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BATCH: LISUM04
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Submitted to: Data Glacier

Data selected for this assignment is a file for college admissions. It contains 3 features:

1. admit
2. gpa
3. gre

- admit gives the final decision of student admitted or not in binary, with 0 meaning not admitted and 1 meaning admitted.
- gpa is the GPA score of the student
- gre is the GRE test score of the student

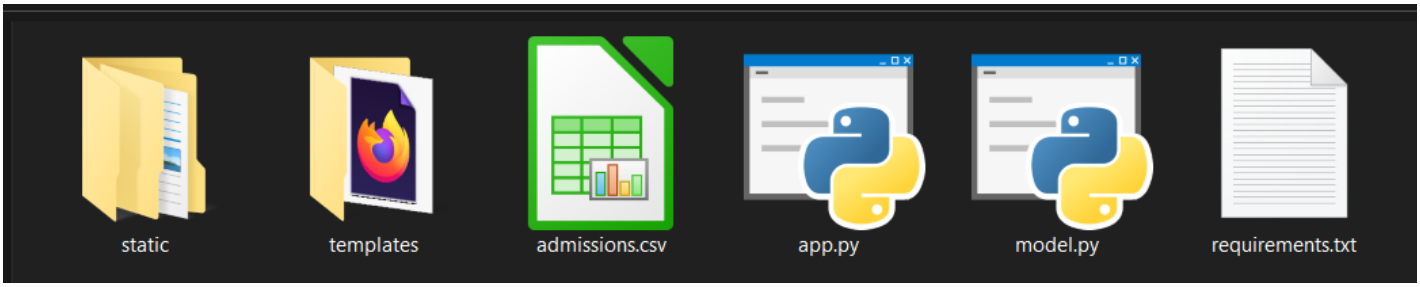
Spyder 5.05 IDE was used to edit the files

Logistic Regression is used to build a model which will predict student admission based on their GPA and GRE test scores.

Application will ask for 2 inputs, GPA and GRE test score, and will give a prediction of Admitted or Not Admitted. If non numeric values are entered or if values are numeric but out of range, then application will inform the user on the screen and ask for proper input values.

Below are screenshots of all major steps:

Preparing the files for the project:



preparing requirements.txt

```
Flask==2.0.2
gunicorn==20.1.0
itsdangerous==2.0.1
Jinja2==3.0.2
MarkupSafe==2.0.1
Werkzeug==2.0.2
numpy>=1.21.2
scipy>=1.7.1
scikit-learn>=1.0
pandas>=1.3.4
```

index.html
Changing number of inputs and their text labels

app.py × model.py × index.html ×

```
<!DOCTYPE html>
<html >
<head>
  <meta charset="UTF-8">
  <title>ML API</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
<link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">

</head>

<body>
 <div class="login">
    <h1>Predict Colleage Admissions</h1>

     <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('predict')}}"method="post">
        <input type="text" name="GPA" placeholder="GPA out of 4" required="required" type="number" />
        <input type="text" name="GRE" placeholder="GRE Test Score Out of 800" required="required" type="number"/>

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

   <br>
   <br>
   {{ prediction_text }}

 </div>
 <img src="/static/images/Original.svg" style="width: 400px;position: absolute;bottom: 10px;left: 10px;" alt="Company Logo"/>

</body>
</html>
```

model.py
changing to logistic regression. Reading in data and using its features to make one text prediction

