Deployment on Flask

Batch code: LISP01

Submission date: 21 March, 2021

Submission to: Data Glacier

Agenda

Model

Deploy on flask

Web App Test

Data Glacier

Your Deep Learning Partner

Model

Training and saving model

```
In [31]: train_x = train[['KM Travelled',  'month', 'day', 'Company_Pink Cab','City']]
         train_y = train['Profit']
         test_x = test[['KM Travelled',  'month', 'day', 'Company_Pink Cab','City']]
         test_y = test['Profit']

In [32]: from sklearn.ensemble import RandomForestRegressor as RF
         logit=RF(n_jobs=2,n_estimators=50, max_depth=15, min_samples_split=12)
         logit.fit(train_x,train_y)

Out[32]: RandomForestRegressor(max_depth=15, min_samples_split=12, n_estimators=50,
                               n_jobs=2)

In [33]: logit.score(train_x,train_y)

Out[33]: 0.8491818608083906

In [34]: logit.score(test_x,test_y)

Out[34]: 0.8066990043933405
```

Trained model

```
In [39]: filename = 'finalized_model.sav'
         pickle.dump(logit, open(filename, 'wb'))
         loaded_model = pickle.load(open(filename, 'rb'))
         result = loaded_model.score(train_x, train_y)
         print(result)

         0.8491818608083906
```

Saved model

Deploy on Flask

Importing libraries, loading model and creating main view

Loaded model

```
from flask import Flask, render_template,request
import numpy as np
import pickle

app = Flask(__name__)


filename = '../W4 deliverables/finalized_model.sav'
model = pickle.load(open(filename, 'rb'))

@app.route('/')
def registrarse():
    result={'profit':'',
        'descr':''  }
    return render_template('registrarse.html',result=result)
```

Deploy on Flask

Creating model view

Input data

Prediction

```python
@app.route("/upload", methods=['GET','POST'])
def uploader():
   if request.method == 'POST':
  # obtenemos el archivo del input "archivo"

      km=request.form['km']
      company=request.form['company']
      city=request.form['city']
      day=request.form['day']
      month=request.form['month']

      print(type(km),type(company),type(city),type(day),type(month))

      int_features = [float(km),int(month),int(day),int(company),int(city)]
      final_features = [np.array(int_features)]
      prediction =model.predict(final_features)

      output = round(prediction[0],2)
      print(output)

      result={
        'profit':output,
        'descr':'The profit should be: $' }
      return render_template('registrarse.html',result=result)


if __name__ == '__main__':
    app.run(host='0.0.0.0' , port = 8080, debug=True)
```

Deploy on Flask

Creating template

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">

  <title>Registrarse</title>
  <link rel="stylesheet" href="{{ url_for('static',filename='css/styles.css') }}">

</head>

<body>


  <div id='pric'>
  <h1>Predict rides profit</h1>
  <form action="/upload" method="POST" class="form-inline tm-search-form" enctype="multipart/form-data">

    <label for="mapel">Company</label>
    <select name="company" id="cars">
      <option value="1">Pink</option>
      <option value="0">Yelow</option>
    </select>

    <label for="mapel">Day</label>
    <select name="day" id="cars">
      <option value="1">1</option>
      <option value="2">2</option>
      <option value="3">3</option>
      <option value="4">4</option>
      <option value="5">5</option>
      <option value="6">6</option>
      <option value="7">7</option>
      <option value="8">8</option>
      <option value="9">9</option>
      <option value="10">10</option>
```

```
    <label for="mapel">City</label>
    <select name="city" id="cars">
      <option value="0">ATLANTA GA</option>
      <option value="1">AUSTIN TX</option>
      <option value="2">BOSTON MA</option>
      <option value="3">CHICAGO IL</option>
      <option value="4">DALLAS TX</option>
      <option value="5">DENVER CO</option>
      <option value="6">LOS ANGELES CA</option>
      <option value="7">MIAMI FL</option>
      <option value="8">NASHVILLE TN</option>
      <option value="9">NEW YORK NY</option>
      <option value="10">ORANGE COUNTY</option>
      <option value="11">PHOENIX AZ</option>
      <option value="12">PITTSBURGH PA</option>
      <option value="13">SACRAMENTO CA</option>
      <option value="14">SAN DIEGO CA</option>
      <option value="15">SEATTLE WA</option>
      <option value="16">SILICON VALLEY</option>
      <option value="17">TUCSON AZ</option>
      <option value="18">WASHINGTON DC</option>
    </select>

