PREDICT THE HEART DISEASE BASED ON HEALTH STATUS USING THEIR MEDICAL HISTORY

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ABSTRACT

This paper to predict the Heart Disease Based on Health Status Using their Medical History to identifty male or woman and accumulate all atributes and test into a logistics set of rules whether or not is laid low with male or lady Collecting all previous scientific histories of the sufferers and developing a dataset.Creating a ID for the patients dataset.This objective will assist saving time in understanding about past info and allows in higher understanding of the situation Of coronary heart sickness affected person

Key words - Heart Disease,Medical History, Health Status

I.INTRODUCTION

The to be had coronary heart disease database consists of every numerical and explicit statistics. Before in addition processing, cleansing and filtering are implemented on those statistics for you to filter out the inappropriate information from the database.The endorse.D system can determine an particular hidden understanding styles and relationships associated with coronary coronary heart illness from a Medical records heart illness database.Predictions of coronary coronary heart Disease based on fitness records have long attracted big research pursuits. Despite huge efforts, the prediction accuracy has remained unsatisfactory. This increases the question as to whether or not or not the statistics insufficiency, statistical and device-gaining knowledge of strategies, or intrinsic noise have hindered the overall performance of previous approaches, and the way the ones troubles can be alleviated.A sort of sickness that influences the heart or blood vessels. The risk of positive coronary heart illnesses may be multiplied by way of smoking, excessive blood strain, excessive cholesterol, bad weight-reduction plan, loss of exercising,generic stroke and weight problems.

II.OBJECTIVE

The objective to to predict the fitness fame of the paitent to perceive the fitness reputation To date, the assessment of patient health repute in scientific practice has been heterogeneous, in large part dependent on conversation between clinician and affected person in a given episode of care. Although a given clinician can also strive to efficiently verify the fitness status of his or her patients, standardized metrics to monitor affected person health status over the years or to examine amongst sufferers are not robotically carried out in exercise. Moreover, time constraints may forestall effective assessment of patient health fame in a given episode of care, and a given patient can also have a couple of care carriers. In addition, there may be

substantial discrepancies among company-assessed and patient-suggested health repute.Ultimately, every affected person is their personal "gold popular" for their symptom burden, practical barriers, and . Thus, there's a clean want for using standardized tools to evaluate affected person-pronounced health fame coronary heart disease medical records

III.RELATED WORK

In healthcare, data mining is becoming increasingly popular, if not increasingly essential. They have employed various classifiers in combination with different data mining techniques for heart disease prediction. It can be perceived from the observations that in some cases, the same classifier produces different accuracy for different data mining techniques. Different data mining algorithms provide different accuracy rates ranging from 100 percent to 72 percent. They have used algorithms like neural network, decision tree genetic algorithm.[1]

The research paper mainly focuses on which patient is more likely to have a heart disease based on various medical attributes. We prepared a heart disease prediction system to predict whether the patient is likely to be diagnosed with a heart disease or not using the medical history of the patient. We used different algorithms of machine learning such as logistic regression and KNN to predict and classify the patient with heart disease. A quite Helpful approach was used to regulate how the model can be used to improve the accuracy of prediction of Heart Attack in any individual. The strength of the proposed model was quiet satisfying and was able to predict evidence of having a heart disease in a particular individual by using KNN and Logistic Regression which showed a good accuracy in comparison to the previously used classifier such as naive bayes[2]

Advanced data mining techniques are used to discover knowledge in database and for medical research, particularly in Heart disease prediction. This paper has analysed prediction systems for Heart disease using more number of input attributes. The system uses medical terms such as sex, blood pressure, cholesterol like 13 attributes to predict the likelihood of patient getting a Heart disease. Until now, 13 attributes are used for prediction. This research paper added two more attributes i. e. obesity and smoking. The data mining classification techniques, namely Decision Trees, Naive Bayes, and Neural Networks are analyzed on Heart disease database.[4]

