**Model Development Phase Template**

|  |  |
| --- | --- |
| Date | 24 April 2024 |
| Team ID | team-739906 |
| Project Title | Identifying Airline Passenger Satisfaction 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:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Model** | **Description** | **Hyperparameters** | **Performance Metric (e.g., Accuracy, F1 Score)** |
| Decision tree | Decision tree has a hierarchical tree structure consisting of a root node, branches, internal nodes, and leaf nodes. Decision trees are used for classification and regression tasks, providing easy-to-understand models. | Esitimators,  Max\_depth,  scoring | Accuracy score=91.4% |
| Logistic regression | Logistic regression is a statistical method used for binary classification tasks. It models the probability that a given input belongs to a particular class by using the logistic function, which maps any real-valued number into a value between 0 and 1. | **-** | Accuracy score=83.9% |
| Random forest | A random forest is a meta estimator that fits a number of decision tree classifiers on various sub-samples of the dataset and uses averaging to improve the predictive accuracy and control over-fitting | **Maximum Depth (max\_depth)**  n\_estimators  Criterion | Accuracy score=**94.5%** |
| K Nearest Neighbor | K-Nearest Neighbor (KNN) is a simple, non-parametric, and lazy learning algorithm used for classification and regression. It operates on the principle of feature similarity. | **-** | Accuracy score=89.3% |
|  | |