TEAM WAZO

AGENDA

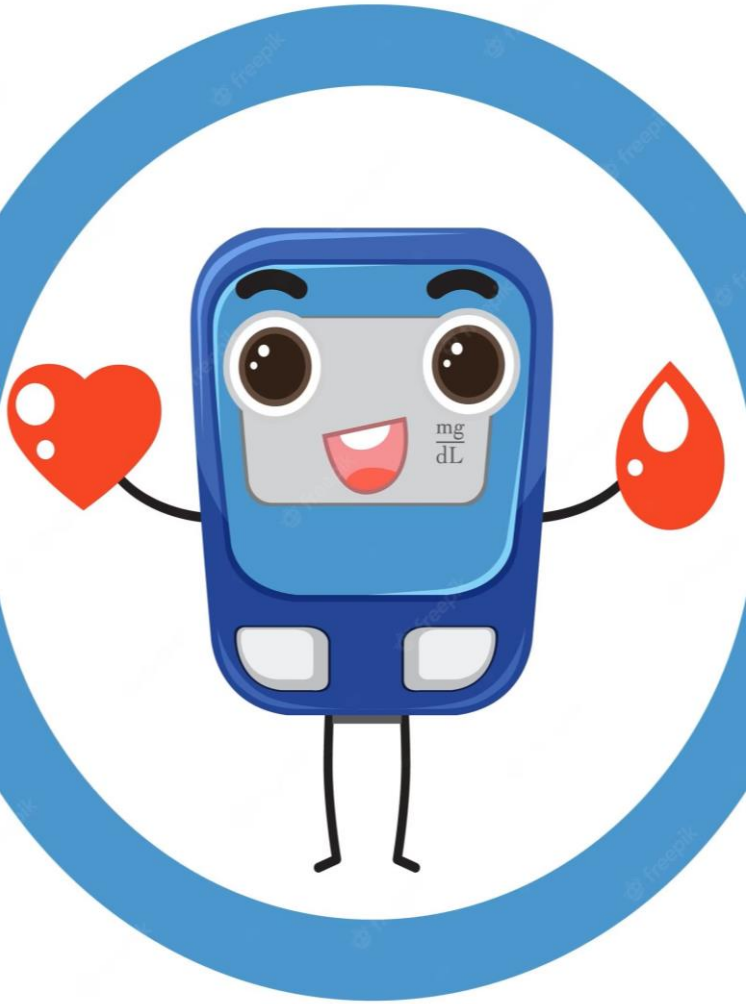
INTRODUCTION

TEAM

DATA

WHAT'S NEXT

CLOSING

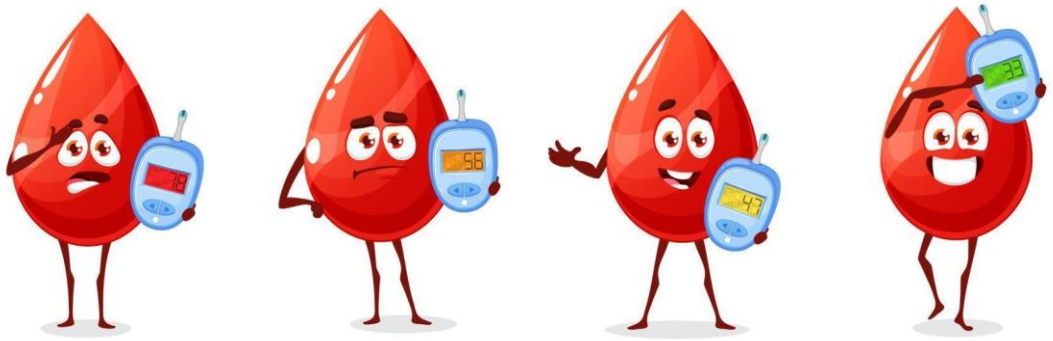


INTRODUCTION

Diabetes is a prevalent and chronic health condition affecting millions of people worldwide. Early detection and prediction of diabetes can play a vital role in providing timely intervention and personalized treatment plans to patients. The availability of a dataset containing medical history and demographic information of patients can be utilized to build machine learning models for predicting the likelihood of developing diabetes in individuals.

