

Data Glacier Internship Week 4

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LISUM 01

Creating the pickle file:

Predict the life expectancy using Linear Regression.

```
In [7]: import numpy as np
import pandas as pd
from flask import Flask, request, render_template, jsonify
import pickle
import json
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

```
In [8]: data_set = pd.read_csv('data_set_uk.csv', sep = ',')
```

```
In [16]: # Split-out validation dataset
x = data_set. iloc[:,0]. values
y = data_set. iloc[:, -1]. values
```

```
In [18]: X_train, X_test, Y_train, Y_test = train_test_split(x, y, test_size=0.20, random_state=1)
```

```
In [29]: regressor = LinearRegression()
regressor.fit(X_train.reshape(-1,1), Y_train)
Y_pred = regressor.predict(X_test.reshape(-1,1))
print(Y_pred)
```

```
[48.77085875 38.56504648 38.79184231 45.1421255 53.07997949 52.62638783
57.84269188 75.07917483 50.13163372 31.98796746 44.23494219 72.58442072
78.93470392 69.86287078 52.39959201 38.11145482 59.88385434 55.34793777
41.05980059 66.0073417 66.23413753 39.92582145 67.82170833 71.90403324
78.25431643 35.16310906 58.06948771 42.64737139 53.30677532 67.36811667
35.38990488 73.49160404 39.69902562 39.01863814 33.57553826 37.65786317
31.08078415 46.7296963 76.4399498 70.31646244 37.43106734 34.7095174
54.21395863 52.17279618]
```

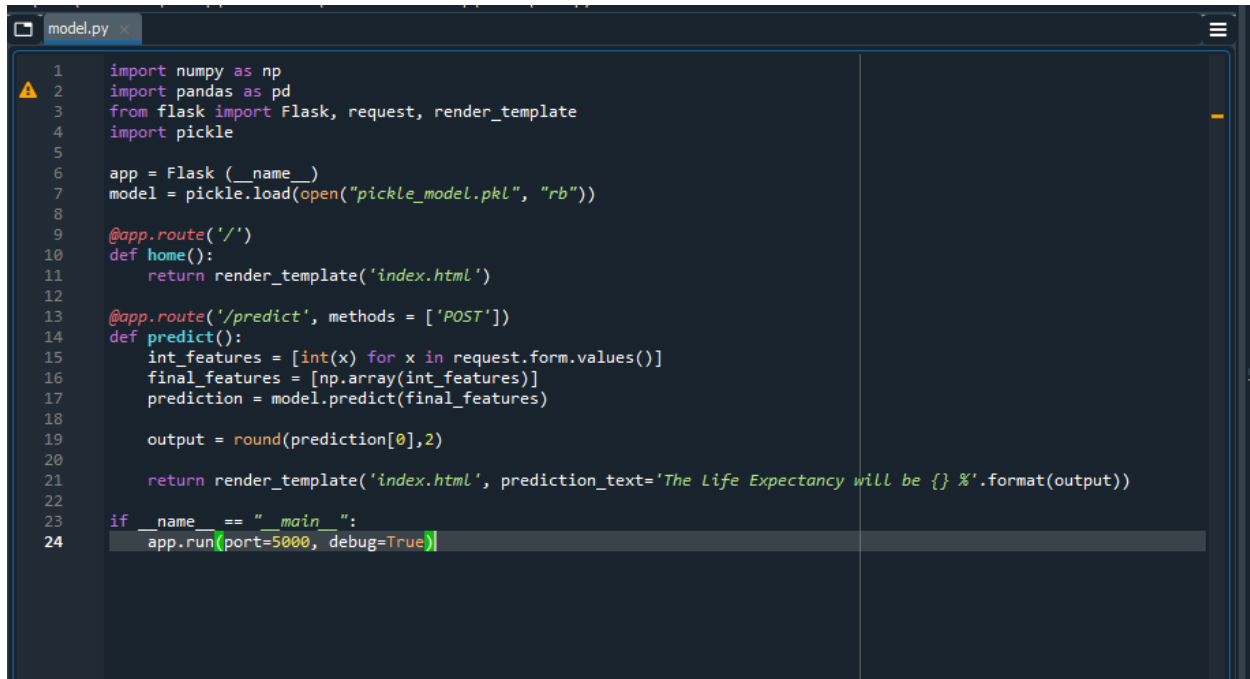
```
In [30]: pickle.dump(regressor, open('model.pkl', 'wb'))
```

