

**NAME: TEHESUMA MENSAH IMORO**

**BATCH CODE: LISUM30 (30<sup>TH</sup> JANUARY 2024 – 30<sup>TH</sup>  
APRIL 2024)**

**SUBMISSION DATE: 13<sup>TH</sup> MARCH 2024**

**SUBMITTED TO: DATA GLACIER VIRTUAL INTERNSHIP**

```

370650.01, 241167. , 115564. , 126014.01, 87474. , 235
352642.04, 234265. , 122811. , 126857. , 202030. , 91
104650. , 156761. , 229656. , 279063. , 134161. , 110
246696. , 185717.02, 263272. , 157872. , 339398. , 94
85094. , 171112. , 121195. , 300593.03, 122171. , 214
334572. , 97416. , 89004. , 140221. , 173967. , 135
92733. , 86532. , 377824.06, 335437.01, 94702. , 104
210329. , 361462. , 96162. , 264001.25, 189980. , 101
117812. , 225855. , 195421. , 118046. , 254943. , 126
125248. , 161570. , 258126.01, 267996. , 249811. , 130
107985. , 360950.18, 149309. , 246804. , 380107.12, 162
216501. , 214788. , 130318. , 170642. , 135843. , 119
240119. , 141751. , 420149.27, 253704. , 347684. ]}

```

```
In [22]: len(y_pred)
```

```
Out[22]: 125
```

```
In [41]: # Saving the model
import pickle

pickle.dump(best_model, open('rfreg.pkl', 'wb'))
```

```
In [24]: # Loading the model
loaded_model = pickle.load(open("randomforest.pkl", "rb"))
```

## Evaluation

We are going to use the following to evaluate our model:

```
1 <!DOCTYPE html>
2 <html >
3 <!--From https://codepen.io/frytyler/pen/EGdtg-->
4 <head>
5   <meta charset="UTF-8">
6   <title>California House Value Predictor</title>
7   <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
8   <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
9   <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
10  <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
11  <link rel='stylesheet' href="{{ url_for('static', filename='css/style.css') }}">
12
13 </head>
14
15 <body>
16   <div class="login">
17     <h1>What's The Price? </h1>
18
19     <!-- Main Input For Receiving Query to our ML -->
20     <form action="{{ url_for('predict')}}" method="post">
21       <input type="text" name="MedInc" placeholder="Median Income" required="required" />
22       <input type="text" name="HouseAge" placeholder="Age of House" required="required" />
23       <input type="text" name="AveRooms" placeholder="AveRooms" required="required" />
24       <input type="text" name="AveBdrms" placeholder="AveBdrms" required="required" />
25       <input type="text" name="AveOccup" placeholder="AveOccup " required="required" />
26       <input type="text" name="Population" placeholder="Block Group" required="required" />
```

```
1  from flask import Flask, request, jsonify, render_template
2  import pickle
3  import numpy as np
4
5
6  app = Flask(__name__)
7  model = pickle.load(open('rfreg.pkl', 'rb'))
8
9
10 @app.route('/')
11 def home():
12     return render_template('index.html')
13
14 @app.route('/predict', methods=['POST'])
15 def predict():
16     '''
17     For rendering results on HTML GUI
18     '''
19     int_features = [int(x) for x in request.form.values()]
20     final_features = [np.array(int_features)]
21     prediction = model.predict(final_features)
22
23     output = round(prediction[0], 2)
24
25     return render_template('index.html', prediction_text='The price is ${}'.format(output))
```

```

1  @import url(https://fonts.googleapis.com/css?family=Open+Sans);
2  .btn { display: inline-block; *display: inline; *zoom: 1; padding: 4px 10px 4px; margin-bottom: 0; font-size:
3  .btn:hover, .btn.active, .btn.active, .btn.disabled, .btn[disabled] { background-color: #e6e6e6; }
4  .btn-large { padding: 9px 14px; font-size: 15px; line-height: normal; -webkit-border-radius: 5px; -moz-border
5  .btn:hover { color: #333333; text-decoration: none; background-color: #e6e6e6; background-position: 0 -1
6  .btn-primary, .btn-primary:hover { text-shadow: 0 -1px 0 rgba(0, 0, 0, 0.25); color: #ffffff; }
7  .btn-primary.active { color: rgba(255, 255, 255, 0.75); }
8  .btn-primary { background-color: #4a77d4; background-image: -moz-linear-gradient(top, #6eb6de, #4a77d4
9  .btn-primary:hover, .btn-primary.active, .btn-primary.active, .btn-primary.disabled, .btn-primary[disabled] {
10 .btn-block { width: 100%; display: block; }
11
12 * { -webkit-box-sizing: border-box; -moz-box-sizing: border-box; -ms-box-sizing: border-box; -o-box-sizing: borde
13
14 html { width: 100%; height: 100%; overflow: hidden; }
15
16 body {
17     width: 100%;
18     height: 100%;
19     font-family: 'Open Sans', sans-serif;
20     color: hsl(0, 0%, 98%);

