Week 4: Deployment on Flask

Name: Hassan Faheem

Batch Code: LISUM06

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1. Creating the ML Model

   The model being used here is of predicting the car prices. The screenshot below shows the overview of the model:

```
dataset = pd.read_csv('car_price.csv')

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

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

X = dataset.iloc[:, :3]
y = dataset.iloc[:, -1]

# Importing ML Library
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'))
```

2. Creating the app.py file

   Here the Flask class will get the name of the module as an argument

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

The function route will give the Flask app the location of the webpage to load

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

```python
@app.route('/predict',methods=['POST'])
def predict():
    '''
    For rendering results on HTML GUI
    '''
    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 price should be $ {}'.format(output))

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

3. Creating index.html file

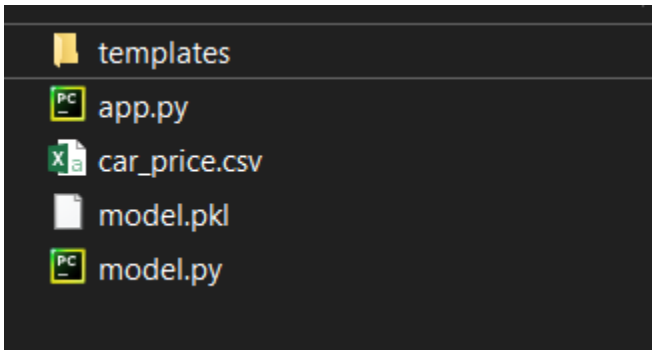
```html
<body>
 <div class="login">
  <h1>Predict Car Price</h1>

    <form action="{{ url_for('predict')}}"method="post">
    <input type="text" name="no_of_cylinders" placeholder="Number of Cylinders" required="required" />
        <input type="text" name="KM" placeholder="KM Run" required="required" />
    <input type="text" name="car_model" placeholder="Car Model" required="required" />

        <button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
    </form>

   <br>
   <br>
   {{ prediction_text }}
```

4. Overview of the files



5. Deployment

To deploy & run the app, use the command python app.py in the cmd to run the flash server. Then open the browser and copy the address and paste it there in the browser. The address here is “http//127.0.0.1:5000/”

```
C:\Users\User\Desktop\Internship\Flask-Deployment>python app.py
C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:310: UserWarning:
.
  warnings.warn(
 * Serving Flask app 'app' (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 stat
C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:310: UserWarning:
.
  warnings.warn(
 * Debugger is active!
 * Debugger PIN: 923-759-706
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [27/Feb/2022 10:25:35] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 10:27:09] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 10:27:13] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 10:27:43] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 11:18:38] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 11:20:02] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2022 11:20:57] "POST /predict HTTP/1.1" 200 -
 * Detected change in 'C:\\Users\\User\\Desktop\\Internship\\Flask-Deployment\\app.py', reloading
 * Restarting with stat
C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:310: UserWarning:
.
  warnings.warn(
 * Debugger is active!
 * Debugger PIN: 923-759-706
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [27/Feb/2022 11:22:52] "POST /predict HTTP/1.1" 200 -
 * Detected change in 'C:\\Users\\User\\Desktop\\Internship\\Flask-Deployment\\app.py', reloading
 * Restarting with stat
C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:310: UserWarning:
.
  warnings.warn(
 * Debugger is active!
 * Debugger PIN: 923-759-706
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [27/Feb/2022 11:23:27] "POST /predict HTTP/1.1" 200 -
```

6. Viewing the App

The Snippet below shows the app in action, deployed in flask.