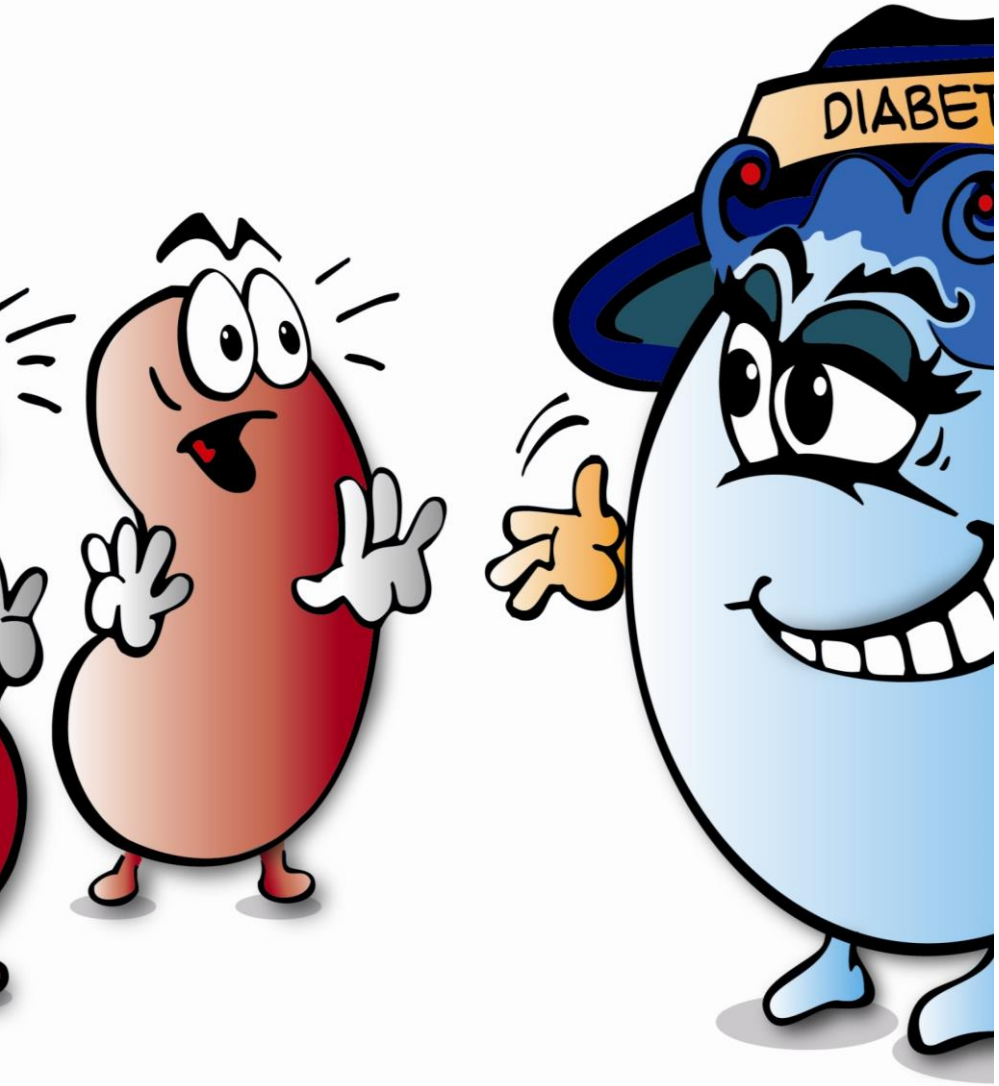
The dataset includes various features such as age, gender, body mass index (BMI), hypertension, heart disease, smoking history, HbA1c level, and blood glucose level. These features provide valuable insights into a patient's health status and can be utilized to develop an accurate predictive model for diabetes.

TEAM WAZO MEMBERS



Edna Wanjiku
George
Ann Wangechi

LET'S DIVE IN



PROBLEM OBJECTIVE

The main objective of this project is to build a machine learning model that can predict the occurrence of diabetes in patients based on their medical history and demographic information. By leveraging the features available in the dataset, we aim to create a model that can assist healthcare professionals in identifying patients at risk of developing diabetes.

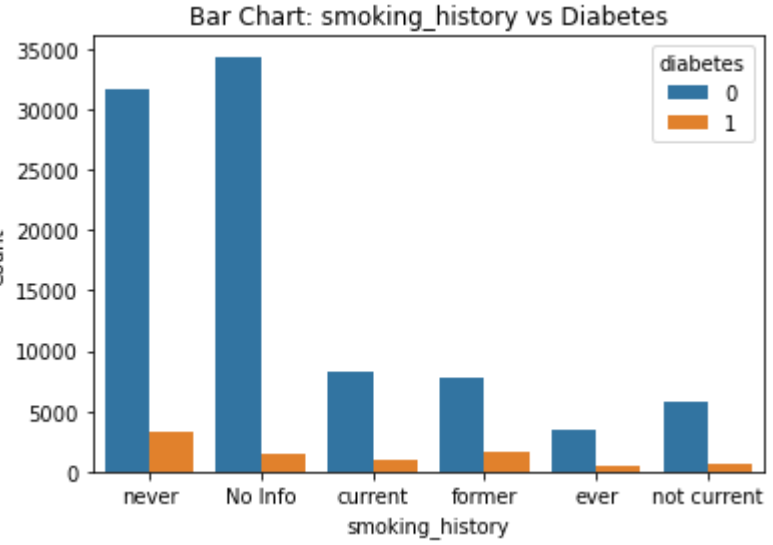
DATASET DESCRIPTION

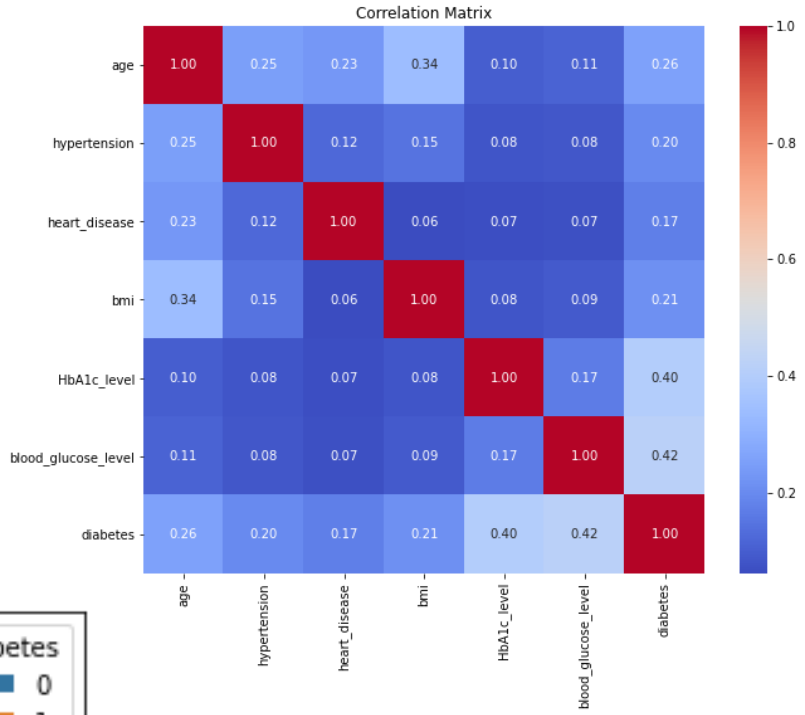
Age: The age of the patient.
Gender: The gender of the patient (e.g., Male, Female, Other).
BMI (Body Mass Index): A numerical measure of body fat based on height and weight.
Hypertension: A binary variable indicating whether the patient has hypertension (Yes/No).
Heart Disease: A binary variable indicating whether the patient has a history of heart disease (Yes/No).
Smoking History: Categorical variable indicating the patient's smoking history (Never, Former, Current).
HbA1c Level: A measure of average blood glucose levels over the past three months.
Blood Glucose Level: A measure of the patient's current blood glucose level.

