Assignment	04
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Maximum Marks	2 Mark

Question-1

Pull an image from Dockers hub and run it in Dockers playground.

SOLUTION:

STEP: 1

STEP: 2

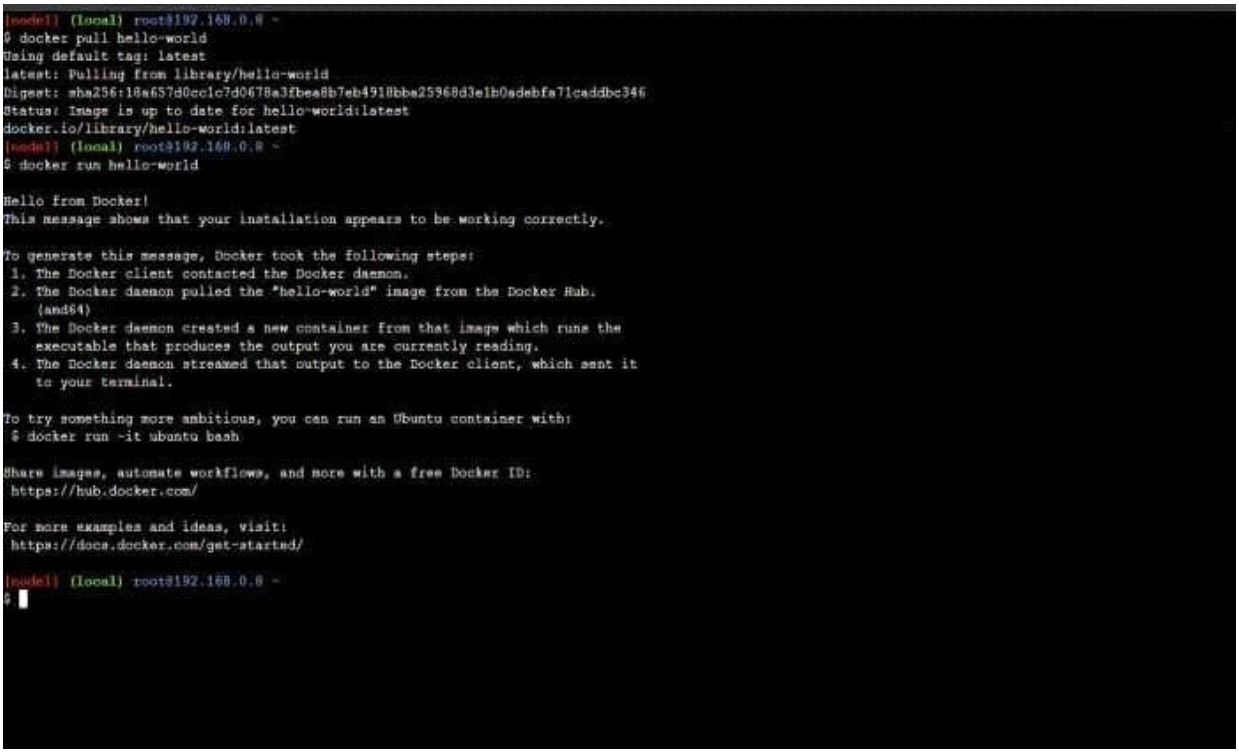
STEP: 3

Login to Dockers hub and get an image

- **Open Dockers playground**
- **Login with Dockers**
- **Create new instance**

In the command prompt run the following:

$	**docker pull hello-world**	**//To pull an image from docker hub**
$	**docker run hello-world**	**//To run the image in docker playground**