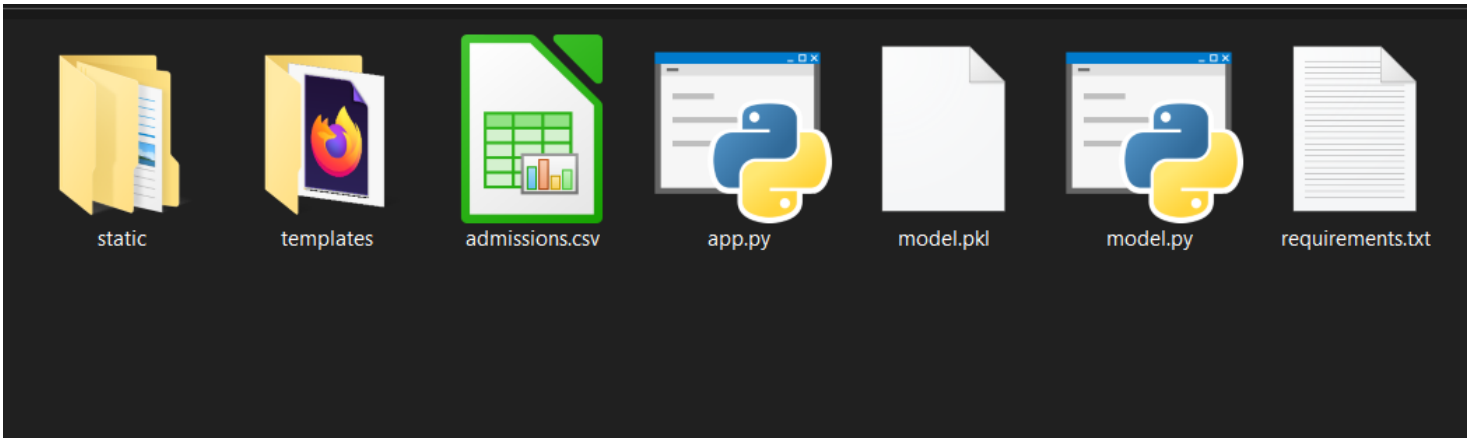
app.py × model.py × index.html ×

```
1   # Importing the libraries
2   import numpy as np
3   import pandas as pd
4   import pickle
5   from sklearn.linear_model import LogisticRegression
6
7   dataset = pd.read_csv('admissions.csv')
8
9   X = dataset[['gpa', 'gre']]
10  y = dataset['admit']
11
12
13  regressor = LogisticRegression()
14
15  #Fitting model with trainig data
16  regressor.fit(X, y)
17
18  # Saving model to disk
19  pickle.dump(regressor, open('model.pkl','wb'))
20
21  # Loading model to compare the results
22  model = pickle.load(open('model.pkl','rb'))
23
24  prediction = 'Admitted' if model.predict([[2.9, 750]]) else 'Not Admitted'
25  print()
26  print(prediction)
27  print()
```

Running model.py
