Model Development Phase

Date	18 June 2025
Team ID	SWTID1749710444
Project Title	Online Payment Fraud Detection using ML
Maximum Marks	5 Marks

Feature Selection Report

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

Feature	Description	Selected (Yes/No)	Reasoning
step	Time step (hour of transaction)	Yes	Provides temporal context, which helps the model identify unusual transaction times that could indicate fraudulent activity
type	The type of online transaction (e.g., PAYMENT, TRANSFER, CASH_OUT)	Yes	Different transaction types have different risk profiles; fraud is concentrated in specific types like TRANSFER and CASH_OUT
amount	The total value of the transaction	Yes	A fundamental predictor, as fraudulent transactions often involve atypical amounts that anomaly detection can flag

nameOrig	The ID of the customer who initiated the transaction.	No	Unique identifier with high cardinality; no generalizable predictive value and risks overfitting.
oldbalanceOrig	The balance of the origin account before the transaction.	Yes	Captures sender's account state; useful for detecting anomalies like account depletion.
newbalanceOrig	The balance of the origin account after the transaction.	Yes	Used with old balance and amount to detect suspicious balance changes.
nameDest	The ID of the customer who is the recipient of the transaction.	No	Similar to nameOrig; unique identifier without predictive patterns, excluded to avoid overfitting.
oldbalanceDest	The balance of the destination account before the transaction.	Yes	Helps identify suspicious recipient account activity, such as sudden large deposits.
newbalanceDest	The balance of the destination account after the transaction.	Yes	Complements oldbalanceDest to track recipient account changes, important for fraud detection.
isFraud	Target variable indicating if the transaction is fraudulent (1) or not (0).	No	This is the label to predict; cannot be used as input feature to avoid data leakage.

isFlaggedFraud	Rule-based flag indicating if a transaction was flagged suspicious by a simple rule.	No	Rarely triggered and ineffective; provides no meaningful predictive value in this dataset.