Project Design Phase-II Technology Stack (Architecture & Stack)

Date	30 January 2026
Team ID	LTVIP2026TMIDS47205
Project Name	Visualization Tool for Electric Vehicle Charge and Range Analysis
Maximum Marks	4 Marks

Technical Architecture:

Visualization Tool for Electric Vehicle Charge and Range Analysis

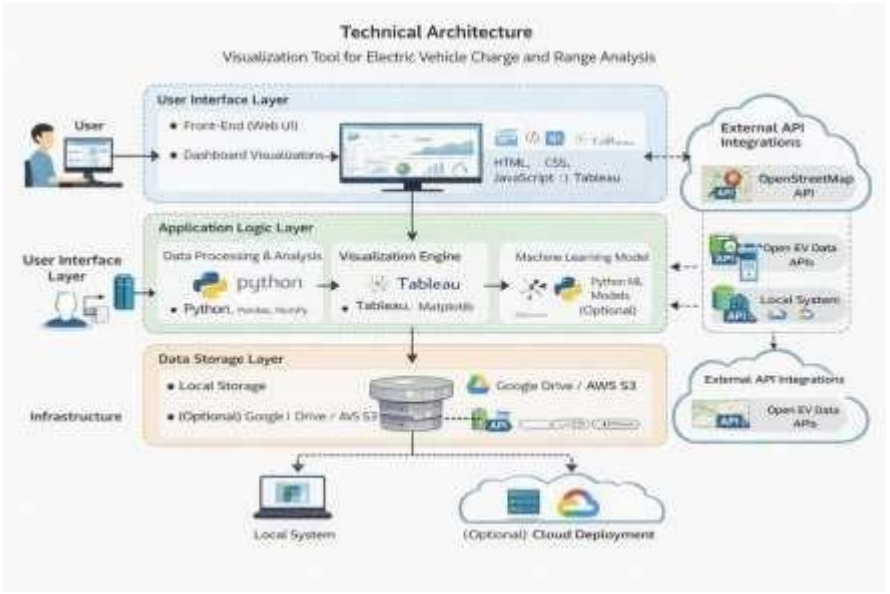

Table-1 : Components & Technologies:

S.No	Component	Description	Technology

1.	User Interface	Web interface to view EV charge and range visualizations	HTML, CSS, JavaScript, Tableau
2.	Application Logic-1	Data processing and analysis	Python
3.	Application Logic-2	Data cleaning and transformation	Pandas, NumPy
4.	Application Logic-3	Visualization logic	Tableau, Matplotlib
5.	Database	Storage of EV datasets	CSV Files
6.	Cloud Database	Cloud storage for datasets	. Google Drive
7.	File Storage	Storage of reports and datasets	Local File System
8.	External API-1	EV charging station data	Open EV Data APIs
9.	External API-2	Geographic data for maps	OpenStreetMap API
10.	Machine Learning Model	Range estimation (optional)	Python ML Models
11.	Infrastructure (Server / Cloud)	Application deployment	Local System

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology

1.	Open-Source Frameworks	Frameworks used for development	Python, Tableau
2.	Security Implementations	Data access control and protection	File permissions, basic encryption
3.	Scalable Architecture	Supports adding more datasets and charts	Modular architecture
4.	Availability	System available during analysis time	Local
5.	Performance	Fast loading dashboards	Optimized queries, caching