Breast Tissue Prediction

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Here are my steps to do this deployment.

1- **Extract the dataset from UCI. That is about breast tissue.**
2- **Build our model:**

```
import pandas as pd
from sklearn.neighbors import KNeighborsClassifier
import pickle

dataset = pd.read_csv('BreastTissue.csv')

x= dataset.iloc[:, :9]

y= dataset.iloc[:, -1]

KNC=KNeighborsClassifier()

KNC.fit(x,y)

pickle.dump(KNC, open('model.pkl','wb'))

model=pickle.load(open('model.pkl','rb'))print(model.predict([290.4551412,0.144164196,0.053058009,74.63506664,1189.545213,15.93815436,35.70333099,65.54132446,330.2672929]))
```

3- Coding our web application using flask:

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

Myapp= Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@Myapp.route('/')
def home():
    return render_template('index.html')

@Myapp.route('/predict',methods=['POST'])
def predict():

    float_features = [float(x) for x in request.form.values()]
    final_features = [np.array(float_features)]
    prediction = model.predict(final_features)

    output =str(prediction)

    return render_template('index.html', prediction_text='Breast Tissue would be $ {}'.format(output))

if __name__ == "__main__":
    Myapp.run(debug=True)
```

4- Coding HTML file for using as a template for our application

```
<!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 Breat Tissue</h1>

    <!-- Main Input For Receiving Query to our ML -->
