Model Development Phase Template

Date	18 June 2024
Team ID	739991
Project Title	Smart home Temperature
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	Performance Metric (e.g., Accuracy, F1 Score)
Linear Regression	In the context of smart home temperature control, linear regression can be utilized to predict and manage the indoor temperature based on various factors.	-	Accuracy score = 44%
Random Forest	Ensemble learning method that can be effectively used to model and predict the indoor temperature in a smart home environment.	-	Accuracy score = 87%
LGBM Regressor	High efficiency and performance, LGBM Regressor leverages gradient boosting techniques to deliver accurate and fast predictions.	-	Accuracy score = 85%

XGB Regressor	XGB Regressor can be employed to predict and manage indoor temperature based on various influencing factors, providing precise and reliable control.	-	Accuracy score = 85%