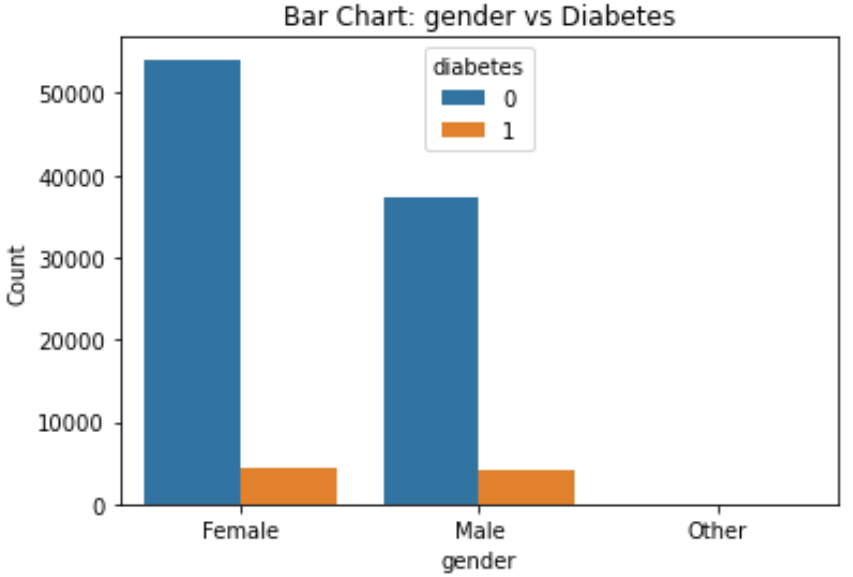
METHODOLOGY

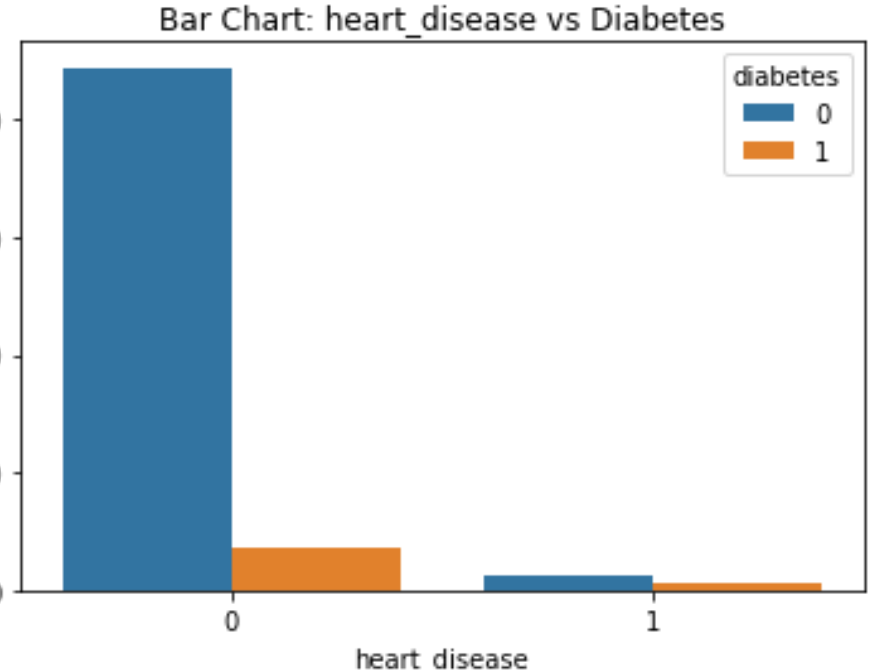
- Data Preprocessing: The dataset will be preprocessed to handle missing values, perform feature encoding for categorical variables, and normalize numerical features if required.
- Model Selection: Various machine learning algorithms such as Gradient Boosting, Random Forest, and Support Vector Machines will be evaluated to select the best-performing model for diabetes prediction.
- Model Training: The selected model will be trained on a subset of the dataset, which will be split into training and validation sets.
- Model Evaluation: The model's performance will be evaluated using metrics such as accuracy, precision, recall, and F1-score on the validation set.
- Hyperparameter Tuning: The model's hyperparameters will be tuned using techniques like Grid Search or Random Search to optimize its performance.
- Final Model Selection: The best-performing model will be chosen as the final diabetes prediction model.
- Model Deployment: The selected model will be deployed as a web application, allowing users to input their medical and demographic information to obtain a prediction of their diabetes risk.