    <label for="fdni">KM</label>
    <input type="number" id="fdni" name="km" placeholder="Put KM" minlength="8" maxlength="8" required>


    <input type="submit" value="Send">
  </form>
  <strong>{{result.descr}}{{result.profit}}</strong>
</div>
</body>
</html>
```

Deploy on Flask

Creating styles for template

```css
input[type=text], select {
  width: 100%;
  padding: 12px 20px;
  margin: 8px 0;
  display: inline-block;
  border: 1px solid #ccc;
  border-radius: 4px;
  box-sizing: border-box;
}

input[type=number], select {
  width: 100%;
  padding: 12px 20px;
  margin: 8px 0;
  display: inline-block;
  border: 1px solid #ccc;
  border-radius: 4px;
  box-sizing: border-box;
}

input[type=submit] {
  width: 100%;
  background-color: #4CAF50;
  color: white;
  padding: 14px 20px;
  margin: 8px 0;
  border: none;
  border-radius: 4px;
  cursor: pointer;
}
```

```css
input[type=submit]:hover {
  background-color: #45a049;
}

#pric {
  width: 30%;
  border-radius: 5px;
  background-color: #f2f2f2;
  padding: 10px;
  margin:0 auto;
}
body {
  background-image: url("123.jpg");
}

h1{
  text-align:center;
}
```

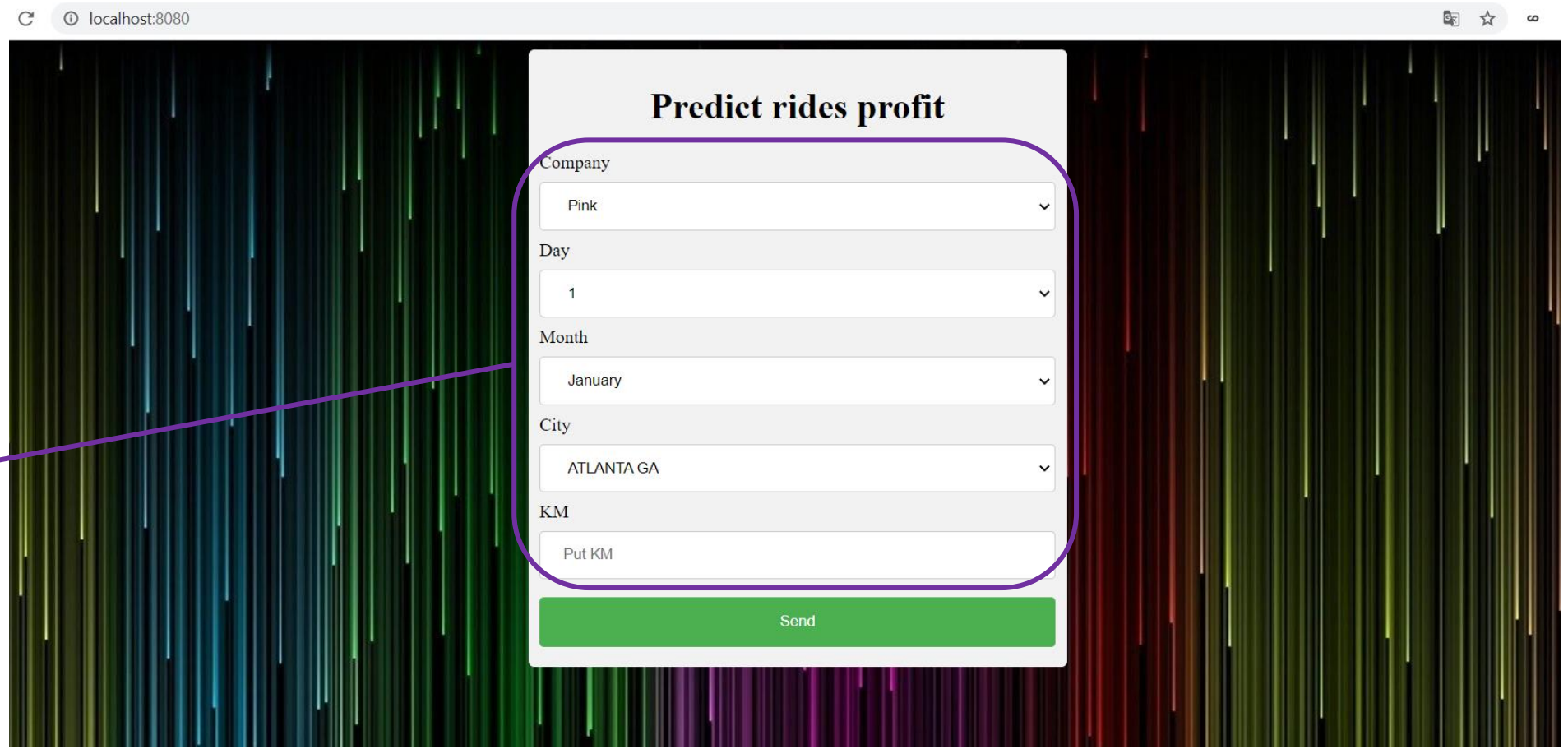
Deploy on Flask

Running App

