**Project Development Phase**

**Model Performance Test**

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| Date | 6 JUNE 2025 |
| Team ID | LTVIP2025TMID33800 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 10 Marks |

**Model Performance Testing:**

Project team shall fill the following information in model performance testing template.

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| **S.No.** | **Parameter** | **Values** | **Screenshot** |
|  | Metrics | **Regression Model:** MAE - , MSE -798.224688107 , RMSE - -5.501465341359022  1.0  , R2 score -5.365880084970492  0.6972692069667399  0.8032224259884193  -11.986624908714628  0.8092036247253418  **Classification Model:** Confusion Matrix - , Accuray Score- & Classification Report - |  |
|  | Tune the Model | Hyperparameter Tuning - Applied GridSearchCV on the Random Forest model to tune the number of estimators (n\_estimators) and maximum tree depth (max\_depth). Best parameters identified: n\_estimators = 100, max\_depth = 10   *   Validation Method - Train/Test Split (80% training and 20% testing) Cross-Validation Score also calculated using cross\_val\_score() for additional stability. |  |