Task 1: Complete Docker File. Checked in at <a href="https://github.com/garimachawla21/udacityProject4/">https://github.com/garimachawla21/udacityProject4/</a> blob/main/Dockerfile

Task 2: Run a Container & Make a Prediction - refer below screenshots Files checked -in at path <a href="https://github.com/garimachawla21/udacityProject4/blob/main">https://github.com/garimachawla21/udacityProject4/blob/main</a>

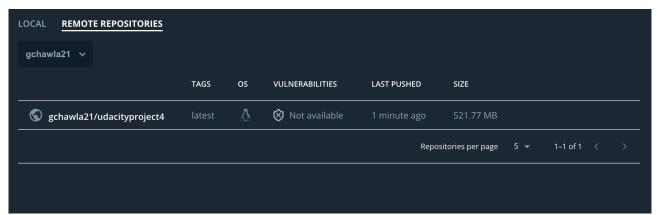
```
🌔 🔵 🖿 project-ml-microservice-kubernetes — IPython: DevOps_Microservices/project-ml-microser...
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:80
* Running on http://172.17.0.2:80
Press CTRL+C to quit
* Restarting with stat
/usr/local/lib/python3.7/site-packages/sklearn/ensemble/gradient_boosting.py:34: DeprecationWarnin
g: `np.bool` is a deprecated alias for the builtin `bool`. To silence this warning, use `bool` by
itself. Doing this will not modify any behavior and is safe. If you specifically wanted the numpy
scalar type, use `np.bool_` here.
Deprecated in NumPy 1.20; for more details and guidance: https://numpy.org/devdocs/release/1.20.0-
notes.html#deprecations
 from ._gradient_boosting import predict_stages
/usr/local/lib/python3.7/site-packages/sklearn/ensemble/gradient_boosting.py:34: DeprecationWarning: `np.bool` is a deprecated alias for the builtin `bool`. To silence this warning, use `bool` by
itself. Doing this will not modify any behavior and is safe. If you specifically wanted the numpy
scalar type, use `np.bool_` here.
Deprecated in NumPy 1.20; for more details and guidance: https://numpy.org/devdocs/release/1.20.0-
notes.html#deprecations
 from ._gradient_boosting import predict_stages
* Debugger is active!
* Debugger PIN: 580-741-045
[2022-11-04 18:31:40,890] 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}}
[2022-11-04 18:31:40,914] INFO in app: Inference payload DataFrame:
                  TAX PTRATIO
   CHAS
          RM
                                       LSTAT
                                     В
                          15.3
     0 6.575 296.0
                                396.9
                                         4.98
[2022-11-04 18:31:40,918] INFO in app: Scaling Payload:
   CHAS
           RM
                 TAX PTRATIO
                                     В
                                       LSTAT
     0 6.575 296.0
                          15.3 396.9
                                         4.98
172.17.0.1 - - [04/Nov/2022 18:31:40] "POST /predict HTTP/1.1" 200 -
                 project-ml-microservice-kubernetes — -zsh — 80×24
Last login: Fri Nov 4 18:51:35 on ttys000
garimachawla@Garimas-MacBook-Pro ~ % cd DevOps_Microservices/project-ml-microser]
vice-kubernetes
garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % ./make_pre]
diction.sh
Port: 8000
   "prediction": [
     20.35373177134412
   1
garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes %
```

## Task 3: Improve Logging & Save Output

Output files at path - <a href="https://github.com/garimachawla21/udacityProject4/tree/main/output txt files">https://github.com/garimachawla21/udacityProject4/tree/main/output txt files</a>

Task 4: Upload the Docker Image

```
(venv) garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % ./upload_docker.sh
Docker ID and Image: gchawla21/udacityproject4
Password:
Login Succeeded
Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://
docs.docker.com/go/access-tokens/
The push refers to repository [docker.io/gchawla21/udacityproject4]
d6062be736b7: Pushed
c56cfd99e63a: Pushed
1e37bfbc7fd6: Pushed
42855dae5730: Mounted from library/python
0e0c3e2a9021: Mounted from library/python
e1bb4ba2013a: Mounted from library/python
3284da728da0: Mounted from library/python
a8e0bda64b48: Mounted from library/python
54060bf84ed3: Mounted from library/python
d1b4bcba0655: Mounted from library/python
1c6f4c23073b: Mounted from library/python
ef9ee2bbae58: Mounted from library/python
latest: digest: sha256:5136cd83308b4b17c928948437145aa4ac2aa535ff0698e3d4728622f411c234 size: 2847
(venv) garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes %
```



Task 5: Configure Kubernetes to Run Locally

Task 6: Deploy with Kubernetes and Save Output Logs

```
□ project-ml-microservice-kubernetes — -zsh — 80×24

Last login: Sat Nov 5 00:13:19 on ttys001
garimachawla@Garimas-MacBook-Pro ~ % cd DevOps_Microservices/project-ml-microservice-kubernetes
garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % ./make_prediction.sh
Port: 8000
{
    "prediction": [
        20.35373177134412
]
}
garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % ■
```

NAME READY STATUS RESTARTS AGE
udacityproject4 1/1 Running 0 102s
Forwarding from 127.0.0.1:8000 -> 80
Forwarding from [::1]:8000 -> 80
Handling connection for 8000

Task 7: [Important] Delete Cluster

Done

Task 8: CircleCl Integration

