Model Development Phase Template

Date	15 March 2024
Team ID	LTVIP2024TMID24955
Project Title	SMS Spam Detection - AIML
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 Selection Report:

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Multinomial Naïve Bayes	A probabilistic classifier based on applying Bayes' theorem, commonly used for text classification like spam detection.	- Alpha (smoothing): 1.0 - Fit prior: True	Accuracy: 96% - F1 Score: 0.97
SVC (Sigmoid Kernel)	A Support Vector Classifier using the sigmoid kernel for non-linear decision boundaries.	- C: 1.0 - Kernel: Sigmoid - Gamma: Scale	- Accuracy: 96% - F1 Score: 0.95

SVC (RBF Kernel)	A Support Vector Classifier with a Radial Basis Function (RBF) kernel, often effective in high-dimensional spaces.	- C: 1.0 - Kernel: RBF - Gamma: Auto	- Accuracy: 94% - F1 Score: 0.89
Decision Tree Classifier	A tree-based model that splits the data based on feature values to create decision rules for classification.	- Criterion: Gini - Max depth: None - Min samples split: 2	- Accuracy: 94% - F1 Score: 0.87