We can see after running model.py that test prediction is working.

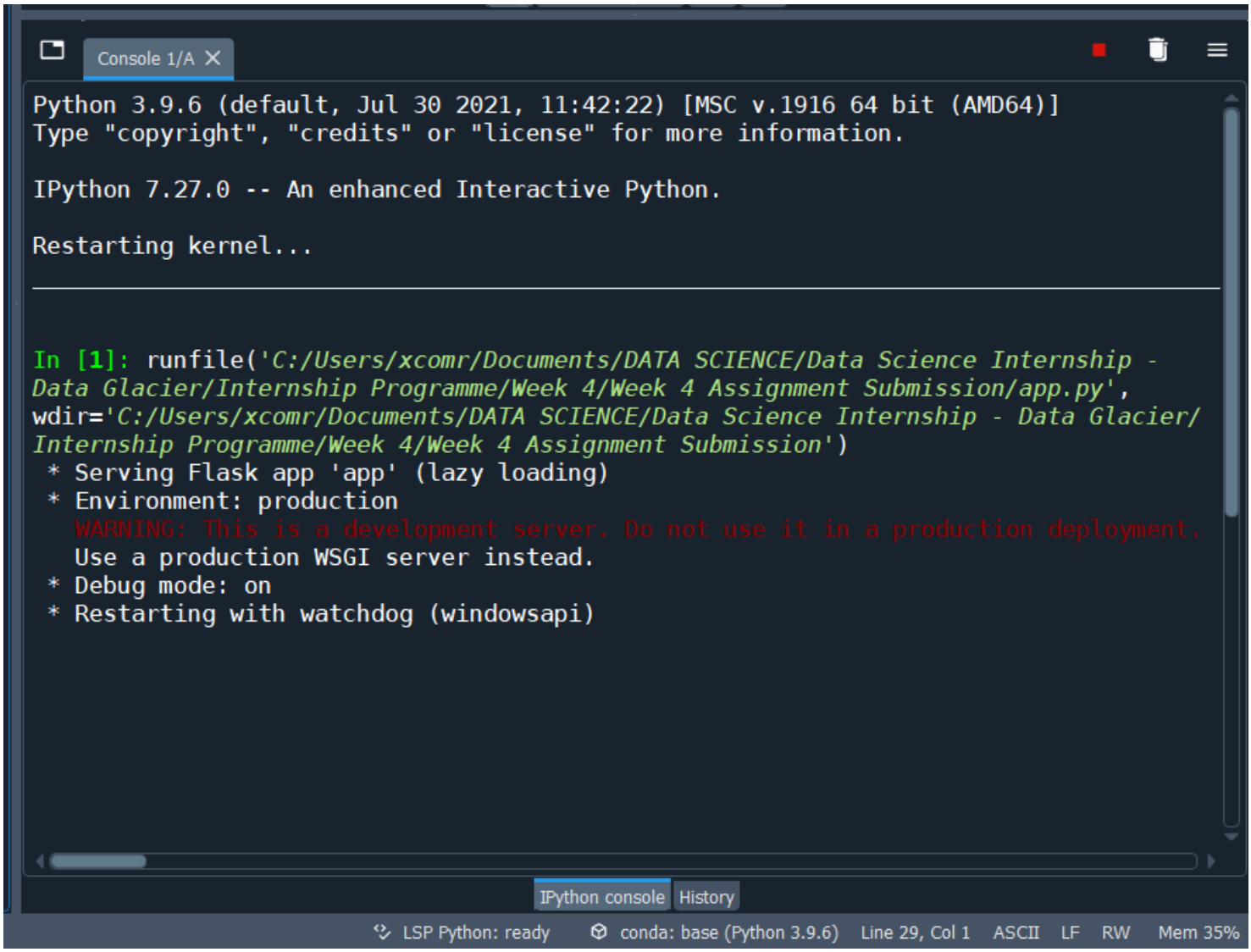
```
Console 1/A

Python 3.9.6 (default, Jul 30 2021, 11:42:22) [MSC v.1916 64 bit
(AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.27.0 -- An enhanced Interactive Python.

Restarting kernel...

---

In [1]: runfile('C:/Users/xcomr/Documents/DATA SCIENCE/Data Science
Internship - Data Glacier/Internship Programme/Week 4/Week 4 Assignment
Submission/model.py', wdir='C:/Users/xcomr/Documents/DATA SCIENCE/Data
Science Internship - Data Glacier/Internship Programme/Week 4/Week 4
Assignment Submission')

Admitted

C:\Users\xcomr\miniconda3\lib\site-packages\sklearn\base.py:441:
UserWarning: X does not have valid feature names, but
LogisticRegression was fitted with feature names
  warnings.warn(
```

