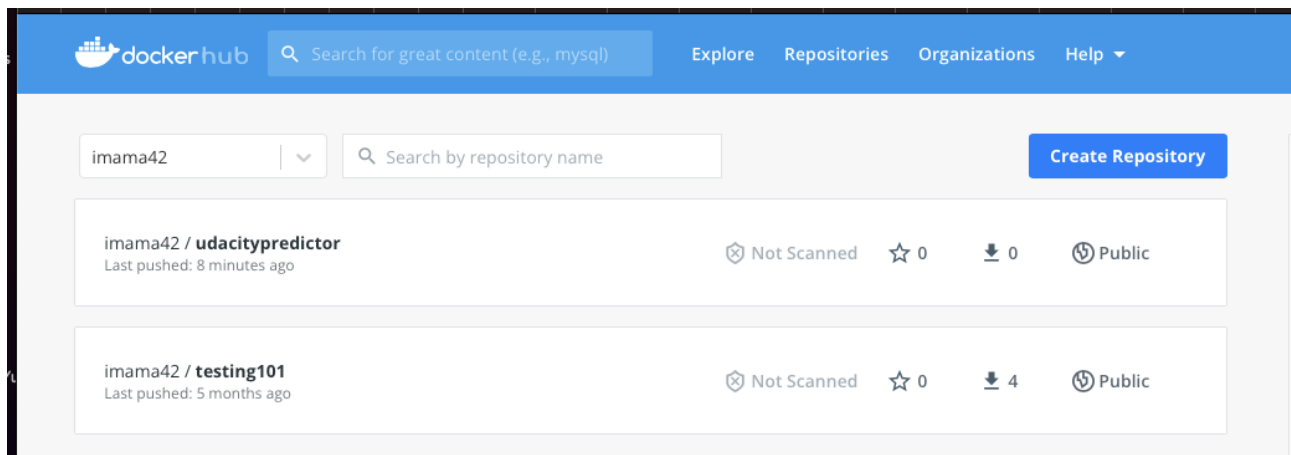


docker\_out.txt and kubernetes\_out.txt Below with some screenshot Below:

```
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % docker image ls
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
udacitypredictor    latest         7f60e4d3ef2a   3 minutes ago  1.21GB
circleci/picard     latest        b5cea36980dc   3 days ago    155MB
python              3.7.3-stretch 34a518642c76   3 years ago   929MB
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %
```



```
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % sh run_docker.sh
[+] Building 31.9s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 37B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/python:3.7.3-stretch
=> [1/4] FROM docker.io/library/python:3.7.3-stretch
=> [internal] load build context
=> => transferring context: 2.88kB
=> CACHED [2/4] WORKDIR /app
=> [3/4] COPY . app.py /app/
=> [4/4] RUN pip install --upgrade --no-cache-dir pip==22.2.1 && pip install --no-cache-dir trusted-host pypi.python.
=> exporting to image
=> => exporting layers
=> => writing image sha256:f773618506c98416293dc27661007bdf00aae668f1aacbe0bf02c3ef5133dd8
=> => naming to docker.io/library/udacitypredictor

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
udacitypredictor    latest         f773618506c9   4 seconds ago  1.21GB
<none>              <none>         7f60e4d3ef2a   7 minutes ago  1.21GB
circleci/picard     latest        b5cea36980dc   3 days ago    155MB
python              3.7.3-stretch 34a518642c76   3 years ago   929MB
* Serving Flask app "app" (lazy loading)
* Environment: production
  WARNING: Do not use the development server in a production environment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:80/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 194-414-639
[2022-07-30 14:48:55,772] INFO in app: JSON payload:
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}
[2022-07-30 14:48:55,793] INFO in app: Inference payload DataFrame:
  CHAS  RM  TAX  PTRATIO  B  LSTAT
0    0  6.575  296.0   15.3  396.9   4.98
[2022-07-30 14:48:55,803] INFO in app: Scaling Payload:
  CHAS  RM  TAX  PTRATIO  B  LSTAT
0    0  6.575  296.0   15.3  396.9   4.98
[2022-07-30 14:48:55,807] INFO in app: Output Prediction:
[20.35373177134412]
172.17.0.1 - - [30/Jul/2022 14:48:55] "POST /predict HTTP/1.1" 200 -
```

```
* Serving Flask app "app" (lazy loading)
* Environment: production
  WARNING: Do not use the development server in a production environment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:80/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
```

```

* Debugger PIN: 194-414-639
[2022-07-30 14:48:55,772] INFO in app: JSON payload:
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}
[2022-07-30 14:48:55,793] INFO in app: Inference payload
DataFrame: CHASRM      TAX PTRATIO      B LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 14:48:55,803] INFO in app: Scaling
Payload: CHAS  RM      TAX PTRATIO      B
LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 14:48:55,807] INFO in app: Output Prediction:
[20.35373177134412]
172.17.0.1 - - [30/Jul/2022 14:48:55] "POST /predict HTTP/1.1" 200 -

