visualization tool for electric vehicle charge and range analysis

EV Dashboard Experience Journey (Aligned to Your Project)

Stage	Steps (What Happens)	Interactions (What They Use / See / Do)	Goals & Motivations (Help Me...)	Positive Moments	Negative Moments	Opportunities
Entice	Identify need for EV analytics dashboard (India + Global)	Stakeholder interviews, EV reports, government data briefs	Understand how charge time, range, and cost impact policy and adoption	Stakeholder curiosity; growing EV ecosystem	Disjointed or unstandardized datasets	Build data-driven visibility into infrastructure, efficiency, and adoption patterns
Enter	Collect EV data from 4 CSV sources (Indian & global)	ElectricCarData_Clean.csv, Cheapestelectriccars-EVDatabase.csv, EVIndia.csv, electric_vehicle_charging_station_list.csv	Collect clean, granular data across pricing, range, charging station coverage	Data ingestion into pandas / SQL successful	Nulls, duplicate entries, format mismatch across CSVs	Use Python (pandas) and SQL for auto-filtering, deduping, unit normalization
Engage	Create Tableau dashboards for charger mapping, model comparison, efficiency vs cost	Tableau Desktop/Public, integrated SQL/CSV sources, filters and maps	Rapidly convey EV trends to policy planners, developers, citizens	Discovering insights like price clusters or DC charger hotspots	Overloaded dashboards or hard-to-compare visuals	Use region filters, KPIs, interactive tooltips, and range-based sliders
Engage	Embed dashboards into Flask app and style for usability	Flask app with HTML/JS templates, Tableau iframes, CSS styling	Provide smooth, mobile-friendly web access to visualizations	Seeing the dashboard work across devices and browsers	iframe scaling or loading delays	Use Bootstrap and device testing; enable responsive design
Exit	Deploy web dashboard via GitHub + Render hosting	GitHub repo, Render platform, CI/CD workflows	Make EV insights publicly accessible and version-controlled	Seamless push-to-deploy experience	GitHub–Render sync or build failure	Write clear README, setup auto-deploy, and version history tracking
Exit	Present dashboard to stakeholders via web demos, reports	Slide decks, site walkthroughs, Tableau story pane	Translate visuals into policy insights or public education	Stakeholder appreciation of clarity and interactivity	Too much information or unclear takeaways	Add story-driven narratives and regional personas (e.g., urban commuter, student driver)
Extend	Integrate predictive EV adoption modeling and dynamic charger availability	Add Python prediction modules, real-time connectors or alerts	Get ahead of infrastructure gaps and policy planning	Seeing trend forecasting or alerts on charger bottlenecks	Data privacy or deployment delays	Use anonymized records, API-ready design, and scalable model integration