

Department of Information Technology

NBA Accredited

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UNIVERSITY OF MUMBAI

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A Project Presentation on
Heart Disease Detection System
Submitted in partial fulfilment of the degree of
Bachelor of Engineering(Sem-6)

in
INFORMATION TECHNOLOGY

By

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1. Project Conception and Initiation

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1.1 Objectives

- The main objective of this research is to develop a heart prediction system. The system can discover and extract hidden knowledge associated with diseases from a historical heart data set
- Provides new approach to concealed patterns in the data.
- Helps avoid human biasness.
- To implement Logistic Regression that classifies the disease as per the input of the user.
- Reduce the cost of medical tests.

1.2 Literature Review

- (Beyene & Kamat, 2018) recommended different algorithms like Naive Bayes, Classification Tree, KNN, Logistic Regression, SVM and ANN. The Logistic Regression gives better accuracy compared to other algorithms.
- (Beyene & Kamat, 2018) suggested Heart Disease Prediction System using Data Mining Techniques
- (A & Naik, 2016) recommended to develop the prediction system which will diagnosis the heart disease from patient's medical data set. 13 risk factors of input attributes have considered to build the system. After analysis of the data from the dataset, data cleaning and data integration was performed. He used k-means and naïve Bayes to predict heart disease. This paper is to build the system using historical heart database that gives diagnosis.

1.3 Problem Definition

- The major challenge in heart disease is its detection. There are instruments available which can predict heart disease but either they are expensive or are not efficient to calculate chance of heart disease in human.
- However, it is not possible to monitor patients every day in all cases accurately and consultation of a patient for 24 hours by a doctor is not available since it requires more sapience, time and expertise.
- Since we have a good amount of data in today's world, we can use various machine learning algorithms to analyze the data for hidden patterns. The hidden patterns can be used for health diagnosis in medicinal data.

1.4 Scope

- The integration of clinical decision support with computer-based patient records could reduce medical errors, enhance patient safety, decrease unwanted practice variation, and improve patient outcome.
- The potential to generate a knowledge-rich environment which can help to significantly improve the quality of clinical decisions.

1.5 Technology stack

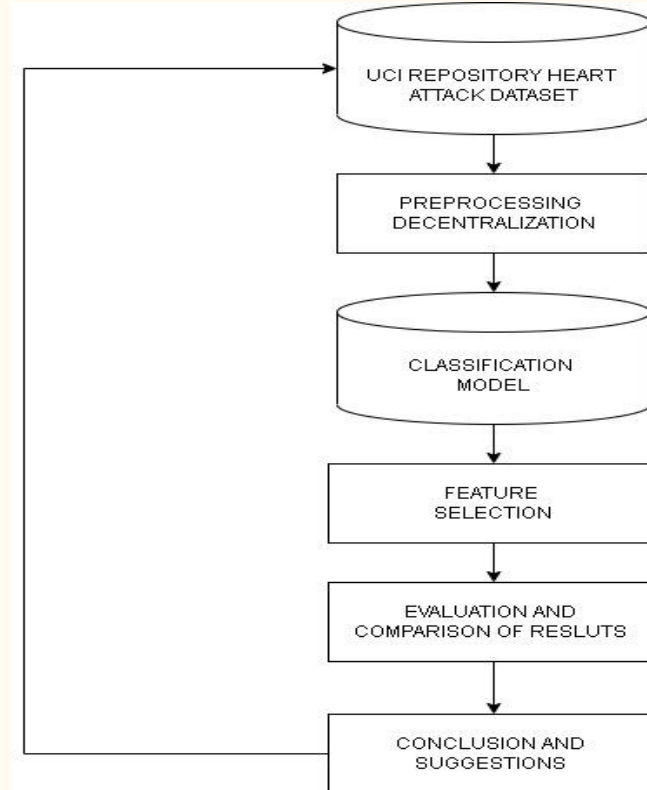
- Jupyter Notebook
- Google Collab
- Python 3.10.2
- Pandas
- Numpy
- Flask
- HTML
- CSS

