Project Development Phase

Performance Test

Date	10 February 2026
Team ID	LTVIP2026TMIDS34838
Project Name	EV Charge and Range Visualization Platform
Maximum Marks	4 Marks

Model Performance Testing

Project team shall fill the following information in model performance testing template. This document captures the key performance metrics and visualization parameters for the EV Charge and Range Visualization Platform.

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Range prediction data from 1000+ EV models, charging station data from 500+ stations, real-time battery status, route elevation profiles, weather integration data. Refresh rate: 30 seconds.
2.	Data Preprocessing	Battery state normalization, range factor weighting (weather 15%, terrain 20%, speed 25%, HVAC 15%, traffic 10%, battery health 15%), elevation gain/loss calculation, real-time weather correlation.
3.	Utilization of Filters	EV model filter, Battery level range slider, Range buffer selector (conservative/normal/aggressive), Weather condition filter, Charger type filter (Level 1/2/DC Fast), Route type filter, Time of day selector.
4.	Calculation Fields Used	Estimated Range = Base Range × Weather Factor × Terrain Factor × Speed Factor × Battery Health Factor, Charging Time = (Target SOC - Current SOC) × Battery Capacity / Charger Power, Range Buffer = Total Range × Safety Percentage, Elevation Impact = Elevation Change × Energy per 1000ft.
5.	Dashboard Design	No of Visualizations / Graphs - 15 visualizations: Range circle map, Battery gauge, Route elevation chart, Efficiency trend line, Charging station markers, Range factor breakdown pie, Historical range comparison bar, Weather impact chart, Speed vs Range curve, Battery health trend, Trip planner timeline, Cost calculator, Queue time predictor, Energy consumption breakdown, Seasonal range heatmap.
6.	Story Design	No of Visualizations / Graphs - 10 story points: Range Overview, Daily Commute Analysis, Long Trip Planning, Battery Health Journey, Seasonal Adaptation, Charging Behavior Insights, Efficiency Improvement Tips, Range Anxiety Hotspots, Weather Impact Story, Future Range Prediction.

Performance Benchmarks Achieved

Dashboard Load Time: < 2 seconds for initial render

Range Calculation: < 1 second for multi-factor prediction

Map Rendering: < 3 seconds for range circle overlay

Route Planning: < 5 seconds for complex multi-stop routes

Prediction Accuracy: 92% within 10% variance of actual range