Support vector machine, naive bayes, and decision tree are three examples of machine learning algorithms utilized in this framework.
The Naive Slogan A fundamental probabilistic classification based on strong independent variables is known as the Bayes classification. The Bayes theorem's application assumptions. The reality the presence or absence of a specific class feature is independent of the whether a certain feature is present or absent. It runs on the principle of circumstances. The Bayes theorem is used to calculate the likelihood that one event will occur when another one does. If A represents the most recent event and B the dependent event, then theorem One way to express Bayes is as follows: Example (B provided in Sample (B supplied in A) = Sample (A and B)/Sample (A and B) (A). The method calculates the chance of B given A alone by dividing the number of times A and B occur together by the number of times A happens. Only a small number of training data are useful for the Naive Bayes Classifier in order to estimate the parameters (variable media and variances). The assumption of independent variables necessitates the computation of each class's variances. It applies to both binary and multi-class situations.

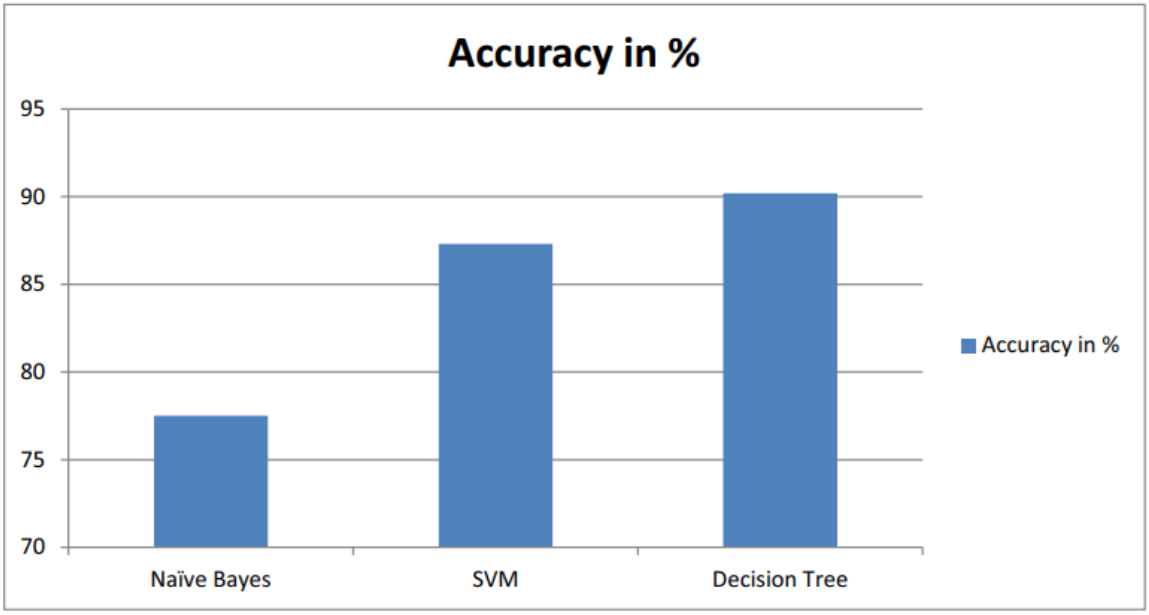


**Fig. 1.** Accuracy results of classification algorithms.

SVM is a technique frequently used in kernel learning to address huge prediction problems. In comparison to other classifiers, the SVM classifier has demonstrated superior generalization and a well-scaling of both linear and nonlinear data. In addition, when combined with different regularly employed strategies in statistical learning and optimisation theory, the SVM classificator provides very good pattern recognition performance. The fundamental objective of the SVM classification system is to find an overview with the lowest error margin that differentiates positive examples from negative data. It is simple to find the ideal hyper-plane dividing two classes of data when the data can be linearly separated. 'Kernel Functions' are applied by SVM on the opposite side for non-inlinear mapping to big dimension space for non-separable situations. In addition to the Linear Kernel Function (LKF), Polynomial Kernel Function (PKF), Sigmoid Kernel Function (SKF), and Exponential Radial Basis Kernel Function (ERBKF) (GRBKF), there are numerous other kernel functions.The best kernel function among the many kernel functions has been determined to be the Radial Basic Function (RBF). Massive datasets are categorised using decision trees on a regular basis.