The healthcare industry collects huge amounts of healthcare data which, unfortunately, are not "mined" to discover hidden information for effective decision making. Discovery of hidden patterns and relationships often goes unexploited. Advanced data mining techniques can help remedy this situation. This research has developed a prototype Intelligent Heart Disease Prediction System (IHDPS) using data mining techniques, namely, Decision Trees, Naïve Bayes and Neural Network. Results show that each technique has its unique strength in realizing the objectives of the defined mining goals. IHDPS can answer complex "what if" queries which traditional decision support systems cannot. Using medical profiles such as age, sex, blood pressure and blood sugar it can predict the likelihood of patients getting a heart disease.[3]

Heart disease (HD) is a major cause of morbidity and mortality in the modern society. Medical diagnosis is an important but complicated task that should be performed accurately and efficiently and its automation would be very useful. All doctors are unfortunately not equally skilled in every sub specialty and they are in many places a scarce resource. A system for automated medical diagnosis would enhance medical care and reduce costs. In this paper, a new approach based on coactive neuro-fuzzy inference system (CANFIS) was presented for prediction of heart disease. The proposed CANFIS model combined the neural network adaptive capabilities and the fuzzy logic qualitative approach which is then integrated with genetic algorithm to diagnose the presence of the disease[6]

In algorithm the accuracy of the Decision Tree and Bayesian Classification further improves after applying genetic algorithm to reduce the actual data size to get the optimal subset of attribute sufficient for heart disease prediction. The proposed work can be further enhanced and expanded for the automation of Heart disease prediction. Real data from Health care organizations and agencies needs to be collected and all the available techniques will be compared for the optimum accuracy.[5]

This research work is the extension of our previous research with intelligent and effective heart attack prediction system using neural network. A proficient methodology for the extraction of significant patterns from the heart disease warehouses for heart attack prediction has been presented. Initially, the data warehouse is pre-processed in order to make it suitable for the mining process. Once the preprocessing gets over, the heart disease warehouse is clustered with the aid of the K-means clustering algorithm, which will extract the data appropriate to heart attack from the warehouse.[7]

Coronary heart disease is a major cause of death worldwide. The diagnosis of heart disease is a tedious task. There is a need for an intelligent decision support system for disease prediction. Data mining techniques are often used to classify whether a patient is normal or having heart disease [8]

