Project Initialization and Planning Phase

Date	15 March 2025
Team ID	LTVIP2025TMID26729
Project Title	Visualization Tool for Electric Vehicle Charge and Range Analysis in Tableau
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	**Enhance User Understanding:** Provide clear and intuitive visualizations of EV charge and range data. **Facilitate Data-Driven Decisions:** Offer comprehensive data analysis capabilities for performance evaluation and trend identification.

Scope	**Data Acquisition and Integration:** Real-time Data:
	• Integration with EV onboard diagnostics (OBD) systems or APIs (if available) to capture live data such as:
	  ○ Battery state of charge (SOC).
	  ○ Current power consumption.

Problem Statement	
Description	**Aggregates and processes data:** Collects real-time and historical data from EV onboard systems, charging networks, and other relevant sources. **Performs advanced analysis:** Calculates range estimates, predicts charging times, analyses battery health, and generates performance metrics.
Impact	**EV Users:** **Reduced range anxiety:** Increased confidence in EV range and charging capabilities. **Improved trip planning:** Efficient route optimization and charging stop planning.

Proposed Solution	
Approach	The proposed solution is a web-based (or cross-platform mobile) application that integrates data from various sources to provide users with a comprehensive and intuitive visualization of their EV's charge and range performance. This tool will act as a central hub for EV data, transforming raw information into actionable insights.
Key Features	**Historical Data Analysis:** • Visualize past charging sessions, trip data, and performance metrics. • Generate reports on energy consumption, charging costs, and battery health. • Compare performance across different trips and time periods.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	Laptop (DELL)	Hp RYZEN 5
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	476 GB
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Format	Ms Excel