SPRINT-4

Date	06 November 2022
Team ID	PNT2022TMID53213
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dash Board
Marks	10 marks

Features Implemented:

User Interactive Dashboard

User can predict whether they have heart disease or not

They can visualize and see in which category they falls

Requirements:

Flask
Python
Ml model

Using Python and Flask open source python framework we created the backend.py in which rendered the frontend.html webpage where simple ui of the app we created will be shown and pickle file is created as model using logistic regression as it has highest accuracy in the implementation which is 89%.

We used model.pkl file and loaded in backend.py which integrate and display frontend.html which consists form to collect user data and send it to backend.py and thus the model is used there to predict and thus the result is rendered in other page which is result.html.

Using the page the user can visualize in the dashboard using the given link the app created in Heroku cloud.

Implementation

Spyder (Python 3.9)

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C:\Users\SSN\Documents\SEMESTER 7\IBM\backend.py

temp.py | backend.py - IBM | frontpage.html - IBM\templates | backend.py - SEMESTER 7\...\Medical-Diagnosis-Web-App-Using-ML-master | frontpage.html - SEMESTER

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

app = Flask(__name__)
@app.route('/')

def front_page():
    return render_template('frontpage.html')
       #project-id_PNT2022TMID53213

@app.route('/hearttt',methods=['POST'])
def heartt():
    
        age = request.form['age']
        sex = request.form['sex']
        chest = request.form['chest']
        trestbps = request.form['trestbps']
        chol = request.form['chol']
        fbs = request.form['fbs']
        restecg = request.form['restecg']
        thalach = request.form['thalach']
        exang = request.form['exang']
        oldpeak = request.form['oldpeak']
        slope = request.form['slope']
        ca = request.form['ca']
        thal = request.form['thal']
        #project-id_PNT2022TMID53213

        model2 = pickle.load(open('./static/heart_model.pkl','rb'))
        input_data = [age,sex,chest,trestbps,chol,fbs,restecg,thalach,exang,oldpeak,slope,ca,thal]
        for i in range(len(input_data)):
            input_data[i]=float(input_data[i])
        print(input_data)
        input_data_as_numpy_array= np.asarray(input_data)
        input_data_reshaped = input_data_as_numpy_array.reshape(1,-1)
        prediction = model2.predict(input_data_reshaped)
        senddata=""
        if (prediction[0]== 0):
            print("According to the given details person does not have Heart Disease")
            senddata='According to the given details person does not have Heart Disease'
            print(senddata)
        else:
            print("According to the given details person does not have Heart Disease")
            senddata='According to the given details chances of having Heart Disease are High, So Please Consult a Doctor'

        return render_template('result.html',resultvalue=senddata)
if __name__ == '__main__':
    app.run()
```

Spyder (Python 3.9)

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C:\Users\SSN

C:\Users\SSN\Documents\SEMESTER 7\IBM\templates\frontpage.html

temp.py | backend.py - IBM | frontpage.html - IBM\templates | backend.py - SEMESTER 7\...\Medical-Diagnosis-Web-App-Using-ML-master | frontpage.html - SEMESTER 7\...\templates

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8" />
    <title>Health Diagnosis ML</title>
    <link
      rel="stylesheet"
      href="{{ url_for('static',filename = 'style.css')}}"
    />
  </head>
  <body>
    <header>
      <h1 style=margin-left:"100px">Health Disease Prediction</h1>

    </header>
    <div class="frontpageclass">
      <h2>Welcome!</h2>

      <h2>About us</h2>
      <p>
        The major challenge in heart disease is its detection. There are instruments available which can
predict heart disease but either they are expensive or are not efficient to calculate chance of heart
disease in human. Early detection of cardiac diseases can decrease the mortality rate and overall
complications. However, it is not possible to monitor patients every day in all cases accurately and
consultation of a patient for 24 hours by a doctor is not available since it requires more sapience,
time and expertise.So here is the solution you can predict disease by this web easily by entering the details
      </p>

      <h2>Heart Disease</h2>


      <h3>Overview</h3>
      <p>
        Heart disease describes a range of conditions that affect your heart.
        Diseases under the heart disease umbrella include blood vessel diseases,
        such as coronary artery disease; heart rhythm problems (arrhythmias);
        and heart defects you're born with (congenital heart defects), among
```

```
            <input type="text" name="age" /><br />
            <label>Sex(1:Male,0:Female) :</label>
            <input type="text" name="sex" /><br />
            <label>Chest Pain Type :</label>
            <input type="text" name="chest" /><br />
            <label>BP :</label>
            <input type="text" name="trestbps" /><br />
            <label>Serum cholestoral in mg/dl :</label>
            <input type="text" name="chol" /><br />
            <label>Fbs :</label>
            <input type="text" name="fbs" /><br />

            <label>EKG :</label>
            <input type="text" name="restecg" /><br />
            <label>Max hr :</label>
            <input type="text" name="thalach" /><br />
            <label>Exercise angina :</label>
            <input type="text" name="exang" /><br />
            <label>St depression :</label>
            <input type="text" name="oldpeak" /><br />
            <label>Slope of st:</label>
            <input type="text" name="slope" /><br />
            <label>Number of vessels fluro :</label>
            <input type="text" name="ca" /><br />
            <label>Thallium :</label>
            <input type="text" name="thal" /><br />
                #project-id_PNT2022TMID53213
            <input type="submit" />
          </div>
        </form>

      </div>

    </body>
</html>
```

