

**Project Development Phase
Model Performance Test**

Date	15 February 2026
Team ID	LTVIP2026TMIDS54415
Project Name	Online Payment Fraud Detection using Machine Learning
Maximum Marks	

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values
1	Model Summary	Multiple models trained: Random Forest, Decision Tree, Extra Trees, SVC Dataset Size: 16,426 balanced samples Features Used: step, amount, balances, transaction type (one- hot encoded)
2	Accuracy	Random Forest: Training Accuracy – 100% Test Accuracy – 99.27% Decision Tree: Training Accuracy – 100% Test Accuracy – 99.48% Extra Trees: Training Accuracy – 100% Test Accuracy – 98.81% SVC: Training Accuracy – 83.58% Test Accuracy – 83.26%
3	Confusion Matrix (Best Performing Model)	True Fraud Correctly Detected – 1610 False Fraud Alerts – 6–18 Precision \approx 0.99 Recall \approx 0.99 F1- Score \approx 0.99
4	Fine Tuning Result	Decision Tree achieved highest Test Accuracy – 99.48% Random Forest also performed strongly with 99.27% accuracy