ANN training is used for the accurate diagnosis of disease and the prediction of possible abnormalities in the patient.[9] The highest accuracy is achieved by HRFLM classification method in comparison with existing methods. [10] ANN has been introduced to produce the highest accuracy prediction in the medical field. [11]
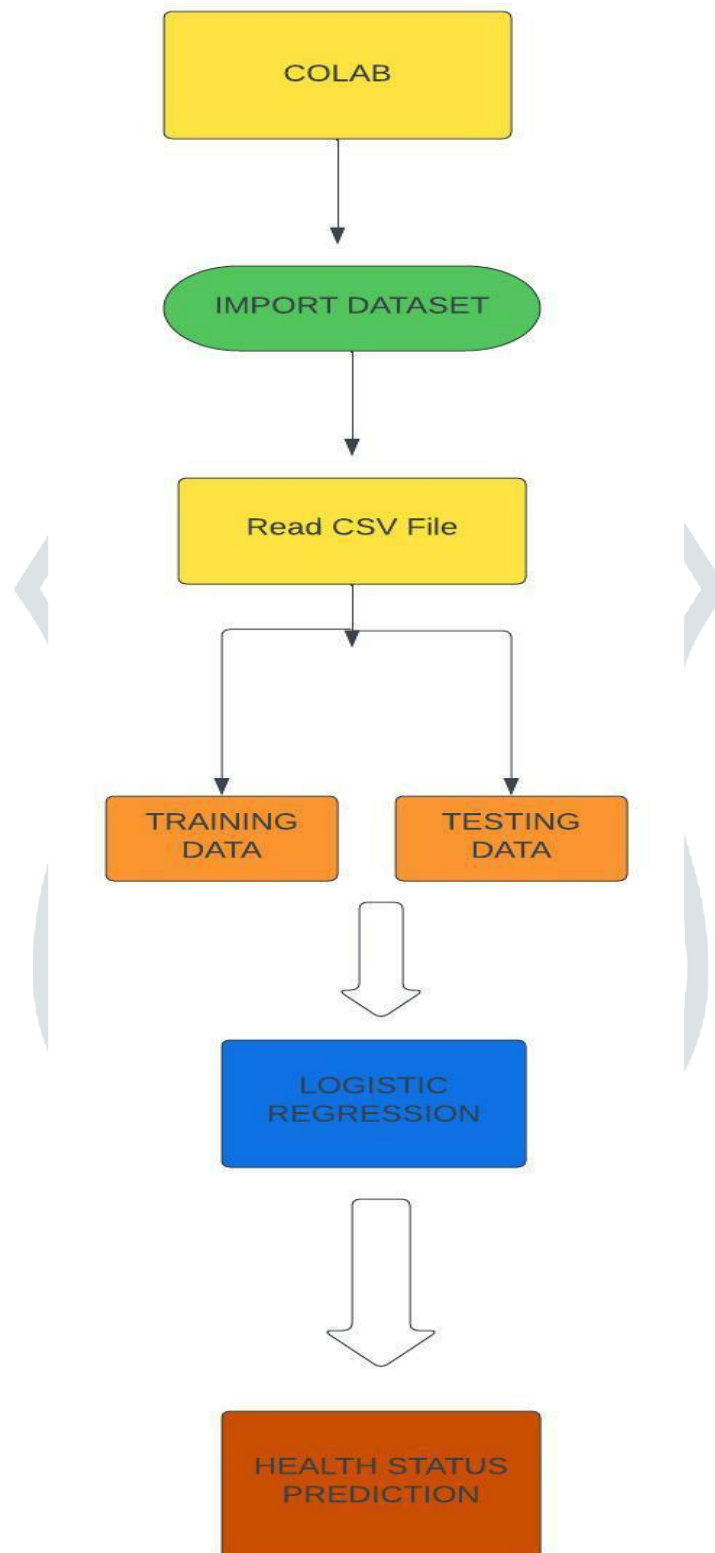
IV.METHODOLOGY

Fig 4.1

A.DATA PREPROCESSING

Data preprocessing, a aspect of facts instruction, describes any sort of processing completed on uncooked facts to prepare it for any other statistics processing process. It has traditionally been an important initial step for the information mining manner.

B.LOGICAL REGRESSION

Logistic regression is a statistical evaluation method to expect a binary final results, inclusive of yes or no, primarily based on previous observations of a data set. A logistic regression version predicts a structured records variable through studying the relationship between one or more existing independent variables

