

**SUBMITTED BY-**

Name: Arjun Neema

SAP ID: 500124012

Enrollment No: R2142230341

Batch: 11

**AIML ASSIGNMENT-2**

Develop a Flask-based UI to use the ML/DL model developed in the Assignment – 1. Upload your all the resources on GitHub.

# Overview

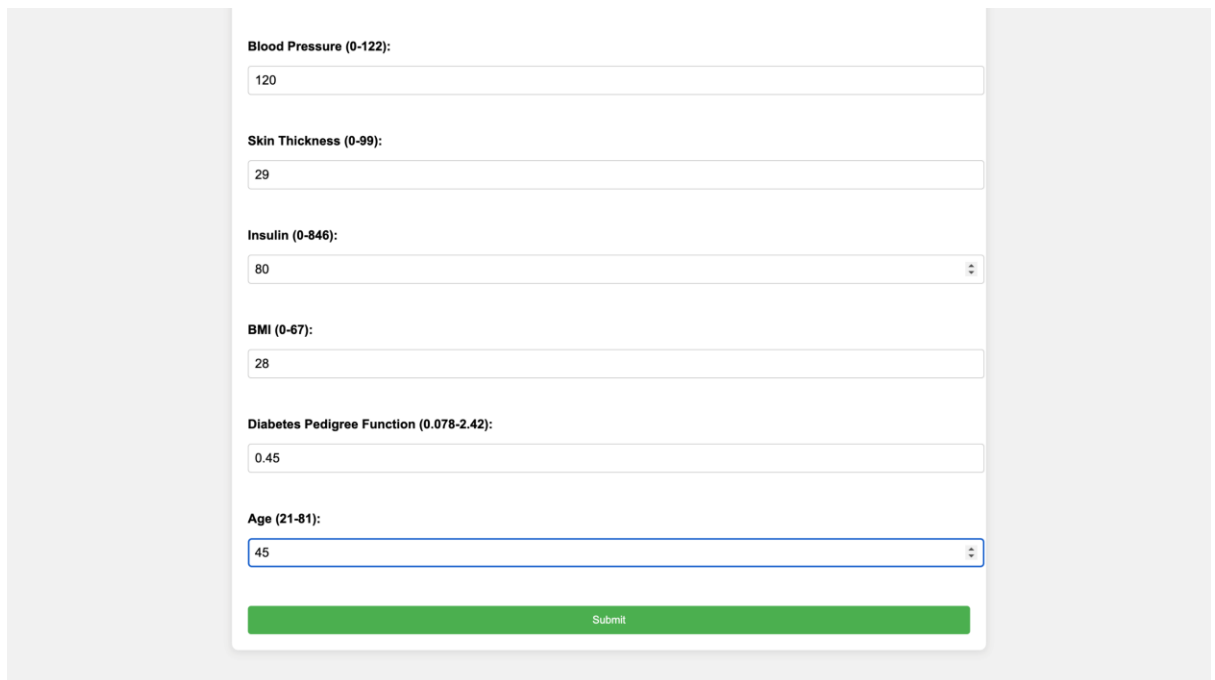
This Flask application is a web-based platform designed to predict whether a person is diabetic based on input data. It uses a pre-trained machine learning model for predictions, which is loaded and invoked in the backend via a function called `preprocess_and_predict`.

## Key Features

- Interactive Web Form:**
    - The app displays a webpage where users can enter health-related details like glucose levels, BMI, and age.
  - Machine Learning Prediction:**
    - The app uses a machine learning model to analyze the provided data and predict whether the person is diabetic.
  - Results Display:**
    - After prediction, the result ("Diabetic" or "Non-Diabetic") is shown on the same webpage.
- 

## How It Works

- User Interaction:**
  - The user visits the webpage and fills out a form with their health information, such as blood pressure, insulin levels, and glucose readings.



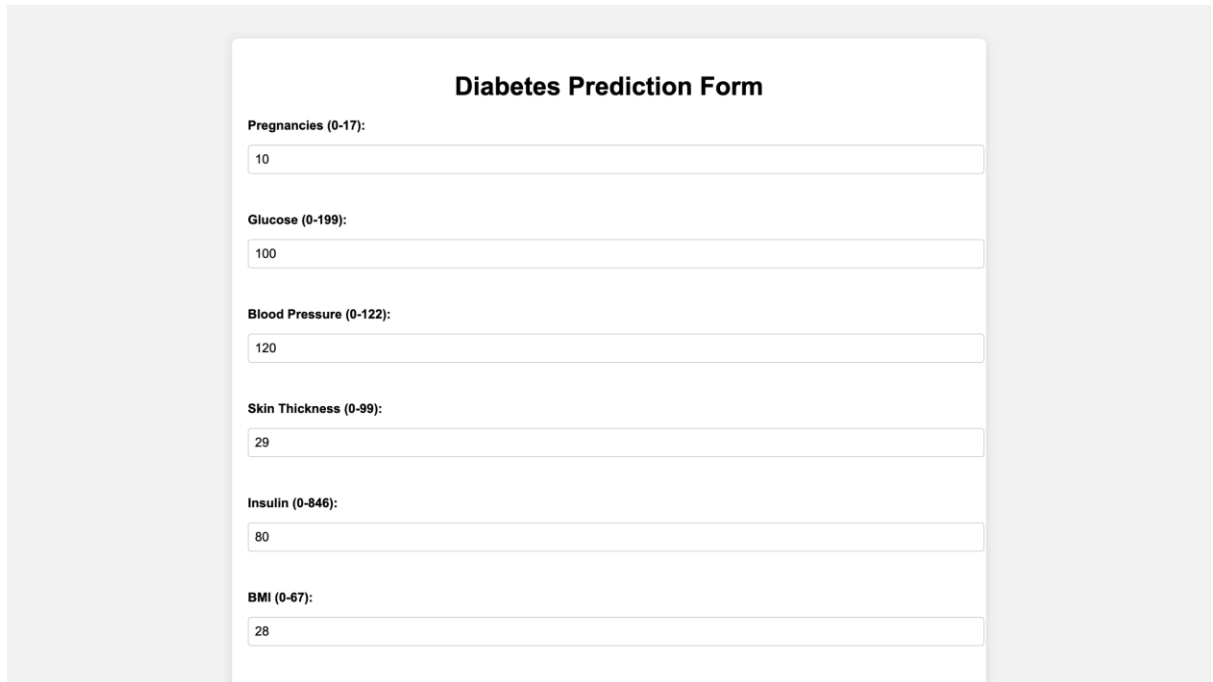
The image shows a web form with the following fields and values:

