Xente Fraud Detection Challenge

Accurately classify the fraudulent transactions from Xente's e-commerce platform

Project Objective

The objective of this competition is to create a machine learning model to detect fraudulent transactions.

Fraud detection is an important application of machine learning in the financial services sector. This solution will help Xente provide improved and safer service to its customers.

About Xente

Xente is an e-payments, e-commerce, and financial services company in Uganda offering various products and services that can be paid for using Mobile Money (Airtel Money, MTN Mobile Money), Bank Card (Visa Card, Master Card), Xente wallet and on credit (Pay Later). Some of the products consumers can buy include airtime, data bundles, pay water and electricity bills, TV subscription services, buy event tickets, movie tickets, bus tickets, and more.

Evaluation

The error metric for this competition is the F1 score, which ranges from 0 (total failure) to 1 (perfect score). Hence, the closer your score is to 1, the better your model.

1. **F1 Score:** A performance score that combines both precision and recall. It is a harmonic mean of these two variables.

   Formula is given as: 2*Precision*Recall/(Precision + Recall)

2. **Precision:** This is an indicator of the number of items correctly identified as positive out of total items identified as positive. Formula is given as: TP/(TP+FP)

3. **Recall / Sensitivity / True Positive Rate (TPR):** This is an indicator of the number of items correctly identified as positive out of total actual positives. Formula is given as: TP/(TP+FN)

Where:

- TP = True Positive
- FP = False Positive
- TN = True Negative
- FN = False Negative