We also have a model.pkl file created

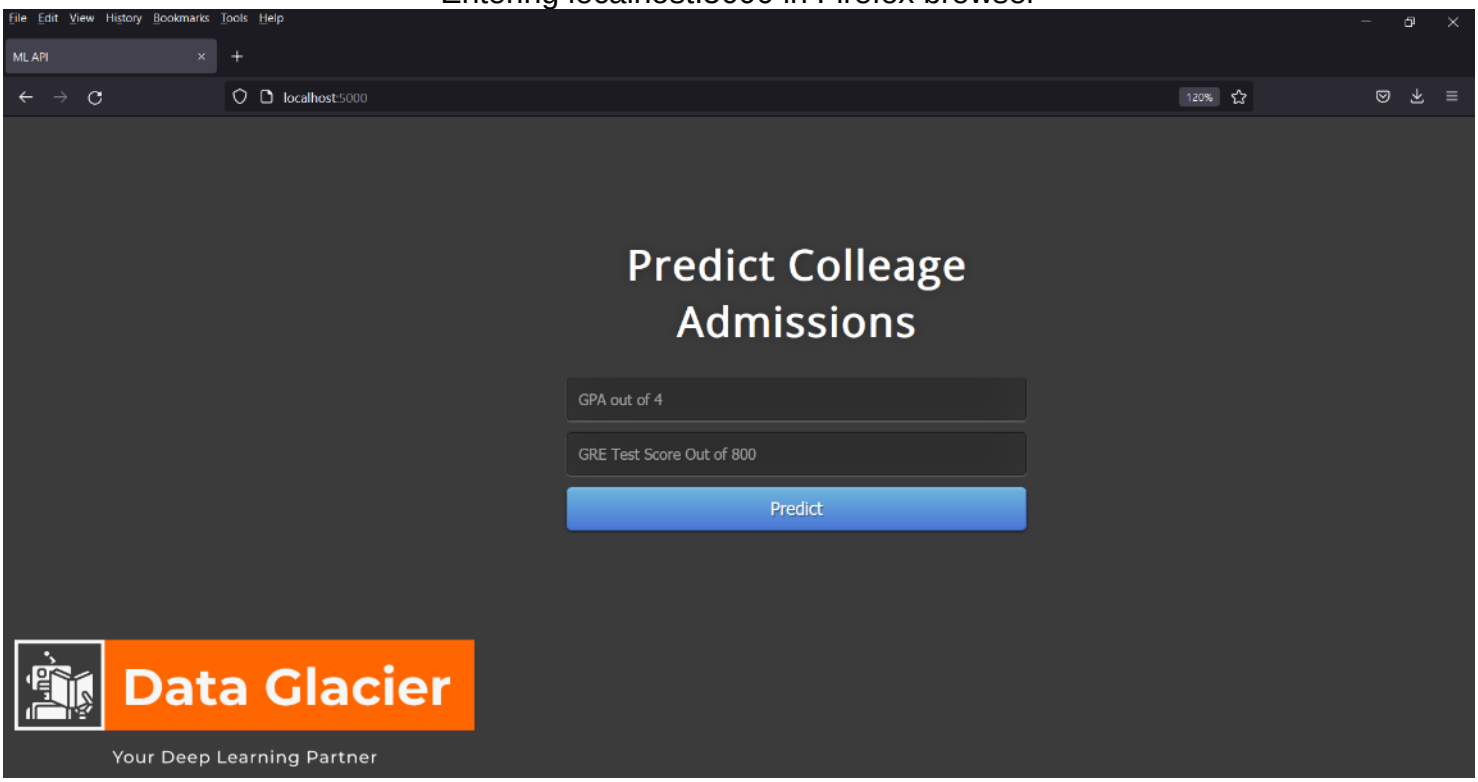


preparing app.py for our new model and to handle new prediction format

