

CREDIT CARD FRAUD DETECTION

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INTRODUCTION

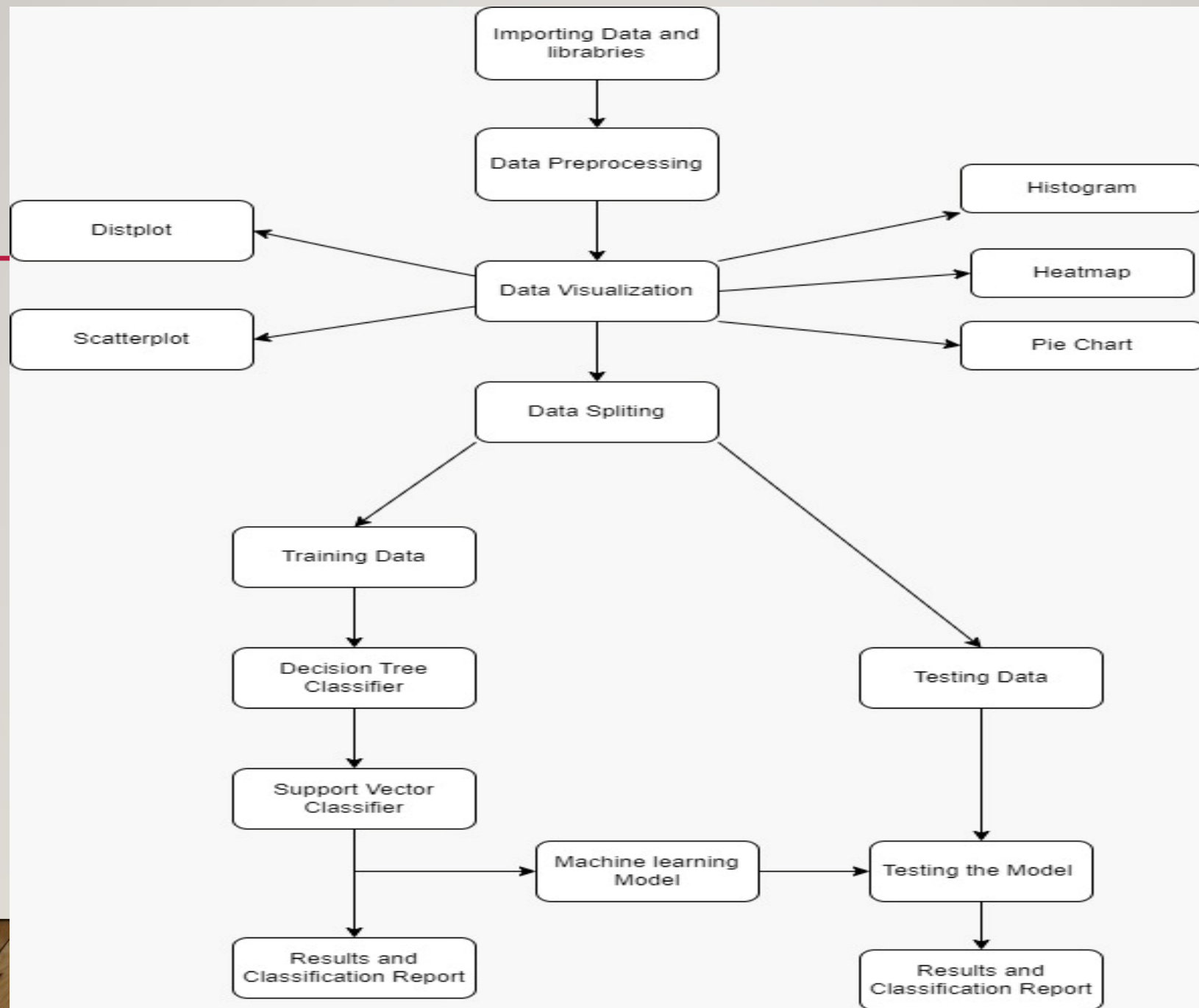
- In an increasingly digital and cashless world, the convenience of credit cards is undeniable. However, this widespread use of credit cards has also made them a prime target for fraudulent activities.
- The PwC global economic crime survey suggests that approximately 48% of organizations experienced economic crime. Therefore, there's positively a necessity to unravel the matter of credit card fraud detection.
- Credit card fraud detection is a vital component of the financial industry's efforts to safeguard transactions and protect consumers. This multifaceted field involves the application of data analytics, machine learning, artificial intelligence, and real-time monitoring to scrutinize card transactions for irregularities.

PROBLEM STATEMENT

- The Credit Card Fraud Detection Problem includes modeling past credit card transactions with the knowledge of the ones that turned out to be fraud.
- This model is then used to identify whether a new transaction is fraudulent or not. Our aim here is to detect the fraudulent transactions while minimizing the incorrect fraud classifications.

METHODOLOGY

- Algorithm used Decision Tree - Decision Tree is a Supervised learning technique that can be used for both classification and Regression problems, but mostly it is preferred for solving Classification problems.
- It is a tree-structured classifier, where internal nodes represent the features of a dataset, branches represent the decision rules and each leaf node represents the outcome.
- Support Vector Classifier - Support Vector Machine or SVM is one of the most popular Supervised Learning algorithms, which is used for Classification as well as Regression problems. However, primarily, it is used for Classification problems in Machine Learning. It creates the best line or decision boundary that segregate n-dimensional spaces into classes.



FUTURE SCOPE

The model has significant potential and can lead to various impactful applications and scopes.

- Credit card fraud detection can be used for developing real-time fraud detection systems is crucial to prevent fraudulent transactions as they occur.
- Anomaly detection algorithms can be combined with supervised learning models to improve fraud detection.
- As digital currencies and blockchain technology gain prominence, fraud detection will extend to these domains. Innovative approaches will be required to secure these new financial.
- With the increasing use of IoT devices and mobile payment systems, fraud detection will need to encompass these channels, and new models tailored to the unique characteristics of these transactions will be required.

CONCLUSION

- This project aims to build a powerful and accurate model that is able to predict whether new transaction is fraudulent or not and also provide valuable insights from data.
- Here we conclude that we have successfully designed, developed and implemented credit card fraud detection system using supervised techniques to identify the frauds and eliminate it for better performance.
- Hence, we have acquired the result of an accurate value of credit card fraud detection i.e., 0.99928372798516 (99.92%) using a decision tree algorithm with new enhancements.