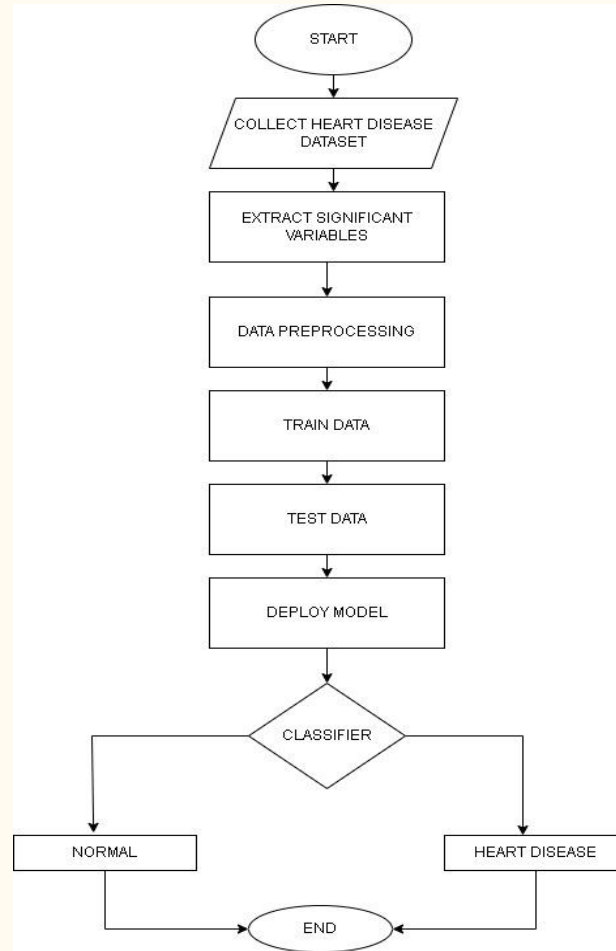
2. Project Design

2.1 Proposed System

- In this system we are implementing heart disease prediction using Logistic Regression Algorithm.
- Input can be given through manual entry and CSV dataset file , after taking the input the algorithm applied on the input is Logistic expression.
- The proposed system will add some more parameters significant to heart attack with their weight, age and the priority levels are by consulting expertise doctors and the medical experts.

2.2 Design(Flow Of Modules)





3. Implementation

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- Implementation

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HEART DISEASE PREDICTION

It's a clean, easy to understand set of data. However, the meaning of some of the column headers are not obvious. Here's what they mean.
Age: displays the age of the individual.
Sex: displays the gender of the individual using the following format:
1 = male
0 = female
Chest-pain type: displays the type of chest-pain experienced by the individual using the following format :
0 = typical angina
1 = atypical angina
2 = non — anginal pain
3 = asymptotic
Resting Blood Pressure: displays the resting blood pressure

AGE (Age: 7 - 50)

SEX (Male: 1 & Female: 0)

CP (Enter Single Value From Range 0-3)

TRESTDPS (Enter Non-Decimal Value)

CHOL (Enter Non-Decimal Value)

FBS (1 = True; 0 = False)

RESTECG (Enter Single Value From Range 0-2)

THALACH (Enter Non-Decimal Value)

EXANG (Examples: 1 = YES; 0 = NO)

OLDPEAK (Enter Decimal Value)

SLOPE (Enter Single Value From Range 0-2)

CA (Enter Single Value From Range 0-4)

THAL (Enter Single Value From Range 0-3)

5. Result

During the course of the project. We were able to make a heart disease detection system using Logistic Regression.



6. Conclusion and Future Scope

6.1 Conclusion

The use of machine learning techniques can be applied to detection of heart-health status but different degrees of accuracy can be obtained. The study has shown the prediction accuracy of three machine learning models to predict the presence or absence of heart diseases.

6.2 Future Scope

- The study will be extended to adapt the models to be used in mobile applications, it will also consider the identification of various categories of heart diseases.
- We can also add diet recommendation features according to the category of the heart disease detected.

References

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Thank You

