PROJECT DOCUMENTATION

1.Introduction

Project Title:

Visualization Tool for Electric Vehicle Charge & Range Analysis

Team Members:

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2. Project Overview

Purpose:

The purpose of this project is to analyze Electric Vehicle datasets from Indian and global markets and transform raw data into meaningful insights using interactive Tableau dashboards and stories.

Features:

- Global EV performance comparison
- Price vs Range analysis
- Top 10 Efficient EV brands
- Indian EV market pricing trends
- EV charging station map visualization
- Interactive filters and story navigation

3. Architecture

Frontend:

The frontend consists of Tableau dashboards and stories that provide interactive visual analytics.

Users can apply filters, view charts, and navigate story sections.

Backend:

There is no traditional backend. Data processing and transformation are handled using Tableau's internal engine after CSV data cleaning.

Database:

Datasets are stored as CSV files. Tableau connects directly to these datasets for analysis.

4. Setup Instructions

Prerequisites:

- Tableau Desktop
- Tableau Public Account
- CSV Datasets

Installation:

1. Install Tableau Desktop
2. Load CSV datasets
3. Create visualizations
4. Publish to Tableau Public

5. Folder Structure

```
EV-Charge-Range-Analysis
│
├ cleaned_data
├ dashboards
├ stories
├ Requirement Analysis
├ Project Design Phase
├ Project Planning Phase
├ Performance Testing
└ Doc and Demo
```

6. Running the Application

https://public.tableau.com/views/ElectricVehicleChargeandRangeAnalysis_17713481097120/Story1?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

7. API Documentation

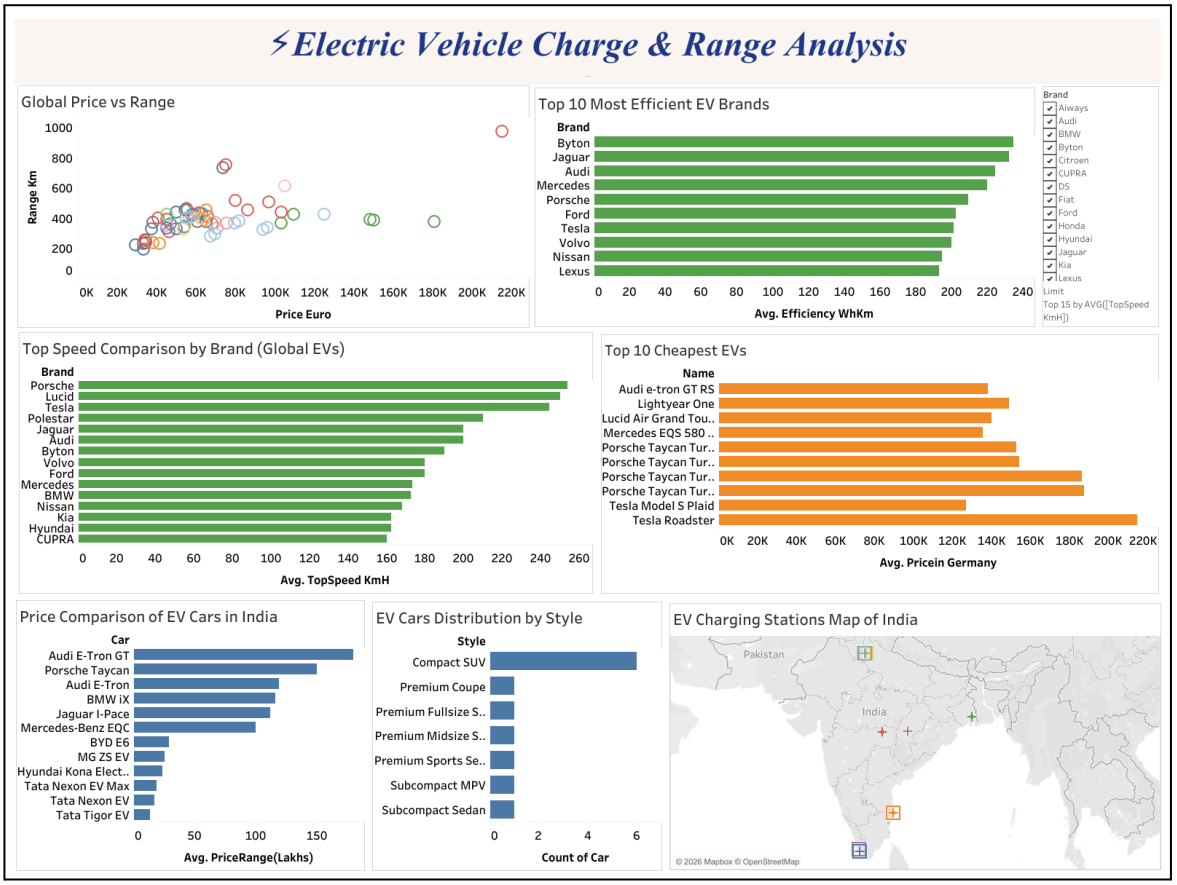
Not applicable. The project uses static CSV datasets and Tableau visualization engine.

8. Authentication

Tableau Public dashboards are publicly accessible. No login authentication required.

9. User Interface

The UI consists of interactive dashboards with charts, maps, filters, and story navigation elements.



10. Testing

User Acceptance Testing and Performance Testing were conducted to ensure dashboards render properly and filters work correctly.

11. Known Issues

- Large datasets may slightly increase loading time.
- Requires internet access for Tableau Public dashboard viewing.

12. Future Enhancements

- Integration with real-time EV APIs
- Predictive analytics using machine learning
- Mobile responsive dashboard optimization
- KPI cards addition