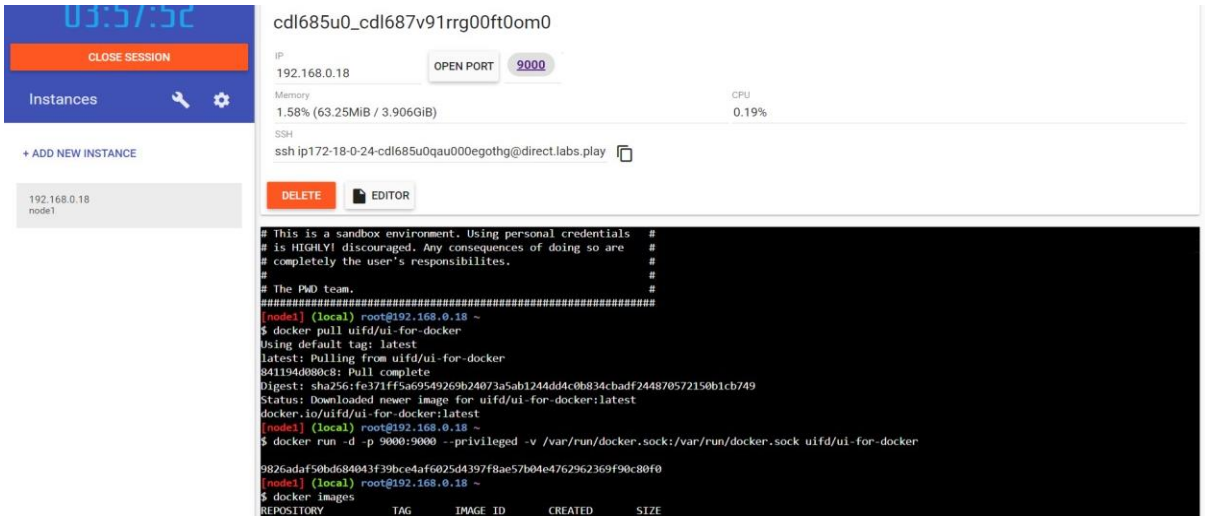
Assignment -4
Kubernetes /
Docker

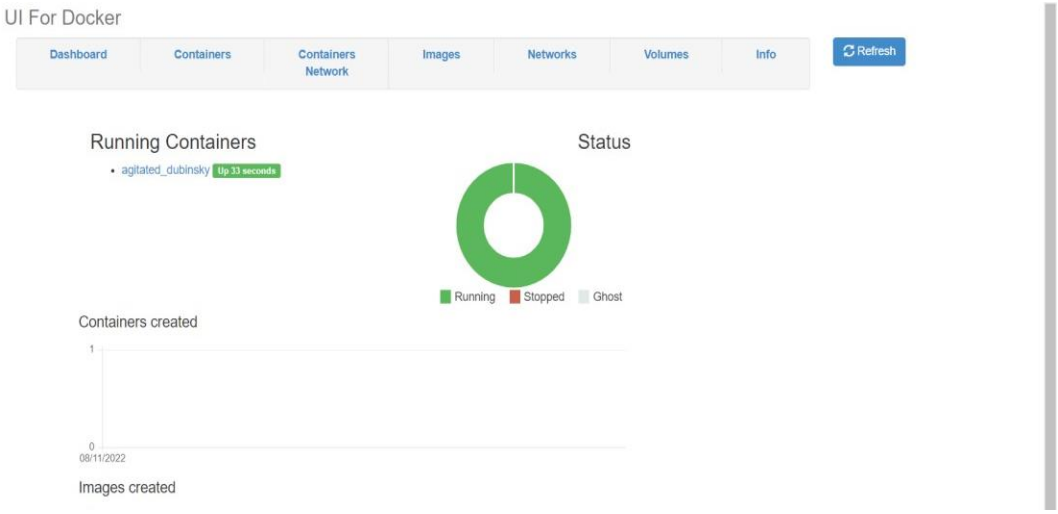
Student Name	ANJANA S
Student Roll Number	621319104002
Maximum Marks	2 Marks

Question-1:

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

Solution:





Question-2:

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

Solution:

app.py

```
from flask import *

app = Flask(_name_)

@app.route("/")
def home():
        return "Hello World"
if____name_== "__main_":
   app.run(debug=True)
```

Dockerfile:

