**Front end**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8">**

**<meta name="viewport" content="width=device-width, initial-scale=1.0">**

**<title>Heart Disease Predictor ML</title>**

**<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/tailwindcss@2.2.19/dist/tailwind.min.css">**

**</head>**

**<body class="bg-gray-100 p-6">**

**<div class="max-w-lg mx-auto bg-white rounded-lg shadow-md p-4">**

**<div class="text-center flex flex-col justify-center">**

**<img class="h-56 p-4" src="./log.png" alt="">**

**<h2 class="text-2xl font-semibold">Heart Disease Prediction Model</h2>**

**<p class="text-gray-600">To check the risk of heart disease, please enter the following details:</p>**

**</div>**

**<form action="" method="post" class="mt-4">**

**<div class="mb-4">**

**<label for="age" class="block text-sm font-medium text-gray-700">Enter Your Age:</label>**

**<input type="number" id="age" name="age" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="gender" class="block text-sm font-medium text-gray-700">Enter Your Gender:</label>**

**<select id="gender" name="gender" required class="w-full px-4 py-2 border rounded-md">**

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

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

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="cp" class="block text-sm font-medium text-gray-700">Enter Your Chest Pain Severity:</label>**

**<select id="cp" name="cp" required class="w-full px-4 py-2 border rounded-md">**

**<option value="0">None</option>**

**<option value="1">Mild</option>**

**<option value="2">Moderate</option>**

**<option value="3">Severe</option>**

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="trestbps" class="block text-sm font-medium text-gray-700">Enter Your Resting Blood Pressure:</label>**

**<input type="number" id="trestbps" name="trestbps" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="chol" class="block text-sm font-medium text-gray-700">Enter Your Serum Cholesterol (mg/dL):</label>**

**<input type="number" id="chol" name="chol" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="fbs" class="block text-sm font-medium text-gray-700">Fasting Blood Sugar (> 120 mg/dL):</label>**

**<input type="number" id="fbs" name="fbs" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="restecg" class="block text-sm font-medium text-gray-700">Resting Electrocardiographic Results:</label>**

**<select id="restecg" name="restecg" required class="w-full px-4 py-2 border rounded-md">**

**<option value="0">Normal (60-100)</option>**

**<option value="1">Slow (below 60)</option>**

**<option value="2">Fast (above 100)</option>**

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="thalach" class="block text-sm font-medium text-gray-700">Maximum Heart Rate Achieved:</label>**

**<input type="number" id="thalach" name="thalach" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="exang" class="block text-sm font-medium text-gray-700">Exercise Induced Angina:</label>**

**<select id="exang" name="exang" required class="w-full px-4 py-2 border rounded-md">**

**<option value="0">NO</option>**

**<option value="1">YES</option>**

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="oldpeak" class="block text-sm font-medium text-gray-700">Oldpeak (ST Depression):</label>**

**<input type="number" id="oldpeak" name="oldpeak" required class="w-full px-4 py-2 border rounded-md">**

**</div>**

**<div class="mb-4">**

**<label for="slope" class="block text-sm font-medium text-gray-700">Peak Exercise ST Segment:</label>**

**<select id="slope" name="slope" required class="w-full px-4 py-2 border rounded-md">**

**<option value="0">Upsloping</option>**

**<option value="1">Flat</option>**

**<option value="2">Downsloping</option>**

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="ca" class="block text-sm font-medium text-gray-700">Number of Major Vessels Colored by Fluoroscopy:</label>**

**<select id="ca" name="ca" required class="w-full px-4 py-2 border rounded-md">**

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

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

**<option value="2">2</option>**

**<option value="3">3</option>**

**</select>**

**</div>**

**<div class="mb-4">**

**<label for="thal" class="block text-sm font-medium text-gray-700">Thalassemia:</label>**

**<select id="thal" name="thal" required class="w-full px-4 py-2 border rounded-md">**

**<option value="0">Normal Blood Flow</option>**

**<option value="1">No Blood Flow (Fixed Defect)</option>**

**<option value="2">Abnormal Blood Flow (Reversible Defect)</option>**

**</select>**

**</div>**

**<div class="text-center">**

**<button type="button" id="submit-button" class="bg-blue-500 text-white px-4 py-2 rounded-md">Submit</button>**

**</div>**

**<div id="result" class="mt-4 text-center text-2xl font-semibold"></div>**

**</form>**

**</div>**

**<script>**

**const form = document.getElementById('prediction-form');**

**const submitButton = document.getElementById('submit-button');**

**const resultElement = document.getElementById('result');**

**submitButton.addEventListener('click', () => {**

**const data = {**

**"data": [**

**parseInt(document.getElementById('age').value),**

**parseInt(document.getElementById('gender').value),**

**parseInt(document.getElementById('cp').value),**

**parseInt(document.getElementById('trestbps').value),**

**parseInt(document.getElementById('chol').value),**

**parseInt(document.getElementById('fbs').value),**

**parseInt(document.getElementById('restecg').value),**

**parseInt(document.getElementById('thalach').value),**

**parseInt(document.getElementById('exang').value),**

**parseInt(document.getElementById('oldpeak').value),**

**parseInt(document.getElementById('slope').value),**

**parseInt(document.getElementById('ca').value),**

**parseInt(document.getElementById('thal').value)**

**]**

**};**

**fetch('http://127.0.0.1:5000/predict', {**

**method: 'POST',**

**headers: {**

**'Content-Type': 'application/json'**

**},**

**body: JSON.stringify(data)**

**})**

**.then(response => response.json())**

**.then(data => {**

**if(data.result == 1){**

**resultElement.textContent = `Prediction: Heart Disease Detected.`;**

**}else{**

**resultElement.textContent = `Prediction: Heart not Disease Detected.`;**

**}**

**})**

**.catch(error => {**

**resultElement.textContent = 'An error occurred. Please try again.';**

**});**

**});**

**</script>**

**</body>**

**</html>**

**Back end**

**import pickle**

**from flask import Flask, request, jsonify**

**import numpy as np**

**from flask\_cors import CORS # Import CORS from flask\_cors module**

**app = Flask(\_name\_)**

**CORS(app) # Enable CORS for your Flask app**

**# Define your predict function here.**

**def predict(data):**

**# Load the pickled model.**

**model = pickle.load(open('model.pk1', 'rb'))**

**# Make a prediction on the input data.**

**prediction = model.predict(data)**

**return prediction**

**@app.route('/predict', methods=['POST'])**

**def predict\_endpoint():**

**# Get data from the POST request.**

**request\_data = request.json # Access the entire JSON object**

**input\_data = request\_data.get('data') # Access the 'data' key**

**if input\_data is None:**

**return jsonify({'error': 'Data not provided in the request.'}), 400**

**# Call the predict function.**

**result = predict(np.array([input\_data])) # Wrap the input data in a NumPy array**

**# Send the result to the front end.**

**return jsonify({'result': result.tolist()}) # Convert NumPy array to a list for JSON serialization**

**if \_name\_ == '\_main\_':**

**app.run(debug=True)**