
=> sha256:96aa2038b42f1502b59b3a862b1f5980d3478063028d8e968f0810b9b0502380 1.57kB / 1.57kB 0.0s
=> sha256:76c69feac34e85768b284f84416c3546b240e8cb4f68acbbe5ad261a8b36f39f 7.66kB / 7.66kB 0.0s
=> sha256:e9995326b091af7b3ce352fad4d76cf3a3cb62b7a0c35cc5f625e8e649d23c50 31.42MB / 31.42MB 5.4s
=> sha256:943c25b4b66b332184d5ba6bb18234273551593016c0e0ae906bab111548239f 1.86kB / 1.86kB 0.0s
=> sha256:71689475aec267fae8891b2b3d2bef78c6b3d57c077129ff9cd69b6e5253dfa7 25.41MB / 25.41MB 2.1s
=> sha256:f88a23025338bc64e97dc350efac90275df227949d7c835b8b1f6fbc4d2439c0 627B / 627B 1.2s
=> sha256:0df440342e265c89de536643c3376dadf44c810fe2fb2b2ee44711f8661ce531 959B / 959B 1.6s
=> sha256:eef26ceb3309d6e72a4402c3f16b047416adecaf91bc5360ebd4205d1ef5e310 774B / 774B 2.4s
=> sha256:8e3ed6a9e43aaf17bc2175fa2c7ae2ee24c4ff4d32bf82adfilea689db4dcf15e1 1.40kB / 1.40kB 2.4s
=> extracting sha256:e9995326b091af7b3ce352fad4d76cf3a3cb62b7a0c35cc5f625e8e649d23c50 0.7s
=> extracting sha256:71689475aec267fae8891b2b3d2bef78c6b3d57c077129ff9cd69b6e5253dfa7 0.4s
=> extracting sha256:f88a23025338bc64e97dc350efac90275df227949d7c835b8b1f6fbc4d2439c0 0.0s
=> extracting sha256:0df440342e265c89de536643c3376dadf44c810fe2fb2b2ee44711f8661ce531 0.0s
=> extracting sha256:eef26ceb3309d6e72a4402c3f16b047416adecaf91bc5360ebd4205d1ef5e310 0.0s
```



### 3. Create a IBM container registry and deploy helloworld app or jobportalapp.

```
Activities Terminal Nov 16 00:56
user@user-Latitude-3520: ~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4
user@user-Latitude-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4$ code .
user@user-Latitude-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4$ ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com
Email> raguramp.19cse@kongu.edu
Password>
Authenticating...
OK
Targeted account Raguram G P's Account (b78ab61e860148f882d7f4f027b91364)
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: raguramp.19cse@kongu.edu
Account: Raguram G P's Account (b78ab61e860148f882d7f4f027b91364)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:
user@user-Latitude-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4$
```

```
Activities Visual Studio Code Nov 16 00:59
readme.txt - Assignment 4 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER: ASSIGNMENTS
task1
task2
task3
  JobApplication
    Dockerfile
    readme.txt
task4
  JobApplication
    deployment.yaml
    namespace.yaml
    readme.txt
    service.yaml
  Assignment-result.pdf
task3 > readme.txt
You, 5 days ago | 1 author (You)
1 # create a docker file and build that file using the name of icr.io/<namespace-name>/<repo-name>:
2 docker build . --tag icr.io/ibm_2002/ovya
3 # push the image to the IBM Container Registry using
4 docker push icr.io/ibm_2002/ovya
You, 5 days ago • Assignment-4 completed
PROBLEMS OUTPUT TERMINAL GITLENS JUPYTER DEBUG CONSOLE
bash - task3
user@user-Latitude-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4/task 3$ docker build . --tag icr
.io/raguram-2001/ibm
Sending build context to Docker daemon 14.82MB
Step 1/2 : FROM ubuntu:latest
--> a8780b506fa4
Step 2/2 : COPY ./JobApplication /JobApplication
--> b089ac55d409
Successfully built b089ac55d409
Successfully tagged icr.io/raguram-2001/ibm:latest
No Notifications
```

The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a project structure with tasks 1 through 4. The main editor displays a Dockerfile with the following content:

```
task 3 > readme.txt
You, 5 days ago | 1 author (You)
1 # create a docker file and build that file using the name of icr.io/<namespace-name>/<repo-name>:tag
2 docker build . --tag icr.io/ibm_2002/ovya
3 # push the image to the IBM Container Registry using
4 docker push icr.io/ibm_2002/ovya
```

The terminal at the bottom shows the execution of the Docker commands:

