Electric Vehicle Charge and Range Analysis

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

Date: 22 June 2025

Team ID: LTVIP2025TMID49433

Target User: EV Enthusiasts, Policy Makers, Automotive Analysts, and Researchers

Empathy Map

Says	"I want to know the best EV options for my budget." "Which areas have more charging stations?" "What's the fastest charging car within my price range?"
Thinks	"Is the range enough for my daily commute?" "Will I be stranded without a nearby charger?" "How efficient is this EV compared to others?"
Does	Compares EV models online Searches EV charging station maps Looks for reviews, specs & charts
Feels	Confused due to inconsistent info across sources Overwhelmed with too much technical data

Empathy Map - EV Charge and Range Analysis

SAYS
- I want a clear comparison of EV models.
- I need to know nearby charging stations.

THINKS
- Is this EV's range enough for me?
- Will I find a charging station easily?

DOES
- Searches for EV specifications online.
- Uses apps to check charger locations.

FEELS
- Overwhelmed by technical comparison
- Anxious about charging availability.

Define Problem Statements - EV Charge & Range Analysis

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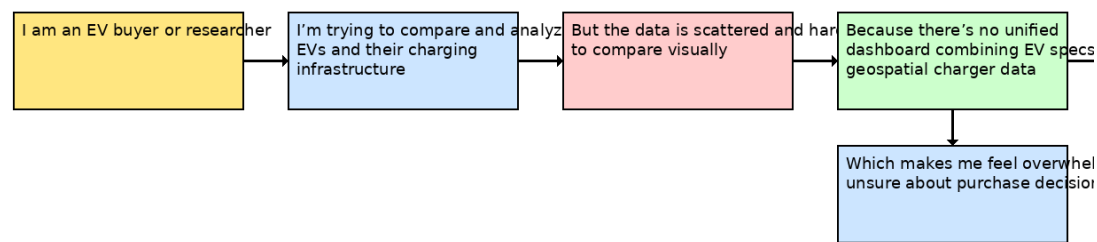**Team ID**: LTVIP2025TMID49433

Problem Statement 1:
I am an EV buyer/researcher
I'm trying to evaluate and compare electric vehicles based on efficiency, price, and range
But the data is scattered across multiple sources and difficult to compare visually
Because there is no centralized, interactive dashboard to analyze this information
Which makes me feel overwhelmed, confused, and less confident in making a purchase decision

Problem Statement 2:
I am a policy maker or EV promoter
I'm trying to understand the current distribution of EV charging stations across regions
But accessing geospatial data for charger locations and analyzing coverage is hard
Because there's no tool integrating vehicle specs and charger locations
Which makes me feel underinformed and unable to make data-backed infrastructure decisions

Field	Response
I am (Customer)	An EV buyer or researcher
I'm trying to	Compare and analyze EVs and their charging infrastructure
But	The data is scattered and hard to compare visually
Because	There's no unified dashboard combining EV specs and geospatial charger data
Which makes me feel	Overwhelmed and unsure about purchase decisions or policy recommendations

Electric Vehicle Charge and Range Analysis – Problem Statement

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│ I am an EV buyer or      │ ──▶ │ I'm trying to compare    │ ──▶ │ But the data is          │ ──▶ │ Because there's no       │
│ researcher               │     │ and analyze EVs and      │     │ scattered and hard       │     │ unified dashboard        │
│                          │     │ their charging           │     │ to compare visually      │     │ combining EV specs       │
│                          │     │ infrastructure           │     │                          │     │ geospatial charger data  │
└─────────────────────────┘     └─────────────────────────┘     └─────────────────────────┘     └─────────────────────────┘
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                                                                                                 │ Which makes me feel      │
                                                                                                 │ overwhelmed unsure       │
                                                                                                 │ about purchase decision  │
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Brainstorming & Idea Prioritization - EV Charge and Range Analysis

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Step 1: Select the Problem Statement

Lack of unified, visual, and interactive dashboard to compare electric vehicle specs and charger coverage in India and globally.

Step 2: Idea Listing

- Integrate multiple CSV datasets on EV specs and charging stations

- Build interactive visualizations (scatter plots, maps, bar charts) in Tableau

- Show comparisons by brand, range, top speed, price, and charging speed

- Use maps to show charging station distribution by region

- Add dashboards with filters for country, brand, segment, and more

- Develop a web page embedding the Tableau dashboards and stories

Step 3: Prioritize Ideas

Ideas	Priority
EV Range vs Price Comparison	High
Interactive Charging Station Map	High
Efficiency and Fast Charging Analysis	High
Cheapest EVs by Country	Medium
Web Embedding and Publishing	Medium

Idea Prioritization - EV Charge and Range Analysis