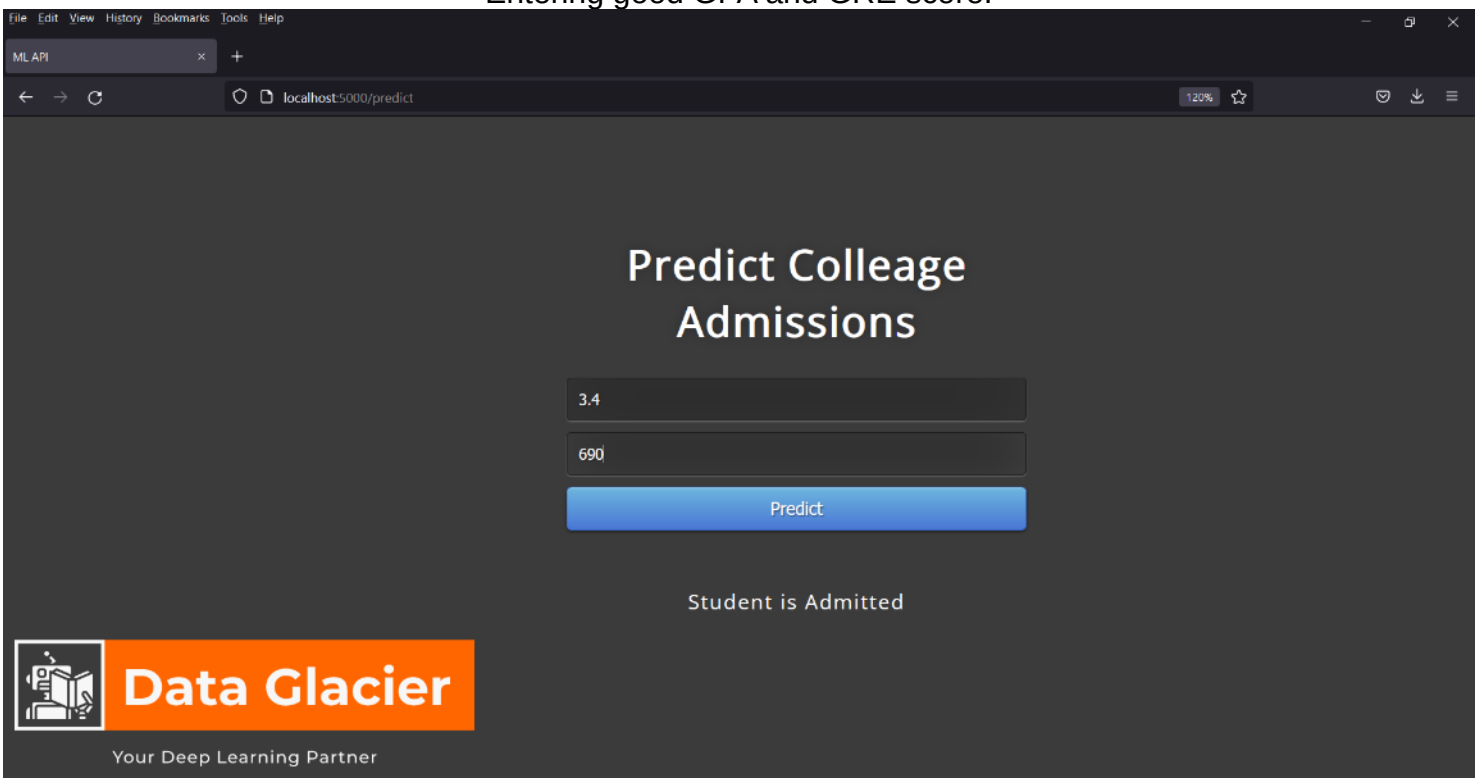
Running app.py



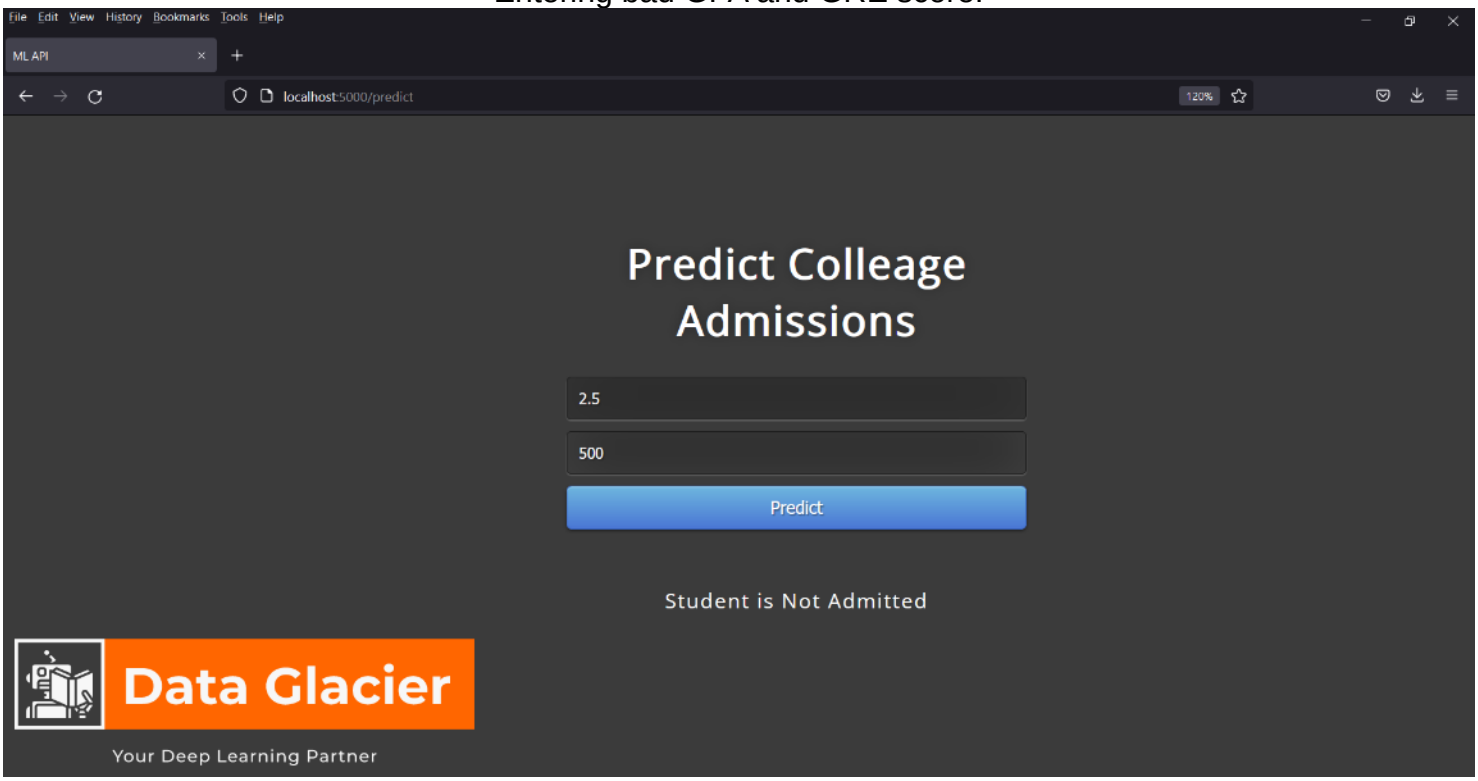
Entering localhost:5000 in Firefox browser



