

## Model Development Phase Template

Date	18 June 2024
Team ID	739990
Project Title	Auto Insurance Fraud Detection
Maximum Marks	6 Marks

### Model Selection Report

This report outlines the selection of models suitable for managing and optimizing the temperature in a smart home. The goal is to enhance energy efficiency, comfort, and overall system performance using predictive and adaptive modeling techniques.

Model	Description	Hyperparameters	PerformanceMetric (e.g., Accuracy, F1 Score)
Decision Tree	model that uses a hierarchical structure of decisions based on key features (like age, claim amount) to classify whether a claim is likely fraudulent or not	-	Accuracy score =100%
Random Forest	Ensemble learning method that can be effectively used to model and predict claims	-	Accuracy score = 99%
KNN	Auto insurance fraud detection involves careful consideration of feature selection, data preprocessing, parameter tuning (especially k), and rigorous evaluation to ensure the model effectively identifies fraudulent claims while maintaining acceptable performance metrics.	-	Accuracy score=64%

Logistic Regression	Logistic Regression provides a straightforward, interpretable, and effective approach for auto insurance fraud detection, especially when combined with robust preprocessing and evaluation techniques to handle the complexities of real-world data	-	Accuracy score=69%
Navie Bayes	Naive Bayes is a straightforward and efficient method for auto insurance fraud detection, especially when the independence assumption approximately holds and with proper preprocessing to handle feature distributions and encoding.		Accuracy score=69%
Support Vector Machine	Support Vector Machines are a powerful tool for detecting auto insurance fraud. By carefully selecting features, normalizing data, and tuning hyperparameters, SVM can effectively classify fraudulent claims, even in the presence of class imbalance.		Accuracy score=89%