C:\Users\SSN\Documents\SEMESTER 7\IBM\templates\result.html

age.html - IBM\templates | backend.py - SEMESTER 7\...\Medical-Diagnosis-Web-App-Using-ML-master | frontpage.html - SEMESTER 7\...\templates | result.html

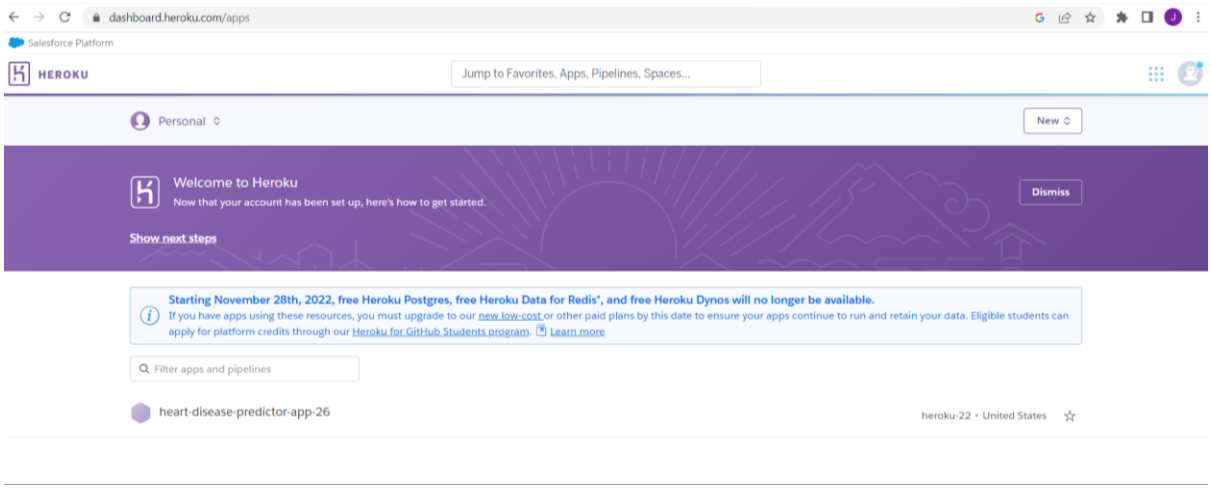
```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8" />
    <title>Heart Disease Detection Website</title>
    <link
      rel="stylesheet"
      href="{{ url_for('static',filename = 'style.css')}}"
    />
  </head>
  <body>
    <header>
      <h1>Home Page</h1>

    </header>
    <div class="resultclass">{{resultvalue}}</div>

  </body>
</html>

```

Heroku



Webapp deployed in Heroku

Health Disease Prediction

Welcome!

About us

The major challenge in heart disease is its detection. There are instruments available which can predict heart disease but either they are expensive or are not efficient to calculate chance of heart disease in human. Early detection of cardiac diseases can decrease the mortality rate and overall complications. However, it is not possible to monitor patients every day in all cases accurately and consultation of a patient for 24 hours by a doctor is not available since it requires more sapience, time and expertise.So here is the solution you can predict disease by this web easily by entering the details

Heart Disease

Overview

Heart disease describes a range of conditions that affect your heart. Diseases under the heart disease umbrella include blood vessel diseases, such as coronary artery disease; heart rhythm problems (arrhythmias); and heart defects you're born with (congenital heart defects), among others. The term "heart disease" is often used interchangeably with the term "cardiovascular disease." Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect your heart's muscle, valves or rhythm, also are considered forms of heart disease. Many forms of heart disease can be prevented or treated with healthy lifestyle choices.

Symptoms

- Chest pain, chest tightness, chest pressure and chest discomfort (angina)
- Shortness of breath
- Pain, numbness, weakness or coldness in your legs or arms if the blood vessels in those parts of your body are narrowed
- Pain in the neck, jaw, throat, upper abdomen or back

To check whether you are having heart disease or not use the below link

Click here to visualize in the dashboard">

Predict whether you are having disease or not

Age :
Sex(1:Male,0:Female) :
Chest Pain Type :
BP :
Serum cholestoral in mg/dl :
Fbs :
EKG :
Max hr :
Exercise angina :
St depression :
Slope of st:
Number of vessels fluro :
Thallium :
#project-id_PNT2022TMID53213 Submit

Debugging & Traceability:

Each Feature is handled and any exceptions are reported with a user interface. Exception handling involves handling the unexpected situation and thus performing actions