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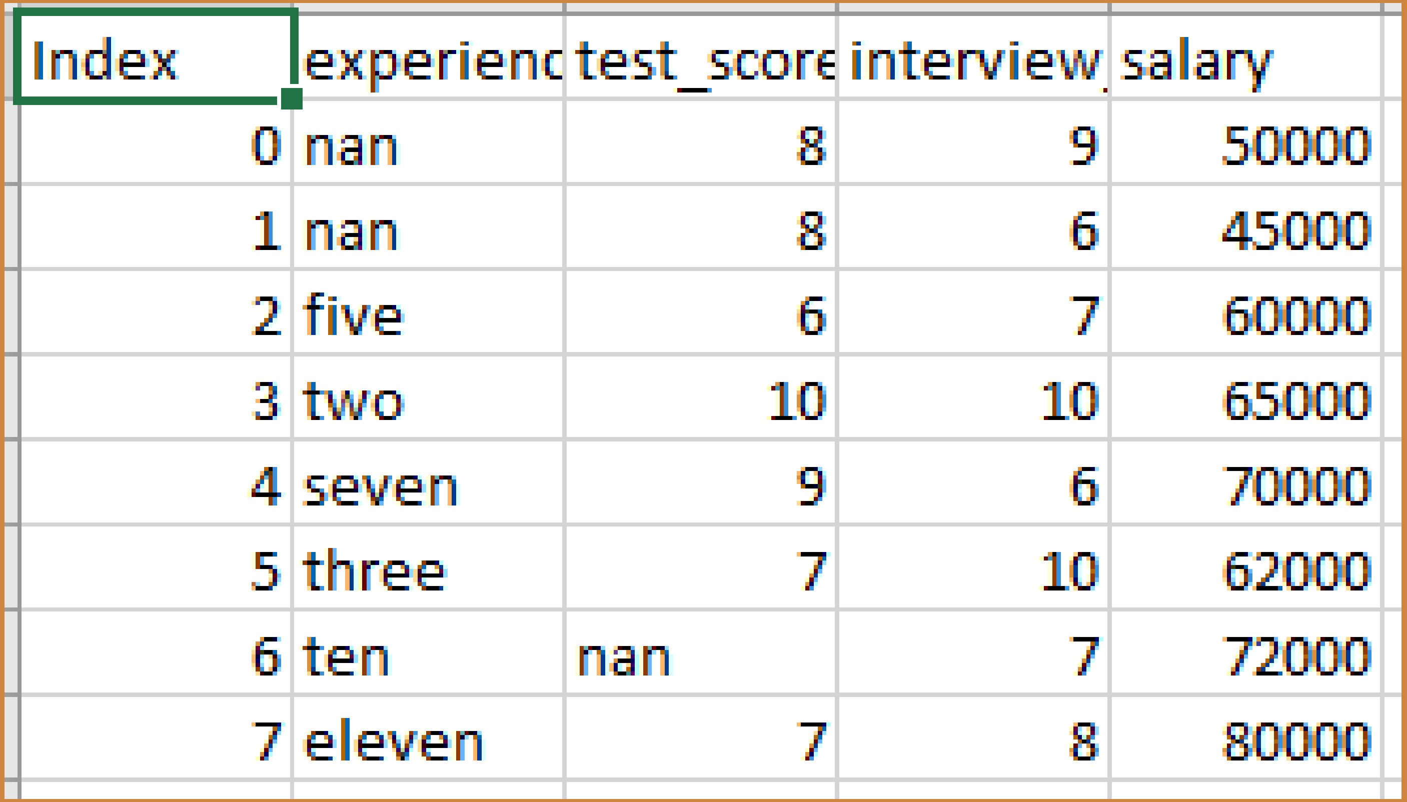
Batch code : LISUM02