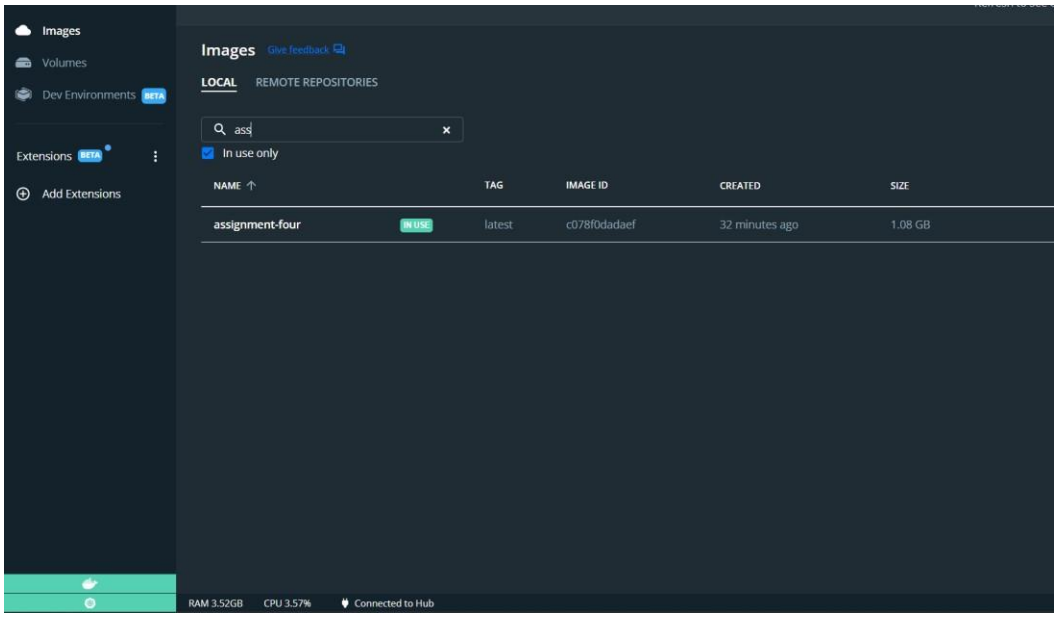
```
FROM

python:3.6

WORKDIR /app

ADD . /app

   COPY requirements.txt /app

   RUN python3 -m pip install -r

   requirements.txtRUN python3 -m pip

   install ibm_db

   EXPOSE 5000

  CMD

["python","app.py"]
```

```
Usage:  docker build [OPTIONS] PATH | URL | -

Build an image from a Dockerfile

D:\OneDrive\Desktop\IBM Docs\Assigments\assignment-four>docker build -t assignment-four .
[+] Building 410.4s (12/12) FINISHED
 => [internal] load build definition from Dockerfile                                                                    0.0s
 => => transferring dockerfile: 231B                                                                                    0.0s
 => [internal] load .dockerignore                                                                                       0.0s
 => => transferring context: 2B                                                                                         0.0s
 => [internal] load metadata for docker.io/library/python:3.6                                                           3.1s
 => [auth] library/python:pull token for registry-1.docker.io                                                           0.0s
 => [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc      0.0s
 => [internal] load build context                                                                                       0.0s
 => => transferring context: 292B                                                                                       0.0s
 => CACHED [2/6] WORKDIR /app                                                                                           0.0s
 => [3/6] ADD . /app                                                                                                    0.0s
 => [4/6] COPY requirements.txt /app                                                                                    0.0s
 => [5/6] RUN python3 -m pip install -r requirements.txt                                                                5.7s
 => [6/6] RUN python3 -m pip install ibm_db                                                                           400.6s
 => exporting to image                                                                                                  0.8s
 => => exporting layers                                                                                                 0.7s
 => => writing image sha256:c078f0dadaefc509e6a60020e5640f17a4aae981c68d3f7c7c416ec0c88fcbac                            0.0s
 => => naming to docker.io/library/assignment-four                                                                      0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

D:\OneDrive\Desktop\IBM Docs\Assigments\assignment-four>
```

```
ago      43.6MB
cker/desktop-git-helper                          c1e302e18fba86bb07f6b657155011bd6791dfc5                                352f04e41a19
ago      45.8MB
bproxy.docker.internal:5000/docker/desktop-kubernetes   kubernetes-v1.25.2-cni-v1.1.1-critools-v1.24.2-cri-dockerd-v0.2.5-1-debian   09d7e1dbc2c4
ago      363MB
s.gcr.io/kube-apiserver                          v1.25.2                                                                 97801f839490
ago      128MB
s.gcr.io/kube-scheduler                          v1.25.2                                                                 ca0ea1ee3cfd
ago      50.6MB
s.gcr.io/kube-controller-manager                 v1.25.2                                                                 dbfceb93c69b
ago      117MB
s.gcr.io/kube-proxy                              v1.25.2                                                                 1c7d8c51823b
ago      61.7MB
s.gcr.io/pause                                   3.8                                                                     4873874c08ef
 ago     711kB
s.gcr.io/etcd                                    3.5.4-0                                                                 a8a176a5d5d6
 ago     300MB
s.gcr.io/coredns                                 v1.9.3                                                                  5185b96f0bec
 ago     48.8MB
cker/getting-started                             latest                                                                  cb90f98fd791
 ago     28.8MB
cker/desktop-git-helper                          5a4fca126aadcd3f6cc3a011aa991de982ae7000                                efe2d67c403b
s ago    44.2MB
cker/desktop-vpnkit-controller                   v2.0                                                                    8c2c38aa676e
s ago    21MB
cker/desktop-storage-provisioner                 v2.0                                                                    99f89471f470
s ago    41.9MB

\OneDrive\Desktop\IBM Docs\Assigments\assignment-four>docker run -p 5000:5000 assignment-four
 Serving Flask app 'app' (lazy loading)
 Environment: production
 WARNING: This is a development server. Do not use it in a production deployment.
 Use a production WSGI server instead.
 Debug mode: on
 Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
 Restarting with stat
```

