Model Development Phase Template

Date	9 August 2025
Skillwallet ID	SWUID20250188620
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 = 99%
Logistic Regression	A statistical model that predicts the probability of anemia presence using a logistic function; interpretable and efficient for binary classification.	-	Accuracy score = 98%
SVM	Support Vector Machine; effective in high-dimensional spaces, constructs optimal hyperplane for anemia classification.	-	Accuracy score = 92%

Naive Bayes	Probabilistic classifier based on Bayes' theorem; works well for small datasets and assumes feature independence.	-	Accuracy score = 96%
Gradient Boosting	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate loan approval predictions.	n_estimators=50, max_depth=3, learning_rate=0.1	Accuracy score = 100%