Project Report

Name: 500_Person_Gender_Height_Weight_Index
Report date: October 17, 2021
Internship Batch: LISUM04
Version: 1.0
Project by: Atakan Özdin
Data intake reviewer:
Data storage location: https://www.kaggle.com/yersever/500-person-gender-height-weight-bodymassindex
Project Location: https://github.com/melisagozet/BMI_Predict_on_Flask.git

Context

Body mass index is a value derived from the mass and height of a person. The BMI is defined as the body mass divided by the square of the body height, and is expressed in units of kg/m^2, resulting from mass in kilograms and height in metres.

Content

The dataset contains information about gender, height, weight and BMI index of individuals

Gender : Male / Female

Height : Number (cm)

Weight : Number (Kg)
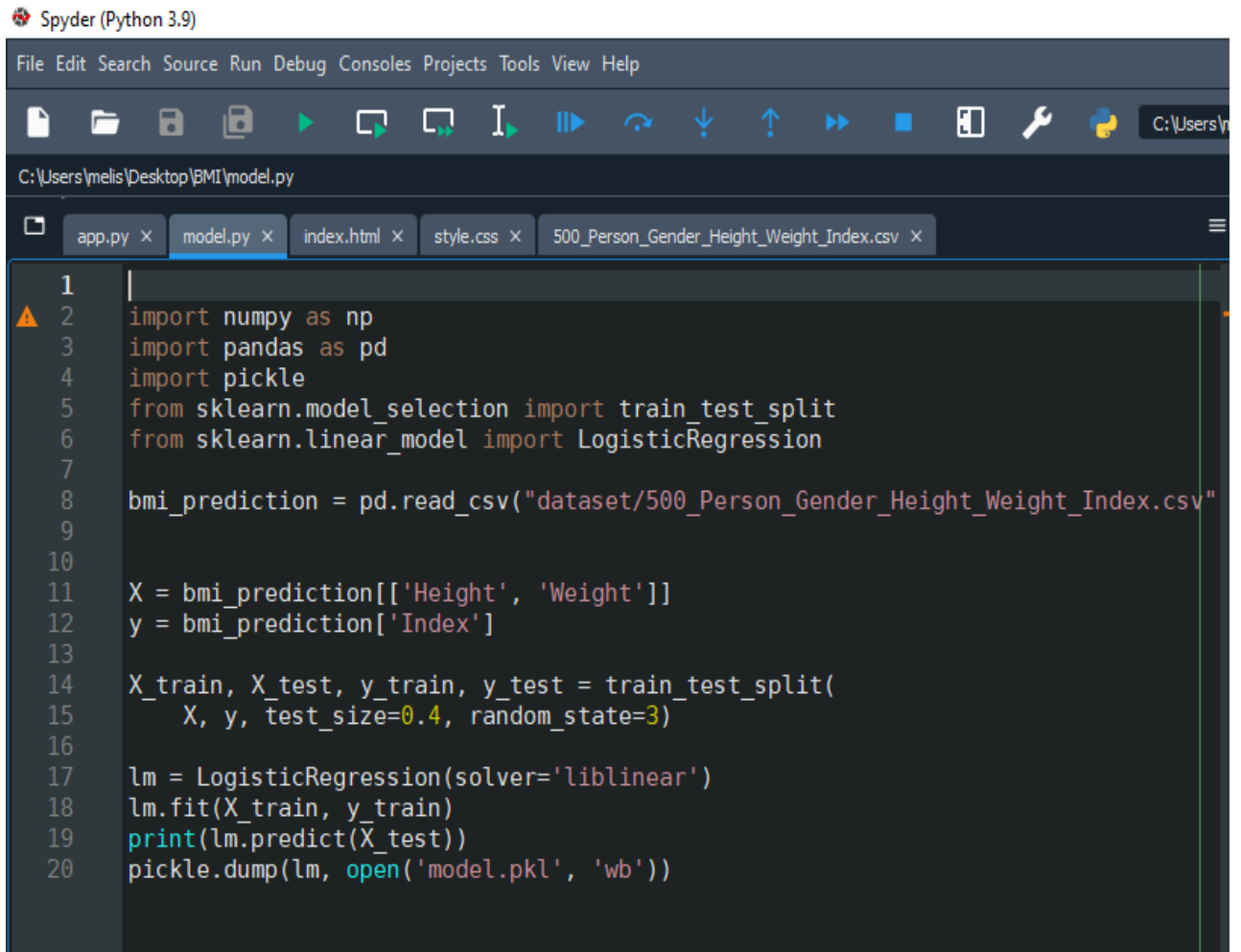
Index

0 - Extremely Weak

1 - Weak

2 - Normal

3 - Overweight

4 - Obesity

5 - Extreme Obesity

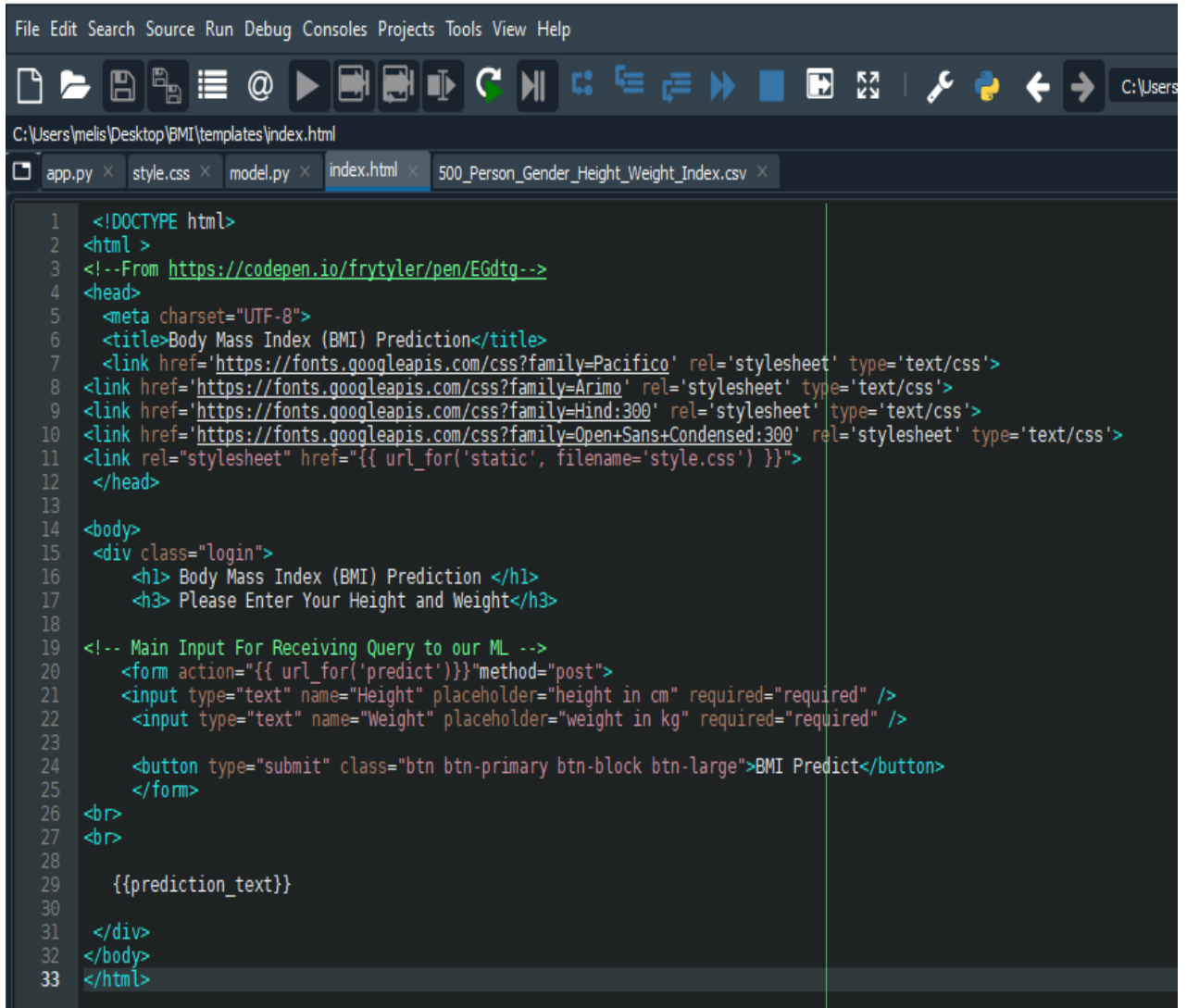1. **Modeling the dataset "500_Person_Gender_Height_Weight_Index.csv"**

