Visualization tool for Electric Vehicle Charge and Range Analytics

A Project Report

Submitted by

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BACHELOR OF SCIENCE

IN

MATHEMATICS

DEPARTMENT OF MATHEMATICS
THE MADURAI DIRAVIUM THYUMANAVAR HINDU COLLEGE
TIRUNELVELI - 627010

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1. INTRODUCTION

1.1 Overview:

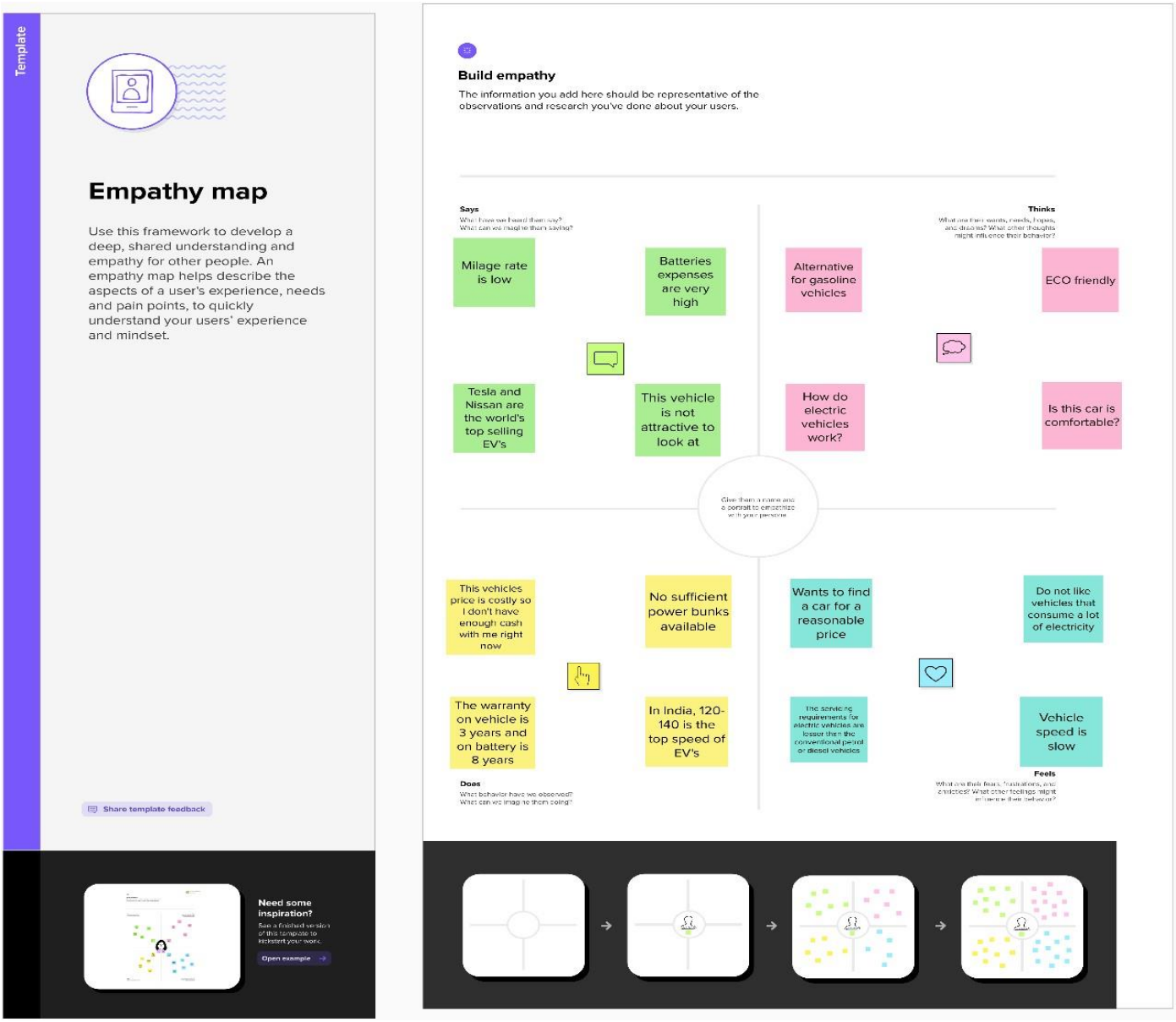
A vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source and have an electric motor instead of an internal combustion engine. The Electric Vehicle (EV) is not new, but it has been receiving significantly more attention in recent years. Advances in both EV analytics and battery technologies have led to increased automotive market share. However, this growth is not attributed to hardware alone. The modern mechatronic vehicle marries electrical storage and propulsion systems with electronic sensors, controls, and actuators, integrated closely with software, secure data transfer, and data analysis, to form a comprehensive transportation solution. Advances in all these areas have contributed to the overall rise of EV's, but the common thread that runs through all these elements is data analytics. The new EV's are combined Electrical storage and propulsion systems with electronic sensors, controls, and actuators, integrated closely with software, secure data transfer to form a comprehensive transportation solution.

1.2 USE OF THIS PROJECT:

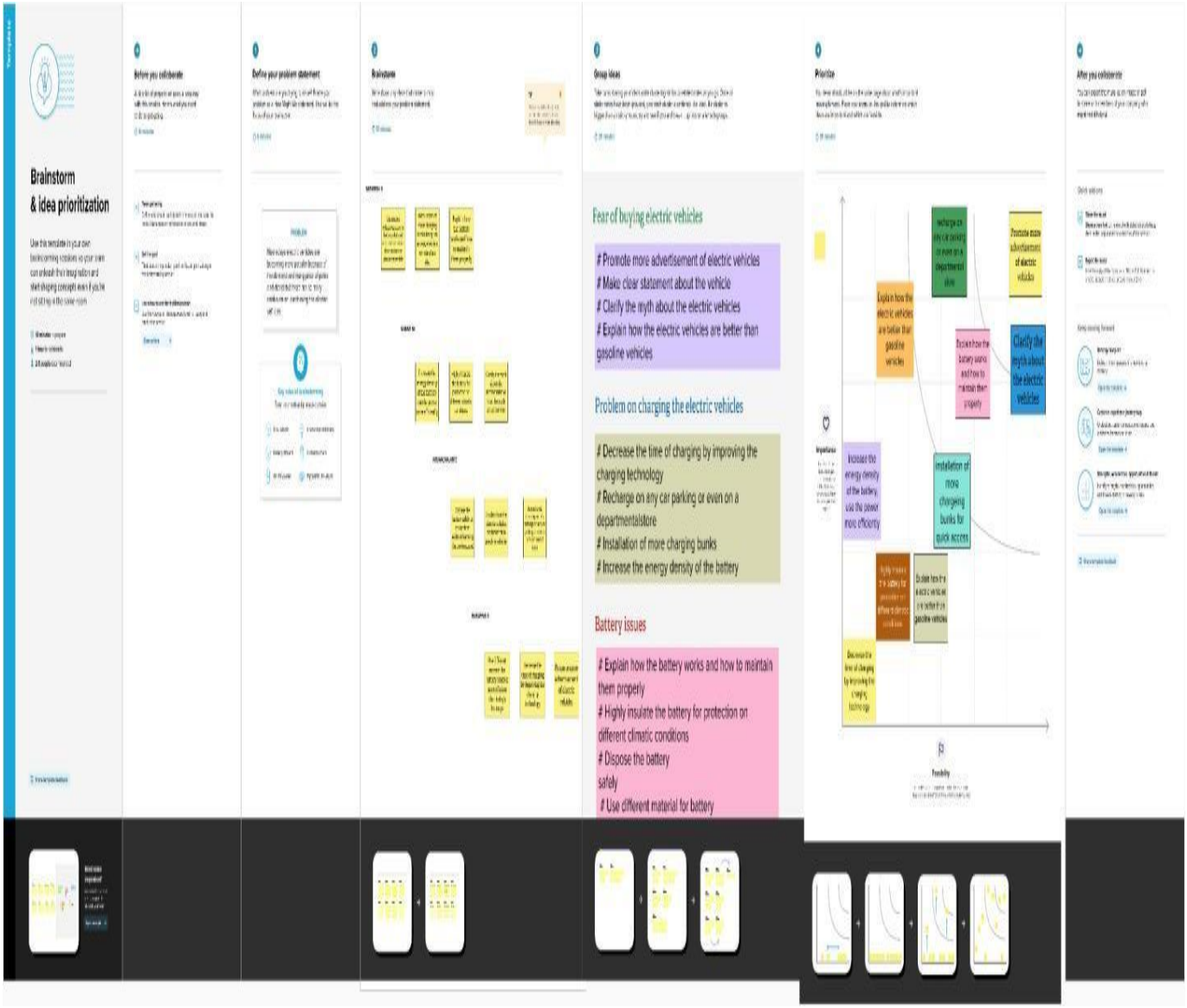
This project used for "ELECTRIC VEHICLE" in problem defining, understanding the problem, specify the business problem, Requirements of business, literature survey and business impact. Through this project we learned how to do data preparation and how to visualize data produced. In this project helps for creating the dashboard and the story using the visualization. We learned how to upload the prepared dashboard and story to the web. Through this project have learned the charge and range analysis for electric vehicles. This project helps for how to handle many software. Also, this project contains many uses full details.

