**Project Design Phase**

**Proposed Solution Template**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID44432 |
| Project Name | Traffictelligence: Advanced traffic volume estimation with machine learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | To develop a machine learning-powered traffic estimation system that provides accurate, real-time, and predictive traffic volume data. The system should help urban planners, traffic authorities, and logistics providers make data-driven decisions to improve mobility, reduce congestion, and plan infrastructure. |
|  | Idea / Solution description | The proposed solution is to build a smart web-based or API-enabled platform that collects traffic-related data from various sources (e.g., CCTV feeds, sensors, historical data, weather reports) and applies ML algorithms to estimate and forecast traffic volumes in real-time across urban areas. |
|  | Novelty / Uniqueness | The uniqueness lies in integrating multi-source data (visual, environmental, and temporal) into an ML pipeline for real-time and predictive analysis. Unlike traditional systems, Traffictelligence emphasizes dynamic learning models, enabling adaptability to changing traffic patterns over time. |
|  | Social Impact / Customer Satisfaction | The solution can significantly reduce traffic congestion, emissions, and commuting stress by enabling smarter traffic control and planning. For citizens, this results in safer, faster commutes. For authorities, it provides reliable data to support urban development and emergency planning. |
|  | Business Model (Revenue Model) | The proposed revenue model includes a **freemium API** for basic traffic insights, while offering **paid tiers** for real-time analytics, historical data access, and predictive forecasting. Government agencies, urban planners, and transport companies can be targeted for enterprise subscriptions. |
|  | Scalability of the Solution | The system is designed to be cloud-native and modular, allowing it to scale efficiently across cities and regions. By supporting integration with new data sources and deploying on a microservices architecture, the platform can grow to support various geographic locations and traffic use-cases. |