```
In [32]: model = pickle.load(open('model.pkl', 'rb'))
print(model.predict([[2020]]))
```

```
[80.97586637]
```

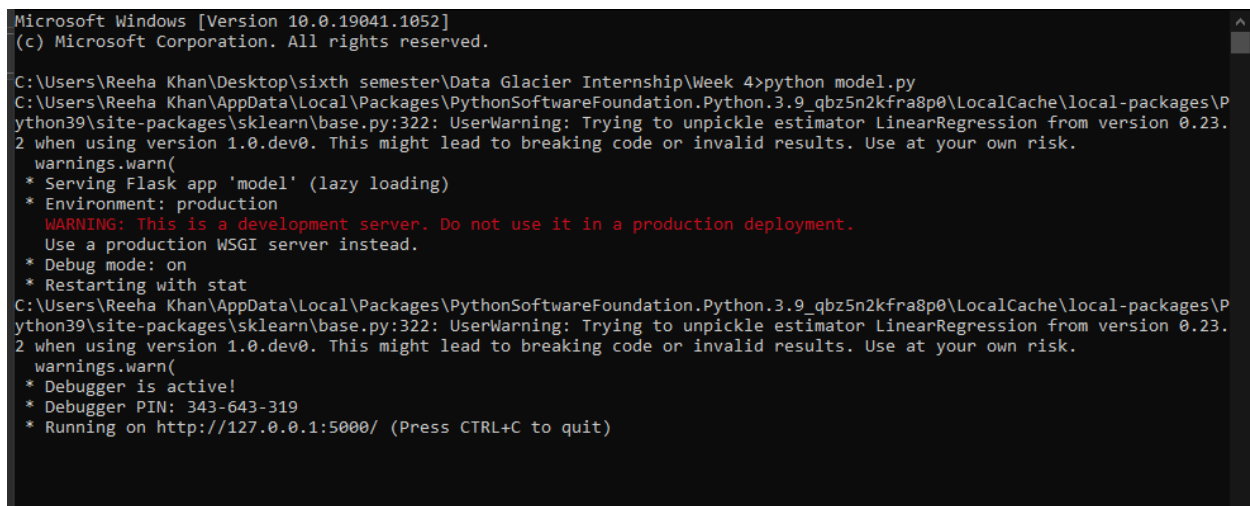
Model Deployment:

Loading the model and deploying the following code using Flask.



```
1 import numpy as np
2 import pandas as pd
3 from flask import Flask, request, render_template
4 import pickle
5
6 app = Flask(__name__)
7 model = pickle.load(open("pickle_model.pkl", "rb"))
8
9 @app.route('/')
10 def home():
11     return render_template('index.html')
12
13 @app.route('/predict', methods = ['POST'])
14 def predict():
15     int_features = [int(x) for x in request.form.values()]
16     final_features = [np.array(int_features)]
17     prediction = model.predict(final_features)
18
19     output = round(prediction[0],2)
20
21     return render_template('index.html', prediction_text='The Life Expectancy will be {} %'.format(output))
22
23 if __name__ == "__main__":
24     app.run(port=5000, debug=True)
```

Running the file on command prompt:



```
Microsoft Windows [Version 10.0.19041.1052]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Reeha Khan\Desktop\sixth semester\Data Glacier Internship\Week 4>python model.py
C:\Users\Reeha Khan\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.9_qbz5n2kfra8p0\LocalCache\local-packages\Python39\site-packages\sklearn\base.py:322: UserWarning: Trying to unpickle estimator LinearRegression from version 0.23.2 when using version 1.0.dev0. This might lead to breaking code or invalid results. Use at your own risk.
  warnings.warn(
* Serving Flask app 'model' (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\Reeha Khan\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.9_qbz5n2kfra8p0\LocalCache\local-packages\Python39\site-packages\sklearn\base.py:322: UserWarning: Trying to unpickle estimator LinearRegression from version 0.23.2 when using version 1.0.dev0. This might lead to breaking code or invalid results. Use at your own risk.
  warnings.warn(
* Debugger is active!
* Debugger PIN: 343-643-319
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

Checking the website:

