**Project Title**

**Medical Diagnosis Predictor**

**Group Members**

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**Objective of the Project**

The objective of this project is to develop a web application that predicts **medical diagnoses** based on user-provided health parameters such as age, gender, height, weight, and blood pressure readings. The application utilizes **machine learning algorithms** to analyze the input data and provide a diagnosis.

**Tools and Libraries Used**

* Flask (Web framework)
* Pandas (Data manipulation and analysis)
* NumPy (Numerical computing)
* Scikit-learn (Machine learning library)
* Faker (Data generation)
* jQuery (JavaScript library for AJAX)
* HTML/CSS (Frontend development)

**Data Source(s)**

The project generates **synthetic data** using the Faker library to simulate medical records. The generated data includes attributes such as age, gender, height, weight, systolic and diastolic blood pressure, and diagnosis.

**Installation Steps**

1. Clone the repository containing the project files.
2. Navigate to the project directory in the terminal.
3. Install the required libraries using the command:

**Command to Install Libraries**

pip install -r requirements.txt

**Run the Application**

1. Run the Flask application using the command:

**Command to Run Application**

python app.py

**Accessing the Application**

1. Open a web browser and go to **http://localhost:5000** to access the application.
2. Fill in the form with the required health parameters and click on "Predict" to receive the diagnosis.

**Summary of Results**

The application successfully predicts medical diagnoses based on the input parameters. The model's accuracy and performance can be evaluated based on the generated synthetic data. The system is designed to provide quick and reliable predictions, aiding users in understanding potential health issues.

**Challenges Faced**

* Generating realistic synthetic data that accurately represents medical conditions.
* Ensuring the machine learning model is trained adequately to provide reliable predictions.
* Handling user input validation and ensuring the web application is user-friendly.
* Debugging and testing the application for various edge cases and inputs.