```

PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS python + - [ ] [ ] ... ^ X

warnings.warn(  
 07-0-0-1 [12/Mar/2024 16:50:11] "GET /api/dict?MedType=7&HouseAge=12&AgeRange=5&AgeRange=7&AgeRange=8&Population

```
(C:\Users\rojer\AppData\Local\Microsoft\Windows\Terminal\env) C:\Users\rojer\Real_Estate>python app.py
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://localhost:8080
Press CTRL+C to quit
* Restarting with watchdog (windowsapi)
* Debugger is active!
* Debugger PIN: 615-196-968
127.0.0.1 - - [11/Mar/2024 20:31:31] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [11/Mar/2024 20:31:31] "GET /static/css/style.css HTTP/1.1" 200 -
127.0.0.1 - - [11/Mar/2024 20:31:32] "GET /favicon.ico HTTP/1.1" 404 -
C:\Users\rojer\AppData\Local\Microsoft\Windows\Terminal\env\Lib\site-packages\sklearn\base.py:439: UserWarning: X does not have valid
feature names, but RandomForestRegressor was fitted with feature names
  warnings.warn(
127.0.0.1 - - [11/Mar/2024 20:32:08] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [11/Mar/2024 20:32:08] "GET /static/css/style.css HTTP/1.1" 304 -
```

California House Value Predicto

localhost:8080/predict

## What's The Price?

Median Income

Age of House

AveRooms

AveBedrms

AveOccup

Block Group

Longitude

Latitude

Predict

The price is \$232319.05



Jump to Favorites, Apps, Pipelines, Spaces...

app.

### Choose a branch to deploy

main

Deploy Branch

### Receive code from GitHub

Build main 10902a35

```
Downloading scipy-1.12.0-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (37.8 MB)
Downloading threadpoolctl-3.3.0-py3-none-any.whl (17 kB)
Downloading tzdata-2024.1-py2.py3-none-any.whl (345 kB)
Downloading werkzeug-3.0.1-py3-none-any.whl (226 kB)
Downloading MarkupSafe-2.1.5-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (28 kB)
Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Building wheels for collected packages: scikit-learn
Building wheel for scikit-learn (pyproject.toml): started
```

☒ Autoscroll with output

### Release phase

### Deploy to Heroku



house-price-prediction · GitHub

California House Value Predicto

house-price-prediction-0dcc7a029c28.herokuapp.com/predict

## What's The Price?

Median Income

Age of House

AveRooms

AveBdrms

AveOccup

Block Group

Longitude

Latitude

Predict

The price is \$232319.05

```
main_app.py > ...
1  from flask import Flask, request, jsonify
2  import pickle
3  import numpy as np
4
5  app = Flask(__name__)
6  model = pickle.load(open('rfreg.pkl', 'rb'))
7
8  @app.route('/')
9  def home():
10     return {'text': 'House Price Prediction'}
11
12  @app.route('/predict', methods = ['GET'])
13  def predict():
14     MedInc = request.args.get('MedInc')
15     HouseAge = request.args.get('HouseAge')
16     AveRooms = request.args.get('AveRooms')
17     AveBdrms = request.args.get('AveBdrms')
18     AveOccup = request.args.get('AveOccup')
19     Population = request.args.get('Population')
20     Longitude = request.args.get('Longitude')
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS



```
ad.
* Running on http://localhost:7000
Press CTRL+C to quit
* Restarting with watchdog (windowsapi)
```

HomeWorkspaces ▾API Network ▾

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newla

NewImport

GET http://localhost:7000/p/ +

No environment ▾

HTTP http://localhost:7000/predict?MedInc=7&HouseAge=12&AveRooms=5&AveBdrms=3&AveOccup=8&Populati... Save ▾

GET ▾

http://localhost:7000/predict?MedInc=7&HouseAge=12&AveRooms=5&AveBdrms=3&AveOccup=8&Population=1200

Send ▾

Params ●

Authorization

Headers (7)

Body

Pre-request Script

Tests

Settings

Cookies

Query Params

<input checked="" type="checkbox"/> Key	Value	Description	*** Bulk Edit
<input checked="" type="checkbox"/> MedInc	7		
<input checked="" type="checkbox"/> HouseAge	12		
<input checked="" type="checkbox"/> AveRooms	5		
<input checked="" type="checkbox"/> AveBdrms	3		

Body

Cookies

Headers (5)

Test Results

⌚ Status: 200 OK Time: 693 ms Size: 208 B Save as example ...

Pretty

Raw

Preview

Visualize

JSON ▾

1 {

2    "The value of a house is": 281728.01

3 }

Collections

Environments

History

My first collection ☆

▾ First folder inside collection

GET

POST

GET

▾ Second folder inside collection

GET

GET

Create a collection for your requests

A collection lets you group related requests and easily set common authorization, tests, scripts, and variables for all requests in it.

Create Collection