Submission date : 08/08/2021

Submitted to : GitHub

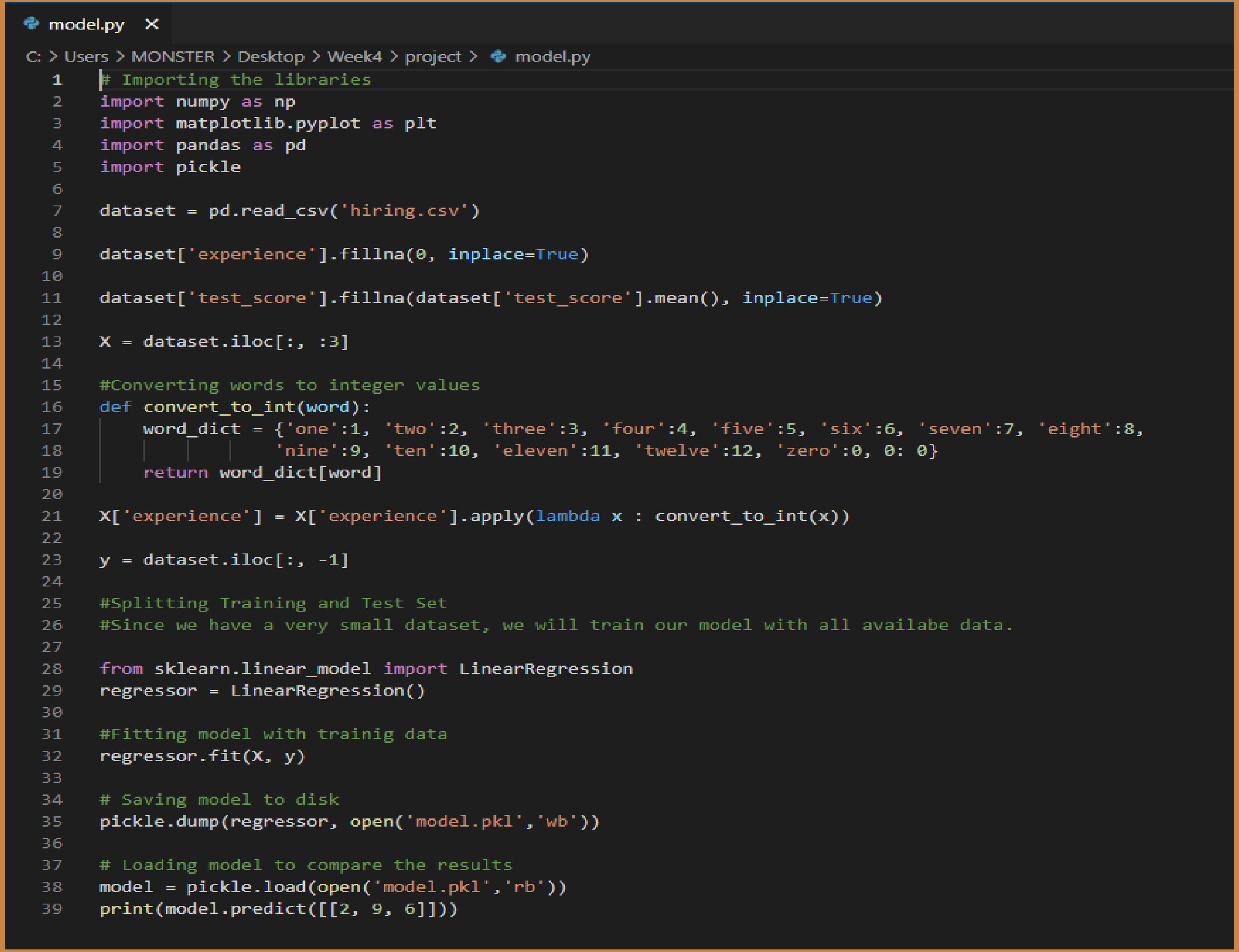
This is the data I am working on ,its pretty simple ,We are predicting the salary of employees based on their experience, test score and interview score .



