

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

Task 2: Run a Container & Make a Prediction - refer below screenshots

Files checked -in at path

<https://github.com/garimachawla21/udacityProject4/blob/main>

```
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: 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
/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:
   CHAS   RM   TAX  PTRATIO    B  LSTAT
0     0  6.575 296.0    15.3  396.9   4.98
[2022-11-04 18:31:40,918] INFO in app: Scaling Payload:
   CHAS   RM   TAX  PTRATIO    B  LSTAT
0     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 — 80x24

Last login: Fri Nov  4 18:51:35 on ttys000
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 %
```




### Task 3: Improve Logging & Save Output

Output files at path - [https://github.com/garimachawla21/udacityProject4/tree/main/output\\_txt\\_files](https://github.com/garimachawla21/udacityProject4/tree/main/output_txt_files)

### 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
1e37bfb7fd6: 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 %
```

LOCAL		REMOTE REPOSITORIES				
gchawla21		TAGS	OS	VULNERABILITIES	LAST PUSHED	SIZE
 gchawla21/udacityproject4		latest		 Not available	1 minute ago	521.77 MB
		Repositories per page 5 1-1 of 1				

## Task 5: Configure Kubernetes to Run Locally

```
project-ml-microservice-kubernetes — IPython: DevOps_Microservices/project-ml-microservice-kubernetes — -zsh — 1...
★ Enabled addons: storage-provisioner, default-storageclass
🏠 Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
(venv) garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % ps
PID TTY TIME CMD
86941 ttys000 0:00.70 -zsh
(venv) garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes % kubectl config view
apiVersion: v1
clusters:
- cluster:
  certificate-authority: /Users/garimachawla/.minikube/ca.crt
  extensions:
  - extension:
    last-update: Sat, 05 Nov 2022 00:29:34 IST
    provider: minikube.sigs.k8s.io
    version: v1.27.1
    name: cluster_info
  server: https://127.0.0.1:54546
  name: minikube
contexts:
- context:
  cluster: minikube
  extensions:
  - extension:
    last-update: Sat, 05 Nov 2022 00:29:34 IST
    provider: minikube.sigs.k8s.io
    version: v1.27.1
    name: context_info
  namespace: default
  user: minikube
  name: minikube
current-context: minikube
kind: Config
preferences: {}
users:
- name: minikube
  user:
    client-certificate: /Users/garimachawla/.minikube/profiles/minikube/client.crt
    client-key: /Users/garimachawla/.minikube/profiles/minikube/client.key
(venv) garimachawla@Garimas-MacBook-Pro project-ml-microservice-kubernetes %
```

## Task 6: Deploy with Kubernetes and Save Output Logs

```
project-ml-microservice-kubernetes — -zsh — 80x24
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 %
```

```
Error from server (AlreadyExists): pods "udacityproject4" already exists
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: CircleCI Integration

Dashboard

Project

All Pipelines >

udacityProject4

udacityProject4

Add team members

Edit Config

Trigger Pipeline

Project Settings

Filters

Everyone's Pipelines

udacityProject4

All Branches

All days

Auto-expand

Pipeline	Status	Workflow	Branch / Commit	Start	Duration	Actions
udacityProject45	Success	workflow	main1c9f606 Update README.md	24m ago	28s	