Week 4: Model Deployment on Flask

Internship Batch LISUM37

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Data Information

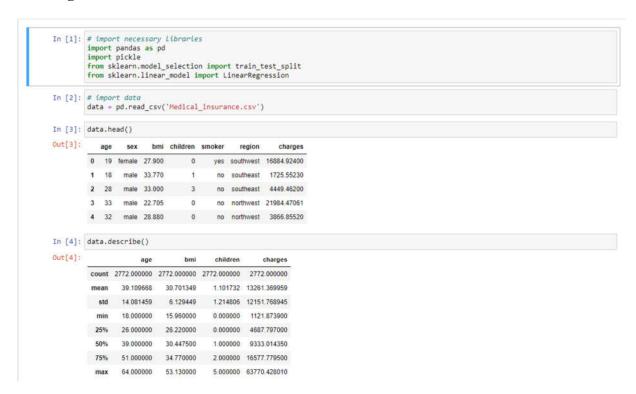
Tabular data details: Medical_insurance

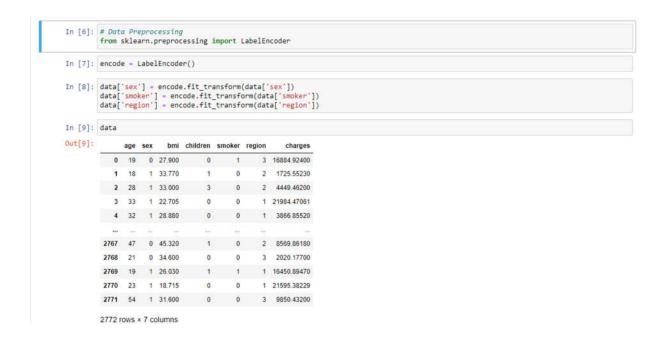
Total number of observations	2772
Total number of files	1
Total number of features	7
Base format of the file	.csv
Size of the data	0.112 MB

Introduction

The aim of the project was to deploy a Linear Regression model that would predict the charges insurance client would pay given certain variables.

Building the Model





Create the x and y data necessary for the regression model

```
In [15]: x = data.drop('charges', axis=1)
      y = data['changes']
In [16]: x
         age sex bmi children smoker region
       0 19 0 27.900 0 1 3
          1 18 1 33.770
       2 28 1 33.000 3 0 2
       3 33 1 22.705 0 0 1
4 32 1 28.880 0 0 1
       2767 47 0 45.320 1 0 2
       2768 21 0 34,600 0 0
       2769 19 1 26.030 1 1 1
       2770 23 1 18.715 0 0
       2771 54 1 31.600 0 0 3
       2772 rows x 6 columns
In [17]: y
Out[17]: 0
             1725.55230
4449.46200
            21984.47061
              3866.85520
            8569.86180
       2767
       2768
              2020.17700
            16450.89470
21595.38229
       2769
       2771
              9850.43200
       Name: charges, Length: 2772, dtype: float64
```

Save model and pickle it

Create the Index HTML file

Create the Flask app

```
Using flask app to make an api
from sklearn.preprocessing import LabelEncoder
app = Flask(__name__)
@app.route('/') # , methods=['GET', 'POST'])
@app.route('/predict', methods=['POST'])
def price_predict():
   age = request.form.get('age')
   bmi = request.form.get('bmi')
   children = request.form.get('children')
   test_df = pd.DataFrame({'age': [age], 'sex': [sex], 'bmi': [bmi], 'children': [children], 'smoker': [smoker],
                            'region': [region]})
   test_df['sex'] = encoder.fit_transform(test_df['sex'])
   pred_price = model.predict(test_df)
   output = round(pred_price[0], 2)
```

Prediction Model