Index	experienc	test_score	interview_	salary
0	nan	8	9	50000
1	nan	8	6	45000
2	five	6	7	60000
3	two	10	10	65000
4	seven	9	6	70000
5	three	7	10	62000
6	ten	nan	7	72000
7	eleven	7	8	80000

I used Linear regression ML model

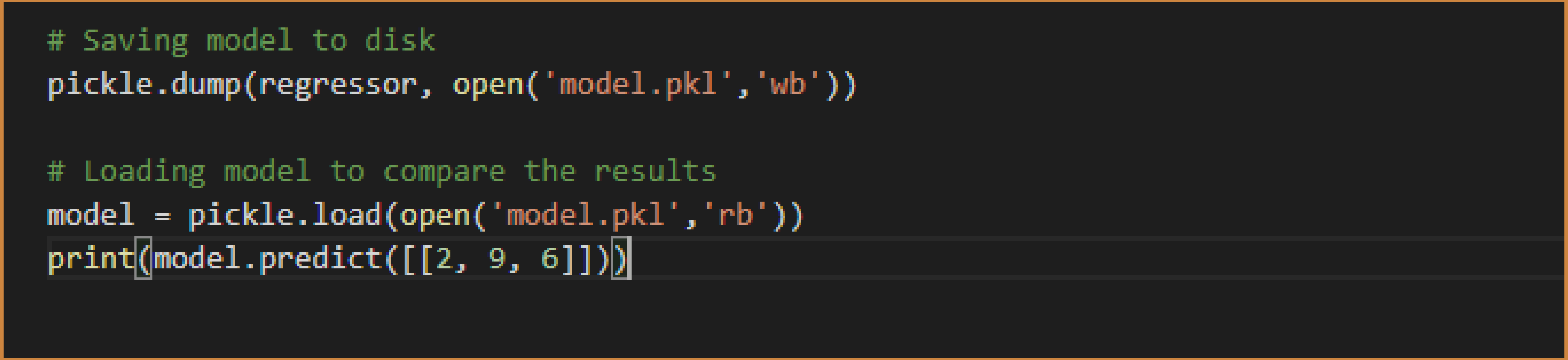
You can see the comments to explain what I did in the module



```python
# Importing the libraries
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import pickle

dataset = pd.read_csv('hiring.csv')

dataset['experience'].fillna(0, inplace=True)

dataset['test_score'].fillna(dataset['test_score'].mean(), inplace=True)

X = dataset.iloc[:, :3]

#Converting words to integer values
def convert_to_int(word):
    word_dict = {'one':1, 'two':2, 'three':3, 'four':4, 'five':5, 'six':6, 'seven':7, 'eight':8,
                 'nine':9, 'ten':10, 'eleven':11, 'twelve':12, 'zero':0, 0: 0}
    return word_dict[word]

X['experience'] = X['experience'].apply(lambda x : convert_to_int(x))

y = dataset.iloc[:, -1]

#Splitting Training and Test Set
#Since we have a very small dataset, we will train our model with all availabe data.

from sklearn.linear_model import LinearRegression
regressor = LinearRegression()

#Fitting model with trainig data
regressor.fit(X, y)

# Saving model to disk
pickle.dump(regressor, open('model.pkl','wb'))

# Loading model to compare the results
model = pickle.load(open('model.pkl','rb'))
print(model.predict([[2, 9, 6]]))
```