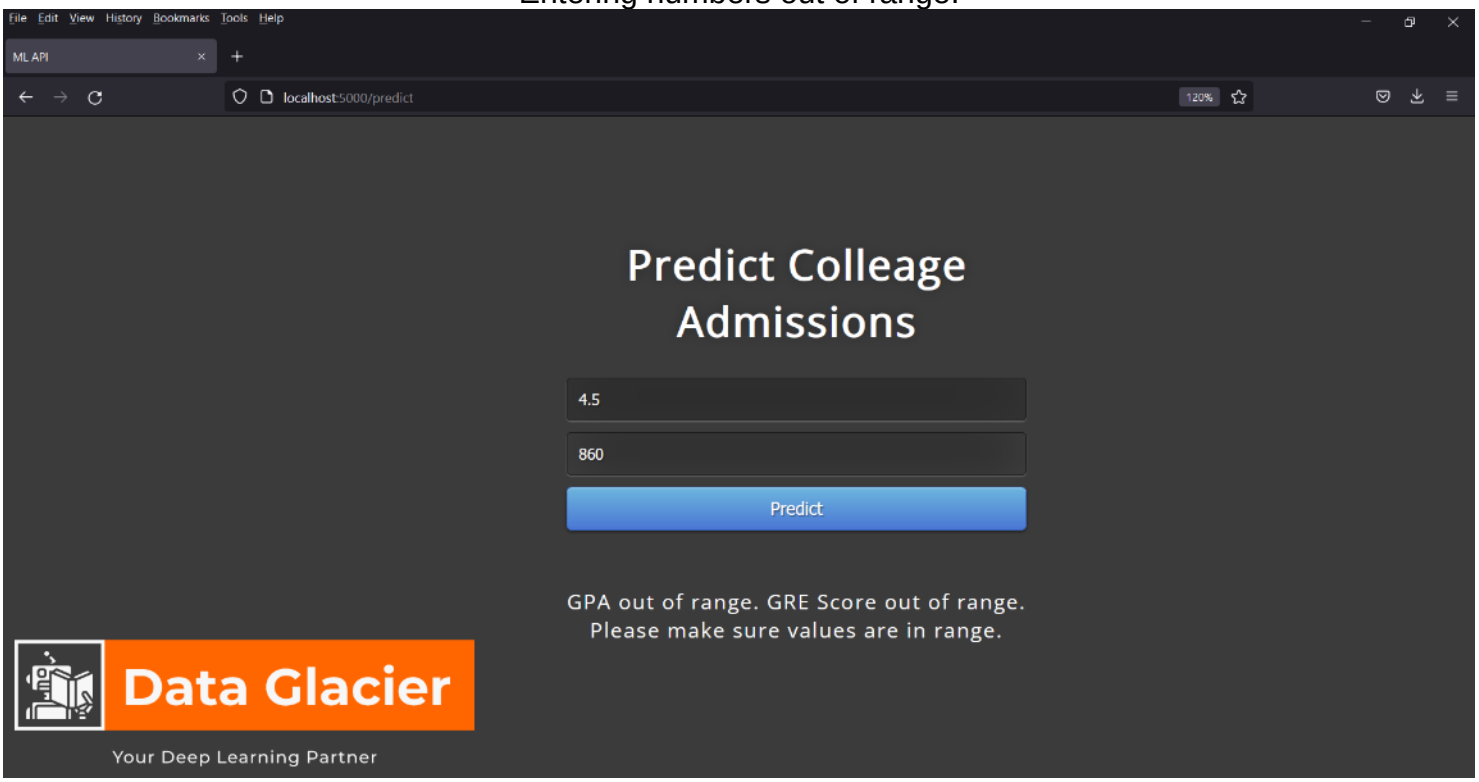
Entering good GPA and GRE score:



Entering bad GPA and GRE score:



Entering numbers out of range:



Entering text in input fields: