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| **Date** | **31-10-2023** |
| **Team ID** | **922** |
| **Project Name** | **6112-AI-Based Diabetes Prediction System** |

**Project Overview:**

This project is an AI-Based diabetes prediction system that uses the Logistic Regression algorithm to predict diabetes . The project is divided into four phases: Ideation, Design and Innovation, Development, and Model Training.

**Phase 1: Ideation Phase**

**Problem Statement:** Predicting diabetes accurately is a complex task influenced by a multitude of factors, including Glucose, Blood Pressure, Insulin, BMI etc..The central problem of this project is to build a model that delivers precise diabetes predictions by incorporating these intricate factors.

**Design Thinking:** We brainstormed and conceptualized the project, considering design and innovation strategies.

**Phase 2: Design and Innovation**

In this phase, we outlined the design and innovation strategies that will be used to predict diabetes.

**Phase 3: Development (Part 1)**

**Google Colab File:**

We created a Google Colab for data preprocessing and loading.

**Data Exploration:**

Explored and visualized the dataset.

**Platform:**

We ran the code in Google Colab.

**Dependencies:**

Imported necessary libraries.

**Dataset:**

Loaded and explored the dataset.

**Phase 4: Model Training:**

**Machine Learning Algorithm:**

We selected the Logistic Regression algorithm for model training.

**Google Colab File:**

Created a new Google Colab for the model training.

**Dependencies:**

Imported relevant dependencies.

**NLTK Resources:**

Downloaded and utilized NLTK resources for text preprocessing.

**Training:**

Trained a Logistic Regression.

**Evaluation:**

Evaluated the predicting performance.

**Results:**

Displayed the evaluation results in Google Colab.

GitHub: Uploaded the project to GitHub for sharing and collaboration.

Running the Code

**To run this code, follow these steps:**

Clone the GitHub repository to your local machine:

Bash

Copy code

git clone https://github.com/yourusername/diabetes-prediction.git

Open the project folder in your Google Colab environment .

Navigate to the "Development" or "Model Training" phase in the Google Colab and execute the code cells step by step.

Make sure to install the required dependencies mentioned in the notebook using !pip install or !conda install.

Ensure that you have downloaded the necessary NLTK resources for text preprocessing.

Once the model is trained and evaluated, you can test it on new data for diabetes prediction.

**Dependencies:**

The following dependencies are required to run this project:

Python (>=3.6)

Google Colab

Pandas

NumPy

Matplotlib

NLTK

Scikit-learn

You can install these dependencies using pip:

**Copy code :**

pip install pandas numpy matplotlib nltk scikit-learn