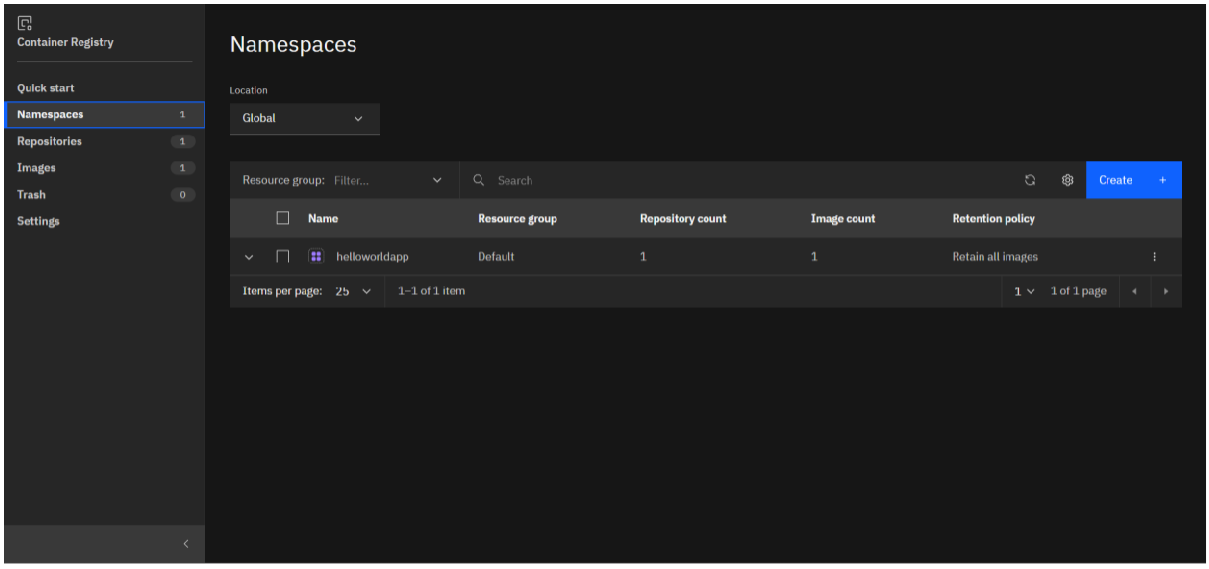
resume Gmail GitHub Personal Cloud Stor... IBM YouTube Least Common Mul... Kongunadu lhub Java Programs | Jav... Palindrome Progra... Java Programs Best Engineering C... »

