Data Flow Diagrams And User Stories

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Team ID: LTVIP2025TMID49433

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

Maximum Marks: 4 Marks

Abstract

The Visualization Tool for Electric Vehicle Charge and Range Analysis is a data analytics project developed using Tableau Public Desktop. It aims to offer meaningful insights into electric vehicle (EV) specifications, performance, and infrastructure availability through interactive dashboards. Utilizing datasets related to EV models, charging stations, and performance metrics, the system visualizes parameters like range, price, efficiency, and charging station distribution. The dashboard helps EV researchers, enthusiasts, and policymakers make informed decisions. The project also includes web embedding using HTML/CSS to increase accessibility.

Hardware Required

- A laptop or computer with a stable internet connection.

Software Required

- Tableau Public Desktop
- Any spreadsheet software (Excel/Google Sheets)
- Optional: Code editor (for web embedding using HTML/CSS)

Data Flow Diagrams

Context Diagram (Level 0):

Represents the system as a single dashboard interacting with external users.

External Entities:

- EV User (general public)
- Researcher
- Policy Maker

Text Representation:

[EV User] --> (View EV Models, Range Filters, Charger Locations) --> [EV Dashboard System] [Researcher] --> (Explore Efficiency, Price, Performance) --> [EV Dashboard System] [Policy Maker] --> (Access Charging Station Heat Maps, Trends) --> [EV Dashboard System] [EV Dashboard System] --> (Filtered Views, Maps, Charts) --> [EV User, Researcher, Policy Maker]

Level 1 DFD:

Breakdown into main modules and data flows using Tableau functionalities.

Modules:

1. Data Collection and Cleaning
2. Data Import and Preprocessing
3. Dashboard Design (Visualizations)
4. Story Creation (Narrative View)
5. Publishing and Web Integration

Text Representation:

[CSV Files] --> [1. Data Collection and Cleaning] --> [Cleaned Spreadsheets] [Cleaned Spreadsheets] --> [2. Tableau Import] --> [Dataset Filters, Measures, Dimensions] [2. Tableau Import] --> [3. Dashboard Design] --> (Charts, KPIs, Maps) [3. Dashboard Design] --> [4. Story Creation] --> (Story Points, Narratives) [4. Story Creation] --> [5. Publishing] --> [Tableau Public / Web App]

User Stories

Below are the user stories for the Airline Management System, aligned with the project's functionalities and Salesforce features.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release

EV User	Interactive Filters	USN-1	As an EV user, I want to apply filters to view EVs by range and price.	EVs update dynamically as filters are applied.	High	Sprint-1
Researcher	Efficiency Analysis	USN-2	As a researcher, I want to compare EVs based on efficiency and top speed.	Comparative visualizations are available and sortable.	High	Sprint-1
Policy Maker	Charger Availability	USN-3	As a policymaker, I want to view regional charger distribution on a map.	Map shows all charger locations with filters by type and power.	High	Sprint-2

Notes

- DFDs: Can be created in Lucidchart, draw.io, or Visio.
- User Stories: Reflect the main business goals; additional stories can be added as required.
- Tableau Features Used:
    - Interactive Filters
    - Maps and Heat Maps
    - Dashboard Navigation
    - Story Points
    - Web Embedding via iFrame

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