Introduction

Project Purpose

Date	26 June 2026
Team Id	LTVIP2025TMID35978
Project Name	Traffictelligence

Purpose:

The purpose of the Traffic Volume Estimation System is to address the critical need for accurate, real-time traffic predictions to improve urban mobility and efficiency. This project aims to:

- Provide urban commuters, traffic managers, and delivery drivers with a reliable tool to predict traffic volume based on weather conditions, time, and holidays.
- Reduce travel delays, enhance traffic management safety, and optimize delivery schedules by leveraging machine learning technology.
- Offer an accessible, user-friendly web-based solution that requires no registration, making it widely available to the public.
- Serve as a foundation for future enhancements, such as real-time data integration and scalability to larger user bases.

Objectives:

- Develop a machine learning model (RandomForestRegressor) to predict traffic volume with high accuracy (target R^2 score > 0.85).
- Create a Flask-based web application to collect user inputs and display predictions.
- Ensure the system processes predictions within 2 seconds for optimal user experience.
- Validate the solution through testing with historical traffic data and user feedback.

Significance:

This project addresses a pressing societal challenge by improving transportation efficiency, reducing congestion-related stress, and supporting economic activities like deliveries. By providing a free tool, it promotes equitable access to traffic insights, benefiting diverse user groups in urban environments.