

Project title:

Visualization Tool for Electric Vehicle Charge and Range Analysis

1 Introduction:

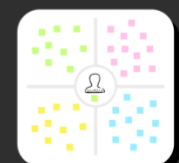
1.1 Overview

An Electric car is a one powered by an electric motor rather than a traditional petrol\diesel engine. This electric motor is powered by rechargeable batteries that can be charged by common household electricity. An electric vehicle (EV) is one that operates on an electric motor, instead of an internal/combustion engine that generates power by burning a mix of fuel and gases. Therefore, such as vehicle is seen as a possible replacement for current-generation automobile, in order to address the issue of rising pollution, global warming, depleting natural resources, etc..

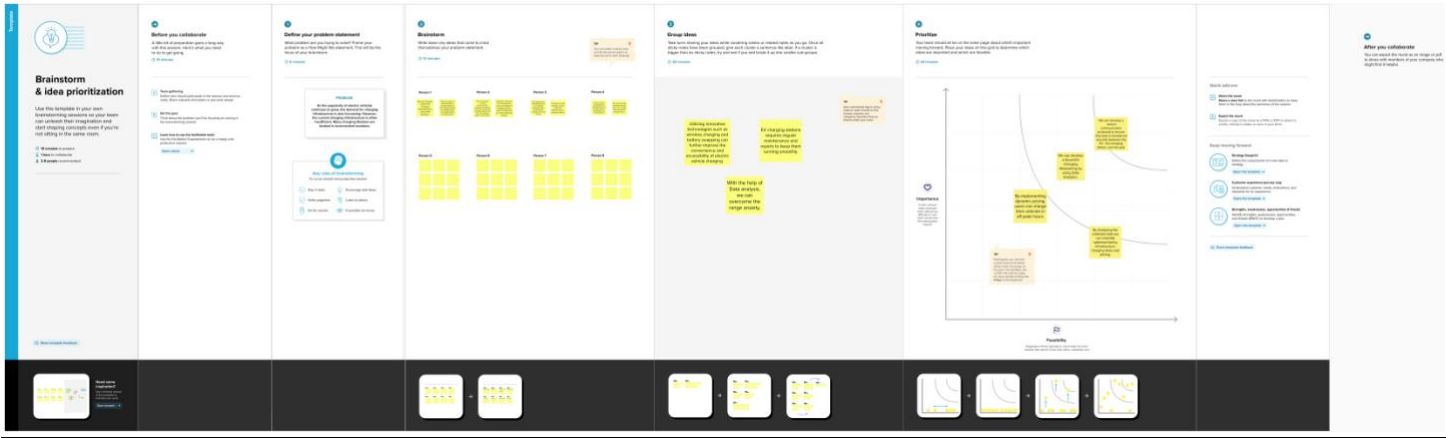
With the sudden surge in demand for electric vehicles, the EV automakers are focusing on long-range battery vehicles and investing in enhancing the charging infrastructure. One of the prime concerns of EV users is the range of their vehicles. This range anxiety among customers cannot be compensated by larger EV batteries or a more extended range of their vehicle along; the charging infrastructure to be addressed as well.

1.2 Purpose

An Electric Vehicle charging station is equipment that connects an electric vehicle (EV) to a source of electricity to recharge electric cars, neighborhood electric vehicles and plug-in hybrids. Electric vehicles are more efficient , and that combined with the electricity cost means that charging an electric vehicle is cheaper than filling petrol or diesel for your travel requirements.