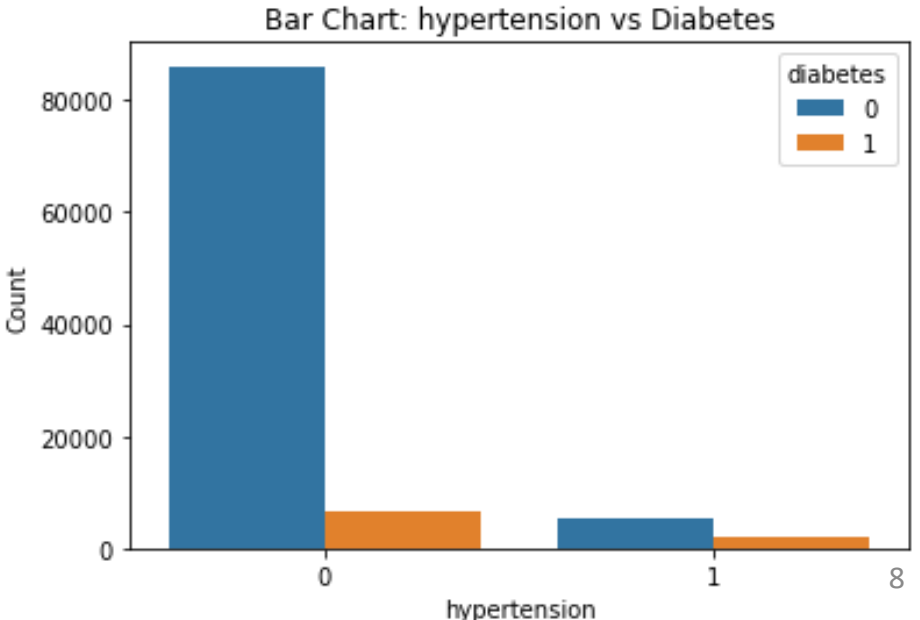
VISUALIZATIONS



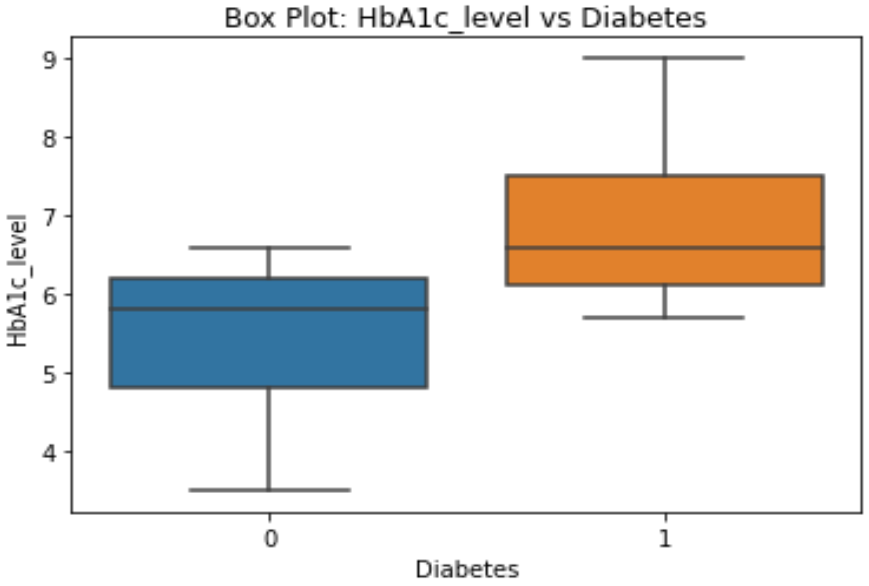


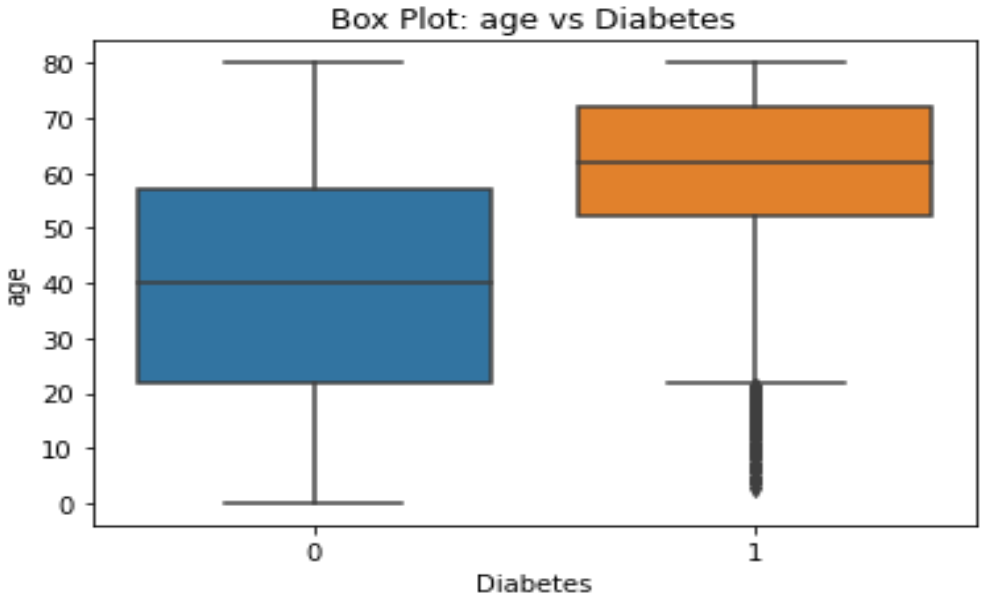