Data is categorized by decision trees between the root node the leaf node, etc. The resulting tree can be used to create rules. Decision trees are simple to comprehend rules. There are several decision-tab algorithms, including ID3, C4.5 and CART . The algorithm C4.5 for data mining is a complex decision tree approach. The profit ratio is the basis for the concept. The C4.5 algorithm's key advantages are its

smooth operation with both categorical and continuous variables. Missing values can also be handled by it while running correctly and uses fewer memory. It includes excess and insignificance of branches' inconveniences. The ID3 algorithm's foundation is the information gain. Based on the Gini index as a measure, CART is a generator of a binary decision tree. Distinct characteristics of the ID3 algorithm do not handle missing values. The Cleveland data collection is used as input in the framework. This Cleveland data set has undergone preprocessing to remove noise and ensure consistency. The input data are clean and consistent after preparation. Machine learning algorithms like SVM, Nave Bayes, and Decision Tree C4.5 are now fed this data. The data that is submitted into these algorithms is classified. The training data for the prediction job is then derived from the classification data. This framework predicts whether newly introduced patient data is normal or abnormal based on the learning data available in the classes when new patient data is introduced. Additionally, names of potential disorders are provided. The accuracy and error rate of machine learning techniques are shown in Figs. 1 and 2.

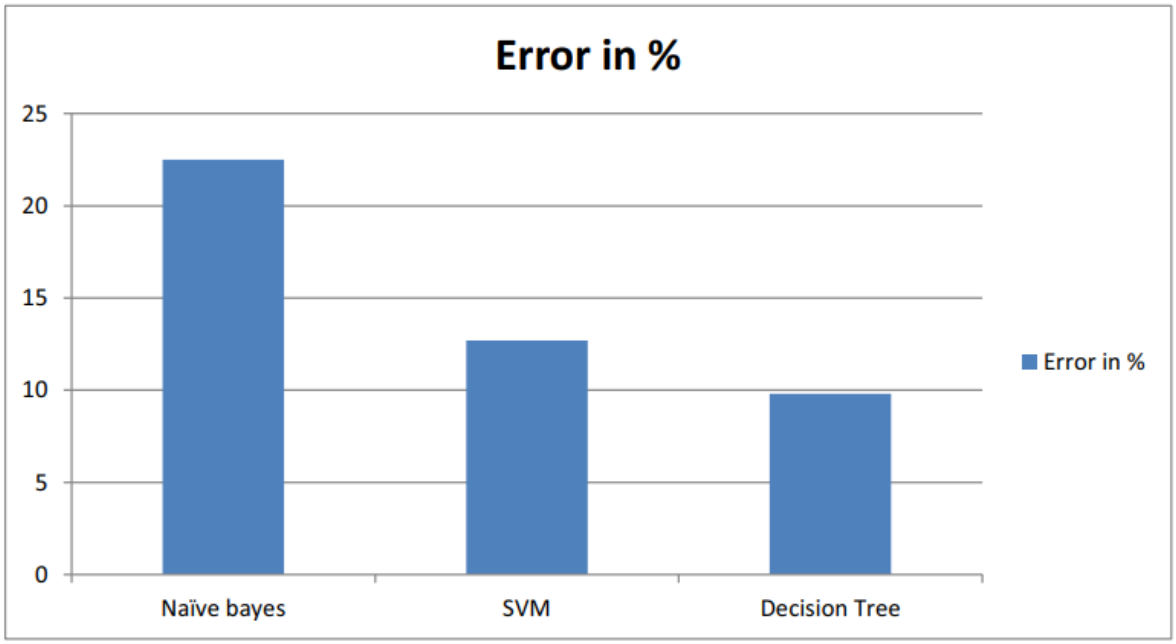


**Fig. 2.** Error rate results of classification algorithms.