

VEDURE-DIABETES PREDICTION USING MACHINE LEARNING ALGORITHM WITH SMART RECOMMENDATION SYSTEM

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Abstract : Diabetes is one of the most deadly diseases on the planet. It also serves as a database for a variety of illnesses, such as coronary artery disease, blindness, and urinary organ disease. In this situation, the patient must go to a diagnostic center to receive their reports after consultation. Since they must spend their time and money at all times. However, with the advancement of Machine Learning techniques, we now have the potential to find a solution to the current problem; we now have advanced system mistreatment information processing that can predict whether a patient has polygenic illness or not.

Index Terms - Diabetes prediction, Preprocessing, Feature selection, machine learning.

I. INTRODUCTION

Diabetes is a condition that causes insulin deficiency due to a lack of insulin in the blood. Frequent urination, thirst, and elevated appetite are all warning signs of high blood sugar. It will cause a slew of problems if it isn't handled. This difficulty resulted in death. Severe difficulties can result in cardiovascular disease, foot sores, and blurry vision. Prior diabetes is characterized by an increase in blood sugar levels. The previous diabetes isn't worth as much as the conventional value. A lot of research has gone into incorporating machine learning algorithms into the design of intelligent healthcare applications, Particularly in disease detection. The majority of them have concentrated on cardiovascular disease, cancer diagnosis, and diabetes. In general, the aim of the study is to apply supervised learning algorithms to a dataset and extract information about diabetes prediction based on the values of the appropriate attributes.

II. LITERATURE REVIEW

[1] An Intelligent System for Diabetes Prediction

Author : Zhilbert Tafa , Bertran Karahoda

With the emerging increase of diabetes, that recently affects around 346 million people, of which more than one-third go undetected in early stage, a strong need for supporting the medical decision-making process is generated

[2] Diabetes Disease Prediction Using Data Mining

Author: Deeraj Shetty, Kishor Rit

Data mining is a subfield in the subject of software engineering. It is the methodical procedure of finding examples in huge data sets including techniques at the crossing point of manufactured intelligence, machine learning, insights, and database systems

[3] Diabetes prediction using different machine learning approaches

Author: priyanka Sonar, Prof. K. JayaMalin

Diabetes is one of the most lethal diseases in the world. It is an additional inventor of various varieties of disorders for example: coronary failure, blindness, urinary organ diseases etc. In such case the patient is required to visit a diagnostic center, to get their report after consultation..

[4] Prediction of Diabetes Using Machine Learning Algorithms in Healthcare

Author: Muhammad Azeem Sarwar,

Big data in the healthcare industry refers to electronic health datasets so large and complex for traditional software tools to process. Healthcare analytics refers to the systematic use of these healthcare datasets for business insights, decision making, planning, learning, early prediction and detection of diseases by using different statistics.

III. PROPOSED MODEL

The Diabetes Disease Prediction System's deliberate operation is depicted in a flowchart. The system's administrator will request that the patient have current records. The system's administrator would then ask the patient for the information required to make a diabetes disease prediction. After Prediction if Algorithm returns 0 then person is at LOW Risk to have Diabetes and if return value is 1 then Person is at HIGH Risk of Diabetes. In both the cases our Output pages will display Recommendation to person according to their result, for example we will show videos about how to avoid diabetes, what should be healthy diet, what types of exercise should be done etc.

Procedure of Proposed Methodology-

Step1: Import required libraries, Import diabetes dataset.

Step2: Pre-process data to remove missing data.

Step3: Perform percentage split of 80% to divide dataset as Training set and 20% to Test set.

