**1. Introduction**

This project aimed to detect online fraud using Key Performance Indicators (KPIs). We aimed to leverage machine learning algorithms such as K-Nearest Neighbors (KNN), decision trees, and ECoD (Extended Chain of Responsibility and Domain-based) models to identify fraudulent online transactions.

**2. Methodology**

The project employed various machine learning algorithms, including KNN, decision trees, and ECoD. We used KPI metrics such as accuracy, recall, precision, and the confusion matrix to evaluate and compare the performance of these algorithms in fraud detection.

**3. Scope**

The project had a limited scope due to the dataset containing a significant number of true negatives. This imbalance affected the accuracy of the fraud detection models and necessitated further investigation and refinement.

**4. Timeline**

The project was conducted from March 14 to May 14, adhering to the following timeline:

March 14: Project initiation and dataset acquisition

March 21: Data preprocessing and exploration

April 1: Implementation of KNN algorithm for fraud detection

April 15: Application of decision trees and ECoD models

May 1: Evaluation and comparison of the results

May 14: Project conclusion and report preparation

**5. Resources**

The following resources were utilized during the project:

Dataset: Online Payment Fraud Detection

Guides on Fraud KPI Metrics: Six Fraud KPI Metrics You Need to Be Tracking

Fraud Prevention KPIs: KPIs of Fraud Prevention

**6. Results and Findings**

The analysis revealed that decision trees were not the most suitable algorithm for online fraud detection. They tended to provide more false positives and negatives compared to other models. On the other hand, the KNN algorithm exhibited better performance in identifying fraudulent transactions. Additionally, the study found that cash and credit payment types were more susceptible to fraud, while debit payments displayed better security measures.

**7. Conclusion**

In conclusion, this project highlighted the significance of using KPIs and machine learning algorithms for online fraud detection. It emphasized the effectiveness of the KNN algorithm and identified cash and credit payment types as more prone to fraud due to potential security vulnerabilities.

**8. Recommendations**

Based on the project findings, exploring and employing more advanced models and techniques for enhanced fraud detection outcomes is recommended. Consideration should be given to incorporating additional features, conducting feature engineering, and addressing the issue of imbalanced datasets.

**9. References**

Online Payment Fraud Detection Dataset

Six Fraud KPI Metrics You Need to Be Tracking

KPIs of Fraud Prevention