Model Development Phase Template

Date	15 July 2024
Team ID	866654
Project Title	Thyroid disease classification using machine learning
Maximum Marks	6 Marks

Model Selection Report

This report summarizes the model selection process for thyroid disease classification using machine learning. We evaluated multiple algorithms to determine the best performing model for classifying thyroid disease into three categories: hypothyroidism, hyperthyroidism, and euthyroidism.

Model	Description	Hyperparameters	Performance metric(Accuracy)

Random Forest	Ensemble of decision trees; robust ,handles complex relationships, reduces overfitting, and provides feature importance for thyroid disease classification	-	Accuracy = 89%
Decision Tree	Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into thyroid classification.	-	Accuracy = 89%
KNN	Classifies based on nearest neighbors; adapts well to data patterns, effective for thyroid classification.	-	Accuracy = 88%

Logistic Regression	Used to model the relationship between a binary dependent variable and one or more independent variable	-	Accuracy = 89%