Multiple Disease Prediction System

A machine learning-based web application that predicts the likelihood of multiple Multiple Disease Prediction System

A machine learning-based web application that predicts the likelihood of multiple diseases using patient data.

https://img.shields.io/badge/Streamlit-FF4B4B?style=for-the-badge&logo=Streamlit&logoColor=white
https://img.shields.io/badge/scikit--learn-%2523F7931E.svg?style=for-the-badge&logo=scikit-learn&logoColor=white
https://img.shields.io/badge/python-3670A0?style=for-the-badge&logo=python&logoColor=ffdd54

□ Project Overview

This project is a multi-disease diagnostic tool that leverages Machine Learning algorithms to predict the presence of **Diabetes**, **Heart Disease**, and **Parkinson's Disease** based on user-inputted medical parameters. The predictions are made through a user-friendly web interface built with Streamlit.

The core purpose of this system is to demonstrate the application of ML in healthcare for early and accessible disease screening.

✨ Features

- **Multi-Disease Prediction:** Single platform for three different disease predictions.
- **User-Friendly Web Interface:** Intuitive UI built with Streamlit for easy interaction.
- **Real-Time Predictions:** Instant results based on user input.

- **Machine Learning Models:** Utilizes trained and serialized models for accurate predictions.
- **Responsive Design:** Clean and modern sidebar layout for seamless navigation.

□ Diseases Predicted

1. **Diabetes Mellitus**
   - **Model:** Support Vector Classifier (SVC)
   - **Key Features:** Pregnancies, Glucose Level, BMI, Insulin, Age, etc.
2. **Heart Disease**
   - **Model:** Logistic Regression
   - **Key Features:** Age, Cholesterol level, Blood Pressure, Maximum Heart Rate, etc.
3. **Parkinson's Disease**
   - **Model:** (To be implemented/confirmed)
   - **Key Features:** MDVP parameters, HNR, RPDE, D2, PPE, etc.

🛠️ Tech Stack

- **Backend:** Python
- **Machine Learning Library:** Scikit-learn
- **Web Framework:** Streamlit
- **Model Serialization:** Pickle
- **Version Control:** Git / GitHub

📊 Dataset Information

The models were trained on publicly available datasets from the UCI Machine Learning Repository:

- **Diabetes:** 📊 Dataset Information

- The models were trained on publicly available datasets from the UCI Machine Learning Repository:
- **Diabetes:** Pima Indians Diabetes Database
- **Heart Disease:** Cleveland Heart Disease Dataset
- **Parkinson's:** UCI Parkinsons Dataset
-

Installation & Usage

Prerequisites

Ensure you have Python 3.8+ installed on your system.

1. Clone the Repository

bash

```
git clone https://github.com/husnain-ali2/multiple-disease-prediction-sys.git
cd multiple-disease-prediction-sys
```

Create a Virtual Environment (Recommended)

bash

```
python -m venv venv
source venv/bin/activate  # On Windows: venv\Scripts\activate
```

Install Dependencies

bash

```
pip install -r requirements.txt
```

Run the Streamlit App

bash

```
streamlit run app.py
```

The application will open in your default web browser at `http://localhost:8501`.