```

```

(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % ./run_kubernetes.sh
pod/udacitypredictorpod created
NAME          READY   STATUS             RESTARTS   AGE
udacitypredictorpod 0/1     ContainerCreating   0           1s

```

```

(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % kubectl port-forward udacitypredictorpod 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080

```

```

kubectl logs udacitypredictorpod
* Serving Flask app "app" (lazy loading)
* Environment: production
WARNING: Do not use the development server in a production environment.
Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:80/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-516-115
[2022-07-30 16:39:20,064] INFO in app: JSON payload:
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}
[2022-07-30 16:39:20,119] INFO in app: Inference payload DataFrame:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:39:20,132] INFO in app: Scaling Payload:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:39:20,141] INFO in app: Output Prediction:
[20.35373177134412]
127.0.0.1 - - [30/Jul/2022 16:39:20] "POST /predict HTTP/1.1" 200 -
[2022-07-30 16:42:44,432] INFO in app: JSON payload:
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}
[2022-07-30 16:42:44,441] INFO in app: Inference payload DataFrame:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:42:44,449] INFO in app: Scaling Payload:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:42:44,452] INFO in app: Output Prediction:
[20.35373177134412]
127.0.0.1 - - [30/Jul/2022 16:42:44] "POST /predict HTTP/1.1" 200 -
[2022-07-30 16:42:46,141] INFO in app: JSON payload:
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}
[2022-07-30 16:42:46,149] INFO in app: Inference payload DataFrame:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:42:46,156] INFO in app: Scaling Payload:
  CHAS  RM    TAX  PTRATIO    B  LSTAT
0      0 6.575 296.0    15.3 396.9  4.98
[2022-07-30 16:42:46,158] INFO in app: Output Prediction:
[20.35373177134412]
127.0.0.1 - - [30/Jul/2022 16:42:46] "POST /predict HTTP/1.1" 200 -

```

```

(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % kubectl port-forward udacitypredictorpod 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080

