



Model Development Phase Template

Date	19 May 2025
Team ID	SWTID1750233055
Project Title	<div>📄(Ctrl) ▾</div> Mental Health Prediction
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 = 75%

Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into loan approval patterns.	-	Accuracy score = 68%
KNN	Classifies based on nearest neighbors; adapts well to data patterns, effective	-	Accuracy score = 67%

	for local variations in loan approval criteria.		
Gradient Boosting	Gradient boosting with trees; optimizes predictive performance, handles complex relationships, and is suitable for accurate loan approval predictions.	-	Accuracy score = 71%
Ada Boost	AdaBoost (Adaptive Boosting) is an ensemble learning algorithm that combines multiple weak learners (usually decision trees) in sequence, where each new model focuses more on the errors made by the previous ones to improve overall accuracy.	-	Accuracy score=75%