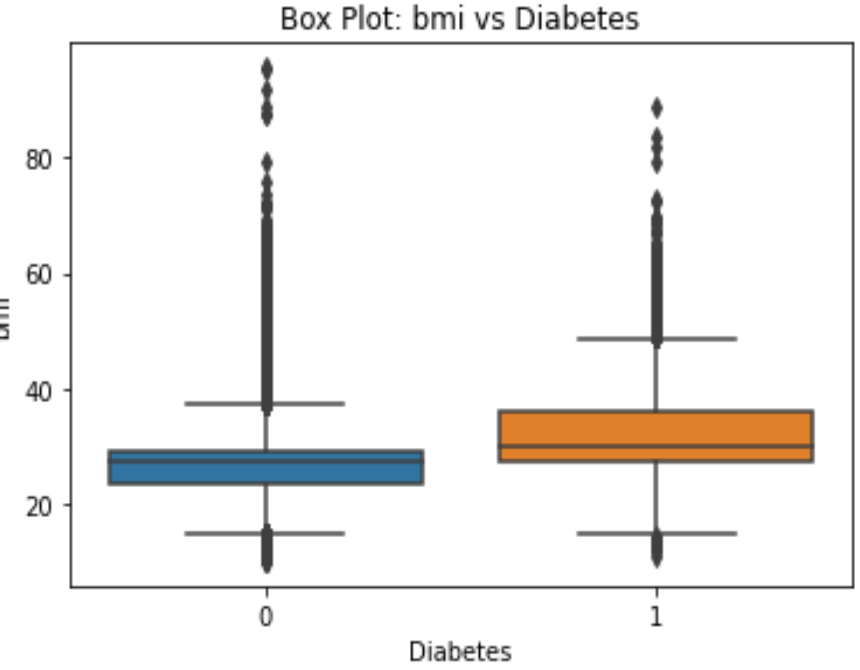


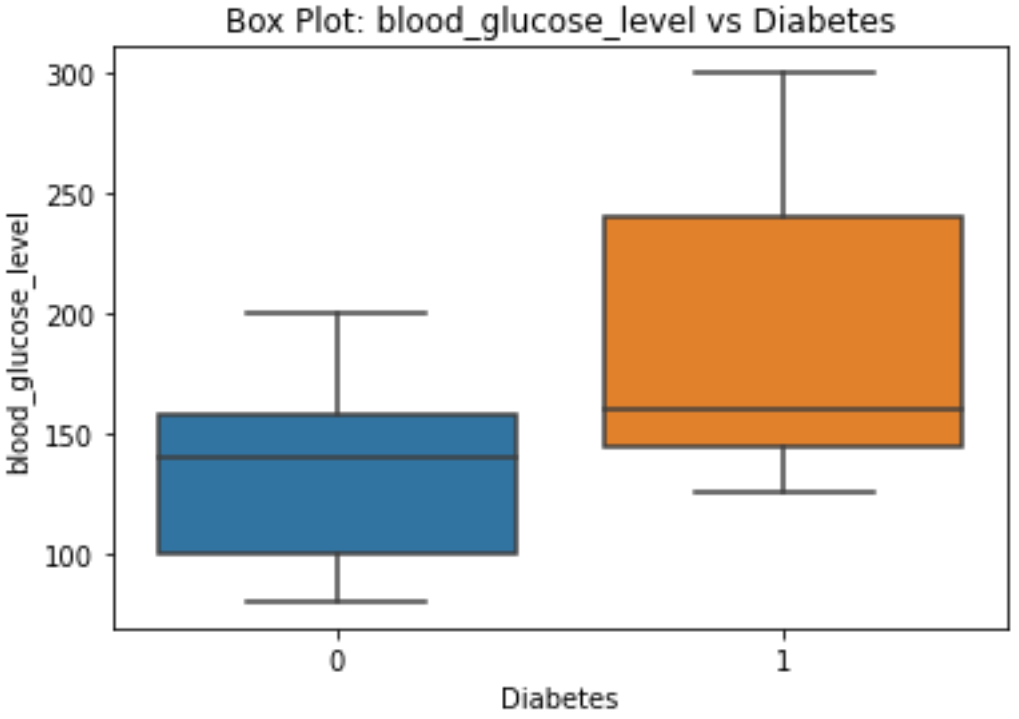


VISUALIZATIONS

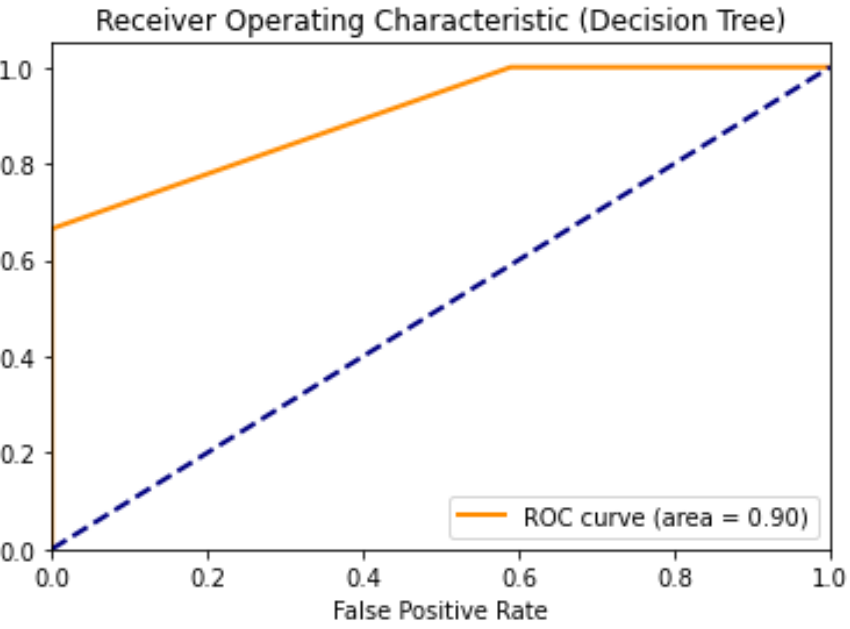


