Model Development Phase Template

Date	24 June 2025
Team ID	SWUID20250176341
Project Title	Machine Learning Approach for Employee Performance Prediction
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., MAE)
Random Forest	Ensemble of decision trees; handles both numerical and categorical features, reduces overfitting, and performs well with minimal tuning.	Default (n_estimators=100)	MAE ≈ 0.08
Linear Regression	Simple linear model; easy to interpret, serves as a baseline model but may underperform with non-linear data.	-	MAE ≈ 0.12
XGBoost	Gradient-boosted trees; optimized for performance, handles complex patterns, and provides fine-tuned predictions.	Default (basic tuning)	MAE ≈ 0.09

Decision Tree	Single tree structure; interpretable and useful for quick insights, but prone to overfitting.	Default	MAE ≈ 0.10