```
(flask) D:\repos\DG\W4\flask>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 stat
 * Debugger is active!
 * Debugger PIN: 266-435-914
 * Running on http://0.0.0.0:8080/ (Press CTRL+C to quit)
```

Web App Test

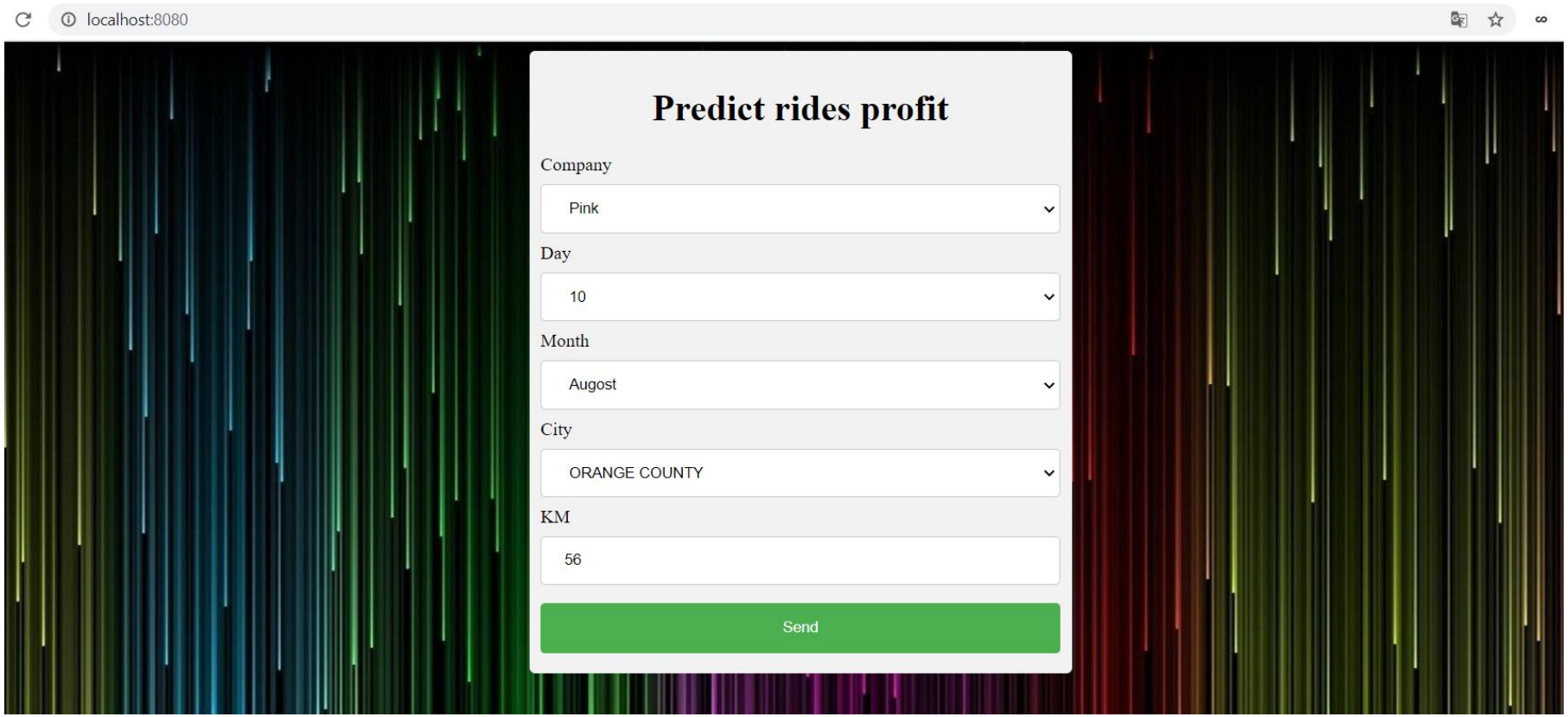
Opening URL: localhost:8080



Input data

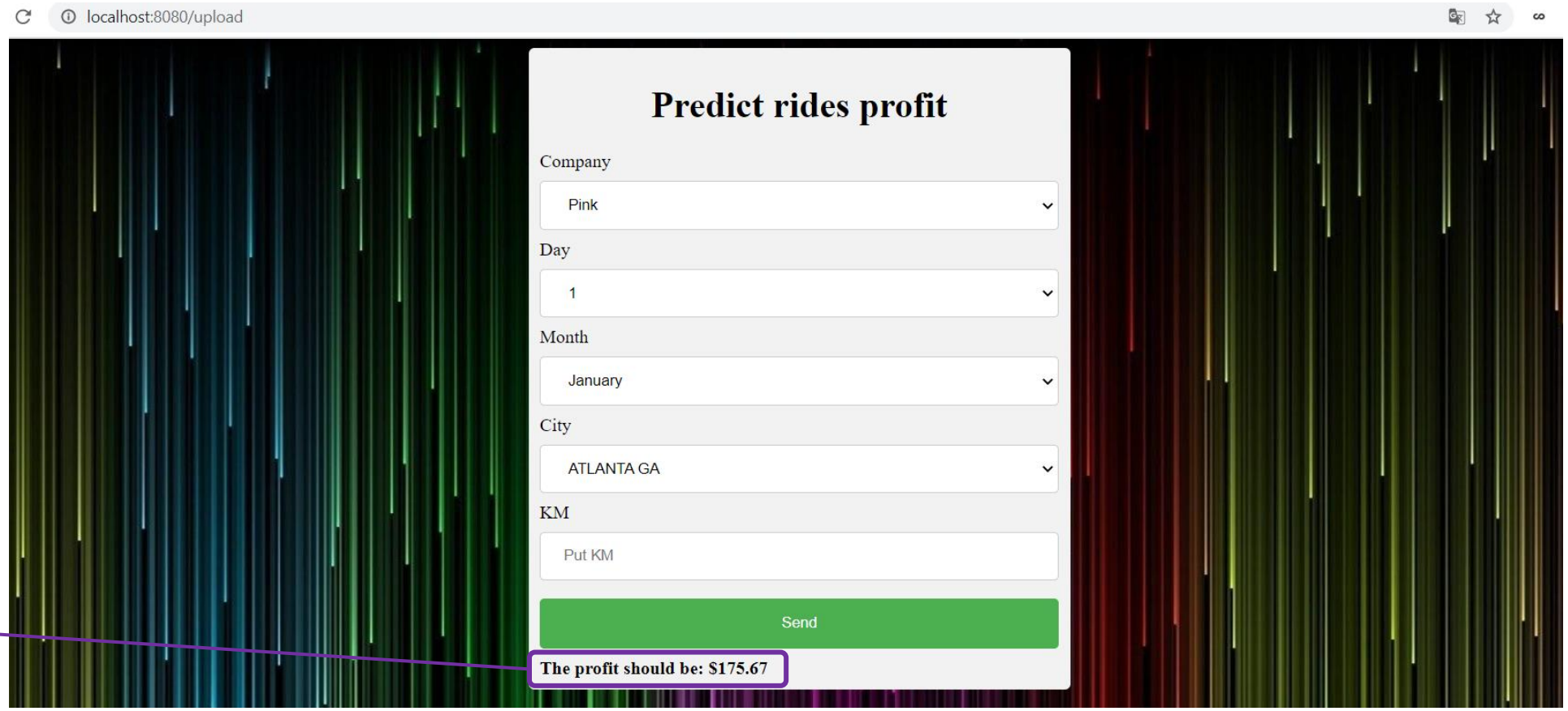
Web App Test

Putting data



Web App Test

Prediction of profit



Prediction

Thank You