

Assignment - 4

Kubernetes/Docker



Assignment Date	9 September 2022
Student Name	Varun S
Student Roll Number	111519205055
Maximum Marks	2 Marks

Question 1:

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

03:58:44

CLOSE SESSION

Instances  

+ ADD NEW INSTANCE

192.168.0.8
node1

cdqtkbe0_cdqtkdu3tccg00ddbq|l0

IP
192.168.0.8

OPEN PORT 80

Memory
2.53% (101.1MiB / 3.906GiB)

CPU
0.84%

SSH
ssh ip172-18-0-66-cdqtkbe0qau0009edbqg@direct.labs.play

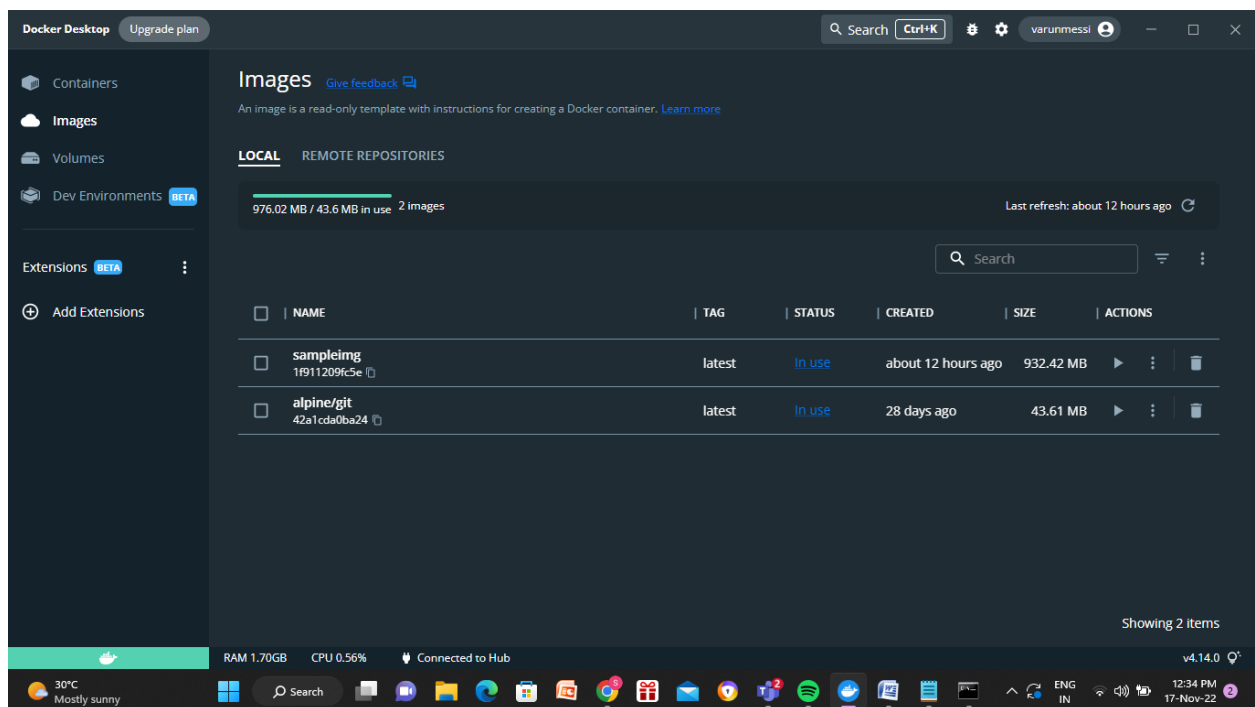
DELETE EDITOR

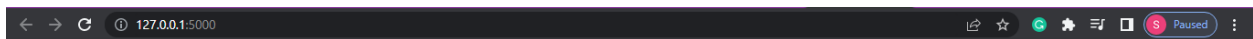
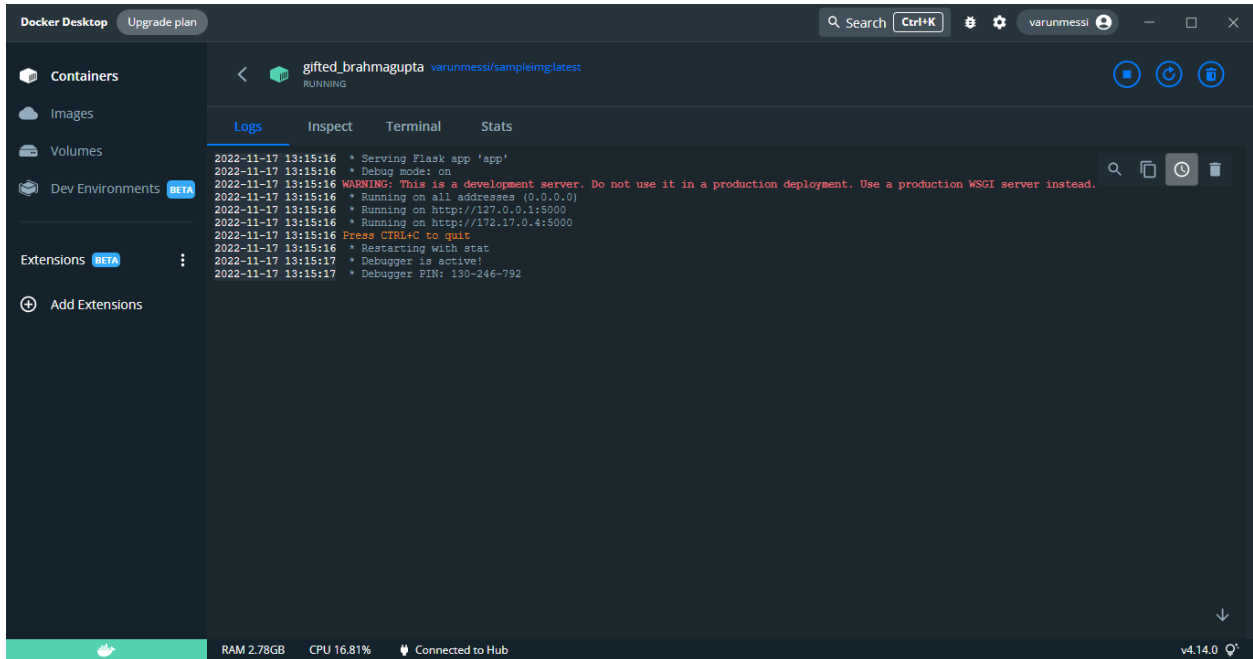
```
#####
[node1] (local) root@192.168.0.8 ~
$ docker run -d -p 80:80 docker/getting-started
Unable to find image 'docker/getting-started:latest' locally
latest: Pulling from docker/getting-started
df9b9388f04a: Pull complete
5867cba5fcbd: Pull complete
4b639e65cb3b: Pull complete
061ed9e2b976: Pull complete
bc19f3e8eeb1: Pull complete
4071be97c256: Pull complete
79b586f1a54b: Pull complete
0c9732f525d6: Pull complete
Digest: sha256:b558be874169471bd4e65bd6eac8c303b271a7ee8553ba47481b73b2bf597aae
Status: Downloaded newer image for docker/getting-started:latest
ed601093b81b49206fcdab88910a4520938433205027627be0366562eaf1a0e
[node1] (local) root@192.168.0.8 ~
$
```

```
C:\Users\Siva\Desktop\flask with form_and_docker-main>docker build -t firstimage .
[+] Building 79.9s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 179B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.10.6
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load build context
=> => transferring context: 10.98kB
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa
=> => resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa
=> => sha256:d25a6390b10283603ff096d777bba5cbb1b9126fb0be7d118b9574946bcf84 8.53kB / 8.53kB
=> => sha256:1671565cc8d0f8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 55.01MB / 55.01MB
=> => sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 5.16MB / 5.16MB
=> => sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 10.88MB / 10.88MB
=> => sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa91052 2.35kB / 2.35kB
=> => sha256:8d1f943ceaa3b3ce05df5c0926e7058836b048b700176bf9c56d8f37ac13fca 2.22kB / 2.22kB
=> => sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babe0bf1043c08de1901a 54.58MB / 54.58MB
=> => sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 196.79MB / 196.79MB
=> => sha256:d8092d56ded5476fe7c30225eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 6.29MB / 6.29MB
=> => extracting sha256:1671565cc8d0f8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 3.3s
=> => sha256:c71afc637d59ddc44c5fd3c348504df2b3bb204f0857ea22c6ac8a1d285a5 20.02MB / 20.02MB
=> => extracting sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 0.4s
=> => sha256:864a10b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 234B / 234B
=> => sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB
=> => extracting sha256:fa9c7528c685216129e8e67bf362a7702e7b1daa585ab85546a41508830657d6 0.4s
=> => extracting sha256:53ad072f9cd16fc8eb93b182b20e758e11acc0ef60babe0bf1043c08de1901a 3.3s
=> => extracting sha256:d6b983117533b718374f1701ef593dd2afa6613c7908c6553be8e2a150e6448a 7.5s
=> => extracting sha256:d8092d56ded5476fe7c30225eb4dc6ff495ae8fb4dd28aa18dbcb7581e24a6c 0.7s
=> => extracting sha256:c71afc637d59ddc44c5fd3c348504df2b3bb204f0857ea22c6ac8a1d285a5 1.2s
=> => extracting sha256:864a10b3c704553e08cb5fcd12fbaee1c07048f6365f0fa35e84a285413da40b 0.0s
=> => extracting sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 0.5s
=> [2/5] WORKDIR /app
=> [3/5] COPY requirements.txt .
=> [4/5] RUN pip install -r requirements.txt
=> [5/5] COPY . .
=> exporting to image
=> => exporting layers
=> => writing image sha256:1f911209fc5ebdbfa750060822493b74978629379178f5f0239a3006f322314f
=> => naming to docker.io/library/firstimage
```