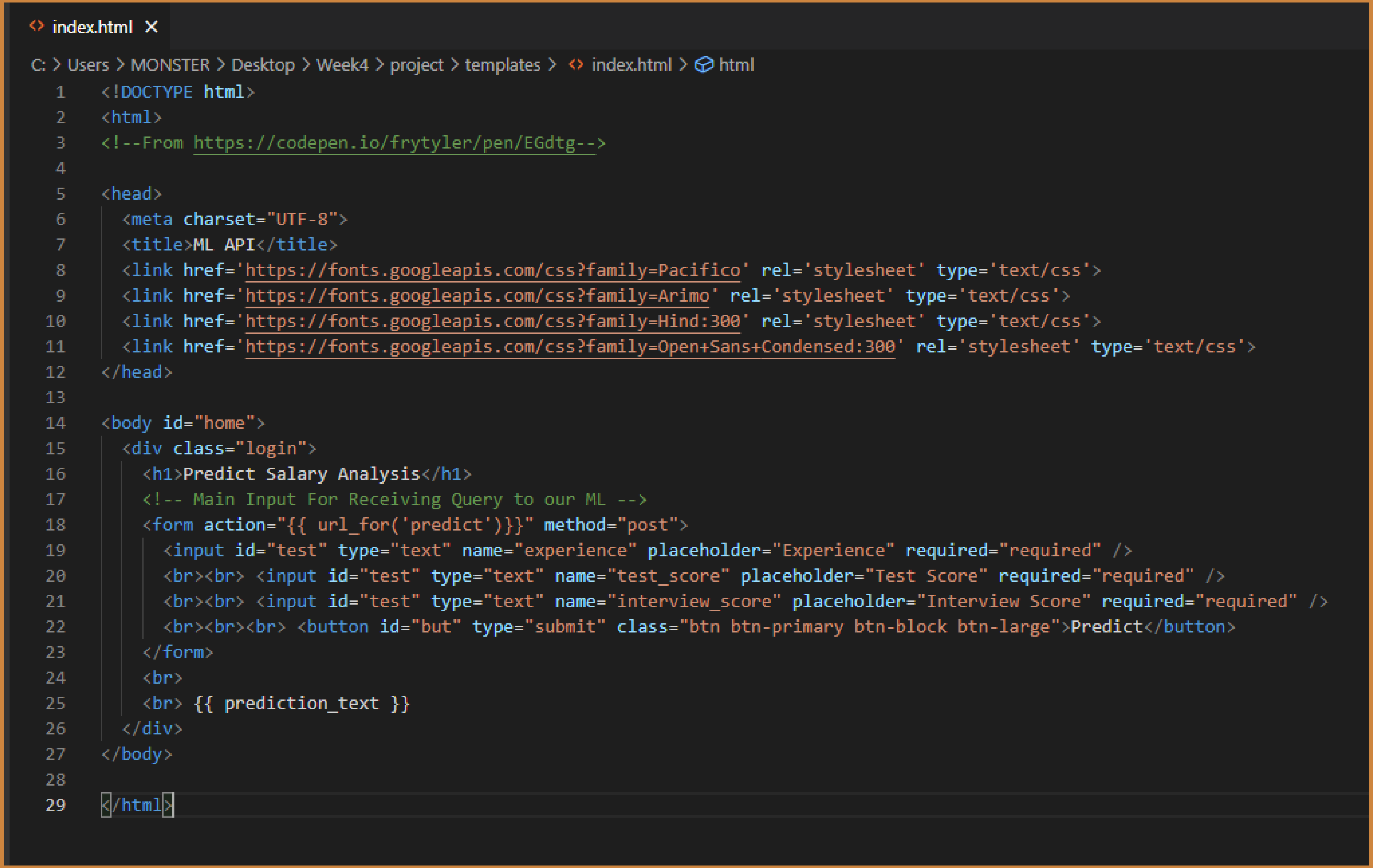
I made a .pkl file for my model

pickle.dump(regressor, open('model.pkl','wb'))



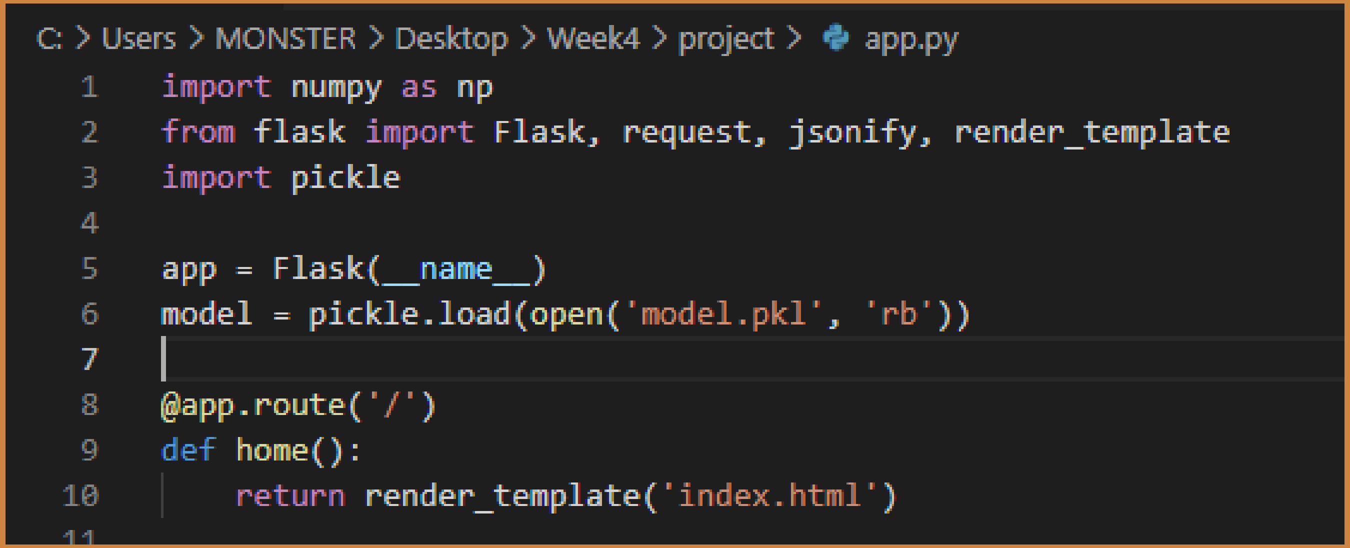
```
# Saving model to disk
pickle.dump(regressor, open('model.pkl','wb'))

# Loading model to compare the results
model = pickle.load(open('model.pkl','rb'))
print(model.predict([[2, 9, 6]]))
```

