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Heart Disease Prediction: A Machine Learning Approach for Risk Assessment

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Abstract: *Objective: Heart disease is the leading cause of mortality globally. A variety of modern technologies are utilized to treat cardiac disease. As one of the most significant areas for prediction, the clinical data analysis covers a highly important condition, namely cardiovascular disease. It is the most prevalent problem in medical centers since many medical personnel do not have equal knowledge and skill to treat their patients, therefore they make their own decisions, which result in bad outcomes and occasionally death. To address these issues, heart disease prediction is being performed utilizing machine learning methods like logistic regression.*

Cases of heart illness are developing at an alarming rate, and it is critical and important to predict any such ailments in advance. This is a challenging process that must be completed accurately and effectively. The study report primarily examines which patients are more likely to develop heart disease based on several medical characteristics. Using the patient's medical history, we developed a heart disease prediction system that predicts whether the patient is likely to be diagnosed with a heart disease or not. To predict and identify the patient with heart disease, we applied several machine learning methods such as logistic regression. To limit how the model may be utilized, a very helpful technique was adopted.

Some data mining and machine learning approaches used to anticipate cardiac illness (SVM) include Artificial Neural Network (ANN), Random Forest, and Support Vector Machine. Heart disease prediction and diagnosis has become a daunting undertaking for doctors and hospitals both in India and overseas. To reduce the staggering number of deaths from heart disorders, a rapid and effective detection method must be developed. In this discipline, data mining techniques and machine learning algorithms are particularly important. The researchers are stepping up their attempts to develop software that uses machine learning algorithms to help doctors forecast and diagnose heart illness. The major purpose of this study is to predict a patient's heart disease utilizing.

Keywords*:* Logistic Regression, Python Programming, Correlation matrix, Stream lit, Classification, Regression

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