

Deployment on Flask

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Model

A simple linear regression model was created in Python using sklearn's built-in California house price dataset to predict house prices from income, house age, number of rooms, number of bedrooms, block population, and number of people in the house (occupancy). The dataset was loaded from sklearn as the "house" dataframe.

Make and save the model:

```
In [6]: # Make model
import numpy as np
from sklearn.linear_model import LinearRegression
X = np.array(house[['Income', 'HouseAge', 'AveRooms', 'AveBedrms', 'Population', 'Occupancy']])
y = np.array(house['HousePrice'])
model = LinearRegression().fit(X,y)

In [ ]: import pickle
filename = "C:/Users/estal/OneDrive/Desktop/DataGlacier/Week4/Model.sav"
pickle.dump(model, open(filename, 'wb'))
```

App

The Python app was created:

```
# import numpy as np
import pickle
from flask import Flask, request, render_template
app = Flask(__name__)
model = pickle.load(open('model.sav', 'rb'))
@app.route('/')
def home():
    return render_template('index.html')
@app.route('/predict', methods = ['POST'])
def predict():
    features = [np.array([float(x) for x in request.form.values()])]
    prediction = model.predict(features)
    output = round(prediction[0], 2)
    return render_template('index.html', prediction_text = 'House price prediction: {}'.format(output))
if __name__ == '__main__':
    app.run(port = 5000, debug = True)
```

Index.html file

The template for the webpage was created:

```

<!DOCTYPE html>
<html>
<body>
  <div class = 'login'>
    <h1>Predict House Price</h1>
    <form action = "{{url_for('predict')}}" method = "post" enctype = "multipart/form-data">
      <input type = "text" name = "Income" placeholder = "Income" required = "required" />
      <input type = "text" name = "HouseAge" placeholder = "Age of House" required = "required" />
      <input type = "text" name = "AveRooms" placeholder = "Number of Rooms" required = "required" />
      <input type = "text" name = "AveBedrms" placeholder = "Number of Bedrooms" required = "required" />
      <input type = "text" name = "Population" placeholder = "Census Block Population" required = "required" />
      <input type = "text" name = "Occupancy" placeholder = "Number of People in House" required = "required" />
      <button type = "submit" class = "btn btn-primary btn-block btn-large">Predict</button>
    </form>
    <br>
    <br>
    {{ prediction_text }}
  </div>
</body>
</html>

```

Start Server

From the command line, the Python app was run:

```

Anaconda Prompt (anaconda3) - python DGapp.py

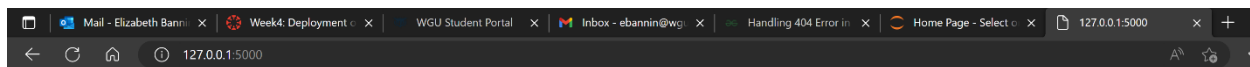
(base) C:\Users\estal>cd OneDrive\Desktop\DataGlacier/Week4

(base) C:\Users\estal\OneDrive\Desktop\DataGlacier\Week4>python DGapp.py
* Serving Flask app "DGapp" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Restarting with watchdog (windowsapi)
* Debugger is active!
* Debugger PIN: 127-382-857
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)

```

Copy and paste server address to web browser

This brings up the index.html running locally:



Predict House Price

Income	Age of House	Number of Rooms	Number of Bedrooms	Census Block Population	Number of People in House	Predict
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Run prediction

Enter values into the form and click the predict button to get prediction of house price:

Predict House Price

50000

32

9

3

200

5

Predict

House price prediction: \$382912.77