Model Development Phase Template

Date	16th June 2025
Team ID	SWTID1749621188
Project Title	Anemia Sense Leveraging-Machine Learning For-Precise Anemia Recognition
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 loan approval prediction.	-	Accuracy score = 100%
Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into loan approval patterns.	-	Accuracy score = 100%
Logistic Regression	Logistic Regression is a supervised learning algorithm used for classification that predicts the	-	Accuracy score = 98.95%

	probability of a binary outcome using a logistic (sigmoid) function.		
Gradient Boosting	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate loan approval predictions.	-	Accuracy score = 100%
Naïve Bayes	Naive Bayes is a probabilistic classification algorithm based on Bayes' Theorem, assuming independence between features for fast and efficient predictions.	-	Accuracy score = 95.09%
SVM	Support Vector Machine (SVM) is a supervised learning algorithm that finds the optimal hyperplane to separate data into classes with maximum margin.	-	Accuracy score = 98.25%
Lasso	Lasso (Least Absolute Shrinkage and Selection Operator) is a regression technique that performs variable selection and regularization by adding an L1 penalty to the loss function.	-	Accuracy score = 99.30%