

Heart Disease Prediction

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Introduction

- It is difficult to identify heart disease because of several contributory risk factors such as diabetes, High blood pressure, high cholesterol, abnormal pulse rate and many other factors.
- The diagnosis of heart disease is a challenging task, which can offer automated prediction about the heart condition of patient so that further treatment can be made effective.
- The severity of the Disease is classified based on various methods like Logistic Regression, Random Forest Classifier, Decision Trees.
- The nature of Heart disease is complex and hence the disease must be handled carefully. Not doing so may affect the heart or cause premature death.

(1)



Problem Statement

- Heart Disease Prediction using Machine Learning Algorithm.



Motivation Of Project

- A major challenge facing healthcare organizations is the provision of quality services at affordable costs.
- Quality Service implies diagnosing patients correctly and administering treatments that are effective.
- Poor clinical decision can lead to disastrous consequences which are therefore unacceptable.
- Hospitals must minimize the cost of clinical tests.
- They can achieve this results by employing appropriate computer based information and decision support system.



Technical Keywords

- Classification
- Machine Learning
- Heart Disease Prediction
- Training and Testing



- According to Mr.Santhana Krishnan the main aim of this system is to predict the possibilities of occurring heart disease of the patients in terms of percentage.This is performed through data mining classification techniques.
- According to Gayathri.R, To achieve better accuracy and to make the system more efficient so that it can predict the chances of heart attack.



Objectives

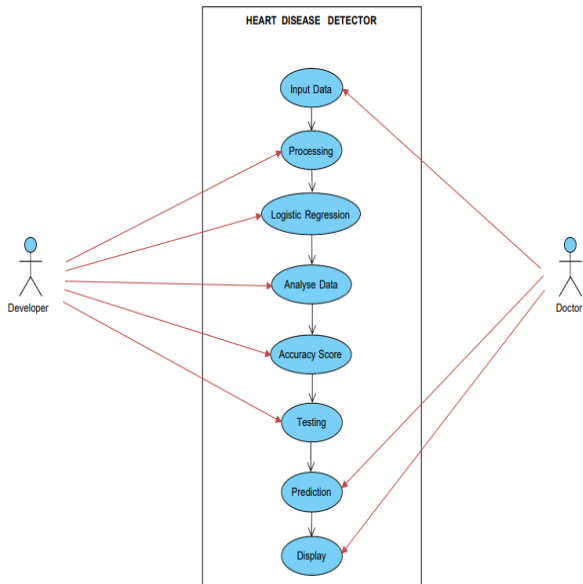
- The main objective of this research is to develop a heart prediction system, the system can discover and extract hidden knowledge associated with diseases from heart data set.
- This system aims to exploit machine learning techniques on medical data set to assist in the prediction of the heart disease.
- Reduce the cost of medical tests.
- To help avoid human biases.

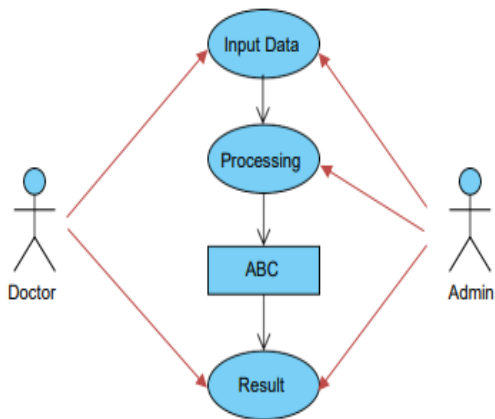


- There are four phases that involve in the spiral model:
- Planning phase - Phase where the requirement are collected and risk is assessed.
- Risk analysis Phase - Phase where the risk and alternative solution are identified.
- Engineering phase - At this phase, a software are created and testing are done at the end this phase.
- Evaluation phase - At this phase, the user do evaluation toward the software.



Use case Diagram





- 1] It is very helpful to medical Community to Predict Accurate results.
- 2] By using classification models user can analyze the Dataset.
- 3] Then Software will display overall feature wise user opinion in the form of graphs.



- 1] Medicial Institutions- To teach medical students how the Heart attack been measured,or how to identify that the person is suffering from Heart Disease.
- 2] Hospitals- To detect that is the Person having heart disease or not.



- 1]Platform : Operating System: Windows 7 or above,Ubuntu 12 or above.
- 2]IDE: Jupyter Notebook,Google Colab Notebook.
- 3] Programming Language : Python



Conclusion

- Heart disease prediction is challenging and very important in medical field. However, the mortality rate can be drastically controlled if the disease is detected at early stage and preventive measures are adopted as soon as possible.
- Hybrid Random Forest with Linear Model(HRFLM) Proved to be quite accurate in the prediction of heart disease.



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