

# Data Mining Techniques to Predict Diabetes

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**Abstract** - This technique is useful for doctor's to extract the data from the database for diabetic patients. A doctor can easily find out a treatment for a particular patient.

**Key Words:** Data Mining, a technique, predict diabetes, disease.

## 1.INTRODUCTION

Diabetes known as blood sugar is too high. Blood glucose is the primary source of energy and comes from food to eat. A hormone created by the pancreas helps glucose from food get into cells to use for energy. Sometimes the body does not make enough—or any—insulin or does not make use insulin well. It stays in the blood and does not reach cells. Having substantial glucose in the blood can cause a health issue.

## 2.Data mining applications in diabetic

When a doctor prescribes a pharmacist dispenses that drug, those things do not automatically mean a patient will follow orders and take the medication. They turned to data mining to see if some purchase data about patients would show connections to medication adherence.

Medical data are available in hundreds of public and private databases, which has only been possible by novel database technologies and the Internet.

When it comes to healthcare industries, diagnosis and prognosis of diseases are very important; it is one of the essential purposes of using data mining for healthcare. Use of data mining for healthcare has helped doctor's to improve the health services provided by them. One cannot waste time and money by choosing some incorrect treatment for a patient, which can also harm the patient's health.

Data mining techniques are used to study all the details of various hospitals in order to rank them. Organisations rank various hospitals based on their capability to handle diabetes patients.

With the use of data mining techniques, both the doctor and patient can choose the best treatment techniques both in terms of effectiveness and cost. Through data mining, they can also find out the side effects of various treatments and thus decreases risk to patients.

By comparing factors like causes, symptoms, side effects, and cost of treatments, data mining is used to analyse the effectiveness of treatments. For example, one can compare

the results of treatments of different patients who were suffering from the same disease but treated with different drugs. In this way, we can find which treatment is valid in terms of the patient's health and cost.

The advancement in technology, we already have voluminous data stored in digitised form. Data mining, when applied on this massive medical data, can help us in extracting many of the interesting unknown patterns. With the help of these patterns, we can improve the quality of services and care provided to patients. Data mining also helps in knowing patients needs and more of their requirements so that it can be treated right.

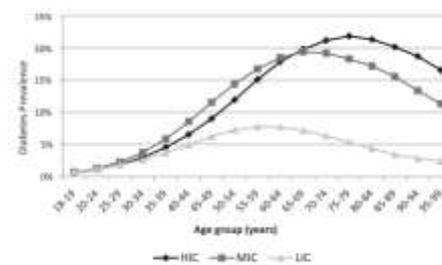


Fig -1: Prevalence (%) of diabetes by age

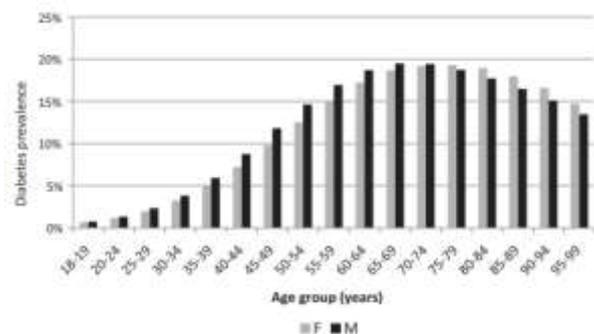


Fig -2: Prevalence (%) of people with diabetes by age and sex,

## 3.Decision Tree

A decision tree is one which has terminal and non-terminal nodes. Each non-terminal node represents a test or condition on a data item. Decision trees classify the instances by sorting them down from the non-terminal to the terminal nodes. The output of which branch will be selected thoroughly depends on the outcome of the test. For example, we have a decision tree for medical readmission. With the

help of this tree, we can decide whether a patient needs readmission or not. Decision trees create a visual representation of various pros and cons and potential values of each option.

Decision trees used for calculating conditional probabilities in operations research analysis. Best alternatives can be chosen with the help of decision trees and based on maximum information gain the traversal from root to leaf node indicates unique class separation. In some other applications of data mining, like in marketing, the accuracy of a prediction could be all that they need. It may not be essential to know about the working of the model. For example, when a marketing professional wants to launch the marketing campaign, he would require the overall descriptions of customer segments. For these types of applications, the decision tree algorithm is very suitable.

#### 4.Existing System

There will difficult to handle all the records, maintain paper works and files.