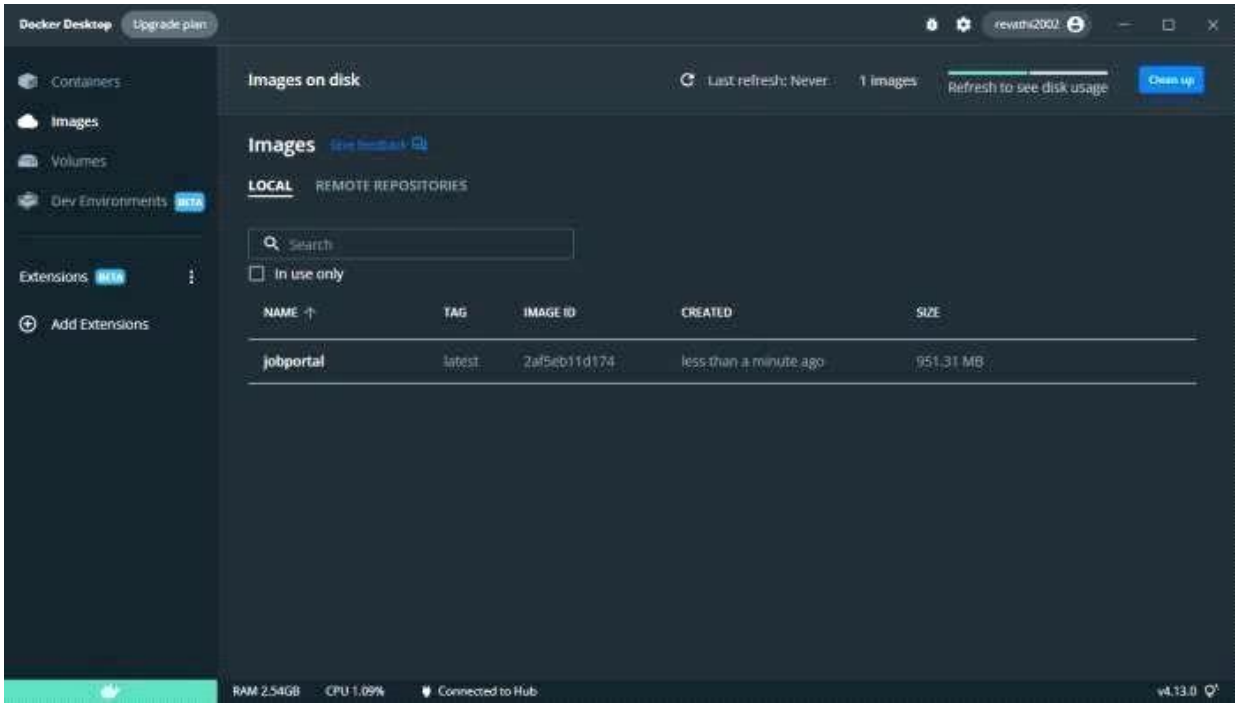
QUESTION 2:

Create a Dockers fileand deploy it inDockers desktop applicationSOLUTION:

STEP: 1

STEP: 2

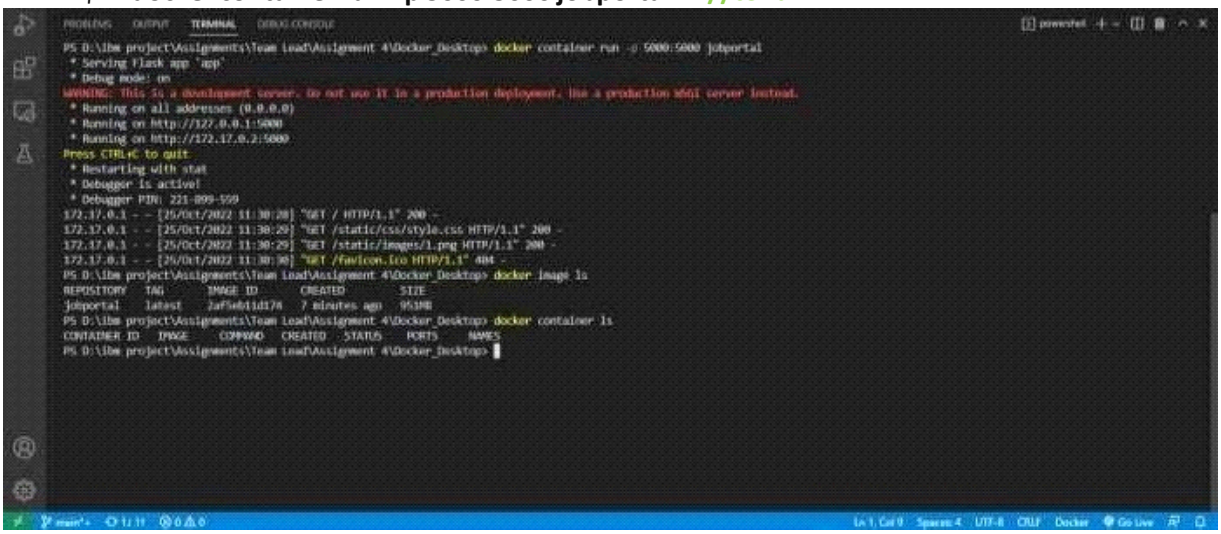
- **Create a flask application**
- **Create a Dockerfile in the same folder**