I have made HTML File to render my interface


index.html ✕
C: › Users › MONSTER › Desktop › Week4 › project › templates › index.html › html

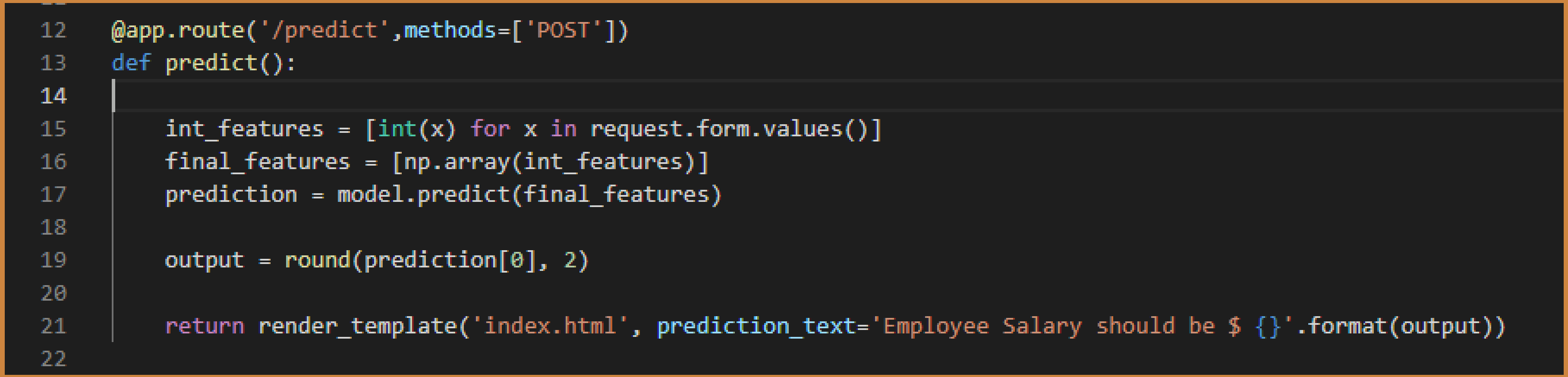
```html
<!DOCTYPE html>
<html>
<!--From https://codepen.io/frytyler/pen/EGdtg-->

<head>
  <meta charset="UTF-8">
  <title>ML API</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
</head>

<body id="home">
  <div class="login">
    <h1>Predict Salary Analysis</h1>
    <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('predict')}}" method="post">
      <input id="test" type="text" name="experience" placeholder="Experience" required="required" />
      <br><br> <input id="test" type="text" name="test_score" placeholder="Test Score" required="required" />
      <br><br> <input id="test" type="text" name="interview_score" placeholder="Interview Score" required="required" />
      <br><br><br> <button id="but" type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
    </form>
    <br>
    <br> {{ prediction_text }}
  </div>
</body>

</html>
```