Question 2:

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





FLASKAPP CREATE ABOUT

Blog Page

Messages

Message One

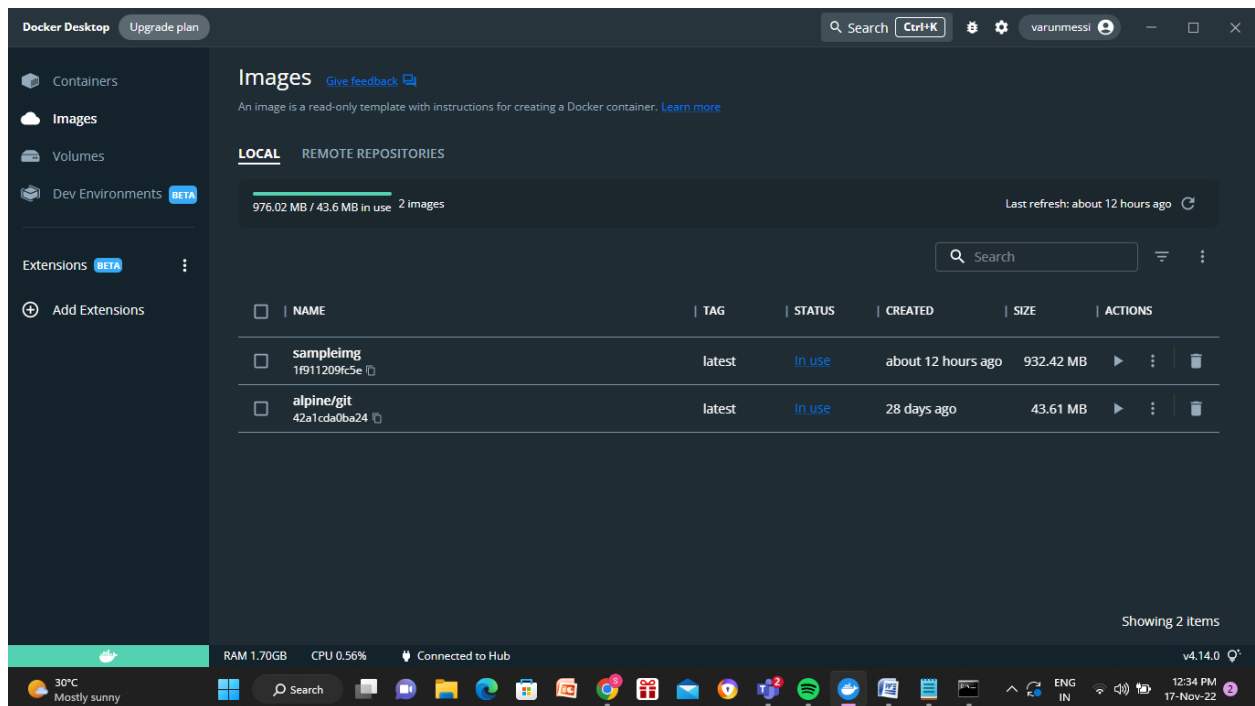
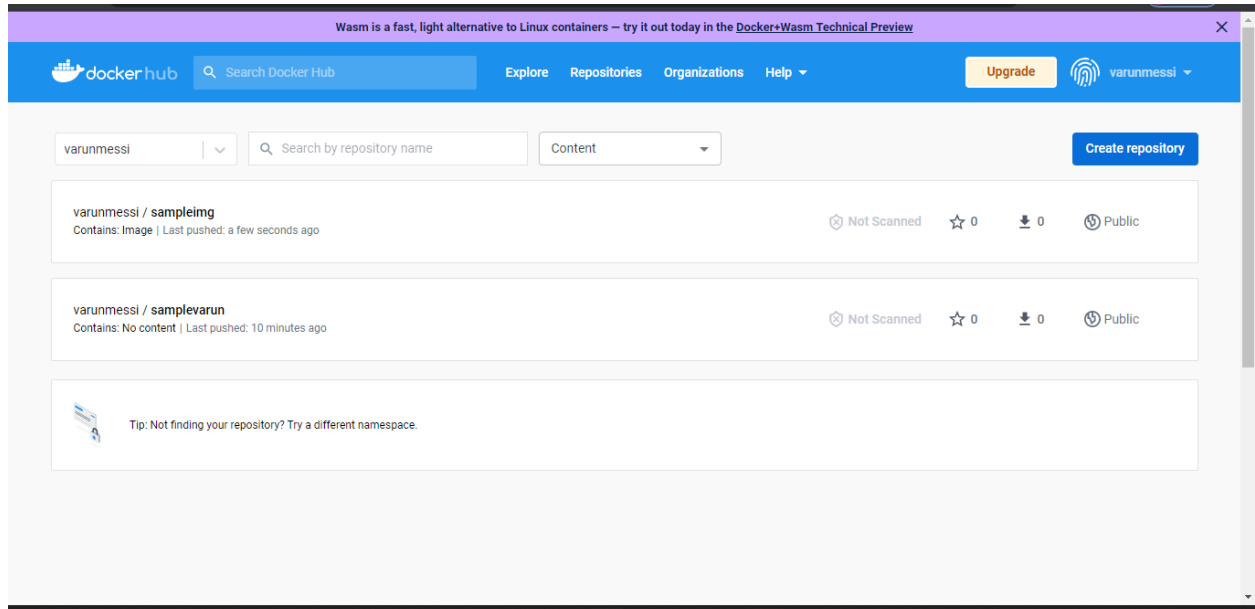
Message One Content