Spyder (Python 3.9)

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C:\Users\melis\Desktop\BMI\model.py

app.py ×   model.py ×   index.html ×   style.css ×   500_Person_Gender_Height_Weight_Index.csv ×

```python
import numpy as np
import pandas as pd
import pickle
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression

bmi_prediction = pd.read_csv("dataset/500_Person_Gender_Height_Weight_Index.csv"


X = bmi_prediction[['Height', 'Weight']]
y = bmi_prediction['Index']

X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.4, random_state=3)

lm = LogisticRegression(solver='liblinear')
lm.fit(X_train, y_train)
print(lm.predict(X_test))
pickle.dump(lm, open('model.pkl', 'wb'))
```

2. HTML codes (index.html)

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C:\Users\melis\Desktop\BMI\templates\index.html

app.py ×   style.css ×   model.py ×   index.html ×   500_Person_Gender_Height_Weight_Index.csv ×

```html
1    <!DOCTYPE html>
2    <html >
3    <!--From https://codepen.io/frytyler/pen/EGdtg-->
4    <head>
5      <meta charset="UTF-8">
6      <title>Body Mass Index (BMI) Prediction</title>
7      <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
8    <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
9    <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
10   <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
11   <link rel="stylesheet" href="{{ url_for('static', filename='style.css') }}">
12    </head>
13
14   <body>
15    <div class="login">
16        <h1> Body Mass Index (BMI) Prediction </h1>
17        <h3> Please Enter Your Height and Weight</h3>
18
19   <!-- Main Input For Receiving Query to our ML -->
20       <form action="{{ url_for('predict')}}"method="post">
21       <input type="text" name="Height" placeholder="height in cm" required="required" />
22        <input type="text" name="Weight" placeholder="weight in kg" required="required" />
23
24        <button type="submit" class="btn btn-primary btn-block btn-large">BMI Predict</button>
25        </form>
26   <br>
27   <br>
28
29     {{prediction_text}}
30
31    </div>
32   </body>
33   </html>
```
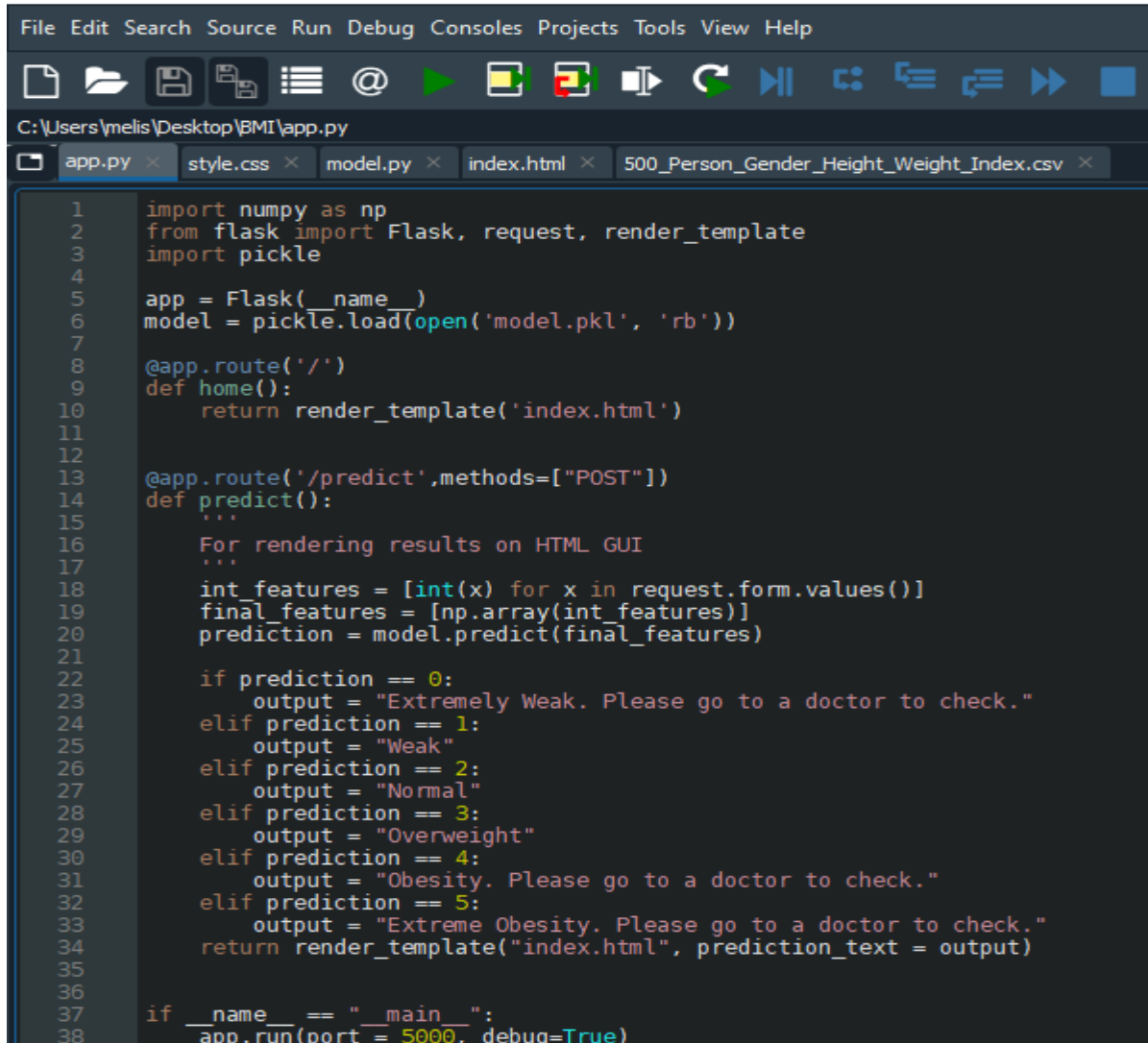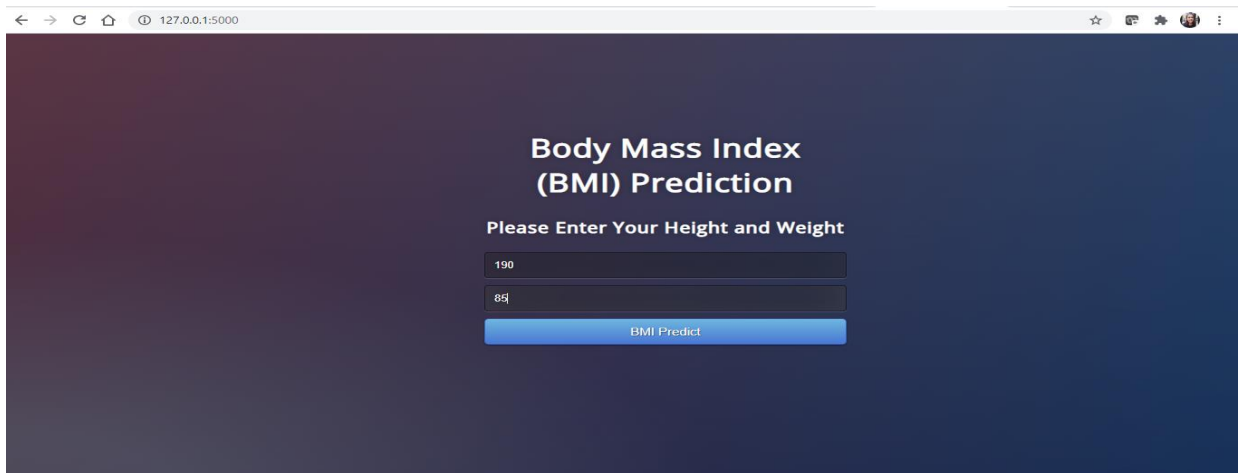
3

