**Model Development Phase Template**

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| Date | 15 March 2024 |
| Team ID | LTVIP2024TMID24785 |
| Project Title | Customer segmentation using Machine learning |
| 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:**

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| **Model** | **Description** | **Hyperparameters** | **Performance Metric (e.g., Accuracy, F1 Score)** |
| Model 1 | A clustering algorithm used to segment customers into groups based on feature similarity. | n\_clusters=5, init='k-means++', max\_iter=300 | Silhouette Score: 0.62 |
| Model 2 | A supervised learning model that segments customers by creating decision rules based on customer attributes. | max\_depth=10, min\_samples\_split=2 | Accuracy: 85%, F1 Score: 0.84 |
| Model 3 | An ensemble model that improves accuracy by combining multiple decision trees | n\_estimators=100, max\_depth=15 | Accuracy: 88%, F1 Score: 0.87 |
| Model 4 | A classification model that predicts binary outcomes, often used for targeted marketing segmentation. | penalty='l2', C=1.0 | Accuracy: 82%, F1 Score: 0.81 |