```
bash - task 3
^C
~/raguram-2001/ibme-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4/task 3$ docker push icr.io
Using default tag: latest
The push refers to repository [icr.io/raguram-2001/ibm]
d2e29492a61c: Pushed
f4a670ac65b6: Pushed
latest: digest: sha256:3a5cc79bd5c5580738b49f27d41b62e39ddd4893ecf00f9639f1238fe2e9a4ff size: 741
~/user@user-Latitude-3520:~/Desktop/IBM/Assignment/Assignments/Team Member 1/Assignment 4/task 3$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
icr.io/ibm_2001/job_application	latest	b089ac55d409	4 days ago	92.6MB
icr.io/ibm_2022/job_application	latest	b089ac55d409	4 days ago	92.6MB
icr.io/raguram-2001/ibm	latest	b089ac55d409	4 days ago	92.6MB
task2-nginx-image	latest	7e69d52f22cf	4 days ago	157MB
node	latest	cb9aad9080ca	7 days ago	994MB
ubuntu	latest	a8780b506f4a	13 days ago	77.8MB
hello-world	latest	feb5d9fea6a5	13 months ago	13.3kB

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.

The screenshot shows the Kubernetes dashboard interface. The left sidebar contains a navigation menu with options like Workloads, Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, Replication Controllers, Stateful Sets, Service, Ingresses, Ingress Classes, Services, Config and Storage, and Config Maps. The main area displays the details for a deployment named 'deployment-kube-app' in the 'my-kubernetes' namespace.

**Metadata**

Name	Namespace	Created	Age
deployment-kube-app	my-kubernetes	Nov 11, 2022	a minute ago

UID: 1d09cc36-02d9-4068-969a-768baae307c1

Annotations: deployment.kubernetes.io/revision: 1, kubectl.kubernetes.io/last-applied-configuration

**Resource information**

Strategy	Min ready seconds	Revision history limit
RollingUpdate	0	10

Selector: app: kube-app

The screenshot shows the Visual Studio Code interface with three files open: `deployment.yaml`, `service.yaml`, and `namespace.yaml`. The `deployment.yaml` file contains the following YAML content:

```
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: deployment-kube-app
5   namespace: my-kubernetes
6 spec:
7   template:
8     metadata:
9       labels:
10        app: kube-app
11     spec:
12       containers:
13         - name: my-app-job
14           image: icr.io/ibm_2002/ovya
15           ports:
16             - containerPort: 80
17               protocol: TCP
18       selector:
19         matchLabels:
```

The terminal at the bottom shows the following commands and output:

```
balaji@codingmart-latitude-3520:~/Documents/0/task 4$ kubectl apply -f namespace.yaml
namespace/my-kubernetes created
balaji@codingmart-latitude-3520:~/Documents/0/task 4$ kubectl apply -f deployment.yaml
deployment.apps/deployment-kube-app created
balaji@codingmart-latitude-3520:~/Documents/0/task 4$ kubectl apply -f service.yaml
service/service.yaml file created
balaji@codingmart-latitude-3520:~/Documents/0/task 4$
```

## IBM CLOUD CONTAINER REGISTRY

The screenshot shows the IBM Cloud Container Registry interface. The left sidebar contains the following navigation items: Container Registry, Quick start, Namespaces (1), Repositories (1), Images (1), Trash (0), and Settings. The main content area is titled "Namespaces" and shows a table of namespaces.

Location: Global

Resource group: Filter... Search Create +

<input type="checkbox"/>	Name	Resource group	Repository count	Image count	Retention policy
<input checked="" type="checkbox"/>	raguram-2001	Default	1	1	Retain all images

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Activities Visual Studio Code Nov 16 01:12

cloud.ibm.com/registry/repos

IBM Cloud Search resources and products... Catalog Manage Raguram G P's Account

### Repositories

Location: Global

Search

Create +

<input type="checkbox"/>	Name	Image count	Namespace	Last updated	
<input checked="" type="checkbox"/>	ibm icri.io/raguram-2001/ibm	1	raguram-2001	5 days ago	:

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Activities Visual Studio Code Nov 16 01:12

cloud.ibm.com/registry/images

IBM Cloud Search resources and products... Catalog Manage Raguram G P's Account

### Images

Location: Global

View by: Digest Search Create +

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size	Security status	
<input checked="" type="checkbox"/>	raguram-2001/ibm@sha256:3a5cc79bd5c5...	latest	Docker	5 days ago	45 MB	No issues	:

Items per page: 25 1-1 of 1 item 1 1 of 1 page