Model Development Phase Template

Date	25 June 2025
Team ID	SWTID1750155746
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	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Random Forest	Ensemble of decision trees; robust, handles complex relationships, reduces overfitting, and provides feature importance for employee promotion prediction.	-	Accuracy score = 95%
Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into employee promotion patterns.	-	Accuracy score = 93%
KNN	Classifies based on nearest neighbors; adapts well to data patterns, effective for local variations in employee	-	Accuracy score = 89%

	promotion criteria.		
XG Boost	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate employee promotion predictions.	-	Accuracy score = 87%