Model Development Phase Template

Date	10th July 2024
Team ID	739958
Project Title	Food Demand Forecasting For Food Delivery Company
Maximum Marks	6 Marks

Model Selection Report

The goal of this report is to recommend suitable models for forecasting food demand in a food delivery company. Accurate forecasting is crucial for optimizing inventory management, resource allocation, and customer satisfaction. This report outlines the methodology used to select appropriate models based on data characteristics and business requirements

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Random Forest	Ensemble learning method using multiple decision trees	- `n_estimators`: Number of trees in the forest - `max_depth`: Maximum depth of each tree - `min_samples_split`: Minimum number of samples required to split an internal node - `min_samples_leaf`: Minimum number of samples required to be at a leaf node	**MAE**: 10.5 - **RMSE**: 15.2

Decision Tree	Non-linear model that predicts the target variable by learning simple decision rules inferred from the data	- `max_depth`: Maximum depth of the tree - `min_samples_split`: Minimum number of samples required to split an internal node - `min_samples_leaf`: Minimum number of samples required to be at a leaf node	**MAE**: 12.1 - **RMSE**: 17.3
Gradient Boosting Regressor	Ensemble learning method that builds a model in a stage-wise fashion and combines weak learners (typically decision trees) to improve predictive performance	- `n_estimators`: Number of boosting stages to be performed - `learning_rate`: Rate at which model learns by minimizing	**MAE**: 9.8 - **RMSE**: 14.5