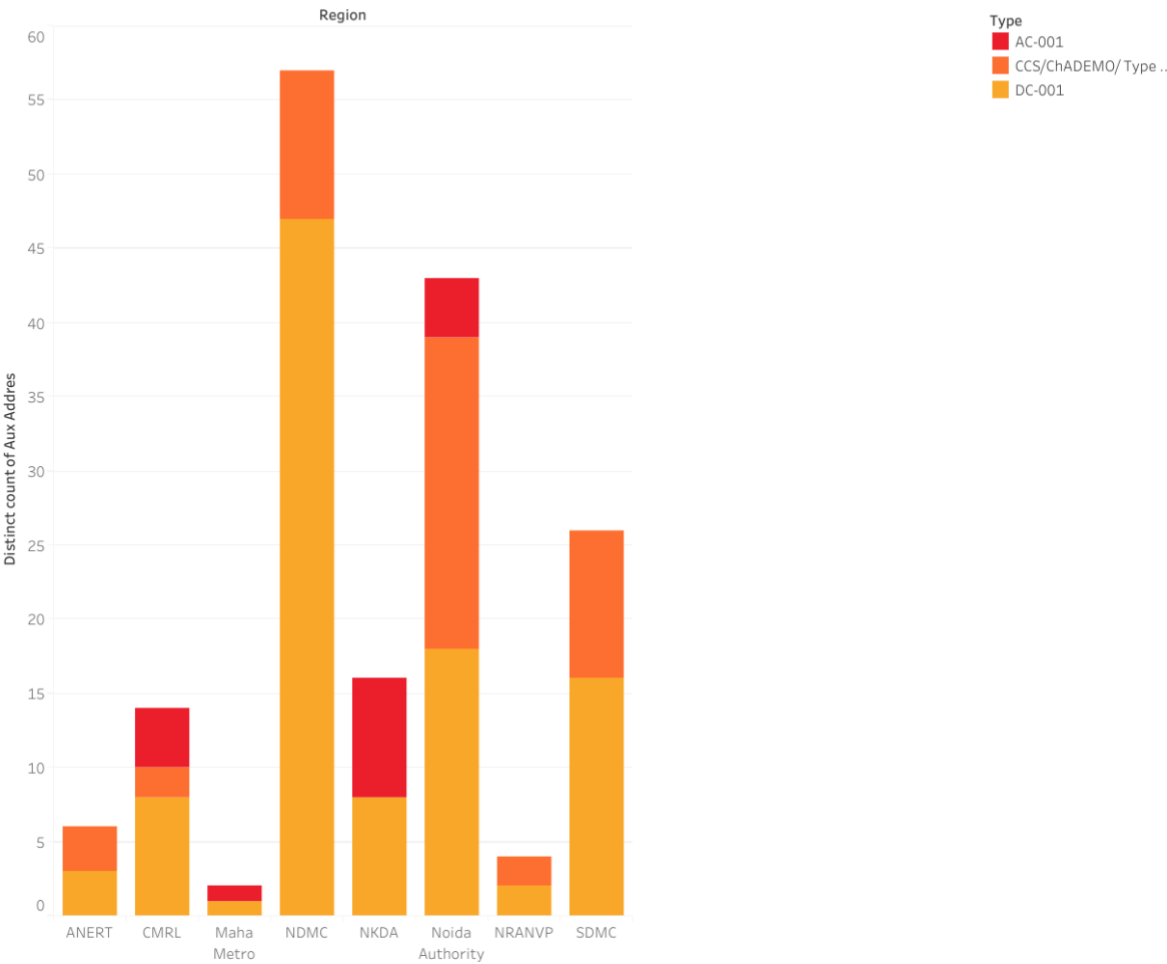
2.2 Ideation & Brainstorming Map



3 RESULT :

Visualization of Electric Vehicle Charge and Range Analysis

Charging Stations by region and type in Ind..	Charging Stations in India	Different EV cars in India	Top speed for Different Brands	Price for Different cars in India	Top 10 most efficient EV Brands	Brands according to..
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Electric Cars Analytics Dashboard

Different brands of EV Cars globally

33

Different brands of EV Cars in India

9



Body Style

- Cabrio
- Hatchback
- Liftback
- MPV
- Pickup
- Sedan
- SPV
- Station
- SUV

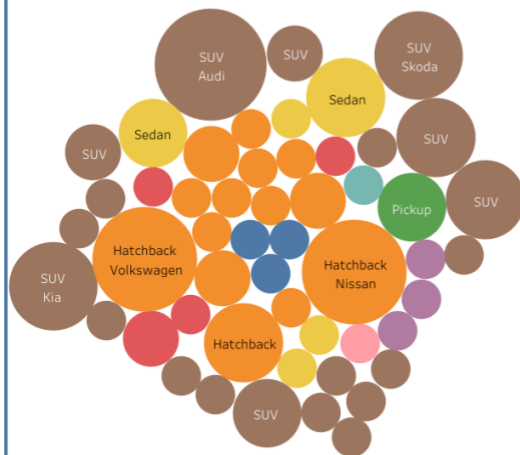
Brand

- Audi
- BMW
- Byton
- Ford
- Jaguar
- Mercedes
- Nissan
- Porsche
- Tesla
- Volvo