Step4: Select the machine learning algorithm

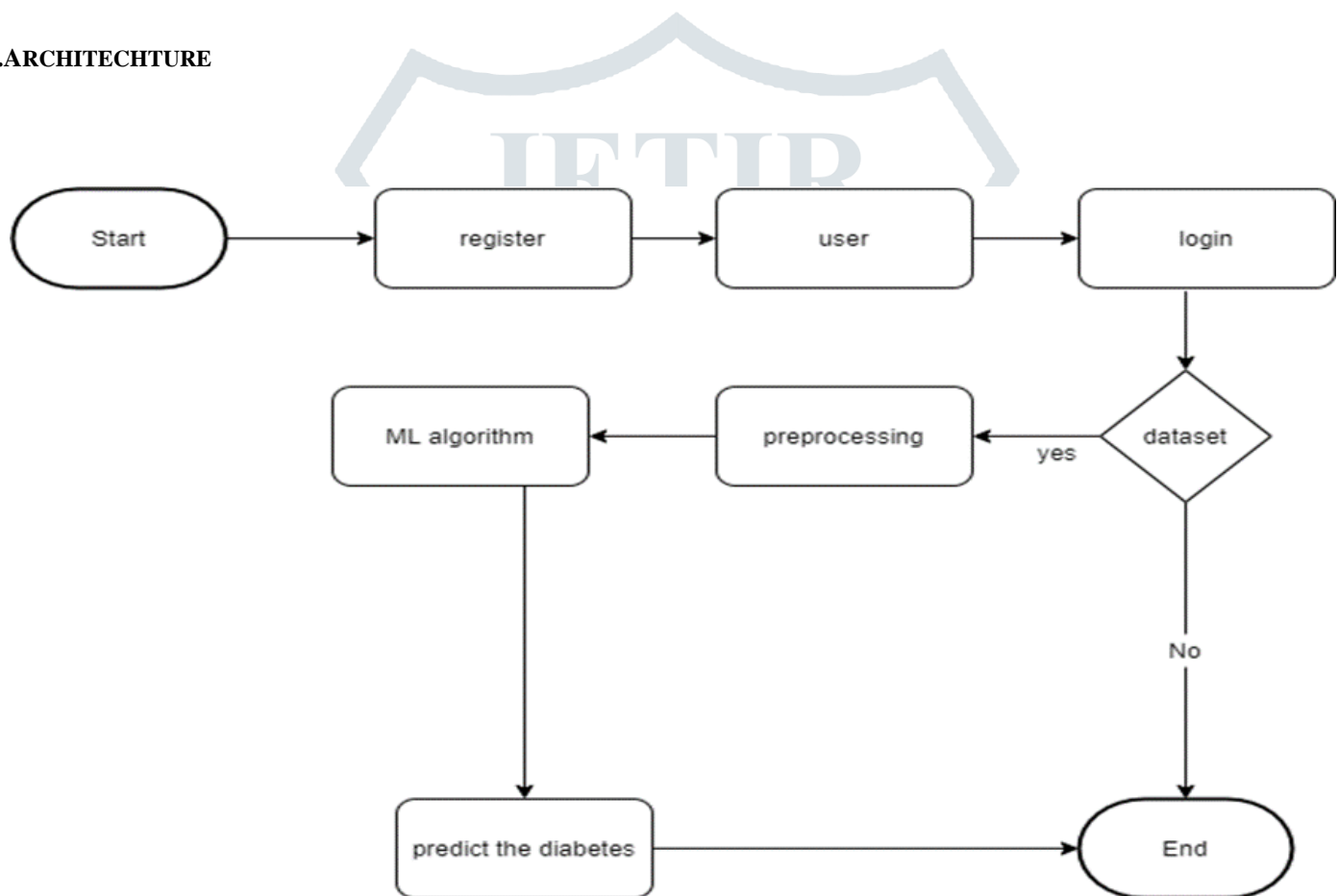
i.e. K- Nearest Neighbor, Support Vector Machine, Decision Tree, Logistic regression, Random Forest and Gradient boosting algorithm.

Step5: Build the classifier model for the mentioned machine learning algorithm based on training set.

Step6: Test the Classifier model for the mentioned machine learning algorithm based on test set.

Step7: Perform Comparison Evaluation of the experimental performance results obtained for each classifier.

Step8: After analyzing based on various measures conclude the best performing algorithm.

IV.ARCHITECHTURE**V. CONCLUSION**

Predictive analytics in healthcare has the potential to transform the way medical researchers and clinicians analyze medical data and make decisions. For the predictive model's training and testing, 8 attributes were chosen. From the results of the experiments, it is clear that SVM and KNN have the highest accuracy for predicting diabetes.

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