Model Development Phase Template

Date	5th July 2024
Team ID	739794
Project Title	Cost Prediction of Acquiring a Customer.
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	Hyper parameters	Performance Metric (e.g., Accuracy, F1 Score)
Random Forest	Random Forest is an ensemble learning method that constructs multiple decision trees and combines their outputs for improved accuracy and reduced overfitting in classification and regression tasks.	-	```---****---random Forest Regressor model---****---
Model performance for test set
R2 Score = 0.9999992223770472
RMSE = 0.026495659012272195

Model performance for Test set
R2_Score = 0.9999992223770472
RMSE = 0.026495659012272195

Model performance for Train set
R2_Score = 0.9999999370963878
RMSE = 0.007523146092761905```
Decision Tree	Decision Tree is a machine learning model that splits data into branches based on feature values, making decisions at each node until a final classification or regression outcome is reached.	-	```---****---Decision Tree Regressor model---****---
Model performance for test set
R2 Score = 0.99999475396002
RMSE = 0.021762359911033424

Model performance for Test set
R2_Score = 1.0
RMSE = 2.7555815953433333e-13
mean_absolute_error: 0.0002487726848418434
mean_squared_error: 0.0004736003089735465```

| Gradient Boosting Regressor | Gradient Boosting is an ensemble learning technique that builds models sequentially, with each new model correcting errors of the previous ones, to improve accuracy in classification and regression tasks. | - | ```
---****---Gradient Boosting Regressor model---****---
Model performance for test set
R2 Score =  0.9998527192407322
RMSE =  0.36463906787159356
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Model performance for Test set
R2_Score =  0.9999999370963878
RMSE =  0.007523146092761905
``` |