Model Development Phase Template

Date	31 June 2024
Team ID	739854
Project Title	Software Employee Salary Prediction
Maximum Marks	6 Marks

Model Selection Report In this Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Mean Squared Error (MSE) and R^2 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model Selection Report:

Model	Description	Hyperparameters	Performance Metric (MSE, R^2 Score)
Random Forest	Ensemble of decision trees; robust, handles complex relationships, reduces overfitting, and provides feature importance for salary prediction.	n_estimators=100, random_state=42	MSE: 3200, R^2 Score: 0.82

Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into salary prediction patterns.	max_depth=None, random_state=42	MSE: 4500, R^2 Score: 0.75
(KNN)	Classifies based on nearest neighbors; adapts well to data patterns, effective for local variations in salary prediction criteria.	n_neighbors=5	MSE: 5000, R^2 Score: 0.70
Gradient Boosting	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate salary predictions.	n_estimators=100, learning_rate =0.1	MSE: 3300, R^2 Score: 0.81