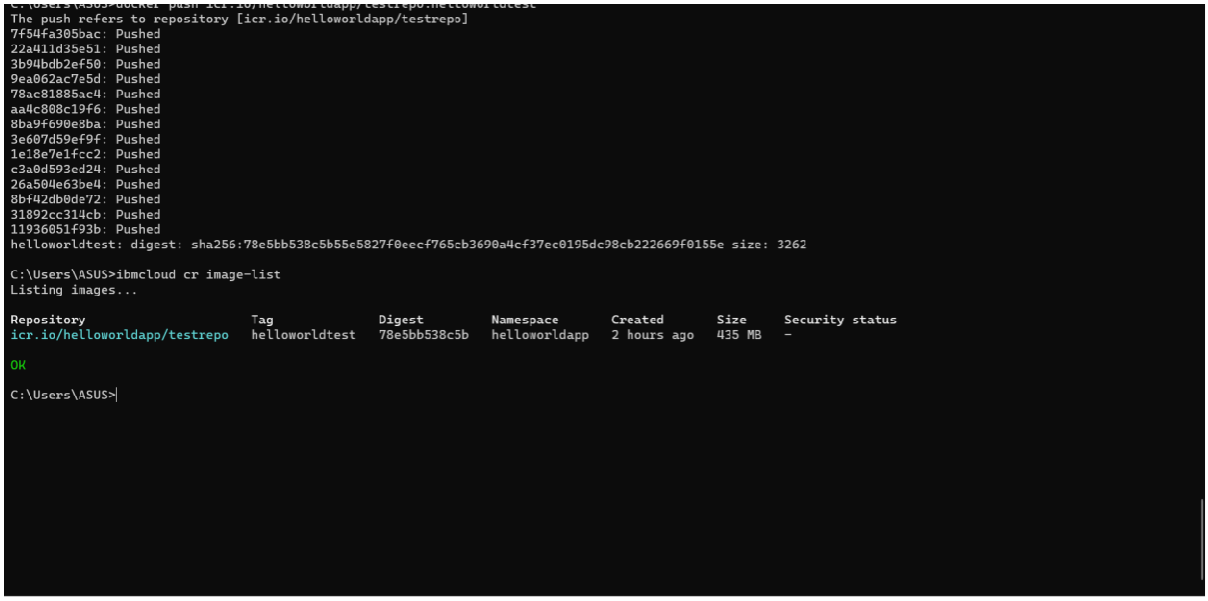
Hello World

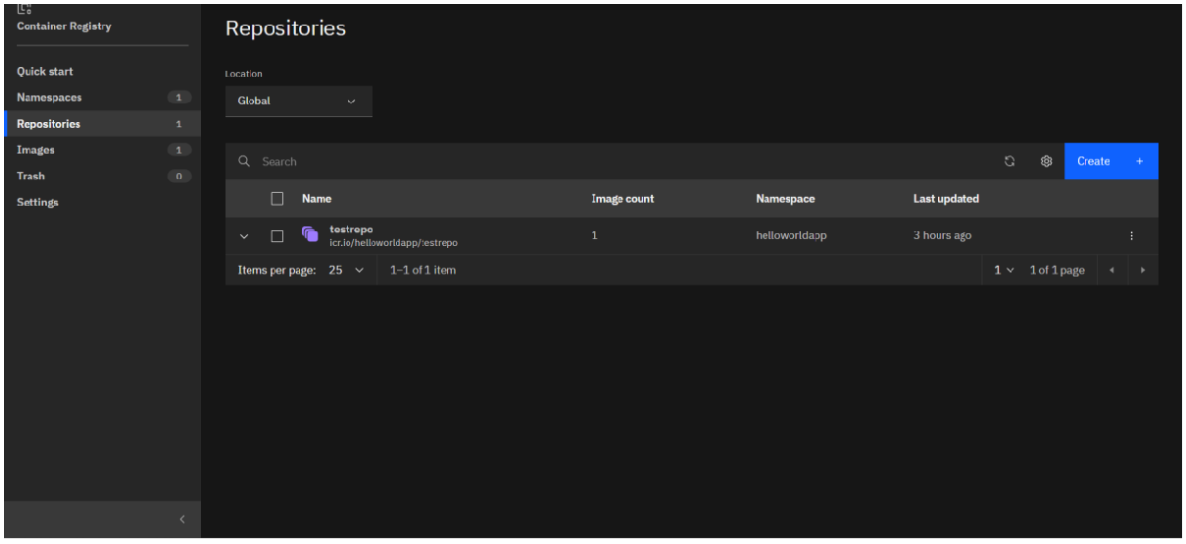


Question-3:

Create a IBM container registry and deploy helloworld app or nutrition app.

