**Model Development Phase Template**

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| Date | 9 July 2024 |
| Team ID | SWTID1720019244 |
| Project Title | Traffictelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 5 Marks |

**Feature Selection Report Template**

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

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| **Feature** | **Description** | **Selected (Yes/No)** | **Reasoning** |
| Holiday | Indicator variable for holidays | Yes | Holidays can significantly impact traffic patterns due to increased travel or altered commutes. |
| Temperature | Temperature | Yes | Temperature can influence traffic volume, with colder or hotter weather potentially leading to changes in driving behavior. |
| Rain | Amount of rainfall | Yes | Rainfall can affect traffic flow due to slower speeds and increased congestion. |
| Snow | Amount of snowfall | Yes | Snowfall can significantly disrupt traffic flow and requires inclusion in the model. |

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| Weather | Categorical variable for overall weather conditions | Yes | Weather conditions can influence visibility and driving behavior, impacting traffic flow. |
| Date | Day of the week and month | Yes | Date can capture weekly and seasonal traffic variations. |
| Time | Time of day | Yes | Time plays a crucial role in traffic patterns, with rush hour periods exhibiting higher volume. |
| **Traffic\_volume** | Traffic volume on a specific road segment | Yes | This is the target variable for the machine learning regression model. The model will be trained to predict traffic volume based on the other features. |