• STEP 1: Generate a dataset and down load vital programs.
• STEP 2: Splinter the dataset into take a look at and schooling dataset.Training set - used to educate the version. Testing set – describes the assessment of the fashions.
• STEP three: Visualization gives a better scope of interactivity of the set of rules to bring a better know-how of the data set.
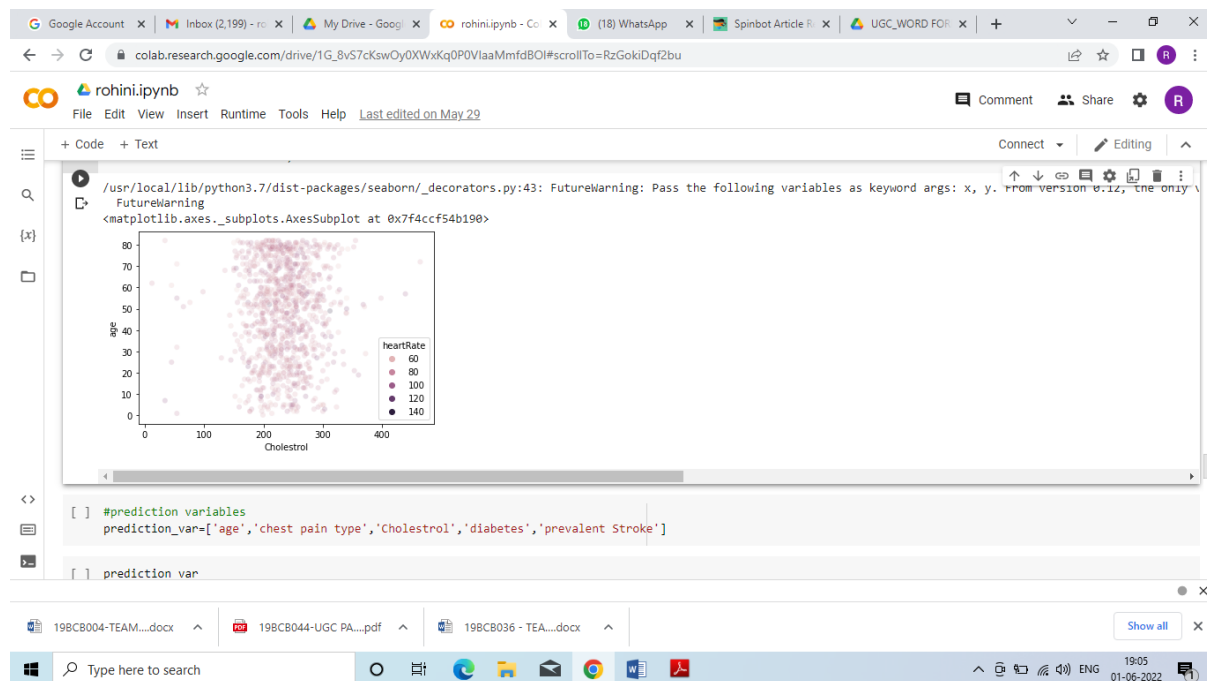

Fig4.2

Fig 4.2 the view of heartrate various age groups are defined in this visualization
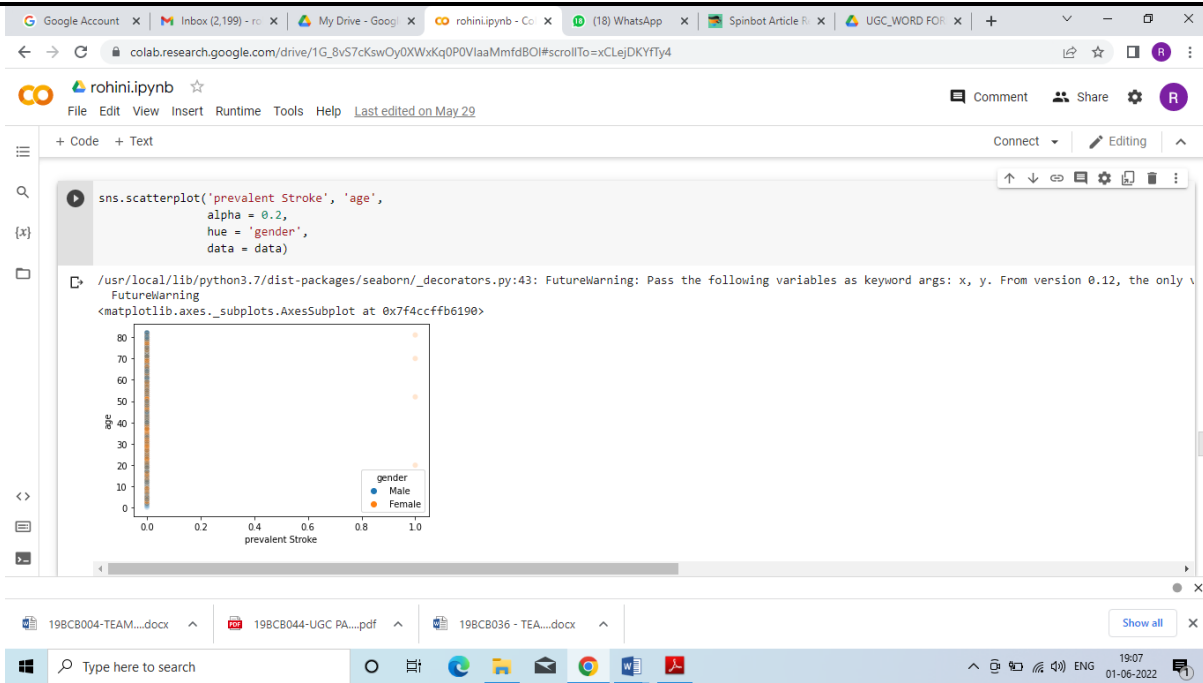
Fig4.3