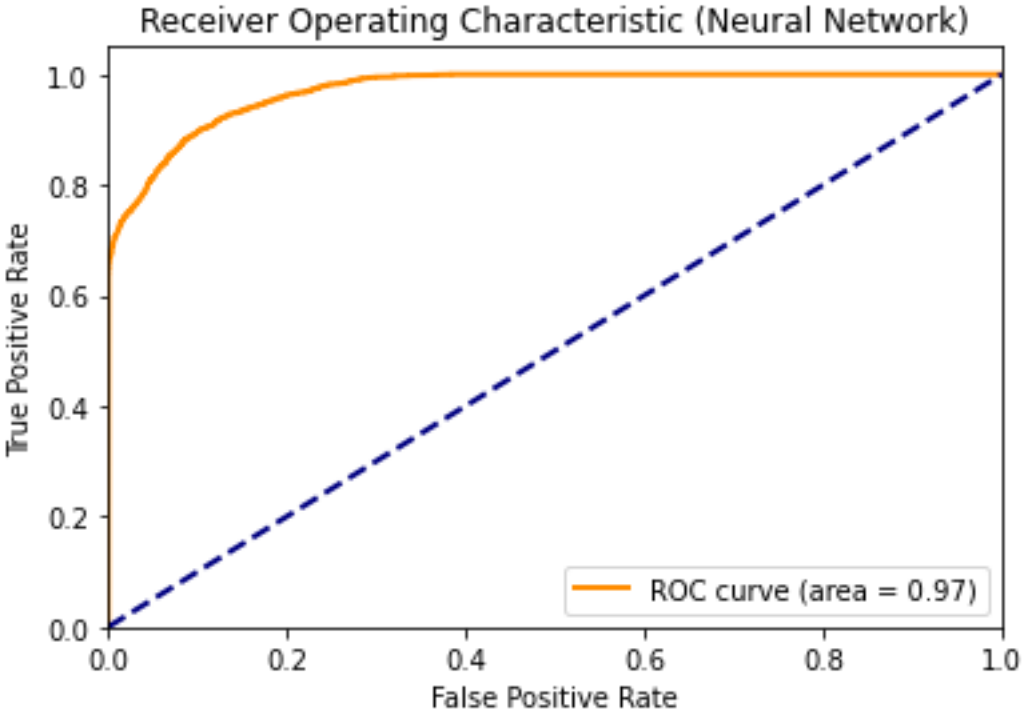


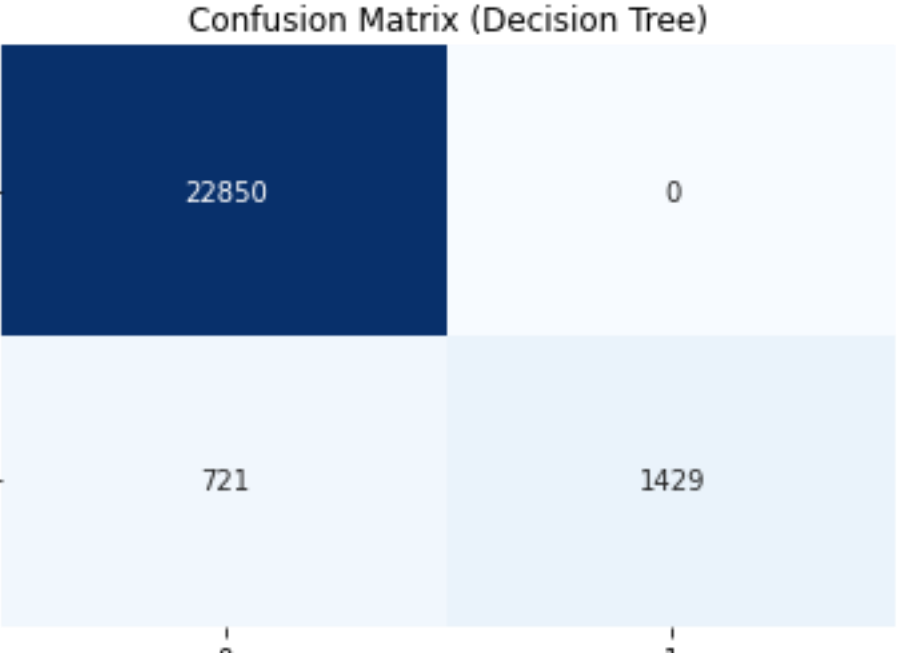


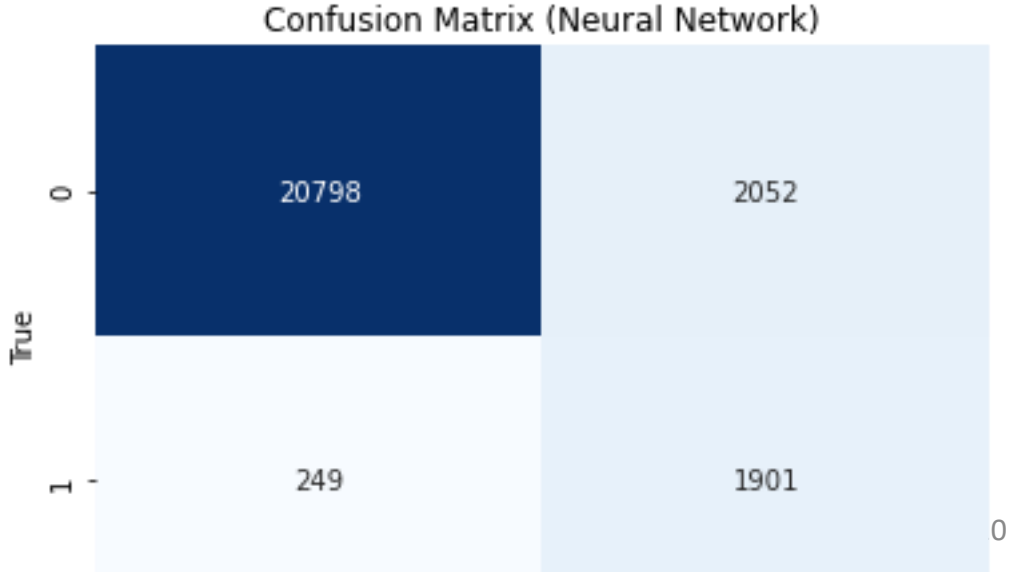