2. PROBLEM DEFINITION & DESIGN THINKING

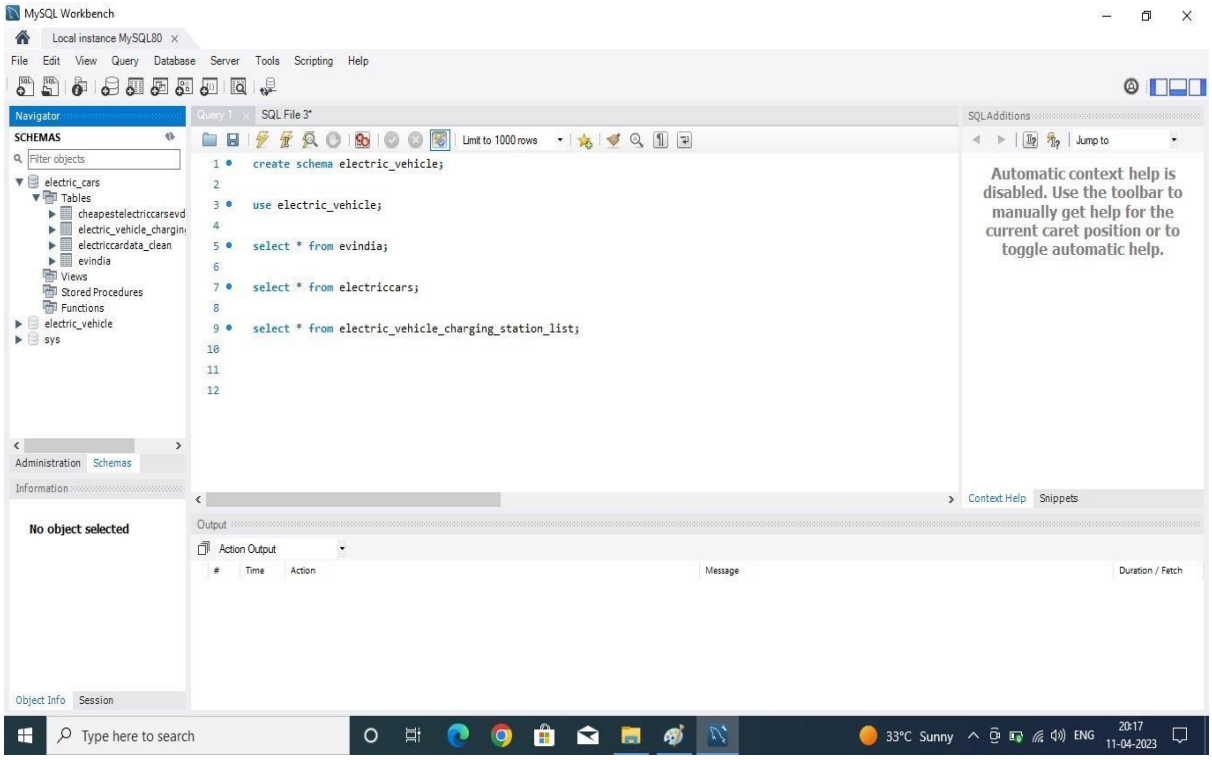
2.1 EMPATHY MAP:



2.2 IDEATION & BRAINSTORMING MAP:



3. RESULTS


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
electric_cars
Tables
cheapestelectriccarsevd
electric_vehicle_chargin
electriccardata_clean
evindia
Views
Stored Procedures
Functions
electric_vehicle
sys
Administration Schemas
Information
No object selected
Object Info Session
Query 1 SQL File 3*
Limit to 1000 rows
1 create schema electric_vehicle;
3 use electric_vehicle;
5 select * from evindia;
7 select * from electriccars;
9 select * from electric_vehicle_charging_station_list;
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
Type here to search
33°C Sunny
ENG
20:17
11-04-2023

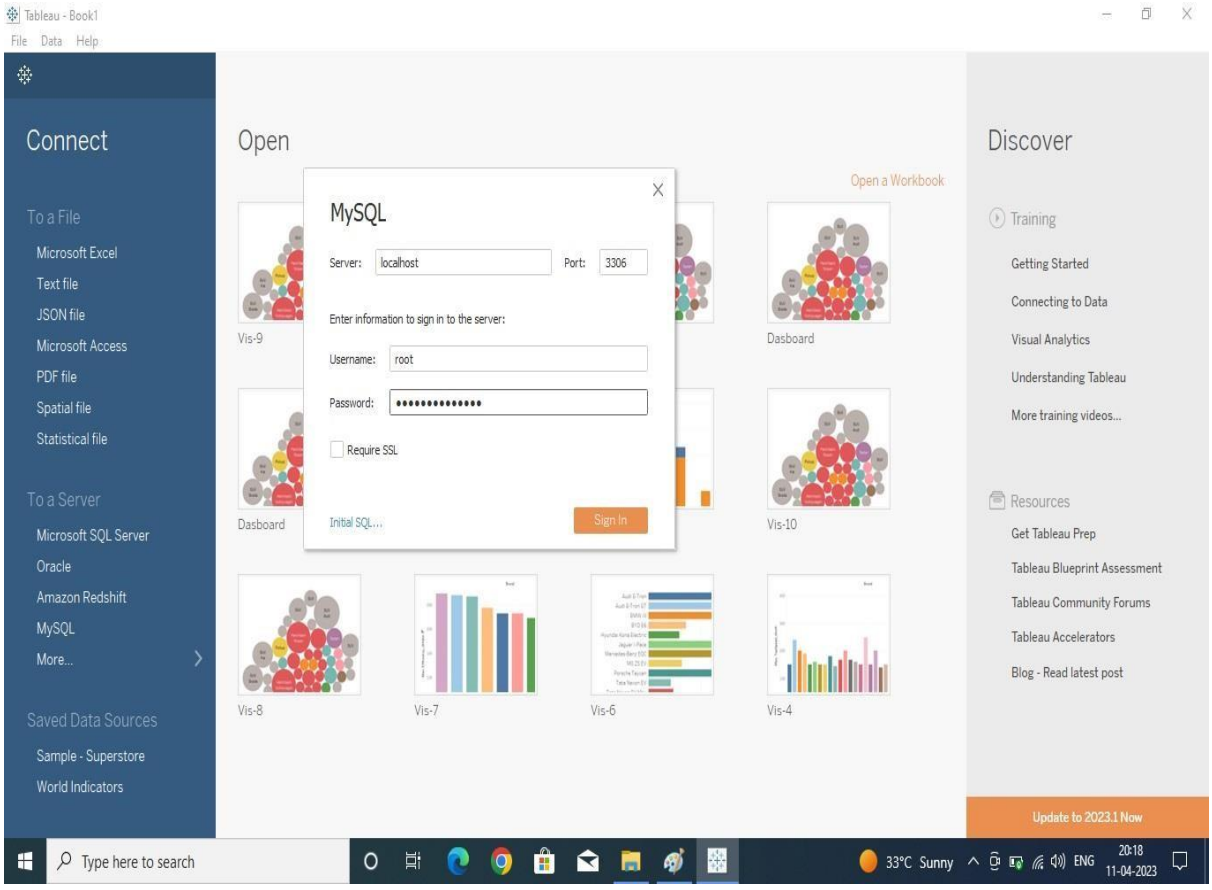


Tableau - Book1
File Data Help
Connect
To a File
Microsoft Excel
Text file
JSON file
Microsoft Access
PDF file
Spatial file
Statistical file
To a Server
Microsoft SQL Server
Oracle
Amazon Redshift
MySQL
More...
Saved Data Sources
Sample - Superstore
World Indicators
Open
Open a Workbook
MySQL
Server: localhost
Port: 3306
Enter information to sign in to the server:
Username: root
Password:
Require SSL
Initial SQL...
Sign In
Vis-9
Dasboard
Dasboard
Vis-10
Vis-8
Vis-7
Vis-6
Vis-4
Discover
Training
Getting Started
Connecting to Data
Visual Analytics
Understanding Tableau
More training videos...
Resources
Get Tableau Prep
Tableau Blueprint Assessment
Tableau Community Forums
Tableau Accelerators
Blog - Read latest post
Update to 2023.1 Now
Type here to search
33°C Sunny
ENG
20:18
11-04-2023

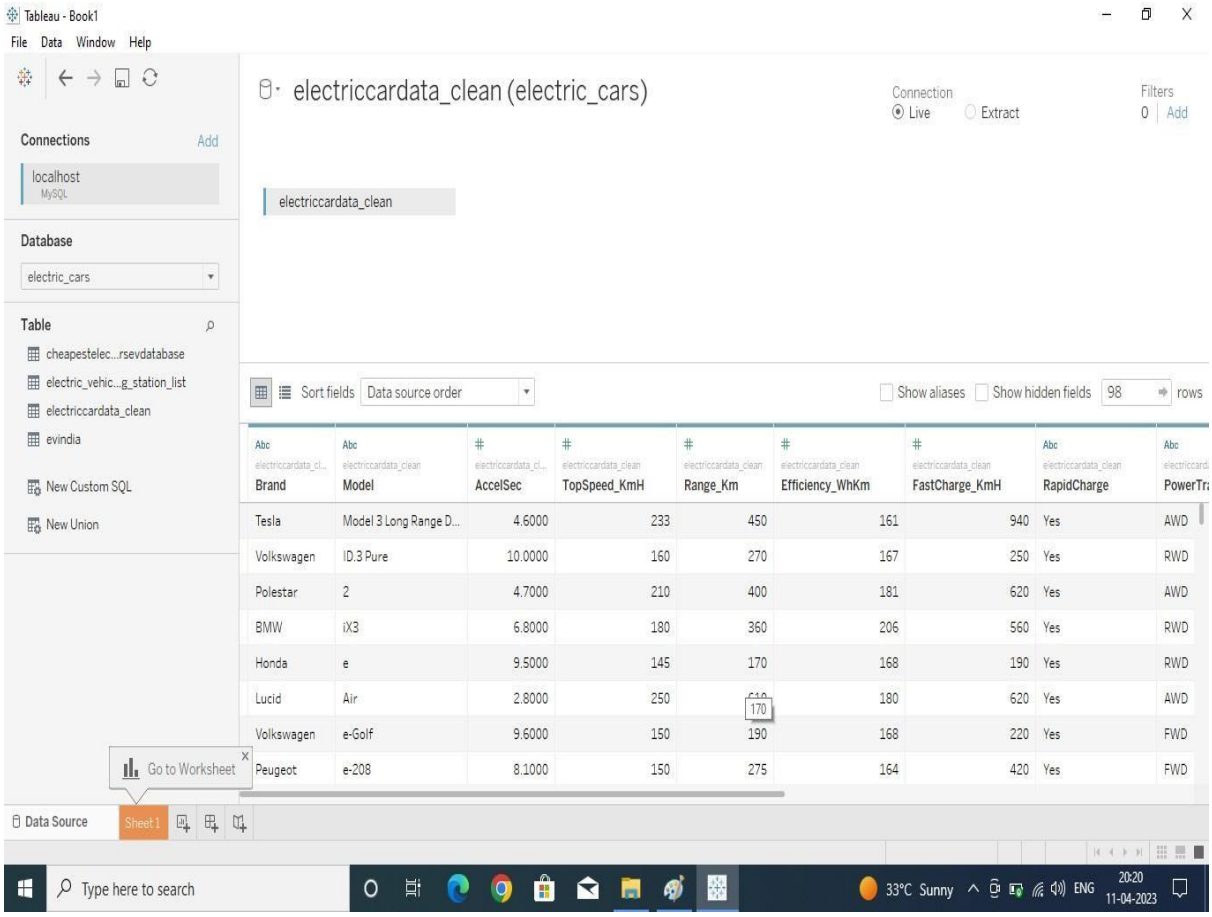


Tableau - Book1
File Data Window Help
electriccardata_clean (electric_cars)
Connection
Live
Extract
Filters
0 Add
Connections Add
localhost
MySQL
Database
electric_cars
Table
cheapestelec...rsevdatabase
electric_vehic...g_station_list
electriccardata_clean
evindia
New Custom SQL
New Union
electriccardata_clean
Sort fields Data source order
Show aliases Show hidden fields 98 rows
Brand
Model
AccelSec
TopSpeed_KmH
Range_Km
Efficiency_WhKm
FastCharge_KmH
RapidCharge
PowerTra
Tesla Model 3 Long Range D... 4.6000 233 450 161 940 Yes AWD
Volkswagen ID.3 Pure 10.0000 160 270 167 250 Yes RWD
Polestar 2 4.7000 210 400 181 620 Yes AWD
BMW iX3 6.8000 180 360 206 560 Yes RWD
Honda e 9.5000 145 170 168 190 Yes RWD
Lucid Air 2.8000 250 180 620 Yes AWD
Volkswagen e-Golf 9.6000 150 190 168 220 Yes FWD
Peugeot e-208 8.1000 150 275 164 420 Yes FWD
Go to Worksheet
Data Source
Sheet 1
Type here to search
33°C Sunny
ENG
20:20
11-04-2023