```

```
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %  
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % kubectl logs udacitypredictorpod  
* Serving Flask app "app" (lazy loading)  
* Environment: production  
  WARNING: Do not use the development server in a production environment.  
  Use a production WSGI server instead.  
* Debug mode: on  
* Running on http://0.0.0.0:80/ (Press CTRL+C to quit)  
* Restarting with stat  
* Debugger is active!  
* Debugger PIN: 129-516-115  
[2022-07-30 16:39:20,064] INFO in app: JSON payload: dd.csv  
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}  
[2022-07-30 16:39:20,119] INFO in app: Inference payload DataFrame:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:39:20,132] INFO in app: Scaling Payload:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:39:20,141] INFO in app: Output Prediction:  
[20.35373177134412]  
127.0.0.1 - - [30/Jul/2022 16:39:20] "POST /predict HTTP/1.1" 200 -  
[2022-07-30 16:42:44,432] INFO in app: JSON payload:  
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}  
[2022-07-30 16:42:44,441] INFO in app: Inference payload DataFrame:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:42:44,449] INFO in app: Scaling Payload:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:42:44,452] INFO in app: Output Prediction:  
[20.35373177134412]  
127.0.0.1 - - [30/Jul/2022 16:42:44] "POST /predict HTTP/1.1" 200 -  
[2022-07-30 16:42:46,141] INFO in app: JSON payload:  
{'CHAS': {'0': 0}, 'RM': {'0': 6.575}, 'TAX': {'0': 296.0}, 'PTRATIO': {'0': 15.3}, 'B': {'0': 396.9}, 'LSTAT': {'0': 4.98}}  
[2022-07-30 16:42:46,149] INFO in app: Inference payload DataFrame:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:42:46,156] INFO in app: Scaling Payload:  
   CHAS  RM  TAX  PTRATIO  B  LSTAT  
0    0  6.575  296.0    15.3  396.9  4.98  
[2022-07-30 16:42:46,158] INFO in app: Output Prediction:  
[20.35373177134412]  
127.0.0.1 - - [30/Jul/2022 16:42:46] "POST /predict HTTP/1.1" 200 -  
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %
```

## Udacity Honor Code

- ☒ I affirm that I have read Udacity's definition of plagiarism.
- ☒ I have correctly attributed all content.
- ☒ I understand that Udacity actively checks for plagiarism during enrollment.

SUBMIT

```
-rwxr-xr-x 1 qrios staff 449 Jul 30 16:39 run_kubernetes.sh  
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %  
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % ./run_kubernetes.sh  
pod/udacitypredictorpod created  
NAME          READY  STATUS      RESTARTS  AGE  
udacitypredictorpod  0/1    ContainerCreating  0          1s  
error: unable to forward port because pod is not running. Current status=Pending  
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %
```



```
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % kubectl get pods
NAME                                READY  STATUS   RESTARTS  AGE
udacitypredictorpod                1/1    Running   0          2m23s
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes % kubectl describe pods udacitypredictorpod
Name:                                udacitypredictorpod
Namespace:                          default
Priority:                            0
Node:                                minikube/192.168.49.2
Start Time:                         Sat, 30 Jul 2022 16:40:11 +0100
Labels:                             app=udacitypredictorpod
Annotations:                         <none>
Status:                             Running
IP:                                  172.17.0.3
IPs:
  IP: 172.17.0.3
Containers:
  udacitypredictorpod:
    Container ID:  docker://064f0d8b06d41270fc14c691b80c1b4fcdc9916a90bc501179dbe7c57a5a5abc
    Image:         imama42/udacitypredictor
    Image ID:      docker-pullable://imama42/udacitypredictor@sha256:07983bc7a2f53f3e383ca938ff385696f359cf60e8d06443a2b28986bbdf5
    Port:         80/TCP
    Host Port:    0/TCP
    State:        Running
      Started:    Sat, 30 Jul 2022 16:41:41 +0100
    Ready:        True
    Restart Count: 0
    Environment:  <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-9mw4x (ro)
Conditions:
  Type             Status
  Initialized       True
  Ready            True
  ContainersReady  True
  PodScheduled     True
Volumes:
  kube-api-access-9mw4x:
    Type:              Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:       kube-root-ca.crt
    ConfigMapOptional:   <nil>
    DownwardAPI:        true
QoS Class:           BestEffort
Node-Selectors:      <none>
Tolerations:         node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                     node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type     Reason      Age   From          Message
  ----     -
  Normal   Scheduled   3m2s  default-scheduler  Successfully assigned default/udacitypredictorpod to minikube
  Normal   Pulling     3m1s  kubelet        Pulling image "imama42/udacitypredictor"
  Normal   Pulled      94s   kubelet        Successfully pulled image "imama42/udacitypredictor" in 1m27.262579078s
  Normal   Created     93s   kubelet        Created container udacitypredictorpod
  Normal   Started     92s   kubelet        Started container udacitypredictorpod
(.devops) qrios@imamas-MacBook-Pro project-ml-microservice-kubernetes %
```