Message Two

Message Two Content

Question 3:

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



IBM Cloud

Container Registry

Quick start

Namespaces1

Repositories0

Images0

Trash0

Settings

Search resources and products...

CatalogManageVarun S's Account

Namespaces

LocationTokyo

Resource group: Filter...SearchCreate +

Name	Resource group	Repository count	Image count	Retention policy
varuns	Default	0	0	Retain all images

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

IBM Cloud

Container Registry

Quick start

Namespaces1

Repositories1

Images1

Trash0

Settings

Search resources and products...

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Repositories

LocationTokyo

SearchCreate +

Name	Image count	Namespace	Last updated
repo1 jp.icr.io/varuns/repo1	1	varuns	1 day ago

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

Question 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 Kubernetes dashboard interface. The left sidebar contains a navigation menu with categories: Workloads, Service, and Config and Storage. The 'Deployments' link under 'Workloads' is selected. The main panel displays the details for the 'sample-app' deployment in the 'default' namespace. The 'Metadata' section shows the deployment was created on Oct 27, 2022, at a day ago, with UID 9699564b-f097-4168-be80-31f40116a0fc. The 'Resource information' section shows the strategy is RollingUpdate, with 0 min ready seconds and a revision history limit of 10. The 'Rolling update strategy' section shows a max surge of 25% and a max unavailable of 25%.

Workloads

- Cron Jobs
- Daemon Sets
- Deployments**
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Ingress Classes
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets
- Storage Classes

sample-app

Metadata

Name	Namespace	Created	Age	UID
sample-app	default	Oct 27, 2022	a day ago	9699564b-f097-4168-be80-31f40116a0fc

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: sample-app

Rolling update strategy

Max surge	Max unavailable
25%	25%

The screenshot shows the Kubernetes dashboard interface. The left sidebar contains a navigation menu with categories: Workloads, Service, and Config and Storage. The 'Pods' link under 'Workloads' is selected. The main panel displays the details for the 'sample-app-d9bfd84d9-fp74z' pod in the 'default' namespace. The 'Metadata' section shows the pod was created on Oct 27, 2022, at a day ago, with UID 3f3b4ff6-4fa6-4f07-9454-35acb2c91631. The 'Resource information' section shows the pod is running on the 'docker-desktop' node, with status 'ImagePullBackOff', IP '10.1.0.48', QoS Class 'BestEffort', 0 restarts, and service account 'default'. The 'Conditions' section shows the pod is not ready, with a message 'containers with unready status: [sample-app-container]'.

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods**
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses
- Ingress Classes
- Services

Config and Storage

- Config Maps
- Persistent Volume Claims
- Secrets
- Storage Classes

sample-app-d9bfd84d9-fp74z

Metadata

Name	Namespace	Created	Age	UID
sample-app-d9bfd84d9-fp74z	default	Oct 27, 2022	a day ago	3f3b4ff6-4fa6-4f07-9454-35acb2c91631

Labels

- app: sample-app
- pod-template-hash: d9bfd84d9

Resource information

Node	Status	IP	QoS Class	Restarts	Service Account
docker-desktop	ImagePullBackOff	10.1.0.48	BestEffort	0	default

Conditions

Type	Status	Last probe time	Last transition time	Reason	Message
Initialized	True	-	a day ago	-	-
Ready	False	-	a day ago	ContainersNotReady	containers with unready status: [sample-app-container]