Model Development Phase

Date	1 August 2025
Skillwallet ID	SWUID20250194750
Project Title	Anemia Sense: Leveraging Machine Learning For Precise Anemia
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 in predicting anemia.

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy,F1 Score)
Linear Regression	Statistical method adapted for classification; models linear relationship between features and anemia outcome.	-	Accuracy score = 99.19%
Decision Tree Classifier	Tree-based model; easy to interpret, captures non-linear relationships, useful for early insights.	-	Accuracy score = 100.00%
Random Forest Classifier	Ensemble of decision trees; reduces overfitting, improves generalization, and ranks features effectively.	-	Accuracy score = 100.00%
Gaussian Naive Bayes	Probabilistic model; assumes feature independence, efficient with small datasets and performs well in practice.	-	Accuracy score = 97.98%

Support Vector Classifier	Finds optimal hyperplane for classification; effective in high-dimensional spaces and robust to overfitting.	-	Accuracy score = 93.95%
Gradient Boost Classifier	Sequential ensemble method; minimizes prediction error, strong performance on complex datasets.	-	Accuracy score = 100.00%