I used pick pickle.load to load my model



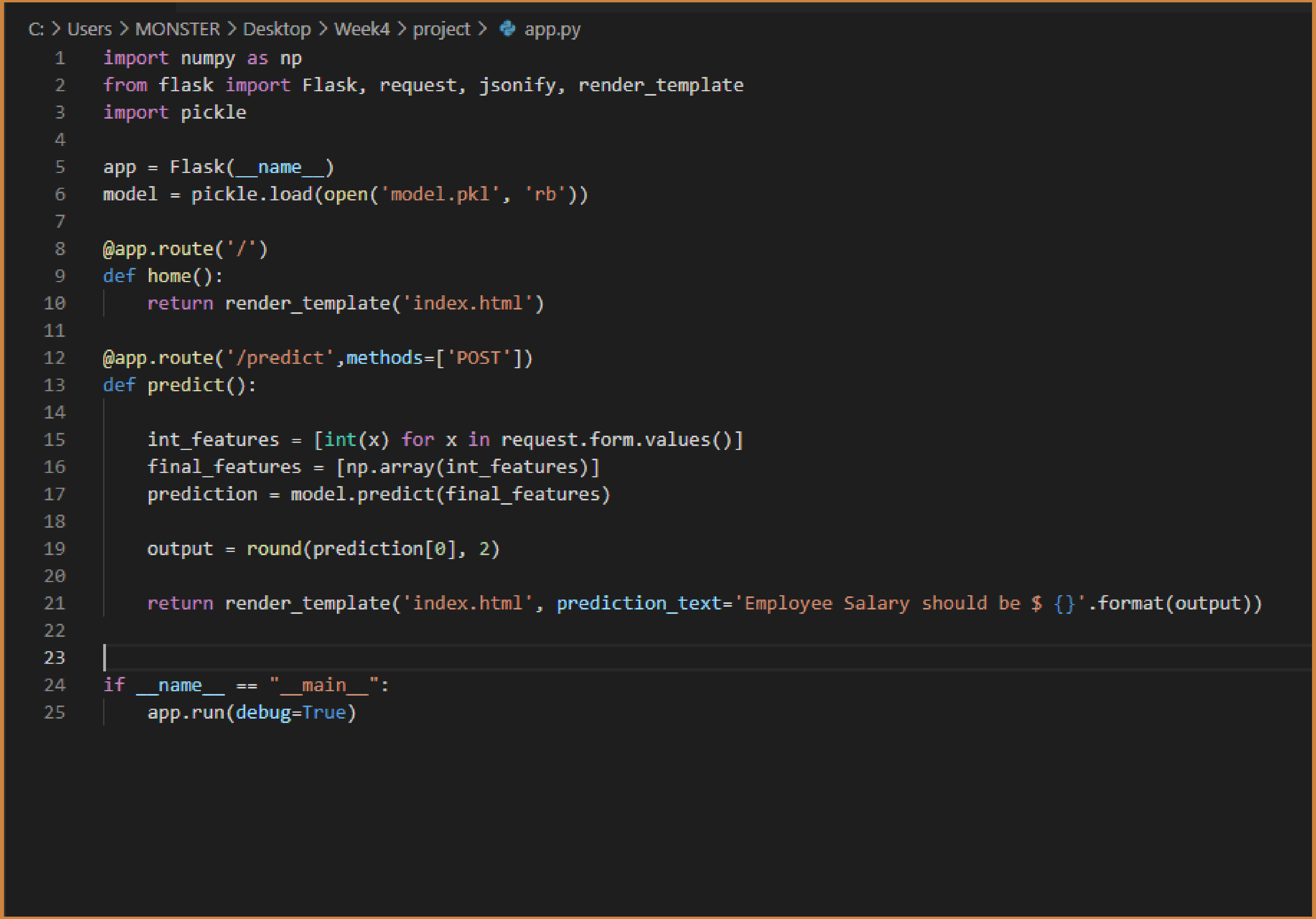
```python
import numpy as np
from flask import Flask, request, jsonify, render_template
import pickle

app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')
```

We used this function for
rendering results on HTML GUI



```python
@app.route('/predict',methods=['POST'])
def predict():

    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    return render_template('index.html', prediction_text='Employee Salary should be $ {}'.format(output))