In Fig4.3this chart visualized a Prevalent stroke and age organizations are as compared whether or not it take a look at male or women it fitness trouble by means of heart disorder
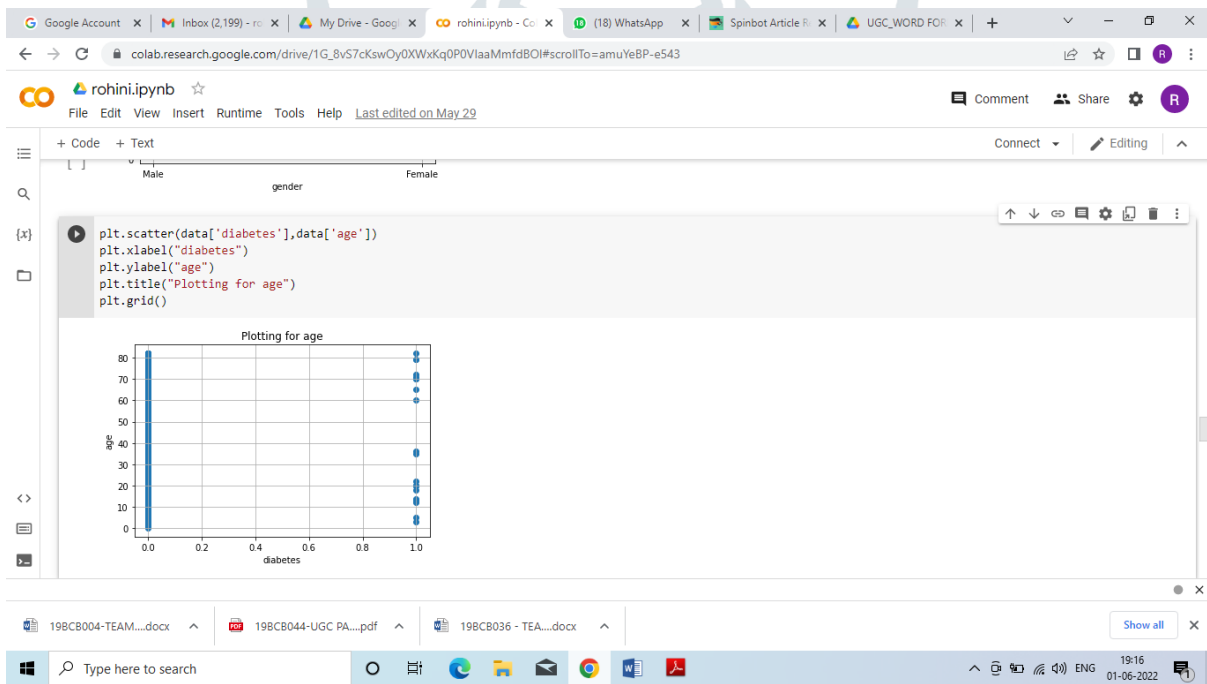