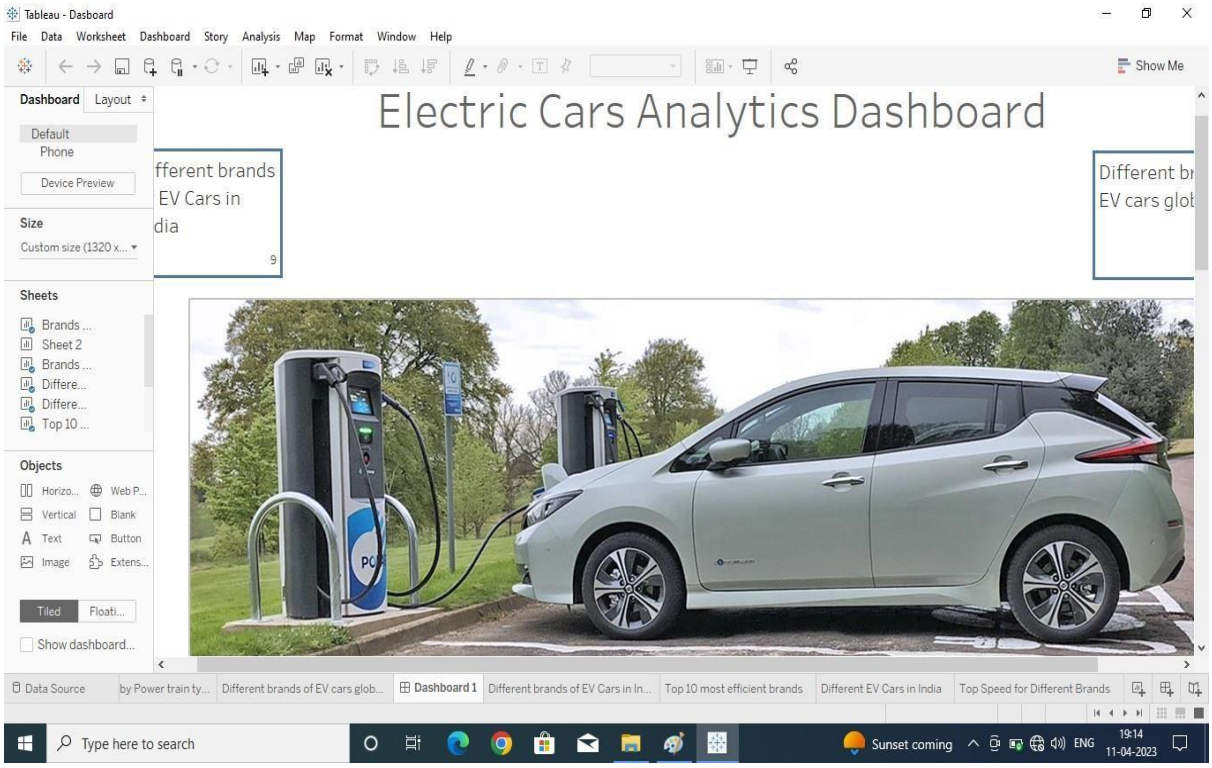


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Show Me
Dashboard Layout
Default
Phone
Device Preview
Size
Custom size (1320 x...
Sheets
Brands ...
Sheet 2
Brands ...
Differe...
Differe...
Top 10 ...
Objects
Horizo...
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Vertical
Blank
Text
Button
Image
Extens...
Tiled
Floati...
Show dashboard...
Electric Cars Analytics Dashboard
fferent brands
EV Cars in
dia
Different br
EV cars glob
Data Source
by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Type here to search
Sunset coming
ENG
19:14
11-04-2023

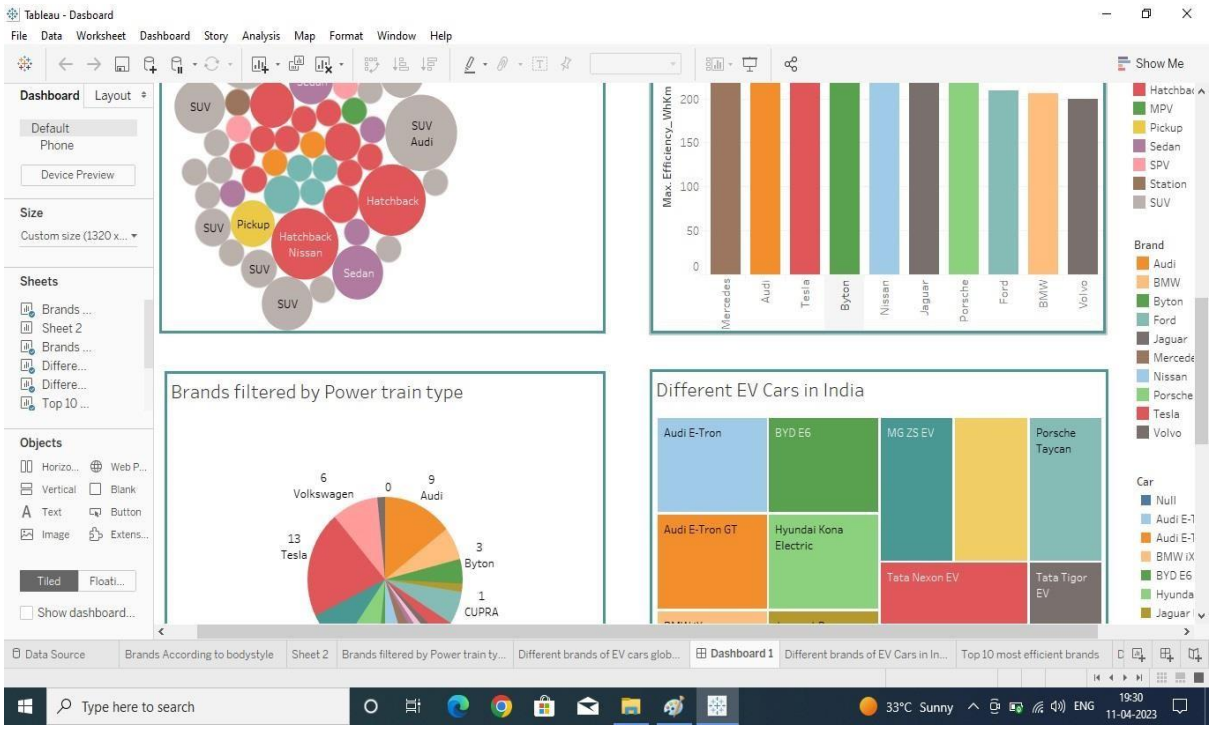
Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Show Me
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Sheet 2
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Differe...
Differe...
Top 10 ...
Objects
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Vertical Blank
Text Button
Image Extens...
Tiled Floati...
Show dashboard...
SUV
SUV Audi
Hatchback
SUV
Pickup
Hatchback Nissan
Sedan
SUV
SUV
Max. Efficiency_WhKm
200
150
100
50
0
Mercedes
Audi
Tesla
Byton
Nissan
Jaguar
Porsche
Ford
BMW
Volvo
Hatchback
MPV
Pickup
Sedan
SPV
Station
SUV
Brand
Audi
BMW
Byton
Ford
Jaguar
Mercede
Nissan
Porsche
Tesla
Volvo
Brands filtered by Power train type
6
Volkswagen
0
9
Audi
13
Tesla
3
Byton
1
CUPRA
Different EV Cars in India
Audi E-Tron
BYD E6
MG ZS EV
Porsche Taycan
Audi E-Tron GT
Hyundai Kona Electric
Tata Nexon EV
Tata Tigor EV
Car
Null
Audi E-1
Audi E-1
BMW iX
BYD E6
Hyunda
Jaguar
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Type here to search
33°C Sunny
ENG
19:30
11-04-2023

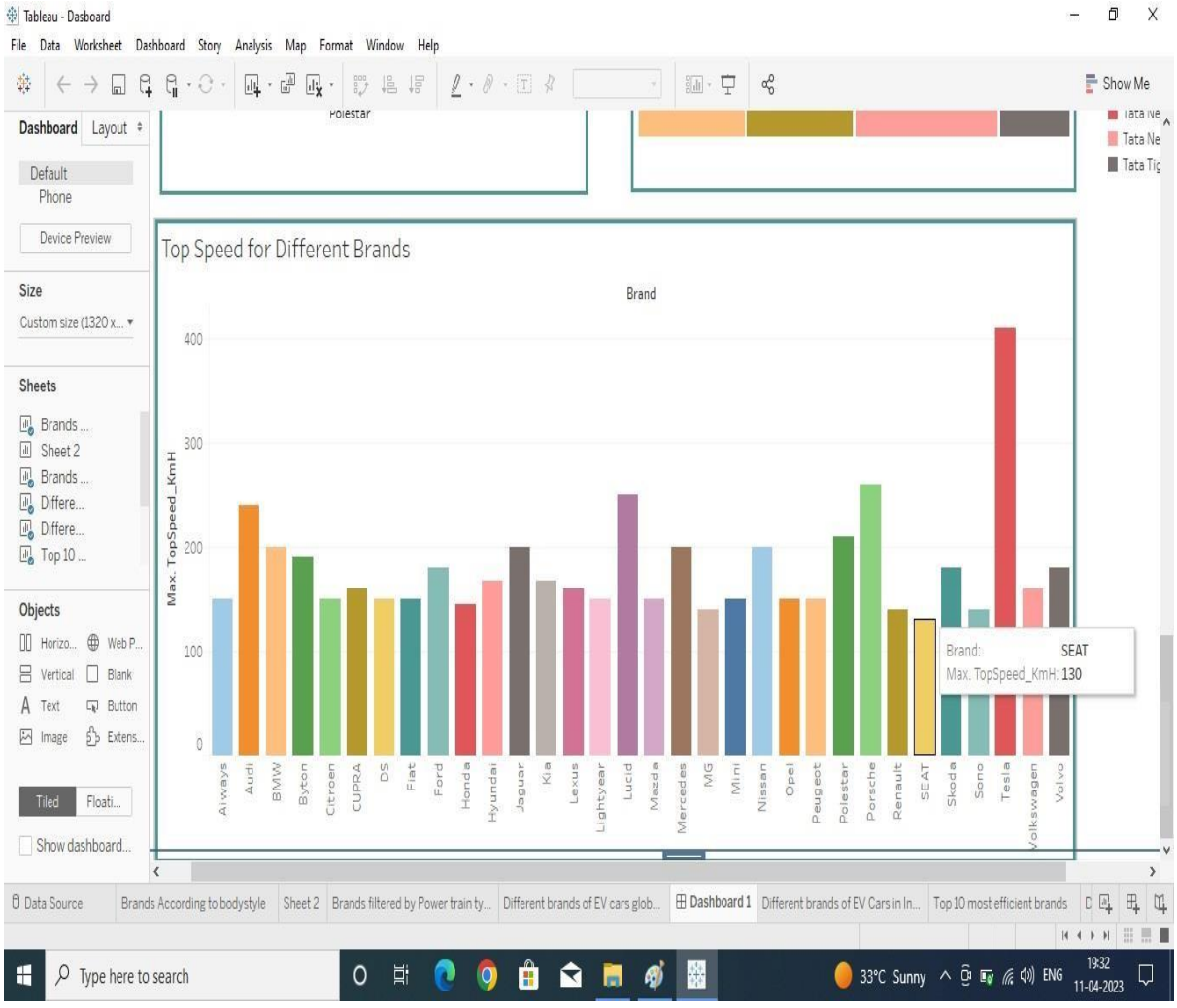
Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Show Me
Dashboard Layout
Default
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Device Preview
Size
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Sheets
Brands ...
Sheet 2
Brands ...
Differe...
Differe...
Top 10 ...
Objects
Horizo... Web P...
Vertical Blank
Text Button
Image Extens...
Tiled Floati...
Show dashboard...
Polestar
Top Speed for Different Brands
Brand
Max. TopSpeed_KmH
400
300
200
100
0
Aiways
Audi
BMW
Byton
Citroen
CUPRA
DS
Fiat
Ford
Honda
Hyundai
Jaguar
Kia
Lexus
Lightyear
Lucid
Mazda
Merceded
MG
Mini
Nissan
Opel
Peugeot
Polestar
Porsche
Renault
SEAT
Skoda
Sono
Tesla
Volkswagen
Volvo
Brand: SEAT
Max. TopSpeed_KmH: 130
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Type here to search
33°C Sunny
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11-04-2023

