

Ideation Phase

Brain Storm & Idea Prioritization Template

Date	22-06-2025
Team ID	LTVIP2025TMID40978
Project Name	Traffic intelligence
Maximum Marks	4 Marks

The ideation phase of the Traffic Intelligence Volume Prediction project began with observing a common real-world issue—urban traffic congestion, especially during peak hours and under varying weather conditions. The primary objective was to develop a solution that could predict traffic volume in advance, helping commuters, traffic management systems, and city planners make better, data-driven decisions.

1. Problem Identification:

Rapid urbanization has resulted in a significant increase in vehicle usage, causing regular traffic jams, delays, and pollution. Managing this requires intelligent systems that can forecast traffic patterns and allow timely interventions. We identified a need for a traffic volume prediction system that uses historical data and real-time inputs like weather and time of day.

2. Initial Research and Brainstorming:

We explored how machine learning can contribute to traffic management. After examining traffic datasets and prior studies, we found that traffic flow is highly influenced by variables such as:

Hour of the day

Holidays

Temperature

Rain and snow conditions

Cloud cover

These factors served as the core features of our prediction model.

3. Feasibility and Dataset Availability:

We verified the availability of a publicly accessible dataset containing traffic and weather information. The dataset included hourly traffic volume records along with weather indicators—making it well-suited for our goals.

4. Goal Definition:

The defined goal of the project was:

“To create a machine learning model that predicts traffic volume based on time and weather features, and deploy it as an interactive web application using Streamlit.”

5. Tool Selection and Planning:

To build the solution efficiently, we selected:

Python for data preprocessing and machine learning

Pandas & Scikit-learn for model training

Streamlit to create an interactive web application

This ideation phase laid a strong foundation for the project by ensuring the problem was relevant, the solution was practical, and the tools were well-suited for implementation.