Model Development Phase Template

Date	15 March 2024
Team ID	SWUID20250184320
Project Title	Online Payment fraud Detection
Maximum Marks	6 Marks

Model Selection Report

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model Selection Report:

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Model 1	Logistic Regression — a simple linear model suitable for binary classification	solver='lbfgs', max_iter=1000, random_state=42	Accuracy Score -1.00, F-1 Score -0.79
Model 2	Random Forest — ensemble of decision trees for improved accuracy	n_estimators=100, random_state=42	Accuracy Score -0.99, F-1 Score – 0.75

Model 3	Support Vector Machine — finds the optimal hyperplane for classification	kernel='rbf', C=1.0, gamma='scale'	Accuracy Score -1.00, F-1 Score – 0.745
Model 4	K-Nearest Neighbors — instance-based learning using distance metric	n_neighbors=5, metric='minkowski', p=2	Accuracy Score -0.99, F-1 Score – 0.85
Model 5 (Best Model)	XG Boost — gradient boosting optimized for performance and speed (**Best Model**)	n_estimators=100, learning_rate=0.1, max_depth=5, subsample=0.8, colsample_bytree=0.8, random_state=42	Accuracy Score -1.00, F-1 Score – 0.88