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

Date	31 January 2025
Team ID	LTVIP2026TMIDS47424
Project Name	Visualization Tool for Electric Vehicle Charge and Range Analysis
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

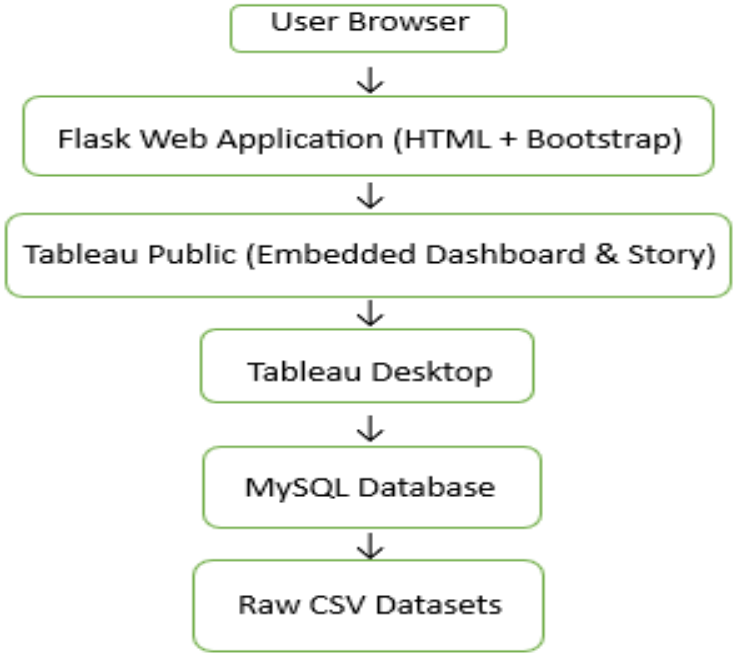

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Web-based interface with embedded dashboards	HTML, Bootstrap, Flask
2	Visualization Engine	Interactive EV dashboards & story	Tableau Desktop & Tableau Public
3	Application Logic	Data cleaning, transformation, aggregation	MySQL
4	Data Processing	Null removal, standardization, preprocessing	SQL Queries
5	Database	Structured storage of EV datasets	MySQL Database
6	File Storage	Storage of raw CSV datasets	Local File System
7	External Interface	Dashboard publishing & embedding	Tableau Public (JavaScript API)
8	Infrastructure	Local development & hosting	Windows Local System

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	SQL used for database management	MySQL
2	Security Implementations	Role-based access to database, secure login to MySQL	MySQL Authentication
3	Scalable Architecture	Modular dataset structure allows adding new EV data easily	SQL + Tableau
4	Availability	Local deployment ensures continuous access	Local System

5	Performance	Aggregated queries improve dashboard performance	SQL Optimization

References:

https://c4model.com/ https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/ https://www.ibm.com/cloud/architecture https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d