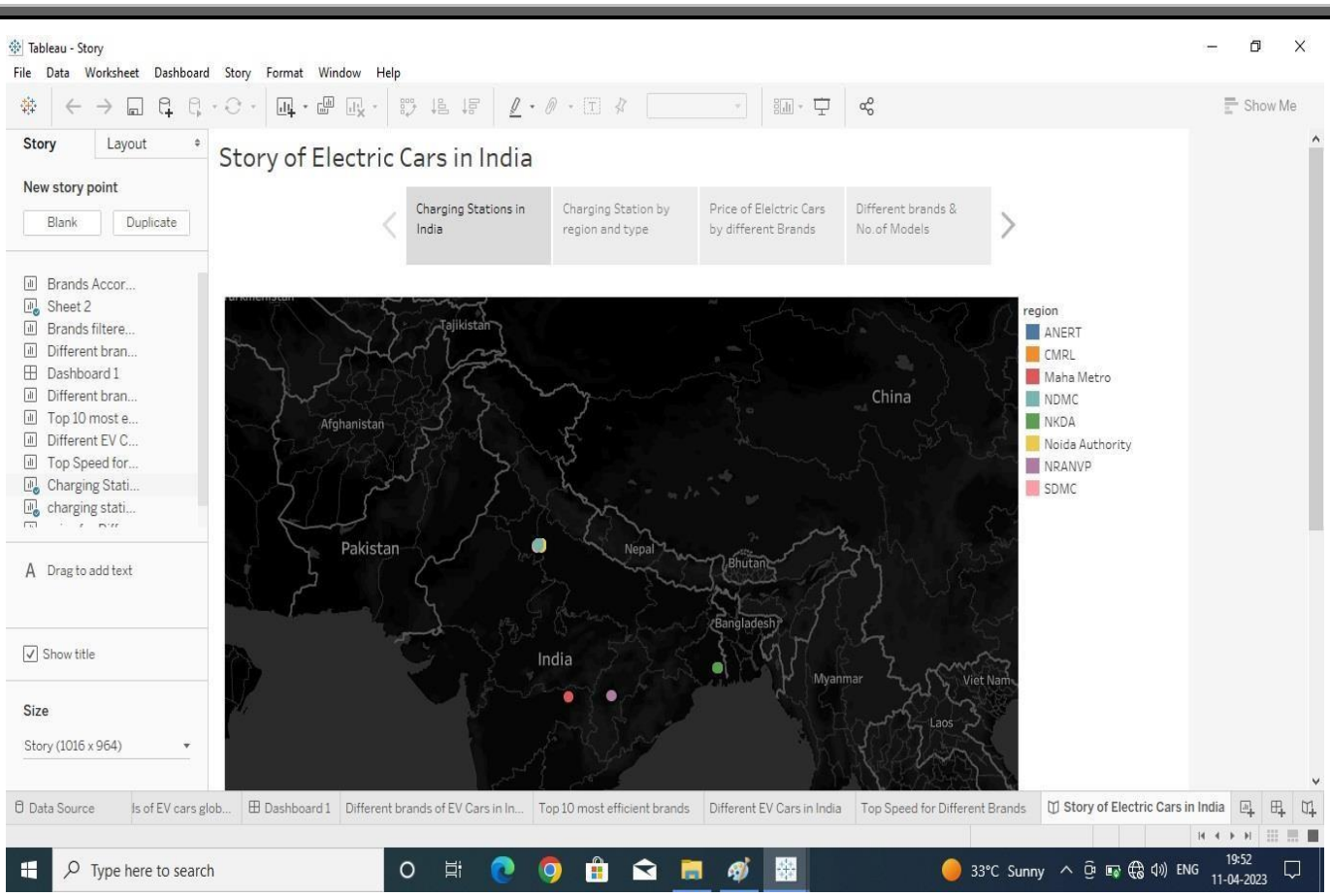
Tableau - Story
File Data Worksheet Dashboard Story Format Window Help
Show Me
Story
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Brands Accor...
Sheet 2
Brands filtere...
Different bran...
Dashboard 1
Different bran...
Top 10 most e...
Different EV C...
Top Speed for...
Charging Stati...
charging stati...
Drag to add text
Show title
Size
Story (1016 x 964)
Story of Electric Cars in India
Charging Stations in India
Charging Station by region and type
Price of Elelctric Cars by different Brands
Different brands & No.of Models
region
ANERT
CMRL
Maha Metro
NDMC
NKDA
Noida Authority
NRANVP
SDMC
Tajikistan
China
Afghanistan
Pakistan
Nepal
Bhutan
Bangladesh
India
Myanmar
Viet Nam
Laos
Data Source
Is of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Type here to search
33°C Sunny
ENG
19:52
11-04-2023

