**Model Development Phase Template**

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| Date | 16 july 2024 |
| Team ID | 740771 |
| Project Title | Car Performance Prediction |
| Maximum Marks | 6 Marks |

**Model Selection Report**

The model selection report evaluates different machine learning algorithms for car performance prediction, comparing their accuracy, efficiency, and interpretability. The chosen model is selected based on performance metrics, computational requirements, and ability to generalize to unseen data.

**Model Selection Report:**

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| **Model** | **Description** | **Hyperparameters** | **Performance Metric**  **(e.g., R2 score)** |
| Random forest classifier | Random forest is an ensemble learning method that constructs multiple decision trees and merges them to get a more accurate and stable prediction | Maximum depth | R2 Score:0.79 |
| Decision tree classifier | It splits the data into subsets based on the value of input features, leading to a tree like model of decisions | max depth, min samples split | R2 Score:0.88 |
| Extra tree classifier | Is an ensemble learning method that builds multiple decorrelated decision trees and merges their predictions | **max features, min samples split** | **R2 Score:0.89** |