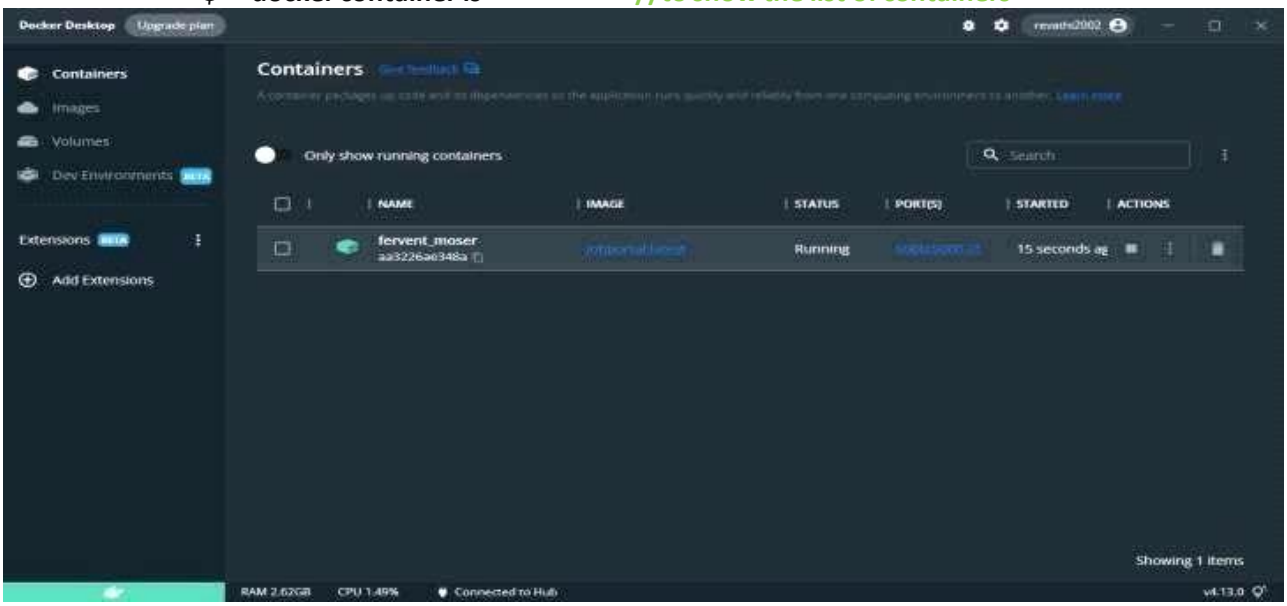
Run the following commands to deploy it in docker desktop

$	**docker build –t jobportal**	**// to deploy all the folders to docker desktop**
$	**docker image ls**	**//to show the list of images in docker desktop**

$ **docker container run –p 5000:5000 jobportal** **//to run**



$ **docker container ls** //to show the list of containers



QUESTION 3:

Create an IBM container registry anddeploy hello-world-app or job-portal- appSOLUTION:

QUESTION 4:

Create a Kubernetes cluster in IBM cloud and deploy hello- world-image or job-portal-image and alsoexpose the same app to run innode-port.

SOLUTION:

- Select your cluster from the cluster list to open the details for your cluster.
- Click Kubernetes dashboard.
- From the menu bar, click the Create new resource icon (+).
- Select the Create from form tab.
    - Enter a name for your app, i.e **hello-world**.
    - Enter **websphere-liberty** for your container image.
    - Enter the number of pods for your app deployment, such as 1.
    - Leave the Service drop-down menu set to None.
- Click Deploy. During the deployment, the cluster downloads the websphere-liberty container imagefrom Docker Hub and deploys the app in your cluster.
- Create a node port so that your app can be accessed by otherusers internallyor externally. Becauseyour cluster is a free cluster, you can only expose an app with a node port, not a load balancer or Ingress.
    - Click the Create new resource icon (+).
    - Copy the node port YAML from GitHub.
    - In the Create from input box, paste the node port YAML that youcopied in the previousstep.
    - Click Upload. The node port service is created.
- From the menu, click Services, and note the TCP endpoint port of your libertyservice in the node portrange 30000 - 32767, i.e **liberty:30357 TCP**.
- From the menu, click Pods, and note the Node that your podruns on, such as10.xxx.xx.xxx.
- Return to the IBM Cloud clusters console, select your cluster, and click the Worker Nodes tab. Findthe Public IP of the worker node that matches the private IP ofthe node that the pod runs on.
- In a tab in your browser, form the URL of your app by combining http:// with the public IP and TCPport that you previously retrieved i.e. **http:// 159.122.178.57: 30357**. The

Welcome to Liberty page is displayed. Great job! You just deployed your first app in your Kubernetes cluster.