MODELS AND CONFUSION MATRICES









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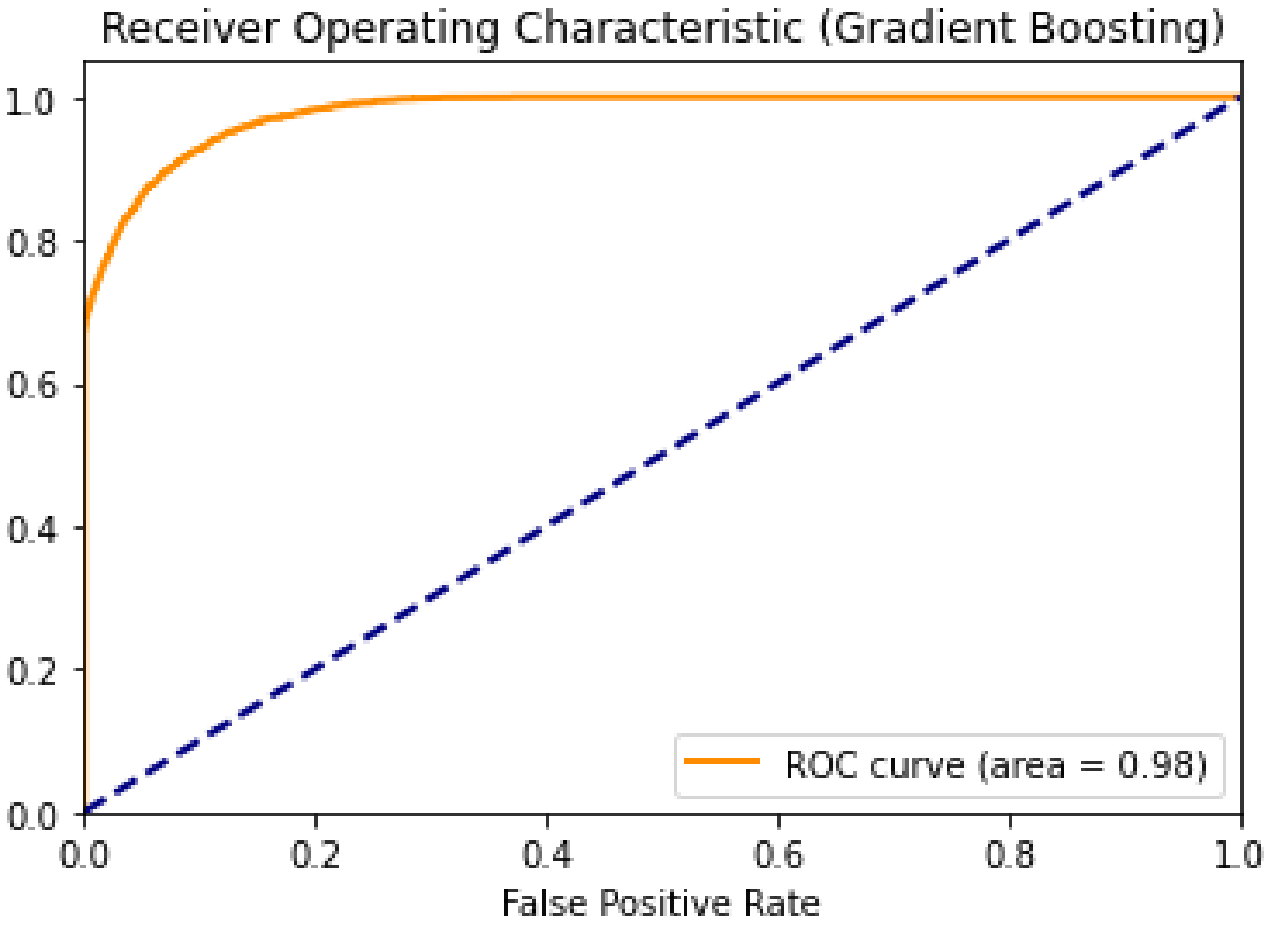

