Model Development Phase Template

Date	30 July 2025
Team ID/ Skill Wallet ID	**SWUID20250195143**
Project Title	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
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%, F1 Score = 100%
Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into loan approval patterns.	-	Accuracy score = 100%, F1 Score = 100%
Logistic Regression	Linear model for classification; interpretable, efficient on small to medium datasets, works well when relationship between features and	-	Accuracy score = 99%, F1 score = 99%

	target is approximately linear.		
Gradient Boosting	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate loan approval predictions.	-	Accuracy score = 100%, F1 Score = 100%
Support Vector Machine	Finds optimal separating hyperplane; effective in high-dimensional spaces, works well with clear margin separation.	-	Accuracy score = 93%, F1 Score = 94%
Gaussian Naive Bayes	Probabilistic classifier based on Bayes' theorem with Gaussian assumptions; efficient and works well for normally distributed features.	-	Accuracy score = 97%, F1 Score = 98%