3. app.py

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```

C:\Users\melis\Desktop\BMI\app.py

app.py ×   style.css ×   model.py ×   index.html ×   500_Person_Gender_Height_Weight_Index.csv ×

```python
1   import numpy as np
2   from flask import Flask, request, render_template
3   import pickle
4
5   app = Flask(__name__)
6   model = pickle.load(open('model.pkl', 'rb'))
7
8   @app.route('/')
9   def home():
10      return render_template('index.html')
11
12
13  @app.route('/predict',methods=["POST"])
14  def predict():
15      '''
16      For rendering results on HTML GUI
17      '''
18      int_features = [int(x) for x in request.form.values()]
19      final_features = [np.array(int_features)]
20      prediction = model.predict(final_features)
21
22      if prediction == 0:
23          output = "Extremely Weak. Please go to a doctor to check."
24      elif prediction == 1:
25          output = "Weak"
26      elif prediction == 2:
27          output = "Normal"
28      elif prediction == 3:
29          output = "Overweight"
30      elif prediction == 4:
31          output = "Obesity. Please go to a doctor to check."
32      elif prediction == 5:
33          output = "Extreme Obesity. Please go to a doctor to check."
34      return render_template("index.html", prediction_text = output)
35
36
37  if __name__ == "__main__":
38      app.run(port = 5000, debug=True)
```

4

4. Converting notebook to .py file and running python code


```
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. Tüm hakları saklıdır.

C:\Users\melis>cd desktop

C:\Users\melis\Desktop>cd BMI

C:\Users\melis\Desktop\BMI>python app.py
 * 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 windowsapi reloader
 * Debugger is active!
 * Debugger PIN: 280-934-384
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```
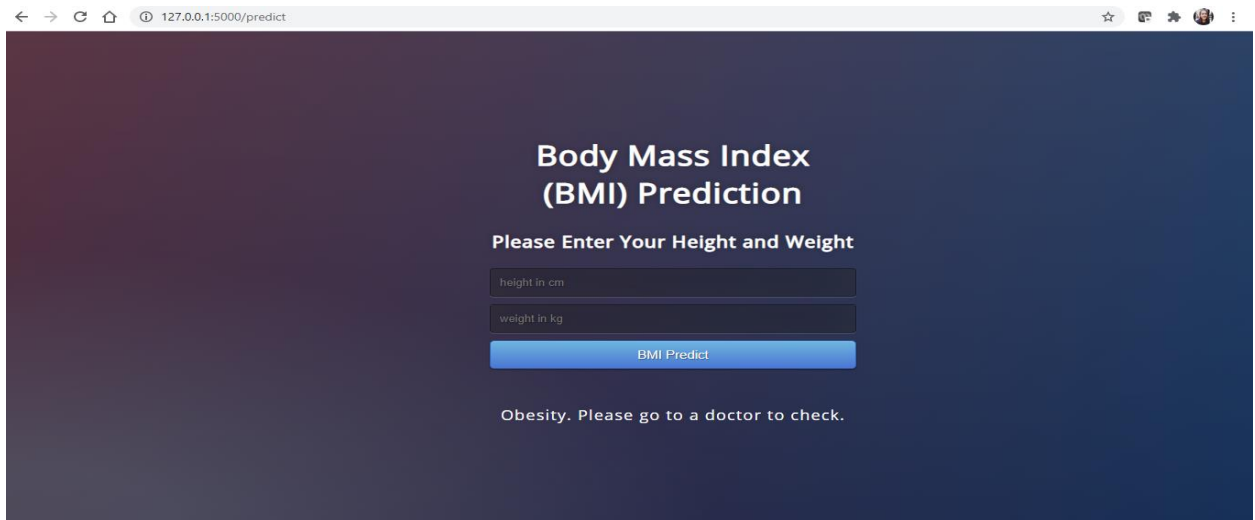
5. Examples of the model

Body Mass Index (BMI) Prediction

Please Enter Your Height and Weight

160

45

BMI Predict

Extremely Weak. Please go to a doctor to check.

Body Mass Index (BMI) Prediction

Please Enter Your Height and Weight

172

75

BMI Predict

Body Mass Index (BMI) Prediction

Please Enter Your Height and Weight

height in cm

weight in kg

BMI Predict

Normal