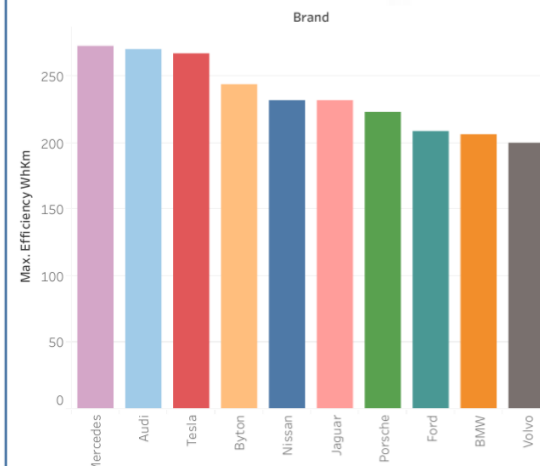
Car

- Audi E-Tron
- Audi E-Tron GT
- BMW IX
- BYD E6
- Hyundai Kona Electric
- Jaguar I-Pace
- Mercedes-Benz EQC
- MG ZS EV
- Porsche Taycan
- Tata Nexon EV
- Tata Nexon EV Max
- Tata Tigor EV

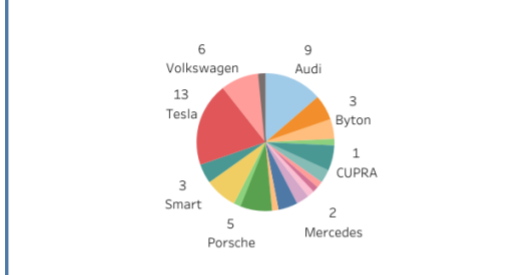
Brands according to Bodystyle



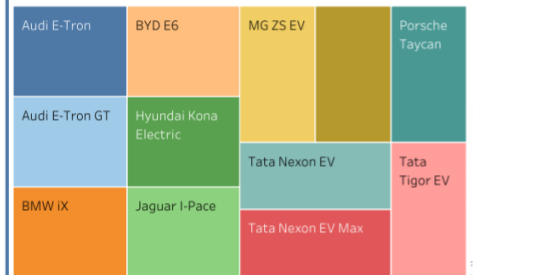
Top 10 most efficient EV Brands



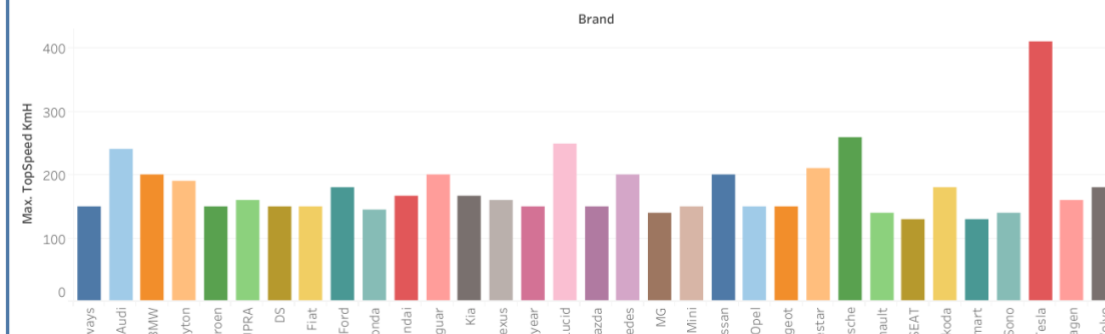
Brand filtered by PowerTrain Type

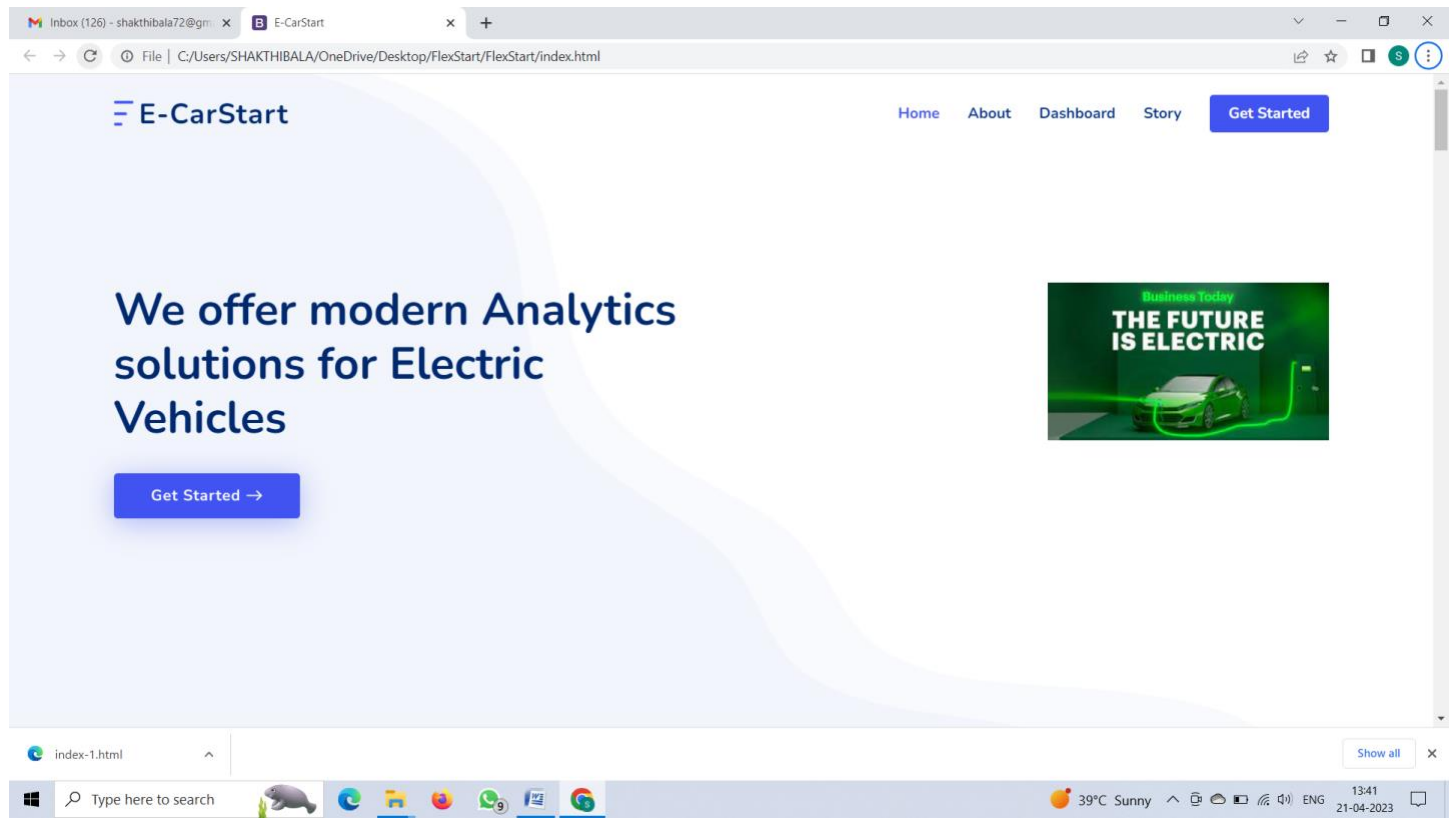


Different EV cars in India



Top speed for different Brands





4 ADVANTAGES

- ✓ Reduce dependences on oil and gasoline.
- ✓ Pollutants and noise free.
- ✓ Recyclable batteries.
- ✓ No fire hazards.
- ✓ Low maintenance and operation cost.
- ✓ Better for the environment.
- ✓ Less environmental impacts across their life-cycle (manufacturing, use and disposal)
- ✓ More Eco-friendly, Lower Carbon footprint.

DISADVANTAGES

- ✓ High Price
- ✓ High recharging time.

- ✓ Range lies between 25-30 miles only.
- ✓ Time required to recharge the batteries is more.
- ✓ The batteries provided are quite heavy increasing the net weight of the car.
- ✓ Can only travel 100-160km between charges.
- ✓ Insufficient Charging Stations.
- ✓ Silent operation-potentially dangerous for pedestrians.

5 APPLICATIONS

- ✓ Monitoring charger availability, managing user access, and providing real-time updates on charger status.
- ✓ Consumer Electronics, Public Transportation and Aviation.
- ✓ Electricity Grid and Renewable Energy Storage.
- ✓ Spaceflight and Wearable Technology.
- ✓ It is used in the electric motors, batteries, inverters, wiring and in charging stations because of its durability, malleability, reliability and superior electrical conductivity.

6 CONCLUSION :

With this, we come to following facts that number of expected vehicles doubling on the roads in the near future the need for this alternative energy is very evident and has promising returns. Important to produce vehicles that do less, have longer range, and use less energy. Lower our toxic emissions and localize green house effects. Increase the overall energy efficiency of cars.

7 FUTURE SCOPE

Most Indian buyers believe that an electric vehicle will be ready by 2023, but the majority also believe that it would no longer be available until 2025.