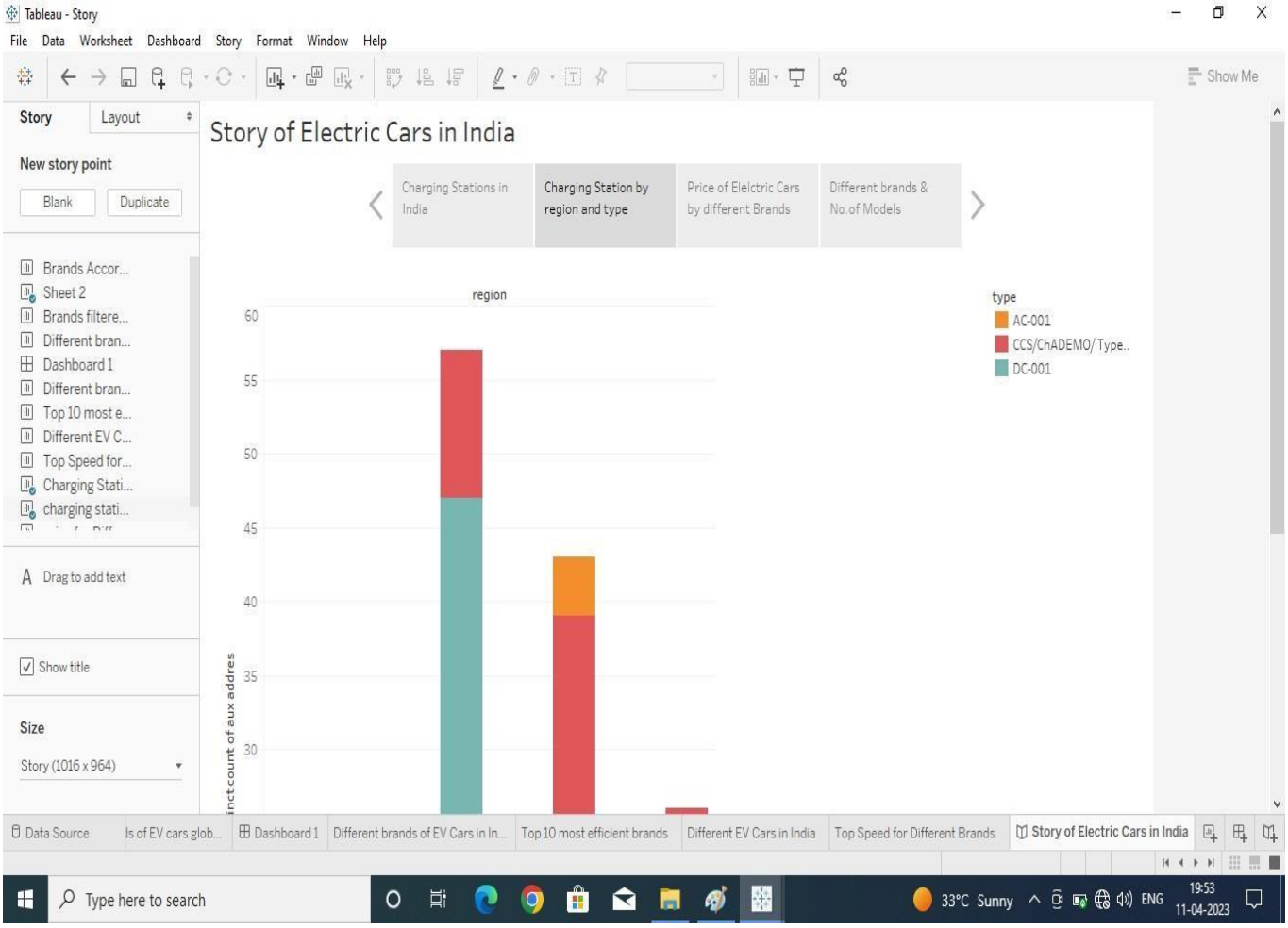


Tableau - Story
File Data Worksheet Dashboard Story Format Window Help
Show Me
Story
Layout
New story point
Blank
Duplicate
Brands Accor...
Sheet 2
Brands filtere...
Different bran...
Dashboard 1
Different bran...
Top 10 most e...
Different EV C...
Top Speed for...
Charging Stati...
charging stati...
Drag to add text
Show title
Size
Story (1016 x 964)
Story of Electric Cars in India
Charging Stations in India
Charging Station by region and type
Price of Elelctric Cars by different Brands
Different brands & No.of Models
region
type
AC-001
CCS/ChADEMO/ Type..
DC-001
60
55
50
45
40
35
30
inct count of aux addres
Data Source
Is of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Type here to search
33°C Sunny
ENG
19:53
11-04-2023

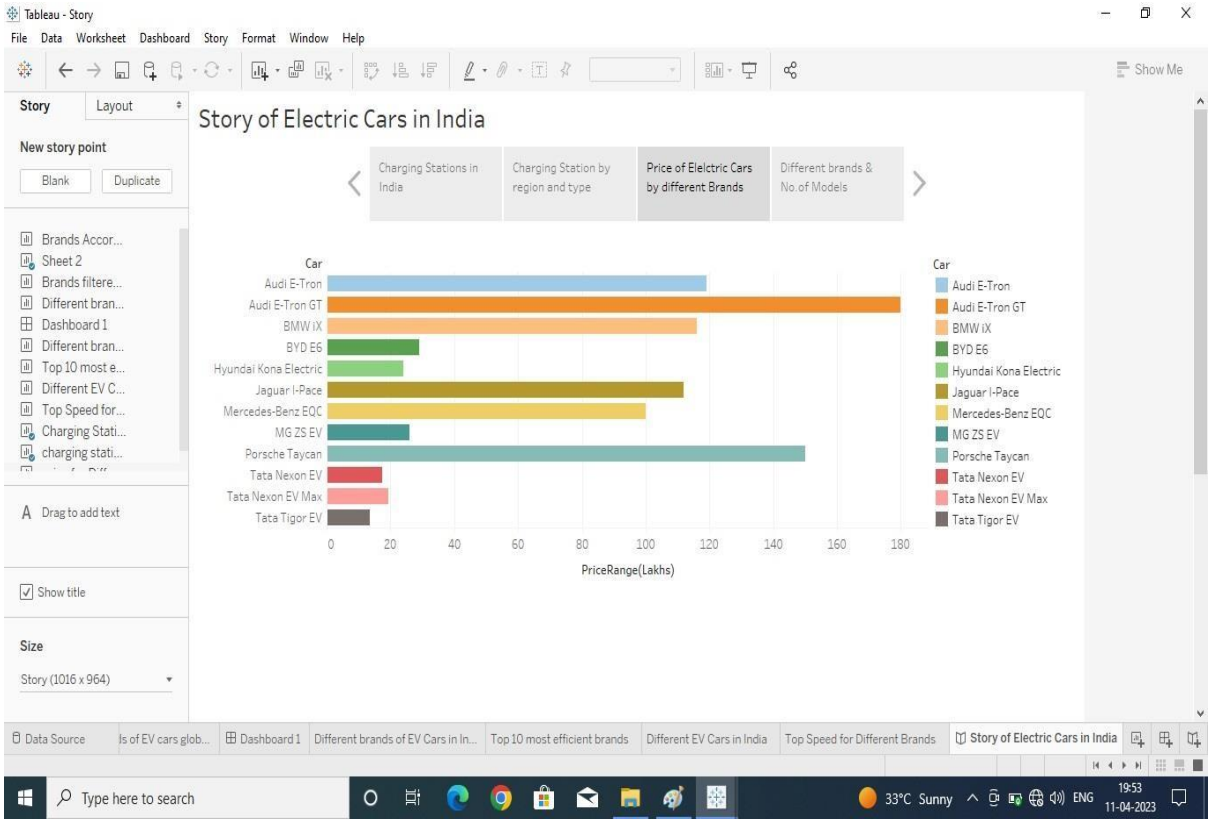


Tableau - Story
File Data Worksheet Dashboard Story Format Window Help
Show Me
Story
Layout
New story point
Blank
Duplicate
Brands Accor...
Sheet 2
Brands filtere...
Different bran...
Dashboard 1
Different bran...
Top 10 most e...
Different EV C...
Top Speed for...
Charging Stati...
charging stati...
Drag to add text
Show title
Size
Story (1016 x 964)
Story of Electric Cars in India
Charging Stations in India
Charging Station by region and type
Price of Elelctric Cars by different Brands
Different brands & No.of Models
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
0 20 40 60 80 100 120 140 160 180
PriceRange(Lakhs)
Data Source
Is of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Type here to search
33°C Sunny
ENG
19:53
11-04-2023

