

Model Development Phase

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| Date | 25 June 2025 |
| Team ID | SWUID20250176209 |
| 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 R^2 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

| Model | Description | Hyperparameters | Performance Metric (R^2) |
|-------------------|--|-----------------|------------------------------|
| Linear Regression | Simple linear model; easy to interpret, serves as a baseline model but may underperform with non-linear data. | Default | $R^2 = 30\%$ |
| Random Forest | Ensemble of decision trees; handles both numerical and categorical features, reduces overfitting, and performs well with minimal tuning. | Default | $R^2 = 60\%$ |
| XGBoost | Gradient-boosted trees; optimized for performance, handles complex patterns, and provides fine-tuned predictions. | Default | $R^2 = 62\%$ |