#### 5.Data Mining

Data Mining is a set of method that applies to large and complex databases of science and statistics with an overall goal to extract information from a data set and convert the valuable information into a comprehensible structure for further use Data mining is the analysis

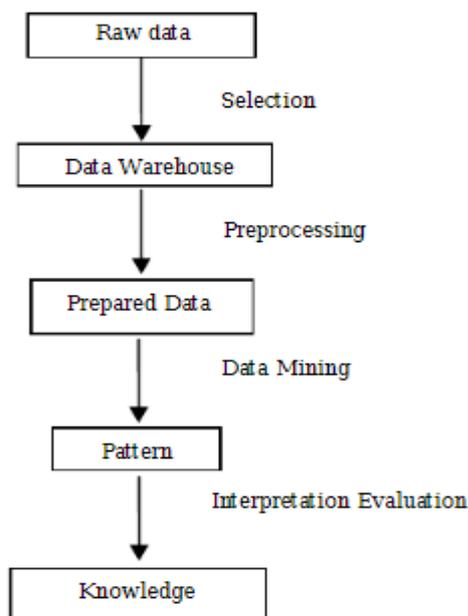


Fig -3: "knowledge discovery in databases."

It used in order to mine the occurred set of items with the transactional database, to identify these items onto the catalogue and extend it primarily until they are reached or settled in the list sufficiently.

#### 7. Literature Surveys

The massive spreading awareness was more prominently on the critical role of the kidney by the glucose homeostasis in the latest days. When the person is fasting and, the DKD patients face many issues with kidney also is a vital organ in such kind of symptoms

The tempo of metabolism does not take into account here, that is the definite reason for producing glucose. The adversary that include the cardiovascular, which is of the long term caused an issue, eyesight, as well as the bone weakening. Can be barred if the intake of the insulin that then manages the obesity caused by the type 2 DM.

#### 8. Disadvantages

1. The exactness is not available.
2. No proper specifications are given and taken through the users.

#### 9. Advantage

As all the information entered with regards to the person, the judgement is finish, and opposite end output is acquired.

#### 10. System Architecture

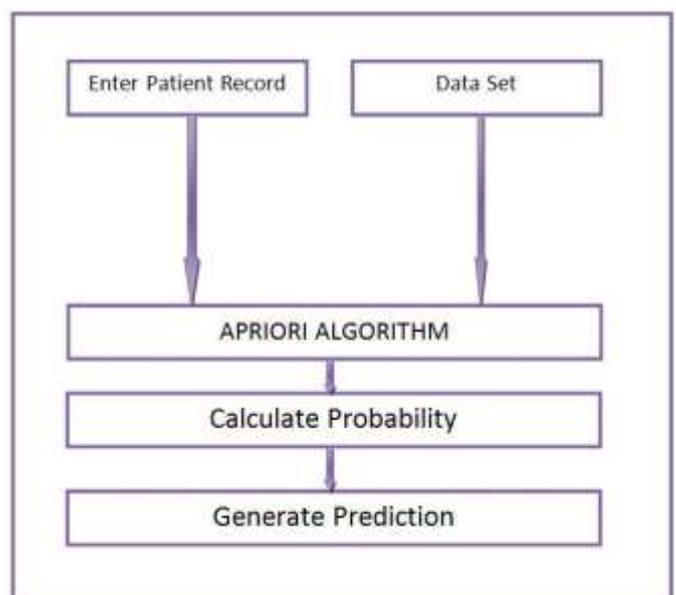


Fig -4: Architecture

#### 6. Apriori Algorithm

#### 11.User Register



Fig -5: Registration

### 12.Login STA



Fig 6: Screenshot of login secured trusted authority

### 13.Token Details



Fig7: a screenshot of token details of users

### 14.Result in Graph

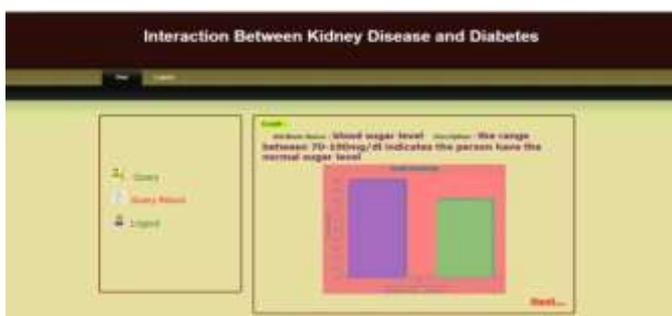


Fig 8: a screenshot of users results in graph

### 15.FUTURE ENHANCEMENT

In approaching the translation of this application, the users can be able to get the dietary suggestions, and the precautionary points needed.

### 16.CONCLUSIONS

The re-amalgamation of the glucose is the main reason for the kidney failure which is getting considered with pathogenesis concerning the DM, where the patients face the dilemma to solve the half- of its life as well as the fighting of the insulin in the human body.

The professional has got to take the necessitated perceptiveness of the kidney disease tests that include physiology along with the

Pathophysiology to the DKD, which they can adequately indulge such patients.

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