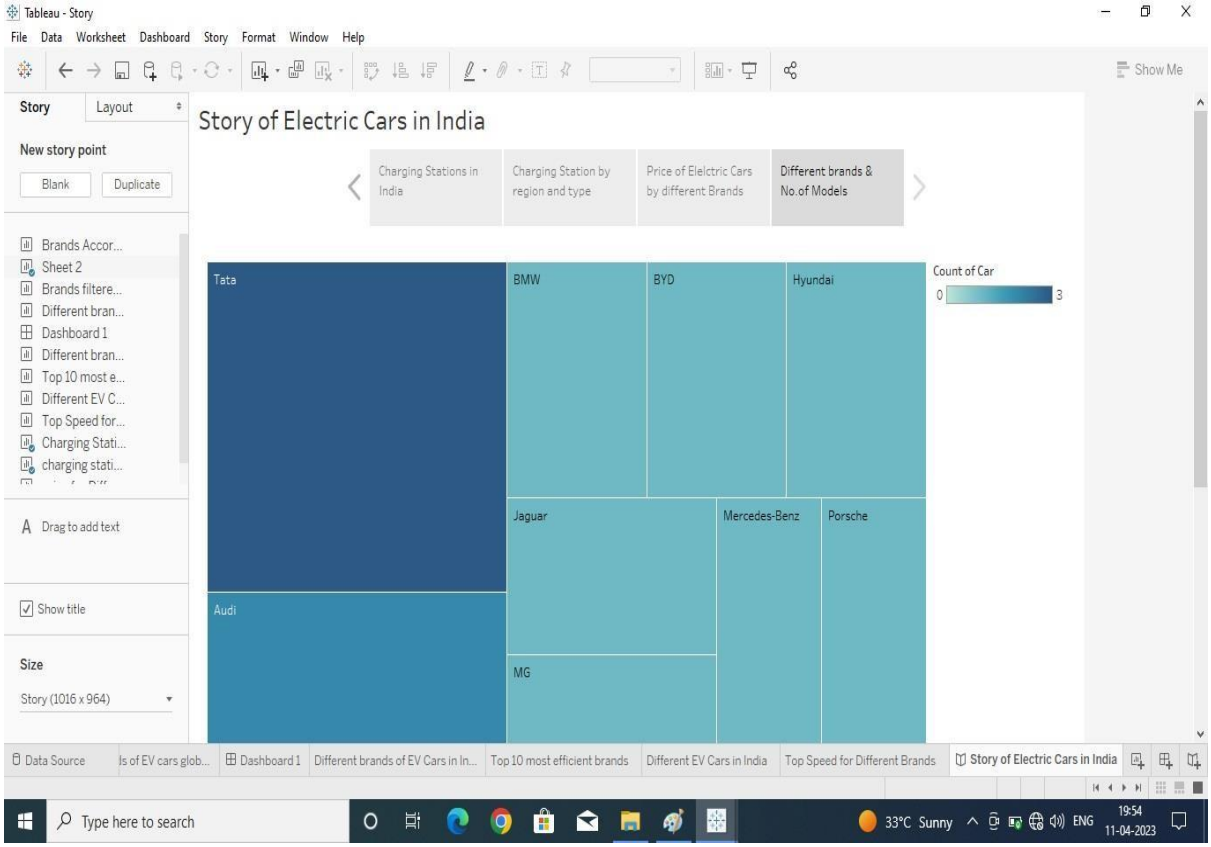


Tableau - Story
File Data Worksheet Dashboard Story Format Window Help
Show Me
Story
Layout
New story point
Blank
Duplicate
Brands Accor...
Sheet 2
Brands filtere...
Different bran...
Dashboard 1
Different bran...
Top 10 most e...
Different EV C...
Top Speed for...
Charging Stati...
charging stati...
Drag to add text
Show title
Size
Story (1016 x 964)
Story of Electric Cars in India
Charging Stations in India
Charging Station by region and type
Price of Elelctric Cars by different Brands
Different brands & No.of Models
Tata
BMW
BYD
Hyundai
Jaguar
Mercedes-Benz
Porsche
Audi
MG
Count of Car
0 3
Data Source
Is of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Type here to search
33°C Sunny
ENG
19:54
11-04-2023

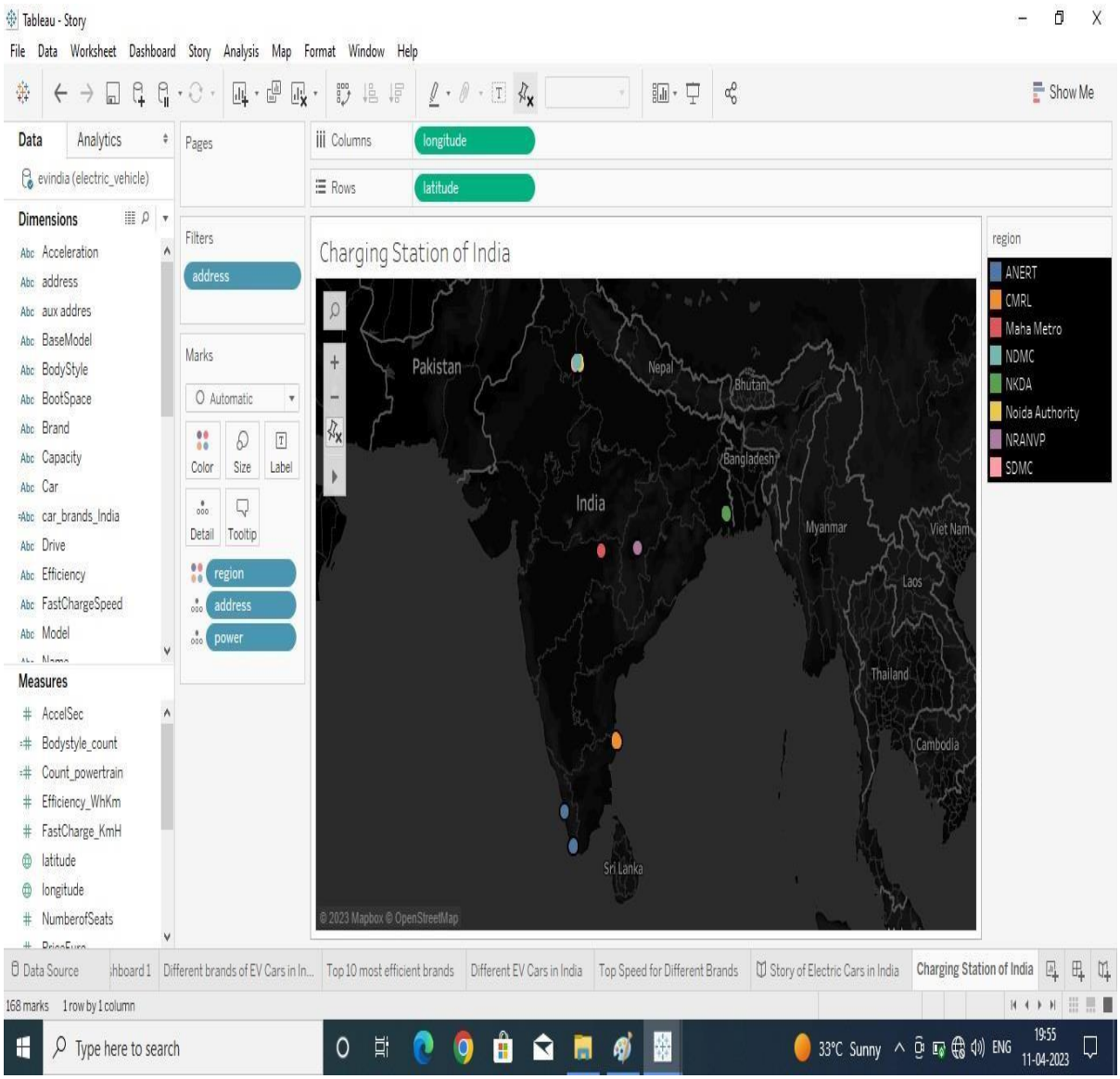


Tableau - Story
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Show Me
Data
Analytics
evindia (electric_vehicle)
Dimensions
Abc Acceleration
Abc address
Abc aux addres
Abc BaseModel
Abc BodyStyle
Abc BootSpace
Abc Brand
Abc Capacity
Abc Car
Abc car_brands_India
Abc Drive
Abc Efficiency
Abc FastChargeSpeed
Abc Model
Measures
AccelSec
Bodystyle_count
Count_powertrain
Efficiency_WhKm
FastCharge_KmH
latitude
longitude
NumberofSeats
Pages
Columns
longitude
Rows
latitude
Filters
address
Marks
Automatic
Color
Size
Label
Detail
Tooltip
region
address
power
Charging Station of India
region
ANERT
CMRL
Maha Metro
NDMC
NKDA
Noida Authority
NRANVP
SDMC
Pakistan
Nepal
Bhutan
Bangladesh
India
Myanmar
Viet Nam
Laos
Thailand
Cambodia
Sri Lanka
© 2023 Mapbox © OpenStreetMap
Data Source
Different brands of EV Cars in In...
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Charging Station of India
168 marks
1 row by 1 column
Type here to search
33°C Sunny
ENG
19:55
11-04-2023

