Diabetes Prediction Dataset

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Problem Statement

THE AIM

**Predict the likelihood of potential diabetes using data and diagnostics extracted from previous patients**

Data set details

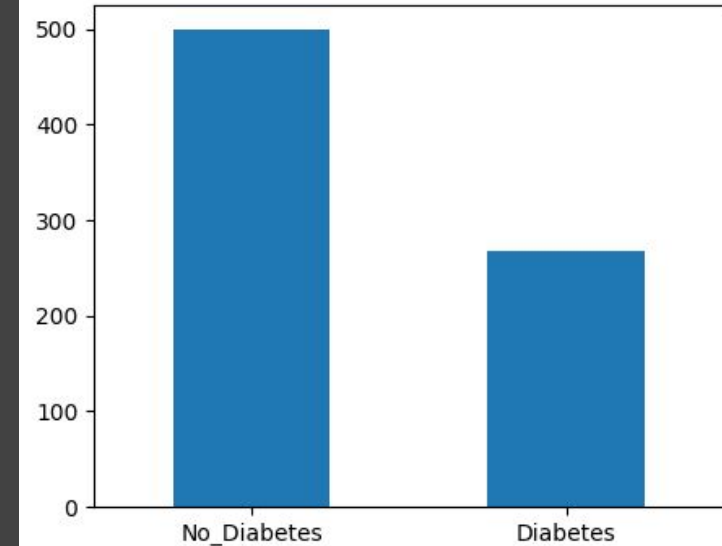|	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1

9 features - 768 Observations - 1 class attribute

Exploratory Data Analysis

Corelation Between Variables
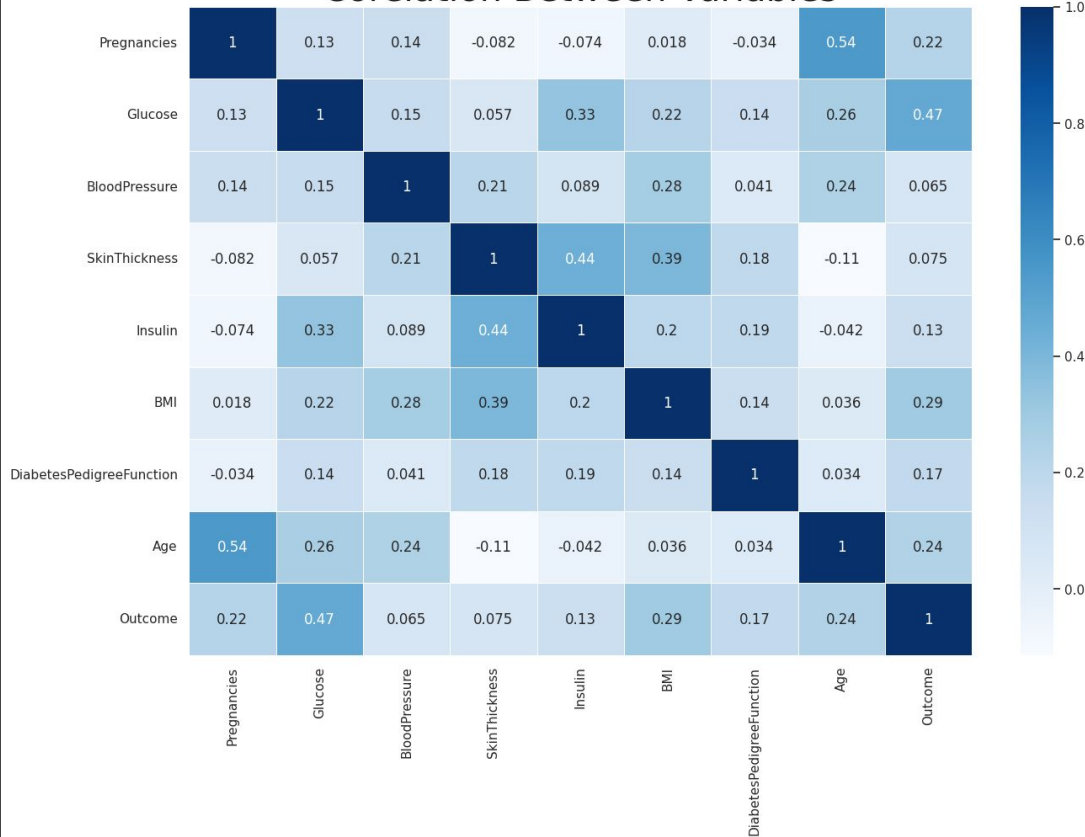
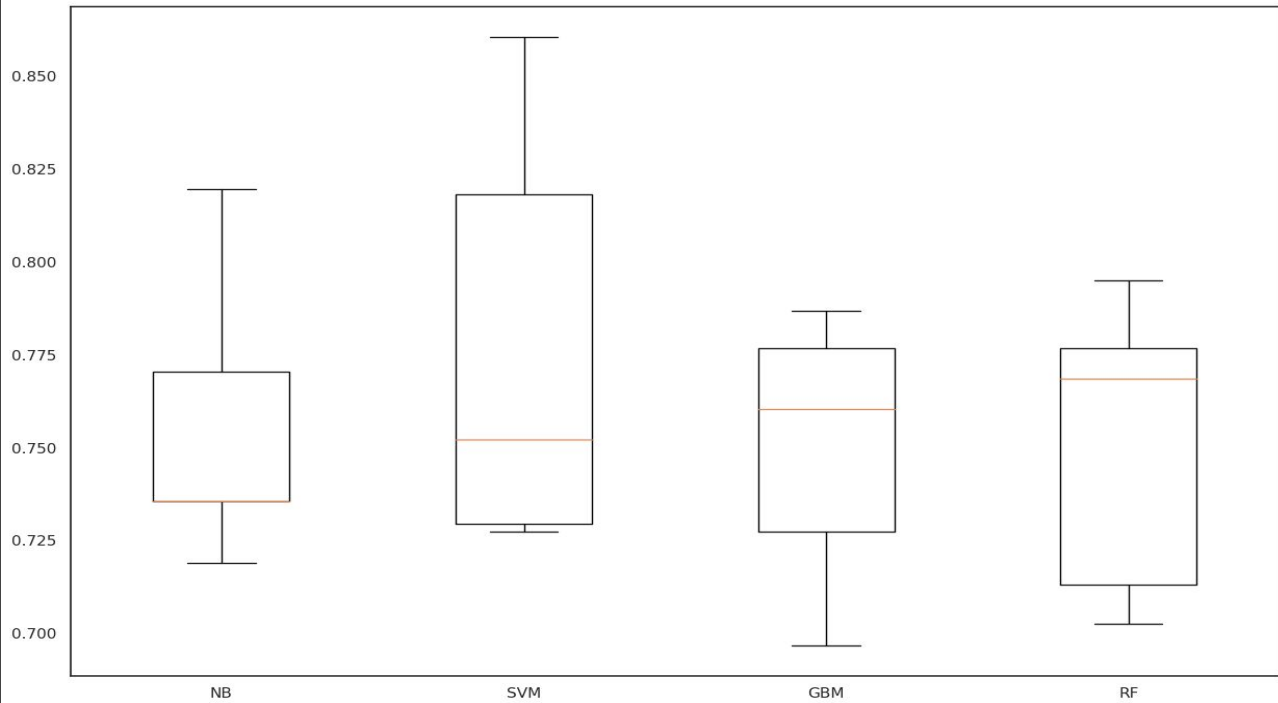Outcomes