   <form action="{{ url_for('predict')}}"method="post">
            <input type="text" name="I0" placeholder="Impedivity (ohm) at zero frequency" required="required" />
      <input type="text" name="PA500" placeholder="phase angle at 500 KHz" required="required" />
            <input type="text" name="HFS" placeholder="high-frequency slope of phase angle" required="required" />
```

<input type="text" name="DA" placeholder="impedance distance between spectral ends" required="required" />

<input type="text" name="Area" placeholder="area under spectrum" required="required" />

<input type="text" name="A/DA" placeholder="area normalized by DA" required="required" />

<input type="text" name="Max IP" placeholder="maximum of the spectrum" required="required" />

<input type="text" name="DR" placeholder="distance between I0 and real part of the maximum frequency point" required="required" />

<input type="text" name="P" placeholder="length of the spectral curve" required="required" />

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

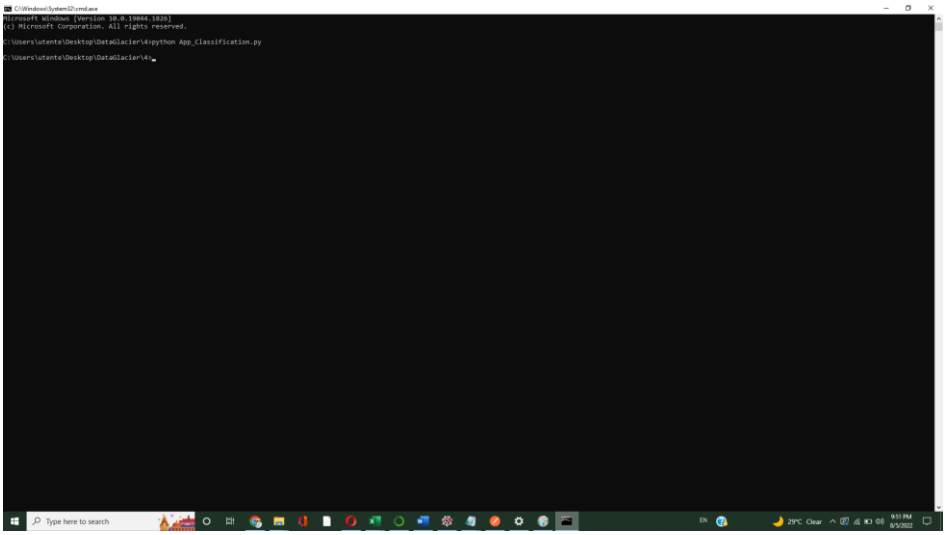
</form>

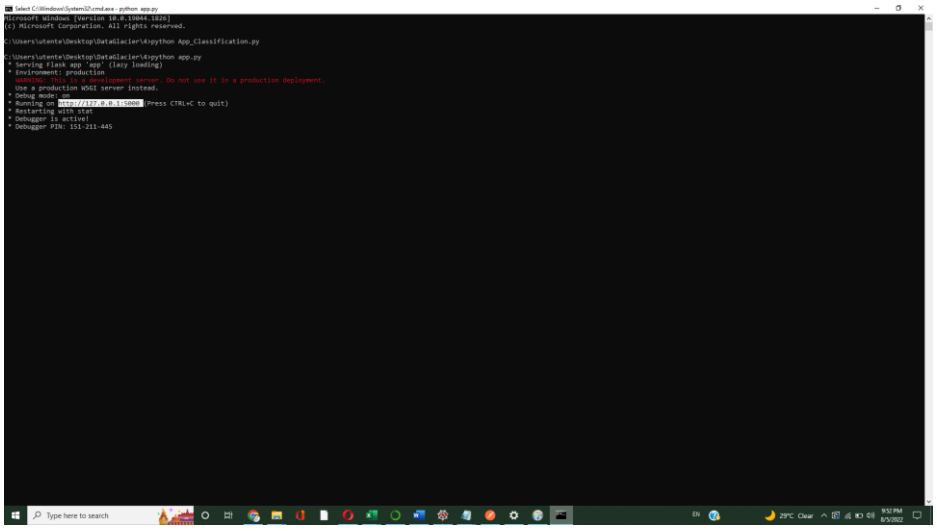
{{ prediction_text }}

</body>

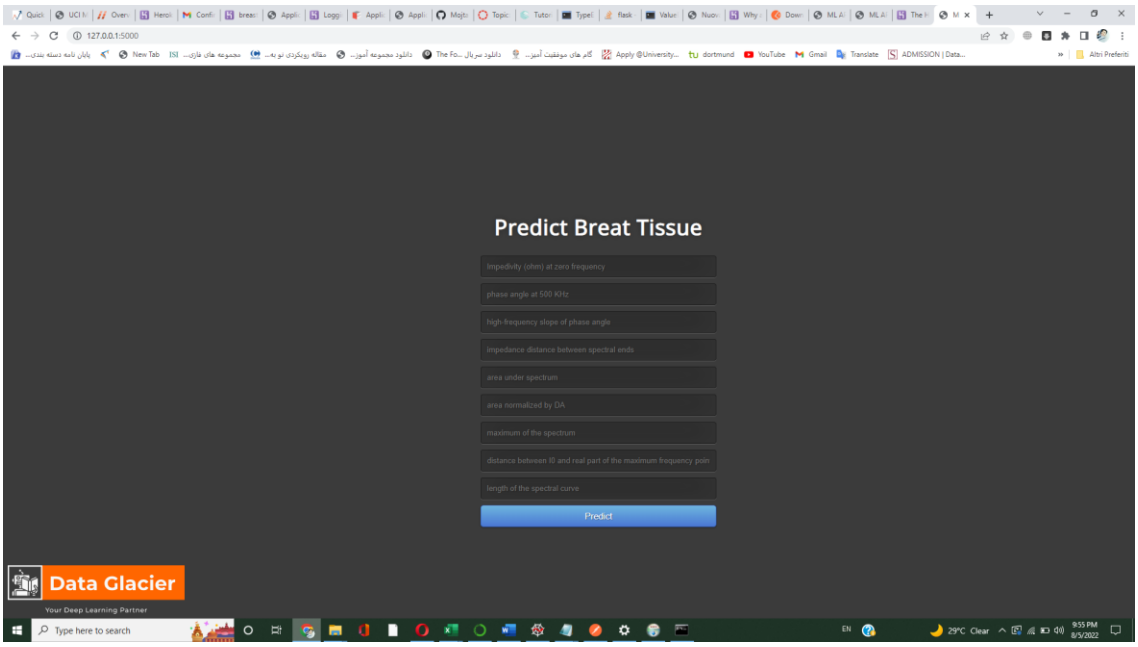
</html>

5- **Now from CMD, we need to run first our model and then our web application.**





As you can see, we have a local host: http://127.0.0.1:5000 and we need to open this in Chrome.



And Finally we can do the prediction.