

RV University

Diabetes Classifier

Software Requirements Specification

Version 1.0

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Software Requirement Specification

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1. OBJECTIVES AND SCOPE

We have developed a system that utilizes machine learning algorithms and datasets containing information on glucose levels and blood pressure. The purpose of this system is to predict the likelihood of a patient having diabetes. By analyzing the input data, the system generates predictions regarding the presence or absence of diabetes in the patient.

1. INTENDED AUDIENCE

This document is meant to undergo review by the customer, as well as by test plan developers and code developers involved in the project. It aims to gather feedback and input from these stakeholders to ensure the accuracy, completeness, and effectiveness of the document.

1. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

|  |  |
| --- | --- |
| **ML** | Machine Learning |
| **AI** | Artificial Intelligence |
| **DL** | Deep learning |
| **NB** | Naïve Bayes |

1. REFERENCES

Code provided

1. REQUIREMENTS OVERVIEW

## Project Perspective

The objective of this project is to develop a platform-independent program that accurately predicts the likelihood of a person having diabetes based on their glucose and blood pressure levels. This program is designed to be user-friendly, allowing users to easily and efficiently analyze their dataset and obtain accurate predictions regarding the presence or absence of diabetes.

1. EXTERNAL INTERFACE REQUIREMENTS

## The user interface of the program includes a window where users can input their glucose and blood pressure levels. It is important for users to enter accurate data within the normal range. If the entered data appears to be outside the normal range, a warning window will be displayed to alert the user.

## Hardware interfaces

CPU above i5  
RAM of atleast 8GB to 16GB  
Storage to store the data set

## Software interfaces

Data set collection

Warning page

## Communication interfaces

Data collection interface

Data processing interface

Prediction interface

1. FUNCTIONAL REQUIREMENTS

## Graphical User Interface

### RFP Id-F1

### Description

F1.1 window for Prediction results

This user window will accept the

* Glucose
* Blood pressure

1. Code

import numpy as np

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.naive\_bayes import GaussianNB

from sklearn.metrics import accuracy\_score

import matplotlib.pyplot as plt

import seaborn as sns

df = pd.read\_csv("Naive-Bayes-Classifier-Data.csv")

df.head()

x=df.drop('diabetes',axis=1)

y=df['diabetes']

x\_train,x\_test,y\_train,y\_test = train\_test\_split(x,y,test\_size=0.25,random\_state=42)

model=GaussianNB()

model.fit(x\_train,y\_train)

y\_pred = model.predict(x\_test)

y\_pred

1. MAINTAINABILITY REQUIREMENTS

Maintaing the data model