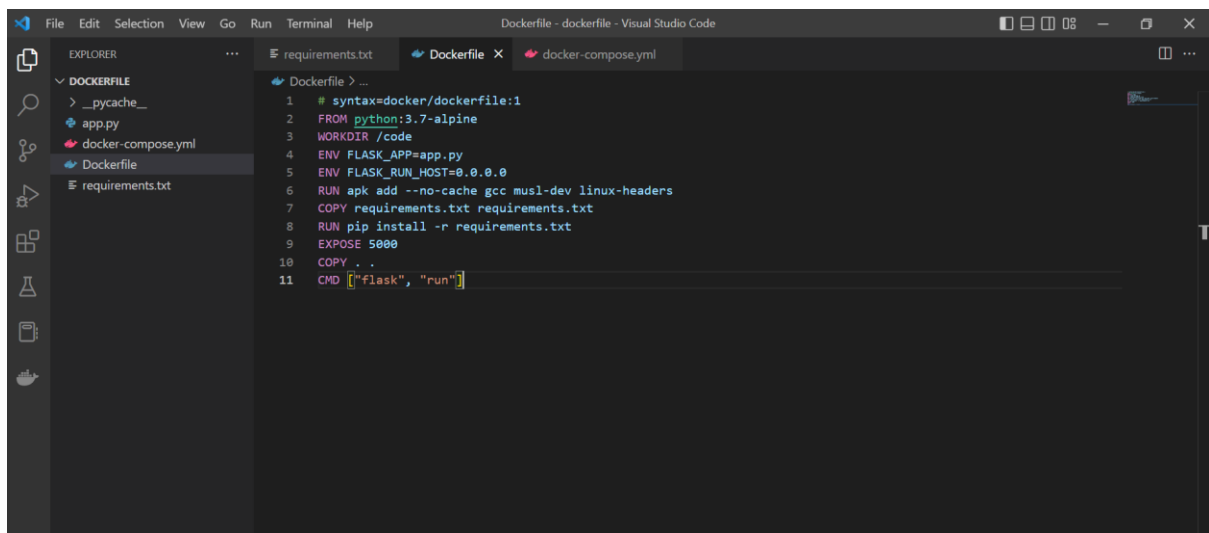


# ASSIGNMENT – 4

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

```
(base) PS C:\Users\MCS> docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
(base) PS C:\Users\MCS>
```

Question 2: Create a docker file for the helloworld application and deploy it in Docker desktop application.



```
File Edit Selection View Go Run Terminal Help Dockerfile - dockerfile - Visual Studio Code
EXPLORER
  > __pycache__
  app.py
  docker-compose.yml
  Dockerfile
  requirements.txt
requirements.txt
Dockerfile
1 # syntax=docker/dockerfile:1
2 FROM python:3.7-alpine
3 WORKDIR /code
4 ENV FLASK_APP=app.py
5 ENV FLASK_RUN_HOST=0.0.0
6 RUN apk add --no-cache gcc musl-dev linux-headers
7 COPY requirements.txt requirements.txt
8 RUN pip install -r requirements.txt
9 EXPOSE 5000
10 COPY . .
11 CMD ["flask", "run"]
```



```
< dockerfile-redis-1 redis:alpine RUNNING
Logs Inspect Terminal Stats
15:C 04 Nov 2022 19:02:48.662 * DB saved on disk
15:C 04 Nov 2022 19:02:48.663 * Fork CoW for RDB: current 0 MB, peak 0 MB, average 0 MB
1:M 04 Nov 2022 19:02:48.739 * Background saving terminated with success
1:C 05 Nov 2022 09:32:25.974 # oOoOoOoOoOoOo Redis is starting oOoOoOoOoOoOo
1:C 05 Nov 2022 09:32:25.974 # Redis version=7.0.5, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 05 Nov 2022 09:32:25.974 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.conf
1:M 05 Nov 2022 09:32:25.975 * monotonic clock: POSIX clock_gettime
1:M 05 Nov 2022 09:32:25.979 * Running mode=standalone, port=6379.
1:M 05 Nov 2022 09:32:25.979 # Server initialized
1:M 05 Nov 2022 09:32:25.983 * Loading RDB produced by version 7.0.5
1:M 05 Nov 2022 09:32:25.983 * RDB age 49784 seconds
1:M 05 Nov 2022 09:32:25.983 * RDB memory usage when created 0.85 Mb
1:M 05 Nov 2022 09:32:25.983 * Done loading RDB, keys loaded: 1, keys expired: 0.
1:M 05 Nov 2022 09:32:25.983 * DB loaded from disk: 0.002 seconds
1:M 05 Nov 2022 09:32:25.983 * Ready to accept connections
1:signal-handler (1667640900) Received SIGTERM scheduling shutdown...
1:M 05 Nov 2022 09:35:00.297 # User requested shutdown...
1:M 05 Nov 2022 09:35:00.297 * Saving the final RDB snapshot before exiting.
1:M 05 Nov 2022 09:35:00.325 * DB saved on disk
1:M 05 Nov 2022 09:35:00.325 # Redis is now ready to exit, bye bye...
1:C 05 Nov 2022 09:35:11.704 # oOoOoOoOoOoOo Redis is starting oOoOoOoOoOoOo
1:C 05 Nov 2022 09:35:11.704 # Redis version=7.0.5, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 05 Nov 2022 09:35:11.704 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.conf
1:M 05 Nov 2022 09:35:11.706 * monotonic clock: POSIX clock_gettime
1:M 05 Nov 2022 09:35:11.707 * Running mode=standalone, port=6379.
1:M 05 Nov 2022 09:35:11.708 # Server initialized
1:M 05 Nov 2022 09:35:11.708 * Loading RDB produced by version 7.0.5
1:M 05 Nov 2022 09:35:11.708 * RDB age 11 seconds
1:M 05 Nov 2022 09:35:11.708 * RDB memory usage when created 0.85 Mb
1:M 05 Nov 2022 09:35:11.709 * Done loading RDB, keys loaded: 1, keys expired: 0.
1:M 05 Nov 2022 09:35:11.709 * DB loaded from disk: 0.000 seconds
1:M 05 Nov 2022 09:35:11.709 * Ready to accept connections
```