- Blood Pressure (0-122):** 120
- Skin Thickness (0-99):** 29
- Insulin (0-846):** 80
- BMI (0-67):** 28
- Diabetes Pedigree Function (0.078-2.42):** 0.45
- Age (21-81):** 45

A green **Submit** button is located at the bottom of the form.

## 2. Data Submission:

- Once the form is submitted, the data is sent to the app for processing.



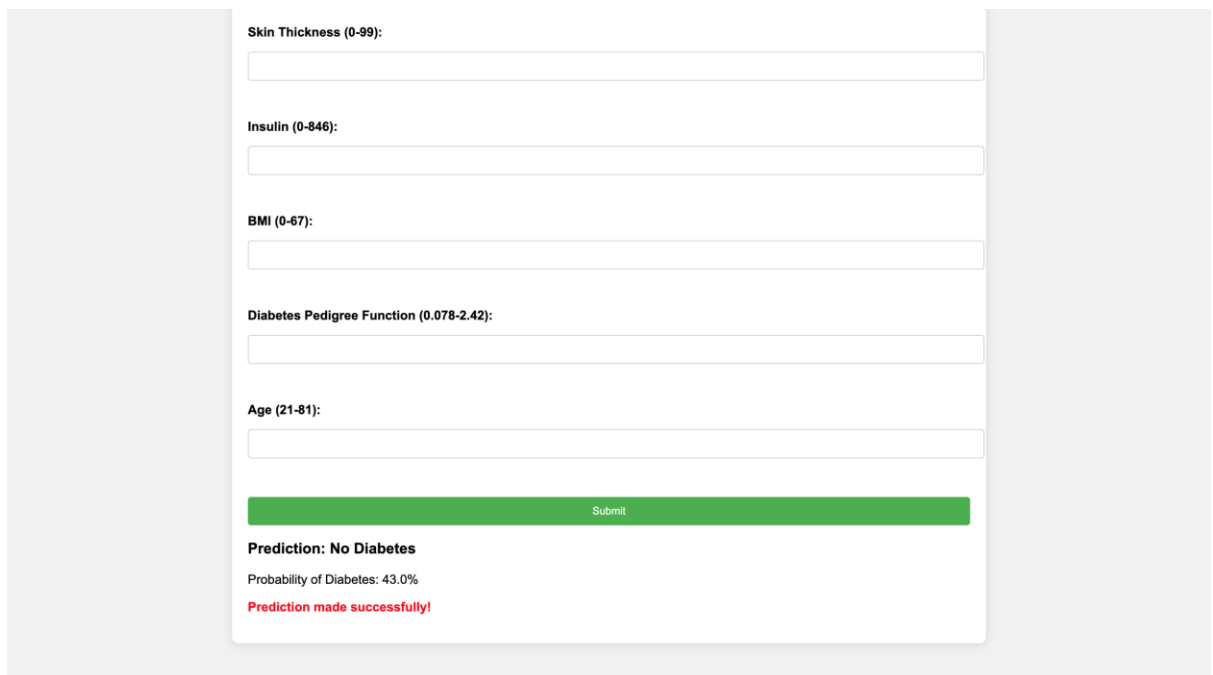
The screenshot shows a web form titled "Diabetes Prediction Form". It contains several input fields, each with a label and a range in parentheses: "Pregnancies (0-17):" with value 10, "Glucose (0-199):" with value 100, "Blood Pressure (0-122):" with value 120, "Skin Thickness (0-99):" with value 29, "Insulin (0-846):" with value 80, and "BMI (0-67):" with value 28. The form is set against a light gray background.

## 3. Processing and Prediction:

- The app preprocesses the input data and uses a pre-trained model to make a prediction.

## 4. Result Display:

- The app sends the prediction back to the webpage, displaying whether the user is "Diabetic" or "Non-Diabetic."



The screenshot shows the same form as before, but now it displays the prediction results. The input fields are empty. Below the input fields is a green "Submit" button. Below the button, the text "Prediction: No Diabetes" is displayed, followed by "Probability of Diabetes: 43.0%" and "Prediction made successfully!" in red. The form is set against a light gray background.

## Components of the App

1. **Backend (Flask App):**
  - Handles user requests and predictions.
  - Processes the input data and communicates with the machine learning model.
2. **Prediction Model:**
  - A pre-trained machine learning model is used to make predictions based on the user's input.
3. **Frontend (Webpage):**
  - A simple HTML form collects data from the user.
  - The prediction result is displayed dynamically on the same page after submission.