HEART DISEASE PREDICTION SYSTEM

SYNOPSIS

ABSTRACT

The main objective of this research is to develop an Intelligent System using data mining modelling technique, namely, Naive Bayes. It retrieves hidden data from stored databases and compares the user values with a trained data set. It can answer complex queries for diagnosing heart disease and thus assist healthcare practitioners to make intelligent clinical decisions which traditional decision support systems cannot. By providing effective treatments, it also helps to reduce treatment costs.

Heart is the most essential or crucial portion of our body. Heart is used to maintain and conjugate blood in our body. There are a lot of cases in the world related to heart diseases. People are dying due to heart disease. Various symptoms are mentioned. The health care industries found a large amount of data. This paper gives the idea of predicting heart disease using machine learning algorithms. Here, we will use machine learning algorithms **knn and naïve bayes**. The algorithms are used on the basis of features and for predicting heart disease.

Keyword: Data mining Naive bayes, heart disease, prediction

K-Nearest Neighbors (KNN): classifies the test data using the training set directly. To classify any test data; it first calculates K value, which denotes the number of K-Nearest Neighbors. For all test data, it calculates the distance between all the training data and then sorts the distance. Then by using majority voting, class label will be allotted to the test data.

Implementation of Bayesian Classification

The Naïve Bayes Classifier technique is particularly suited when the dimensionality of the inputs is high. Despite its simplicity, Naive Bayes can often outperform more sophisticated classification methods.
Naïve Bayes ' model identifies the characteristics of patients with heart disease. It shows the probability of each input attribute for the predictable state.

Why preferred Naive bayes algorithm

Naive Bayes or Bayes' Rule is the basis for many machine-learning and data mining methods. The rule (algorithm) is used to create models with predictive capabilities.
It provides new ways of exploring and understanding data. Why preferred naive bayes implementation:
1) When the data is high.
2) When the attributes are independent of each other.
3) When we want more efficient output, as compared to other methods of output.

CONCLUSIONS

The Heart Disease Prediction, historically viewed as a necessary burden in medical offices, healthcare facilities and wellness centres, can be completely automated through an inefficient online software program. The benefits of implementing this technology touch everyone involved in the scheduling process, as administrators and users can conduct their tasks more efficiently and accurately. The system extracts hidden knowledge from a historical heart disease database. This system can be further enhanced and expanded for many more disease predictions.

Heart disease prediction can be increased and expanded. For instance, it can incorporate different medical attributes besides the listed. It may also incorporate different data processing techniques, e.g., time series, clustering and association Rules. Continuous information may also be used rather than simply categorical information.
Machine learning based solutions are widely used in the healthcare sector for analysing patients' data, predicting diseases and suggesting possible treatments. With a number of machine learning techniques available today, it is important to identify the most efficient and accurate technique especially in critical domains like healthcare. A comparative analysis of the various Machine learning algorithms used in the heart disease prediction is presented. KNN and Naive Bayes are discussed and compared to identify the best suited classifier for heart disease prediction. Many previous researches and studies related to heart disease prediction were identified and analysed. findings shows that in most cases machine learning based approaches have shown significant potential to transform the healthcare sector and improve the entire process of disease predictions and suggesting treatments.