Model Development Phase Template

Date	17 July 2024
Team ID	-
Project Title	Human Resource Management: Predicting Employee Promotions 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	Performance Metric (e.g., Accuracy, F1 Score)
Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into promotion patterns	random_state=42	Accuracy score : 93%
Random Forest	An ensemble learning method for classification that operates by constructing multiple decision trees during training and outputting the mode of the classes as the prediction.	random_state=42	Accuracy score: 95%

K-Nearest Neighbors (KNN)	Classifies based on nearest neighbors; adapts well to data patterns, effective for local variations in promotion criteria	n_neighbors=5	Accuracy score: 89%
XGboost	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate promotion predictions	random_state=42	Accuracy score: 86%