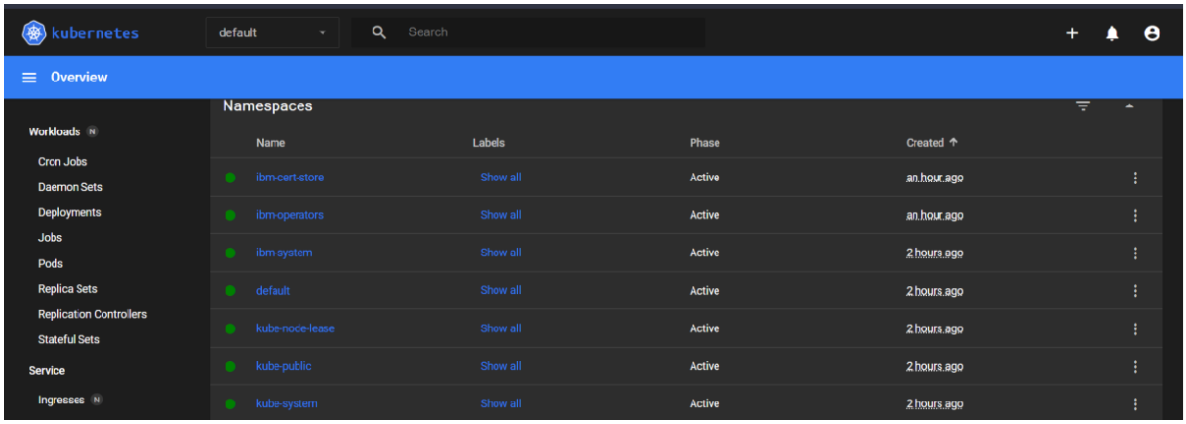


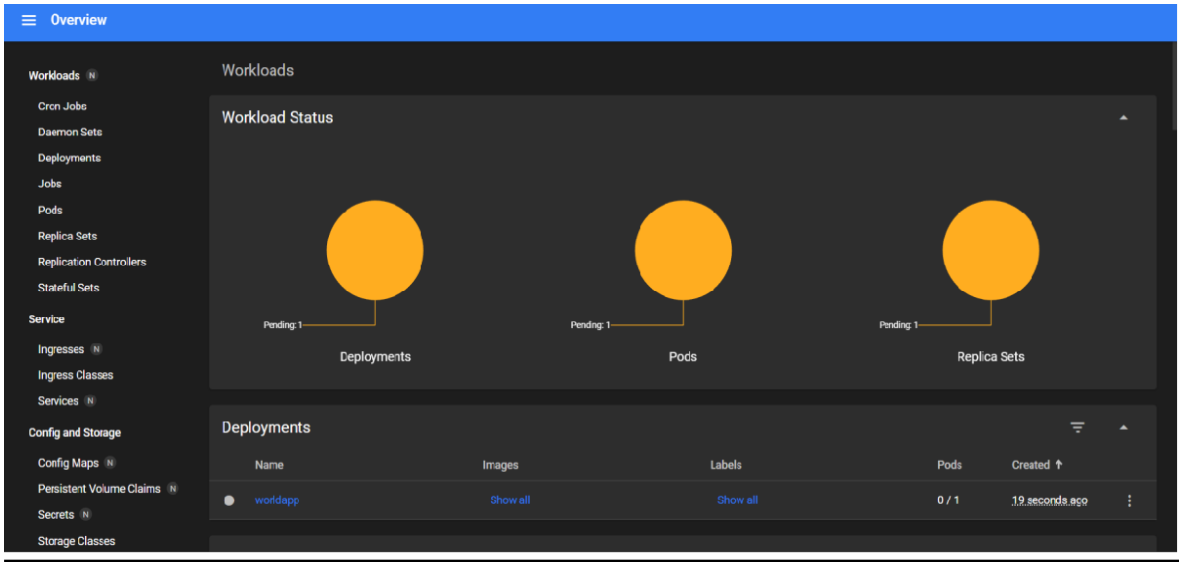




Question-4:

Create a Kubernetes cluster in IBM cloud and deploy helloworld image or nutrition image and also expose the same app to run in node port.


kubernetes
default
Search
Overview
Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Namespaces
Name
Labels
Phase
Created
ibm-cert-store
Show all
Active
an hour ago
ibm-operators
Show all
Active
an hour ago
ibm-system
Show all
Active
2 hours ago
default
Show all
Active
2 hours ago
kube-node-lease
Show all
Active
2 hours ago
kube-public
Show all
Active
2 hours ago
kube-system
Show all
Active
2 hours ago


Overview
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
Workloads
Workload Status
Pending: 1
Deployments
Pending: 1
Pods
Pending: 1
Replica Sets
Deployments
Name
Images
Labels
Pods
Created
workdapp
Show all
Show all
0 / 1
19 seconds ago