

# Technology Stack:

## Technology Stack (Architecture & Stack)

**Date:** 25<sup>th</sup> June 2025

**Team ID:** LTVIP2025TMID49433

**Project Name:** Visualization Tool for Electric Vehicle Charge and Range Analysis

**Maximum Marks:** 4 Marks

### Technical Architecture:

This project provides an interactive platform for visualizing electric vehicle specifications and charging station data. Built using Tableau Public, it simplifies data exploration with rich visuals and interactivity. The solution supports:

- Integration of multiple CSV datasets
- Custom calculated fields and filter creation
- Geospatial visualization of EV charging stations
- Range and efficiency trend analysis
- Web-based dashboard embedding for accessibility

**Table-1: Components & Technologies**

S.No	Component	Description	Technology
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1	Data Collection	Collecting EV data from multiple sources (CSV)	Excel / Google Sheets
2	Data Cleaning	Filtering missing/null values and standardizing fields	Excel / Tableau Prep
3	Data Import	Importing cleaned datasets into visualization platform	Tableau Public Desktop
4	Dashboard Visualization	Interactive dashboards with filters and charts	Tableau Sheets & Dashboards

5	Storyboard Development	Narrative flow to present insights and scenarios	Tableau Story feature
6	Web Embedding	Make dashboard available through website	Tableau Public + HTML/CSS

**Table-2: Application Characteristics**

S.No	Characteristics	Description / Technology
1	Open-Source Stack	Tableau Public and HTML/CSS-based embedding (non-commercial)
2	Security	Public data only; hosted through Tableau Public
3	Scalable Architecture	Dashboard easily updatable with more filters or data sources
4	Availability	Hosted online; accessible 24/7 via Tableau Public
5	Performance	Fast, responsive filtering with minimal rendering time

### Milestones Implemented:

- Dataset Collection: 4 CSV files related to EV specifications and charging stations
- Data Cleaning: Removed nulls, renamed columns, standardized units
- Dashboard Design: Built range vs price chart, charger map, brand KPIs
- Storyboard: Created narratives for charger availability, cost analysis, and EV efficiency
- Filters: Implemented interactive filters by range, price, brand, efficiency
- Web Integration: Embedded dashboards using Tableau iFrame into HTML

## References:

- <https://public.tableau.com/>
- <https://developer.mozilla.org/en-US/docs/Web/HTML>
- <https://help.tableau.com/>