Model Development Phase Template

Date	17 March 2024
Team ID	SWTID1749709340
Project Title	Predicting Co2 Emission by countries Using Machine Learning
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	Model	Performance Matrix(R^2 Score)	Performance Matrix(RMSE)	Performance Matrix(F1 Score (Macro))
Linear Regression	Fits a straight line between features and target	Default	Linear Regression	0.0301	1328286701 8179.9961	0.7213
KNN	Predicts based on nearest neighbors	n_neighbors=5 (default)	KNN	0.2783	1145811906 2280.3848	0.7685

Decision Tree	Tree-based split rules to minimize variance	random_state=42	Decision Tree	0.8586	5071746744942.4941	0.7952
Random Forest	Ensemble of decision trees (averaged)	n_estimators=100, random_state=42	Random Forest	0.9985	7863224335477.2188	0.8610
XGBoost	Boosted decision trees, gradient optimization	n_estimators=100, random_state=42	XGBoost	0.8598	5050634315628.5957	0.8782
AdaBoost	Boosted shallow trees with adaptive weighting	n_estimators=100, random_state=42	AdaBoost	-513.7526	3059986918 02595.8750	0.8079
Gradient Boost	Sequential tree boosting	n_estimators=100, random_state=42	Gradient Boost	0.6902	7506340843913.5820	0.8357