Web App Code for ipynb file to flask framework view

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Team ID	PPNT2022TMID40507
Project Name	Project - Visualizing and Predicting Heart Diseases with an Interactive Dashboard

Web App Code for ipynb file to flask framework view Visualizing and Predicting Heart Diseases with an Interactive Dashboard:

Heart_prediction_app.py

```
# -*- coding: utf-8 -*-
import numpy as np
import pickle
from flask import Flask, request, render_template
# Load ML model
model = pickle.load(open('models.pkl', 'rb'))
# Create application
app = Flask(__name__)
# Bind home function to URL
@app.route('/')
def home():
    return render_template('Heart_Disease_Classifier.html')
# Bind predict function to URL
@app.route('/predict', methods =['POST'])
def predict():
    # Put all form entries values in a list
    features = [float(i) for i in request.form.values()]
    # Convert features to array
    array_features = [np.array(features)]
    # Predict features
    prediction = model.predict(array_features)
    output = prediction
    # Check the output values and retrive the result with html tag based on the value
```

```
 if output == 1:
        return render_template('Heart_Disease_Classifier.html',
                               result = 'The patient is not likely to have heart disease!')
    else:
        return render_template('Heart_Disease_Classifier.html',
                               result = 'The patient is likely to have heart disease!')
if __name__ == '__main__':
#Run the application
```

Heart_Disease_Classifier.html

```
<html>
<head>
<!-- Bootstrap CSS -->
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css" integrity="sha384-JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z" crossorigin="anonymous">
<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js" integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj" crossorigin="anonymous"></script>
<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js" integrity="sha384-9/reFTGAW83EW2RDu2S0VKaIzap3H66lZH81PoYlFhbGU+6BZp6G7niu735Sk7lN" crossorigin="anonymous"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js" integrity="sha384-B4gt1jrGC7Jh4AgTPSdUtOBvfO8shuf57BaghqFfPlYxofvL8/KUEfYiJOMMV+rV" crossorigin="anonymous"></script>
<title>Heart Disease Test</title>
</head>
<body>
<!-- Java Script -->
<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js" integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj" crossorigin="anonymous"></script>
```

```
<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js" integrity="sha384-9/reFTGAW83EW2RDu2S0VKaIzap3H66lZH81PoYlFhbGU+6BZp6G7niu735Sk7lN" crossorigin="anonymous"></script>

<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js" integrity="sha384-B4gt1jrGC7Jh4AgTPSdUtOBvfO8shuf57BaghqFfPlYxofvL8/KUEfYiJOMMV+rV" crossorigin="anonymous"></script>



<!-- Navbar-->

<nav class="navbar navbar-dark" style="background-color: rgb(13, 102, 87);">

<span class="navbar-brand mb-0 h1">Heart Disease Test</span>

</nav>

<div class="container">

<br>

<!--Form-->

<form action = "{{url_for('predict')}}" method ="POST" >

<fieldset>

<legend style="color: rgb(41, 15, 134);"><b>Heart Disease Test Form</b></legend><br>

<div class="card card-body" style="background-color: rgb(194 245 236 / 56%);">

<div class="form-group  row">

<div class="col-sm-3">

<label for="age">Age</label>

<input type="number" class="form-control" id="age" name="age" required>

</div>

<div class="col-sm-3">

<label for="sex">Sex</label>

<select class="form-control" id="sex"  name="sex" required>

<option disabled selected value> -- Select an Option -- </option>

<option value = "0">Female</option>

<option value = "1">Male</option>

</select>

</div>
```

```
</div>
<br>
<div class="form-group  row">
<div class="col-sm">
<label for="cp">Chest Pain Type</label>
<select class="form-control" id="cp" name = "cp" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "1">Typical Angina</option>
<option value = "2">Atypical Angina</option>
<option value = "3">Non-anginal Pain</option>
<option value = "4">Asymptomatic</option>
</select>
</div>
<div class="col-sm">
<label for="trestbps">Resting Blood Pressure in mm Hg</label>
<input type="number" class="form-control" id="trestbps" name="trestbps"  required>
</div>
<div class="col-sm">
<label for="chol">Serum Cholestoral in mg/dl</label>
<input type="number" class="form-control" id="chol" name="chol" required>
</div>
<div class="col-sm">
<label for="fbs">Fasting Blood Sugar > 120 mg/dl</label>
<select class="form-control" id="fbs" name="fbs" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "0">False</option>
<option value = "1">True</option>
</select>
</div>
</div>

<br>
```

```
<div class="form-group row">
<div class="col-sm">
<label for="restecg">Resting ECG Results </label>
<select class="form-control" id="restecg" name="restecg" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "0">Normal  </option>
<option value = "1">Having ST-T wave abnormality  </option>
<option value = "2">Probable or definite left ventricular hypertrophy</option>
</select>
</div>
<div class="col-sm">
<label for="thalach">Maximum Heart Rate</label>
<input type="number" class="form-control" id="thalach" name="thalach" required>
</div>
<div class="col-sm">
<label for="exang">Exercise Induced Angina </label>
<select class="form-control" id="exang" name="exang" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "0">No</option>
<option value = "1">Yes</option>
</select>
</div>
<div class="col-sm">
<label for="oldpeak">ST Depression Induced</label>
<input type="number" step="any" class="form-control" id="oldpeak" name="oldpeak" required>
</div>
</div>
<br>
<div class="form-group  row">
<div class="col-sm">
<label for="slope">Slope of the Peak Exercise ST Segment </label>
```

```
<select class="form-control" id="slope" name="slope" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "1">Upsloping</option>
<option value = "2">Flat</option>
<option value = "3">Downsloping</option>
</select>
</div>
<div class="col-sm">
<label for="ca">Number of Vessels Colored by Flourosopy</label>
<select class="form-control" id="ca" name = "ca" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "0">0</option>
<option value = "1">1</option>
<option value = "2">2</option>
<option value = "3">3</option>
</select>
</div>
<div class="col-sm">
<label for="thal">Thalassemia</label>
<select class="form-control" id="thal" name = "thal" required>
<option disabled selected value> -- Select an Option -- </option>
<option value = "3">Normal</option>
<option value = "6">Fixed defect</option>
<option value = "7">Reversable defect</option>
</select>
</div>
</div>
<br>
<div class="form-group">
<input class="btn btn-primary" type="submit" value="Result">
</div>
```