```

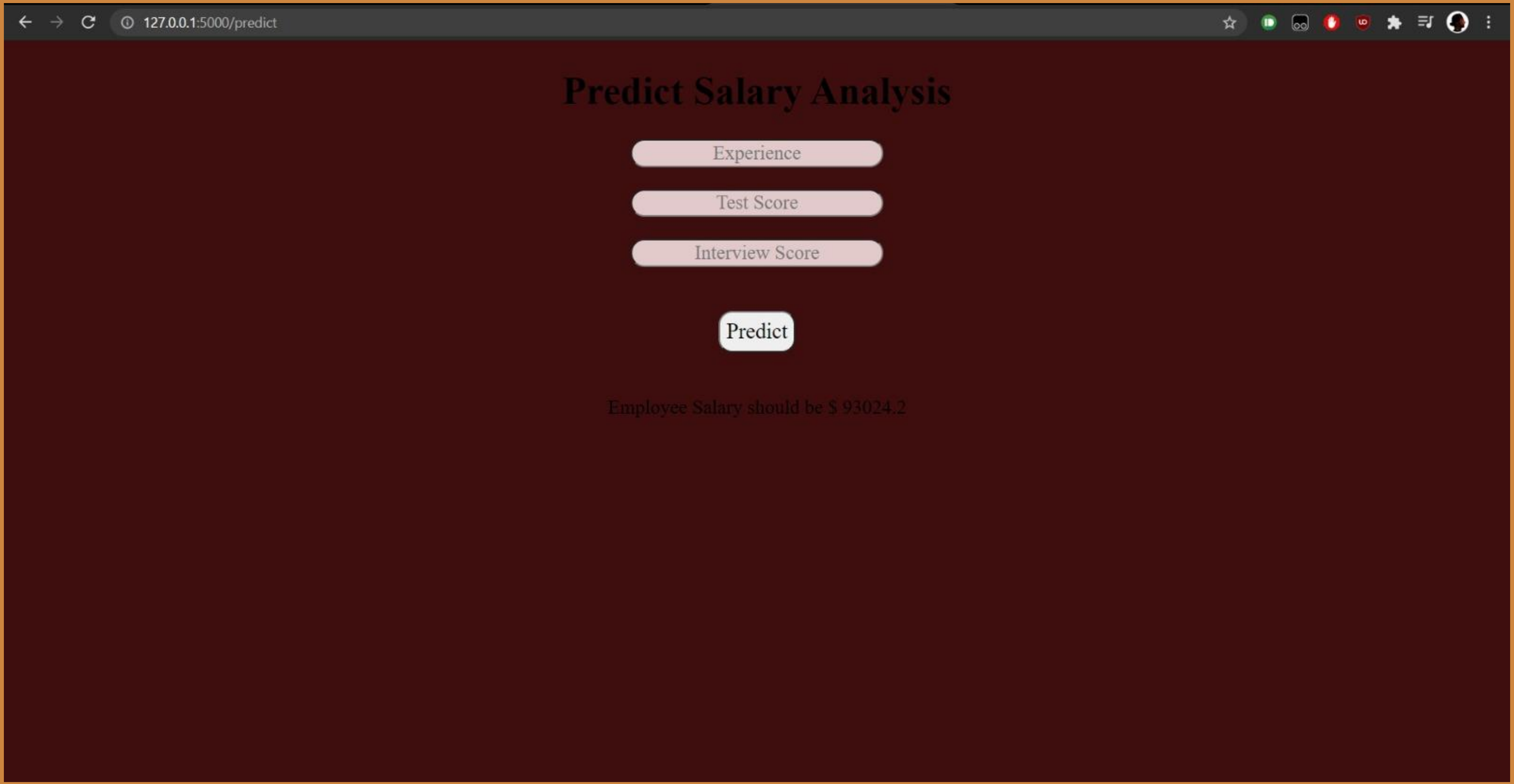
Now our program is ready run



C: > Users > MONSTER > Desktop > Week4 > project > app.py

```python
import numpy as np
from flask import Flask, request, jsonify, render_template
import pickle

app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/predict',methods=['POST'])
def predict():

    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    return render_template('index.html', prediction_text='Employee Salary should be $ {}'.format(output))


if __name__ == "__main__":
    app.run(debug=True)
```

After running our program we can see the result in browser



Predict Salary Analysis

Employee Salary should be $ 93024.2