Question 3: Create a IBM container registry and deploy helloworld app .

```
(base) PS C:\Users\MCS> docker tag hello-world us.icr.io/hi123/hello-world:hello-world
(base) PS C:\Users\MCS> docker push us.icr.io/hi123/hello-world:hello-world
The push refers to repository [us.icr.io/hi123/hello-world]
e07ee1baac5f: Pushed
hello-world: digest: sha256:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
(base) PS C:\Users\MCS>
```

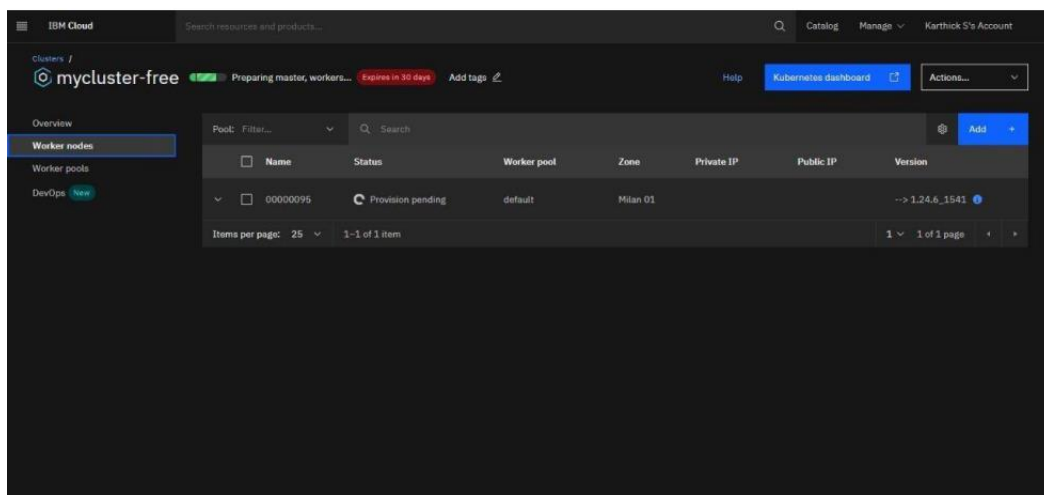
```
(base) PS C:\Users\MCS> ibmcloud cr image-list
Listing images...

Repository          Tag          Digest          Namespace    Created      Size      Security status
us.icr.io/hi123/hello-world  hello-world  f54a58bc1aac    hi123        1 year ago   2.5 kB    -

OK
(base) PS C:\Users\MCS>
```

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.

```
(base) PS C:\Users\MCS\desktop> kubectl run deployment --image=us.icr.io/hi123/hello-world:1
pod/deployment created
```



```
NAME                TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/hello-world NodePort       172.21.109.54   <none>            80:30081/TCP     6m37s
service/kubernetes  ClusterIP      172.21.0.1      <none>            443/TCP          6m54s
(base) PS C:\Users\MCS\desktop>
```