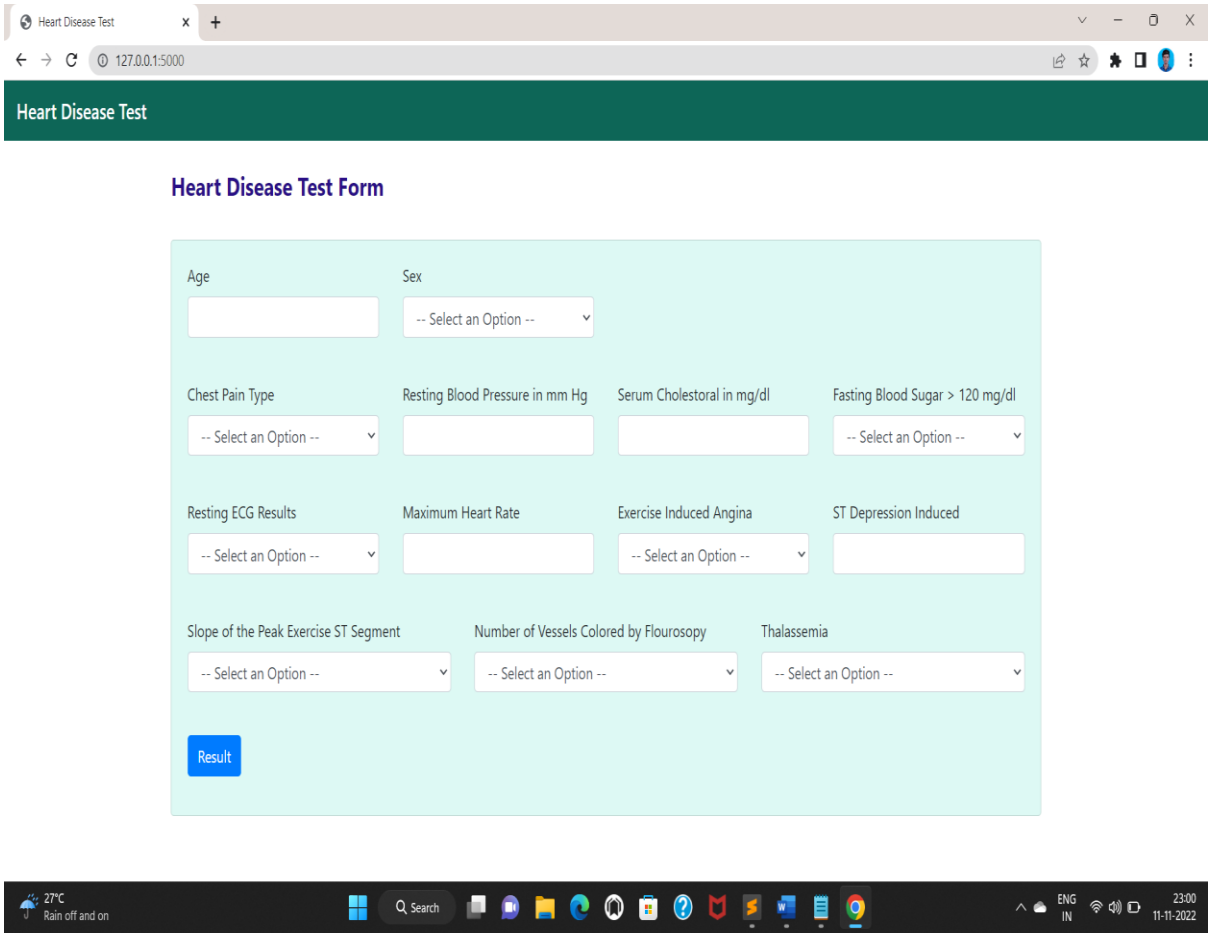
```
<!--Prediction Result-->
<div id ="result">
<strong style="color:red">{{result}}</strong>
</div>
</div>
</fieldset>
</form>

</div>

</body>
</html>
```

