# Model Development Phase Template

| Date | 15 March 2024 |
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| Team ID | 739687 |
| Project Title | SMS SPAM DETECTION |
| 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 effective

| Model | Description | Hyperparameters | Performance Metric (e.g., Accuracy, F1 Score) |
|---|---|---|---|
| Multinomial Naïve Baye's | The multinomial Naive Bayes classifier is suitable for classification with discrete features (e.g., word counts for text classification). The multinomial distribution normally requires integer feature counts. Naive Bayes are mostly used in natural language processing (NLP) problems. Naive Bayes predicts the tag of a text. | - | Accuracy score = 80-90% |

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|---|---|---|---|
| Random Forest | Ensemble of decision trees; robust, handles complex relationships, reduces overfitting, and provides feature importance for loan approval prediction. | - | Accuracy score = 98 |
| Decision Tree | Simple tree structure; interpretable, captures non-linear relationships, suitable for initial insights into loan approval patterns. | - | Accuracy score = 97 |
| SVM | Classifies based on Support vector mechaine; adapts well to data patterns, effective | - | Accuracy score = 97 |