**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

| Date | 31 January 2025 |
| --- | --- |
| Team ID | LTVIP2025TMID41777 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation With Machine Learning |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| --- | --- | --- |
| FR-1 | Input Data Collection | User inputs values for weather, holiday, date, time, etc. |
| FR-2 | Data Preprocessing | Validate and pre process inputs (scaling, handling missing values) |
| FR-3 | Traffic Volume Prediction | User inputs traffic data (temp, rain, snow, etc.)  Predict traffic volume using trained ML model  Display prediction results on web UI |
| FR-4 | Data Handling & Preprocessing | | Validate user input values  Perform feature scaling  Convert data into ML-ready format |
|  |  |  |
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**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

| **FR No.** | **Non-Functional Requirement** | **Description** |
| --- | --- | --- |
| NFR-1 | **Usability** | The system must have a clean, user-friendly, and intuitive web interface for input and displaying results. |
| NFR-2 | **Security** | Ensure secure handling of user input data and protect the deployed application from unauthorized access. |
| NFR-3 | **Reliability** | The application should consistently deliver accurate and stable predictions without failures. |
| NFR-4 | **Performance** | The system should respond to prediction requests within 2 seconds under normal load. |
| NFR-5 | **Availability** | The system should be available 24/7 with minimal downtime. |
| NFR-6 | **Scalability** | The system should be easily scalable to support additional data sources, cities, or increased traffic prediction requests. |