Model Development Phase Template

Date	15 July 2024
Team ID	739874
Project Title	Telecom Customer Churn Prediction
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)
svm	Support Vector Machines (SVM) are supervised learning models used for classification and regression analysis, finding an optimal hyperplane that best separates data points into different classes.	-	Accuracy Score=79%

Logistic Regression	Logistic regression is a statistical model used for binary classification, predicting the probability of a binary outcome based on input variables. It uses a logistic function to model the relationship between the dependent variable and independent variables.	-	Accuracy Score=80%

Decision Tree	decision tree is a machine learning algorithm that models decisions and their outcomes in a tree structure. Each node represents a decision based on a feature, leading to final classifications or values. It's intuitive but can overfit easily.	-	Accuracy Score=78%
Random Forest	Random forest is an ensemble learning method that builds multiple decision trees and merges their outputs for better accuracy and reduced overfitting. It works by training each tree on a random subset of the data and making predictions through averaging (regression) or majority voting (classification).	-	Accuracy Score=86%
knn	K-Nearest Neighbors (KNN) is a simple, instance-based learning algorithm used for classification and regression. It predicts the label of a data point based on the majority label or average value of its knearest neighbors in the feature space.	-	Accuracy Score=83%

| Naïve Bayes | Naive Bayes is a probabilistic classifier that applies Bayes' theorem with strong independence assumptions between features. | - | Accuracy Score=82% |