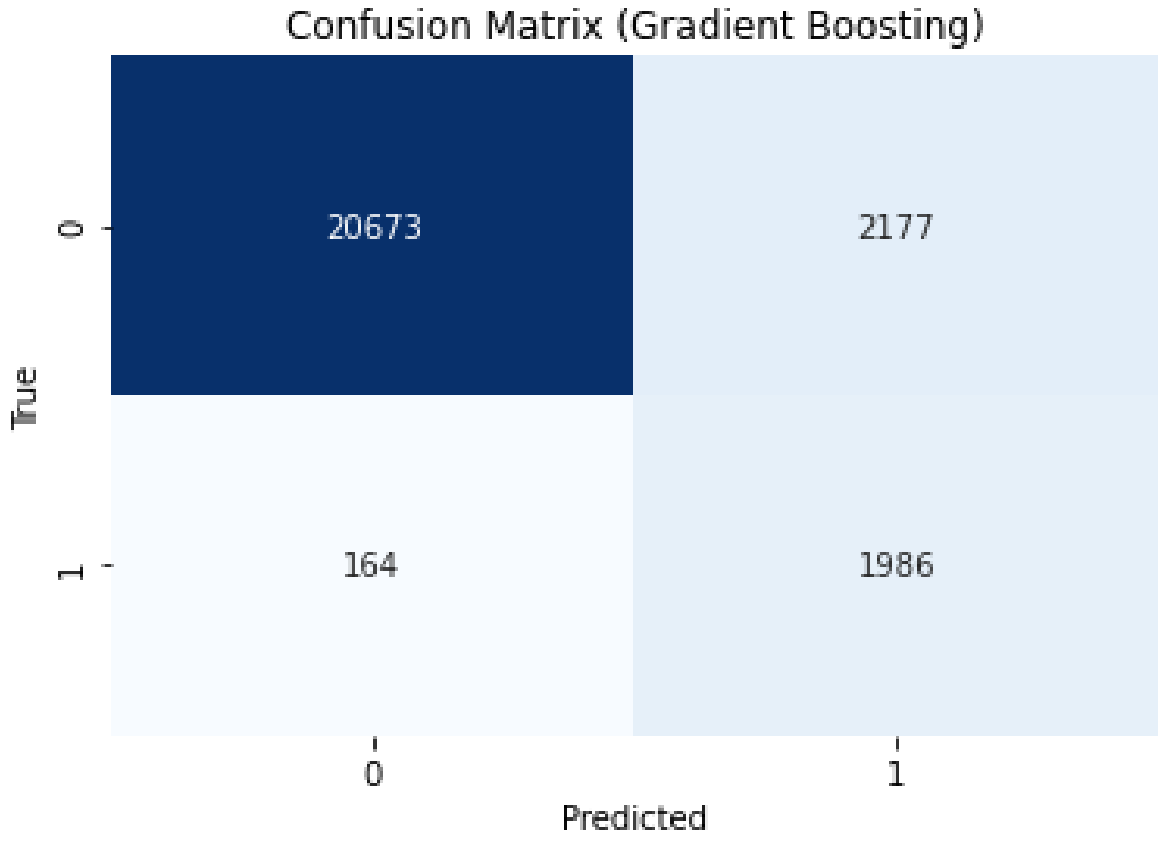

DEPLOYMENT

Login / Sign Up

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wanjikuedna3@gmail.com

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Your Image Caption

African TechGirl Hackathon - Diabetes Prediction

Please input the following features to make predictions.

Enter age:

18.00

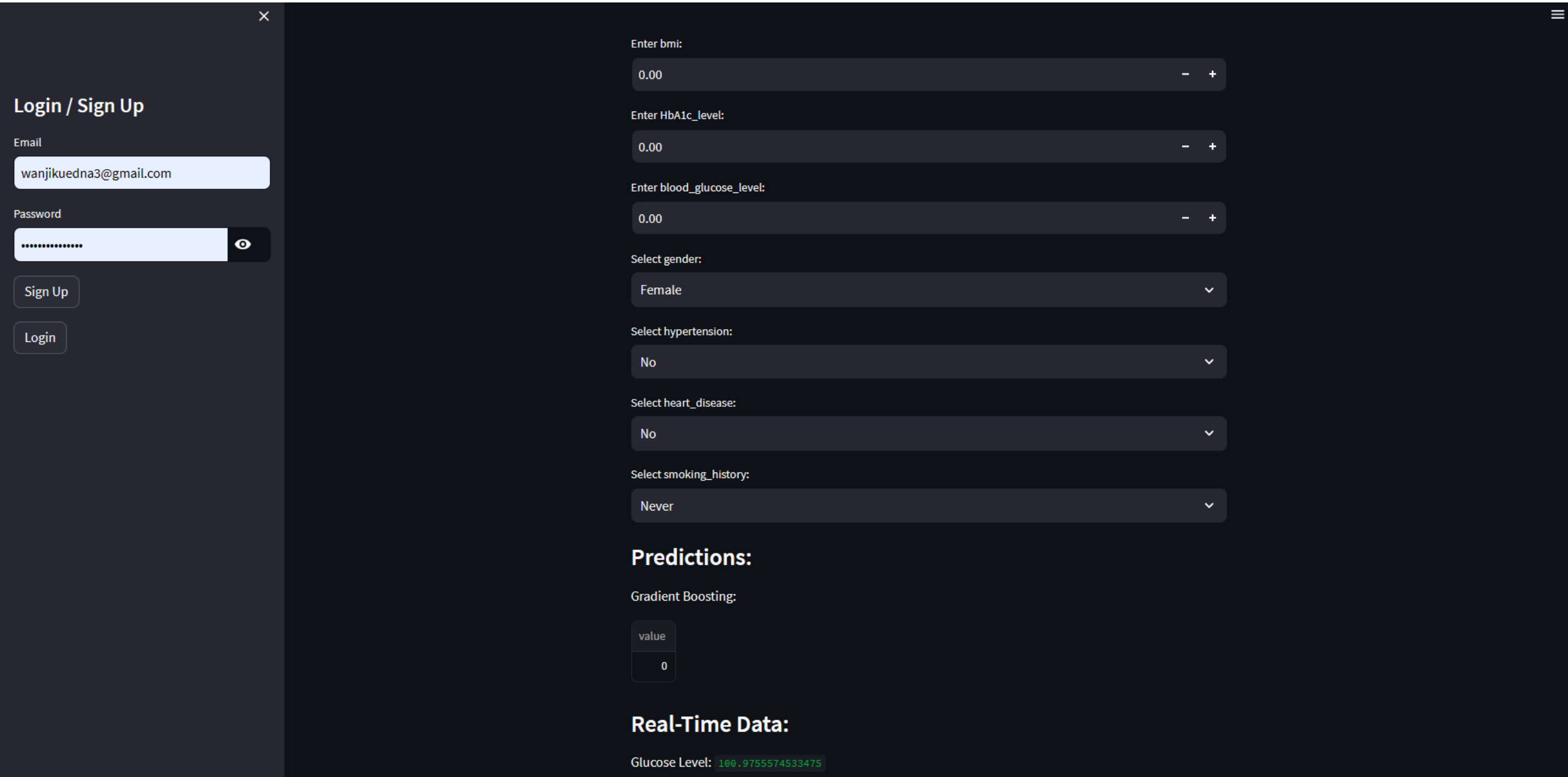
Enter bmi:

0.00

Enter HbA1c_level:

0.00

DEPLOYMENT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0.00
Enter HbA1c_level:
0.00
Enter blood_glucose_level:
0.00
Select gender:
Female
Select hypertension:
No
Select heart_disease:
No
Select smoking_history:
Never
Predictions:
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