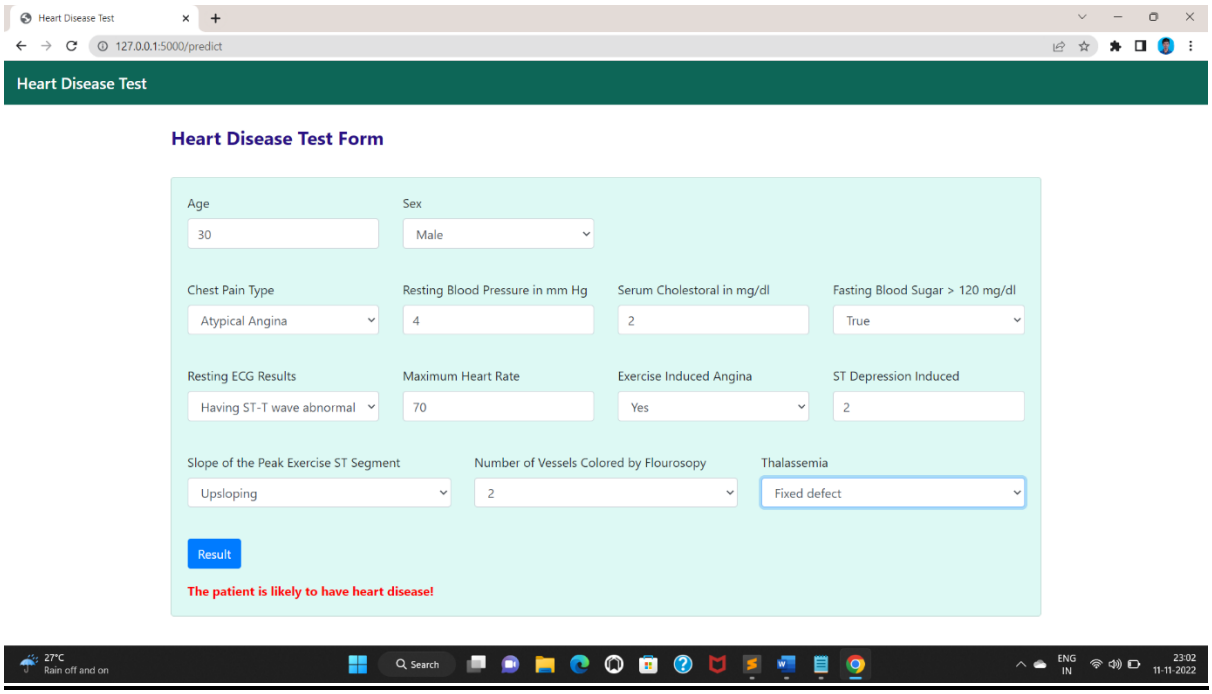
SCRRENSHOT OF OUTPUT:

USER INTERFACE:



Heart Disease prediction presence or absence Analytics:

Heart disease Presence:



Heart disease Absence: