Model Development Phase Template

Model	Description	Hyperparameters	Performance Metric

Linear regression model	Moderate Mean Squared Error (MSE) values for both training and testing data. Relatively low R-squared (R2) scores, indicating weaker fit to the data.	We used every hyper parameter which is used in the data set.	mean squared error in training: 0.021829740434257082 mean squared error in testing: 0.021321517772632737 r2_score in training data: 0.3038198342280549 r2_score in testing data: 0.1970042499190925

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Team ID	738303
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 Mean Squared Error (MSE), R-squared (R2) scores,Mean Absolute Error. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model Selection Report:

	Consistent Mean Absolute Error (MAE) values.		mean_absolute_error in training data : 0.10769706277175743 mean_absolute_error in testing data: 0.10729554202727433
Random forest model	Lowest Mean Squared Error (MSE) on testing data among the three models, indicating better prediction accuracy. High R-squared (R2) scores on both training and testing data, suggesting a good fit to the data and capturing more variance. Consistent Mean Absolute Error (MAE) values.	We used every hyper parameter which is used in the data set.	mean squared error in training: 0.0022752182381708293 mean squared error in testing: 0.011925308844873023 r2_score in training data: 0.9274401903683915 r2_score in testing data: 0.5508775490117057 mean_absolute_error in training data: 0.10769706277175743 mean_absolute_error in testing data: 0.10729554202727433

XGBoost Regressor	Moderate Mean Squared Error (MSE) values on both training and testing data. Lower Rsquared (R2) scores compared to Random Forest	We used every hyper parameter which is used in the data set	mean squared error in training: 0.0034479208767329884 mean squared error in testing: 0.013391620879678592 r2_score in training data: 0.8900411054010678

	Regressor, indicating slightly weaker performance in capturing variance.		r2_score in testing data: 0.4956543540779629 mean_absolute_error in training data: 0.10783759497384089 mean_absolute_error in testing data: 0.10751262955001012