CELEBAL WEEK 7

Project Overview

The Diabetes Prediction Web App is a machine learning-powered tool built using Python, Scikit-learn, and Streamlit, which allows users to input health parameters and get a real-time prediction about whether a person is likely to have diabetes.

It aims to assist in early detection and awareness using a user-friendly web interface.

Live App URL

https://diabetes-app-d.streamlit.app/

Technology Used

- ➢ Python
- ➢ Pandas & NumPy – Data handling
- ➢ Scikit-learn – Machine Learning (Model training, prediction)
- ➢ Streamlit – Web UI deployment
- ➢ Jupyter Notebook – Model development
- ➢ Pickle – Saving/loading the ML model

Dataset Overview

The dataset contains the following features:

- Pregnancies
- Glucose
- BloodPressure
- SkinThickness
- Insulin
- BMI
- DiabetesPedigreeFunction
- Age
- Outcome (Target: 1 = Diabetic, 0 = Non-Diabetic)

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Model Training & Evaluation

- Model Used: RandomForestClassifier
- Steps:
  - ➢ Data Cleaning and Scaling
  - ➢ Model Training
  - ➢ Accuracy and Model Metrics
  - ➢ Saving Model with pickle

Streamlit App – Features

- **Sidebar for User Input:** Users can enter health parameters.
- **Predict Button:** Triggers prediction using the trained model.
- **Result Output:** Displays whether the person is likely diabetic or not.
- **Design:** Simple and interactive layout using Streamlit widgets.