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Batch Code: LIMSUM 11

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Topic: Deployment on Flask

Step 1: Create your model and Use python pickle library to save the model in a pickle file.

In [61]:
```
print(lr_4.summary())
```

```
                            OLS Regression Results
==============================================================================
Dep. Variable:                  price   R-squared:                       0.676
Model:                            OLS   Adj. R-squared:                  0.667
Method:                 Least Squares   F-statistic:                     77.18
Date:                Tue, 16 Aug 2022   Prob (F-statistic):          3.13e-84
Time:                        13:05:24   Log-Likelihood:                 378.51
No. Observations:                 381   AIC:                            -735.0
Df Residuals:                     370   BIC:                            -691.7
Df Model:                          10
Covariance Type:            nonrobust
==================================================================================
                     coef    std err          t      P>|t|      [0.025      0.975]
----------------------------------------------------------------------------------
const              0.0428      0.014      2.958      0.003       0.014       0.071
area               0.2335      0.030      7.772      0.000       0.174       0.293
bathrooms          0.2019      0.021      9.397      0.000       0.160       0.244
stories            0.1081      0.017      6.277      0.000       0.074       0.142
mainroad           0.0497      0.014      3.468      0.001       0.022       0.078
guestroom          0.0402      0.013      3.124      0.002       0.015       0.065
hotwaterheating    0.0876      0.022      4.051      0.000       0.045       0.130
airconditioning    0.0682      0.011      6.028      0.000       0.046       0.090
parking            0.0629      0.018      3.482      0.001       0.027       0.098
prefarea           0.0637      0.012      5.452      0.000       0.041       0.087
unfurnished       -0.0337      0.010     -3.295      0.001      -0.054      -0.014
==============================================================================
Omnibus:                       97.054   Durbin-Watson:                   2.099
Prob(Omnibus):                  0.000   Jarque-Bera (JB):              322.034
Skew:                           1.124   Prob(JB):                     1.18e-70
Kurtosis:                       6.902   Cond. No.                         10.3
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

In [80]:
```
import pickle

with open('model.pkl','wb') as f:
    pickle.dump(lr_4, f)
```

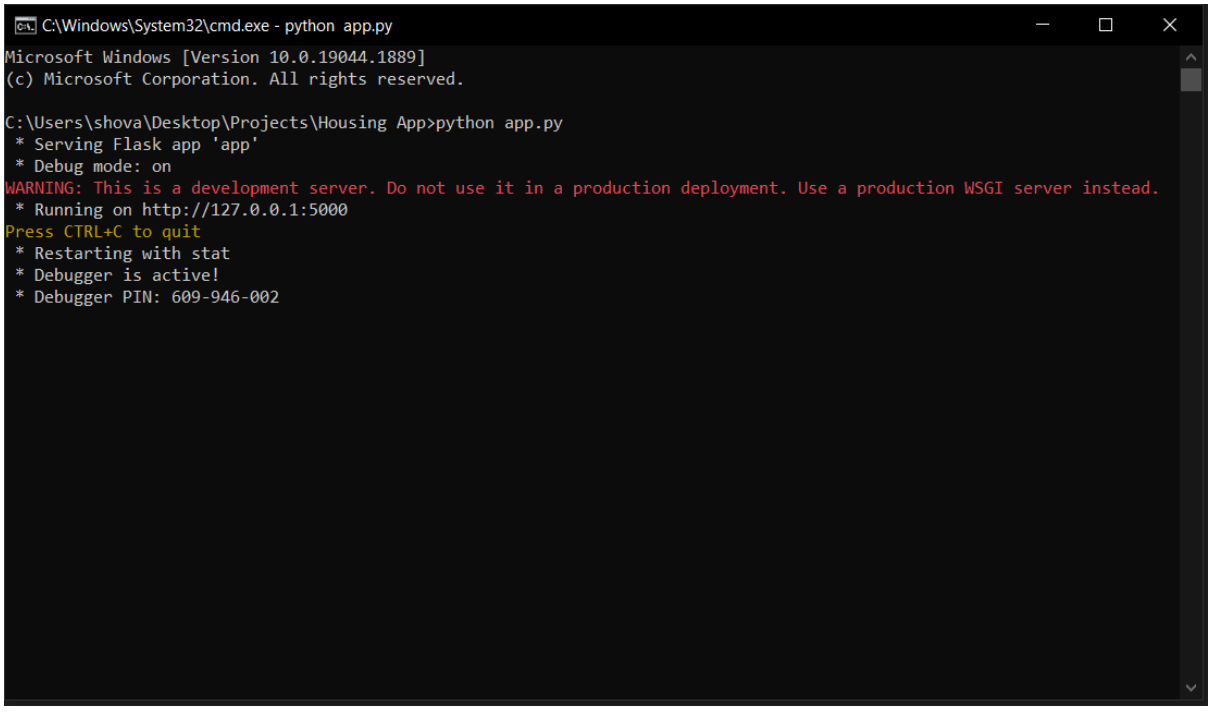
Step 2: Create an html page to be our front end for the flask app.

```
<body>
    <fieldset>
    <div class="login">
    <h1>Predict House Price</h1>

    <!-- Main Input For Receiving Query to our ML -->
       <form action="{{ url_for('predict')}}"method="post">
       <input type="text" name="area" placeholder="Area (in square feet)" required="required" /><br>
       <input type="text" name="bedrooms" placeholder="No of Bedrooms" required="required" /><br>
       <input type="text" name="bathrooms" placeholder="Number of Bathrooms" required="required" /><br>
       <input type="text" name="stories" placeholder="No of floors" required="required" /><br>
       <input type="text" name="parking" placeholder="No of Parking Spaces" required="required" /><br>



       <legend>Choose:</legend>

       <div>
           <input type="hidden" name="mainroad" value=0>
           <input type="checkbox" id="mainroad" name="mainroad" value = 1>
           <label for="mainroad">mainroad</label>
       </div>

       <div>
           <input type="hidden" name="guestroom" value=0>
           <input type="checkbox" id="guestroom" name="guestroom" value = 1>
           <label for="guestroom">guestroom</label>
       </div>

       <div>
           <input type="hidden" name="basement" value=0>
           <input type="checkbox" id="basement" name="basement" value = 1>
           <label for="basement">basement</label>
       </div>
```

Step 3: Write program for app.py and import pickle in it.

```python
import numpy as np
from flask import Flask, request, 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='House priice should be $ {}'.format(output))

if __name__ == "__main__":
    app.run(port=5000, debug=True)
```

Step 4: Run “python app.py” to run the flask app.



Step 5: Copy the url in the command prompt into any web browser .