Predictive Data Analytics

Algorithm Comparison

Best Model Accuracy Score on Test Set: 0.743421052631579

Implementation / Deployment

```python
import tkinter as tk
from diabetes_model import *


class DD_GUI:
    def __init__(self):

        # Create the main window.
        self.main_window = tk.Tk()
        self.main_window.title("Diabetes Prediction Calculator")

        # Create two frames to group widgets.
        self.one_frame = tk.Frame()
        self.two_frame = tk.Frame()
        self.three_frame = tk.Frame()
        self.four_frame = tk.Frame()
        self.five_frame = tk.Frame()
        self.six_frame = tk.Frame()
        self.seven_frame = tk.Frame()
        self.eight_frame = tk.Frame()
        self.nine_frame = tk.Frame()
        self.ten_frame = tk.Frame()
        self.eleven_frame = tk.Frame()

        # Create the widgets for one frame. (title display)
        self.title_label = tk.Label(self.one_frame, text='HEART DISEASE PREDICT(
        self.title_label.pack()
```

References

[1] *Diabetes* (no date) *World Health Organization*. World Health Organization. Available at: https://www.who.int/news-room/fact-sheets/detail/diabetes (Accessed: April 28, 2023).

[2] *Diabetes tests & diagnosis - NIDDK* (no date) *National Institute of Diabetes and Digestive and Kidney Diseases*. U.S. Department of Health and Human Services. Available at: https://www.niddk.nih.gov/health-information/diabetes/overview/tests-diagnosis (Accessed: April 26, 2023).

[3] Khare, A.D. (2022) *Diabetes dataset*, *Kaggle*. Available at: https://www.kaggle.com/datasets/akshaydattatraykhare/diabetes-dataset (Accessed: April 25, 2023).