Fig4.4

In Fig4.4 This chart represent a diabetes and age analysis are compared whether or now not it take a look at age groups are described for analysed with the aid of heart disease patients
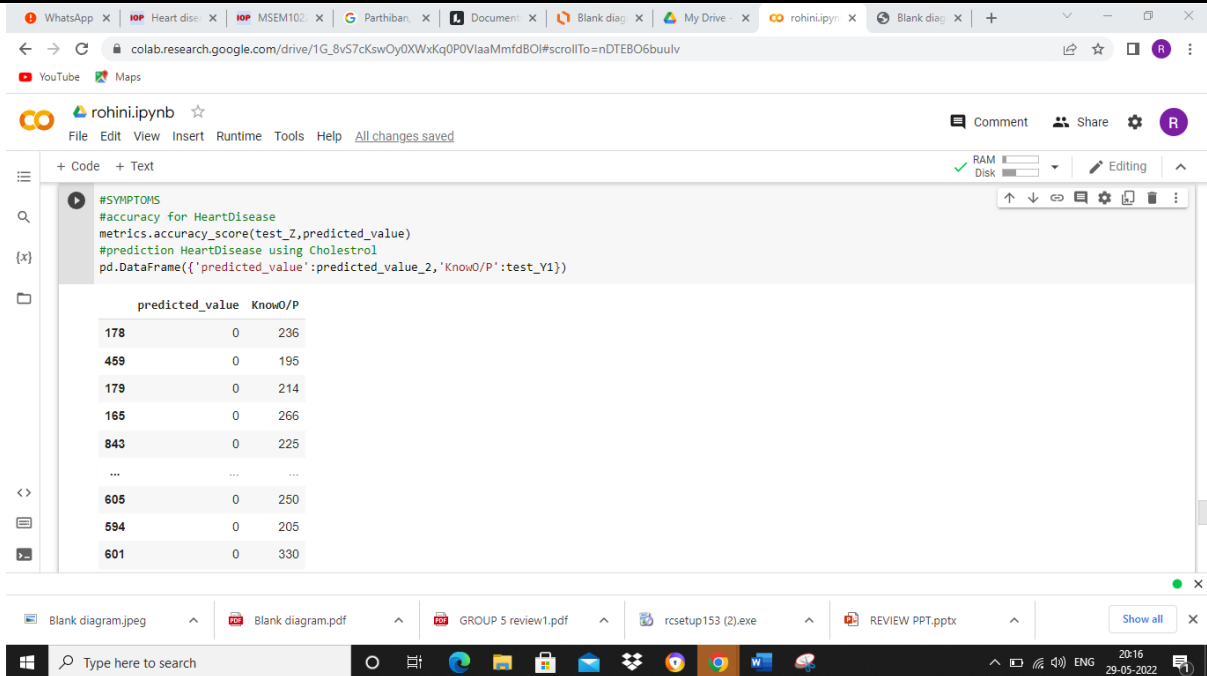
Fig4.5

In Fig4.5this chart accuracy score of heart disease medical patients datasets

IV.RESULT

To are waiting the use of logistic set of policies coronary heart disease the use of those attributes are health recognition to check a age,cholestrol and diabeties are in assessment to age Men or Women the above photograph, the mentioned output within the dataset can be above or beneath 95% however the anticipated values may be above or below 95% through evaluating the attributes.In a scientific statistics anlysing by means of the use of the use of manner of the use of in attributes coronary heart affected Patient
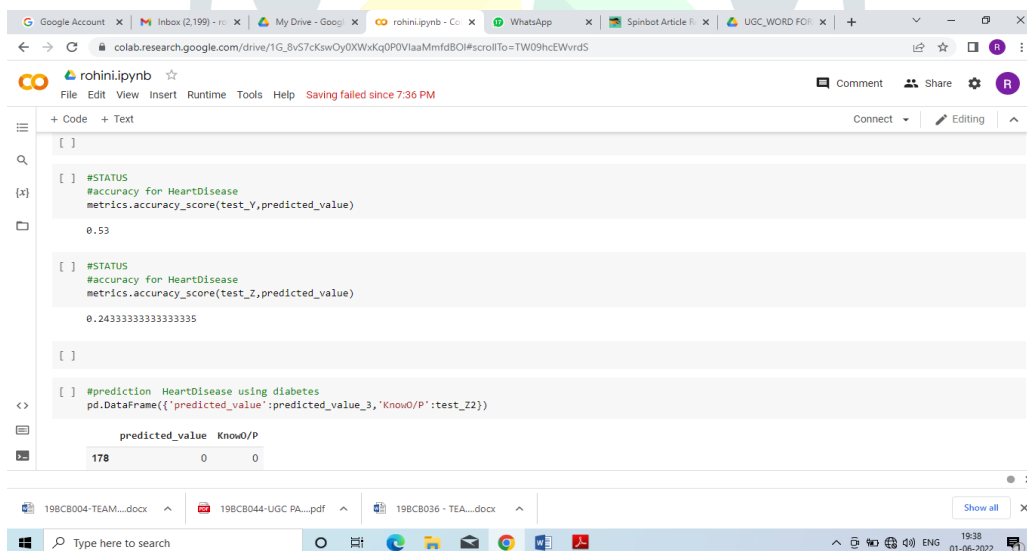

