Project Initialization and Planning Phase

Date	20 JULY 2024
Team ID	SWTID1720014187
Project Title	Traffictelligence: Advanced Traffic Volume Estimation With Machine
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	To develop TrafficTelligence, an advanced system that uses machine learning algorithms to estimate and predict traffic volume with high precision, enhancing traffic management, urban planning, and commuter experiences.
Scope	The project will include: • Analyzing historical traffic data. • Integrating weather patterns and event impacts. • Providing real-time traffic monitoring and predictive modeling.
Problem Statement	
Description	Urban areas face increasing traffic management challenges due to population growth, frequent events, and variable weather conditions. Traditional systems are inadequate for accurate, timely traffic predictions, leading to congestion, delays, and inefficiencies in urban planning and commuter experiences.
Impact	Solving this problem will lead to: • Improved traffic flow and reduced congestion. • Enhanced urban planning with accurate traffic forecasts. • Better commuter experiences with real-time traffic updates and predictive insights.

Proposed Solution	
Approach	Use machine learning algorithms to analyze historical traffic data, weather patterns, and events. Develop predictive models to forecast traffic volumes. Create a real-time traffic monitoring system.
Key Features	High precision traffic volume predictions. Integration of weather and event data. Real-time traffic monitoring and updates. Predictive traffic modeling for future scenarios.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	e.g., scikit-learn, pandas, numpy
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images