Fig4.6
V.CONCLUSION

In this paper, dataset incorporation, uploading packages and visualization are finished in Colab Notebook. Logical Regression is used to predict the health popularity heart sickness. To have everyday and feasible immunity each human beings ought to devour healthful and to stay and manipulate

REFERENCE

[1]Nidhi Bhatla ,Kiran Jyothi "An Analysis of Heart Disease Prediction using Different Data Mining Techniques"- International Journal of Engineering Research & Technology (IJERT) Vol. 1 Issue 8, October - 2012 ISSN: 2278-0181

[2]Harshit Jindal1, Sarthak Agrawal1, Rishabh Khera1, Rachna Jain2 and Preeti Nagrath2- Heart disease prediction using machine learning algorithms To cite this article: Harshit Jindal et al 2021 IOP Conf. Ser.: Mater. Sci. Eng. 1022 012072

[3]Sellappan Palaniappan, Rafiah Awang, "Intelligent Heart Disease Prediction System Using Data Mining Techniques", IJCSNS International Journal of Computer Science and Network Security, Vol. 8 No. 8, August 2008

[4]Dangare Chaitrali S and Sulabha S Apte. "Improved study of heart disease prediction system using data mining classification techniques." International Journal of Computer Applications 47.10 (2012): 44-8.

[5]yoti Soni, Ujma Ansari, Dipesh Sharma, Sunita Soni "Predictive Data Mining for Medical Diagnosis: An Overview of Heart Disease Prediction"- International Journal of Computer Applications (0975 – 8887) Volume 17– No.8, March 2011

[6]Latha Parthiban and R. Subramanian, "Intelligent Heart Disease Prediction System using CANFIS and Genetic Algorithm", International Journal of Biological, Biomedical and Medical Sciences, Vol. 3, No. 3, 2008**.**

[7] Parthiban, Latha and R Subramanian. "Intelligent heart disease prediction system using CANFIS and genetic algorithm." International Journal of Biological, Biomedical and Medical Sciences 3.3 (2008).

[8]M. A. Jabbar and S. Samreen, "Heart disease prediction system based on hidden naïve bayes classifier," 2016 International Conference on Circuits, Controls, Communications and Computing (I4C), 2016, pp. 1-5, doi: 10.1109/CIMCA.2016.8053261

[9] Tarle, Balasaheb and Sudarson Jena. "An Artificial Neural Network Based Pattern Classification Algorithm for Diagnosis of Heart Disease." 2017 International Conference on Computing, Communication, Control and Automation (ICCUBEA) (2017): 1-4.

[10]Senthilkumar Mohan, Chandrasegar ThirumalaI, Gautam Srivastava "Effective Heart Disease Prediction Using Hybrid Machine Learning Techniques"-IEEEACCESS- date of publication June 19, 2019. Digital Object Identifier 10.1109/ACCESS.2019.2923707

[11]Baccour, Leila. "Amended fused TOPSIS-VIKOR for classification (ATOVIC) applied to some UCI data sets." Expert Syst. Appl. 99 (2018): 115-125.