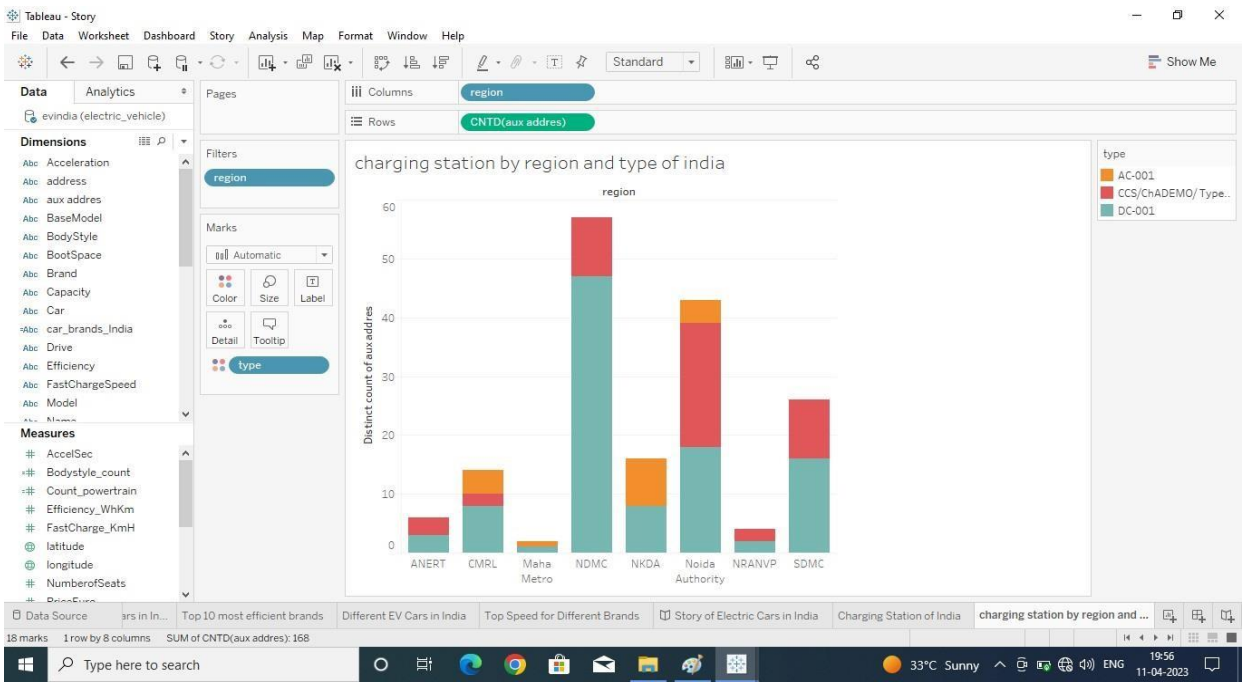


Tableau - Story
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data
Analytics
evindia (electric_vehicle)
Dimensions
Abc Acceleration
Abc address
Abc aux addres
Abc BaseModel
Abc BodyStyle
Abc BootSpace
Abc Brand
Abc Capacity
Abc Car
Abc car_brands_India
Abc Drive
Abc Efficiency
Abc FastChargeSpeed
Abc Model
Measures
AccelSec
Bodystyle_count
Count_powertrain
Efficiency_WhKm
FastCharge_KmH
latitude
longitude
NumberofSeats
Pages
Columns
region
Rows
CNTD(aux addres)
Filters
region
Marks
Automatic
Color
Size
Label
Detail
Tooltip
type
charging station by region and type of india
region
Distinct count of aux addres
60
50
40
30
20
10
0
ANERT
CMRL
Maha Metro
NDMC
NKDA
Noida Authority
NRANVP
SDMC
type
AC-001
CCS/ChADEMO/ Type..
DC-001
Data Source
Top 10 most efficient brands
Different EV Cars in India
Top Speed for Different Brands
Story of Electric Cars in India
Charging Station of India
charging station by region and ...
18 marks
1 row by 8 columns
SUM of CNTD(aux addres): 168
Type here to search
33°C Sunny
ENG
19:56
11-04-2023

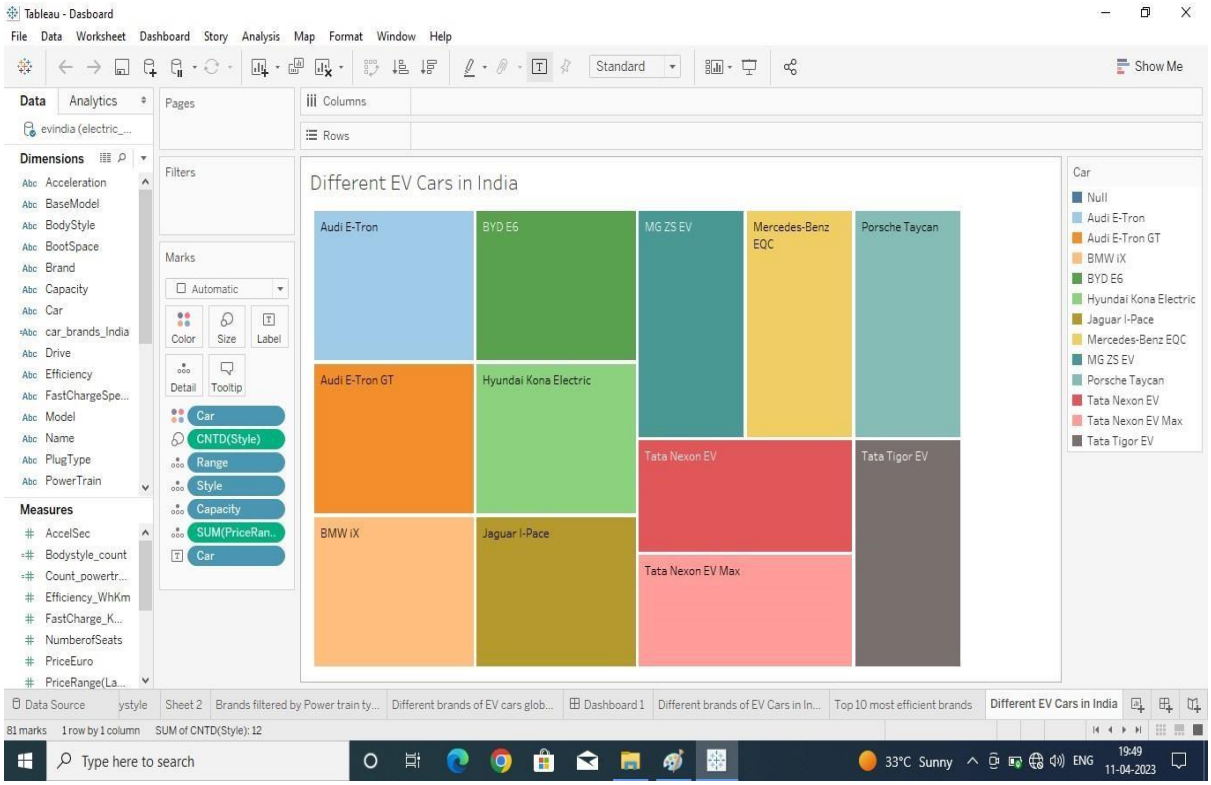


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Different EV Cars in India
Audi E-Tron
BYD E6
MG ZS EV
Mercedes-Benz EQC
Porsche Taycan
Audi E-Tron GT
Hyundai Kona Electric
Tata Nexon EV
Tata Tigor EV
BMW iX
Jaguar I-Pace
Tata Nexon EV Max
Car
Null
Audi E-Tron
Audi 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
81 marks 1 row by 1 column SUM of CNTD(Style): 12

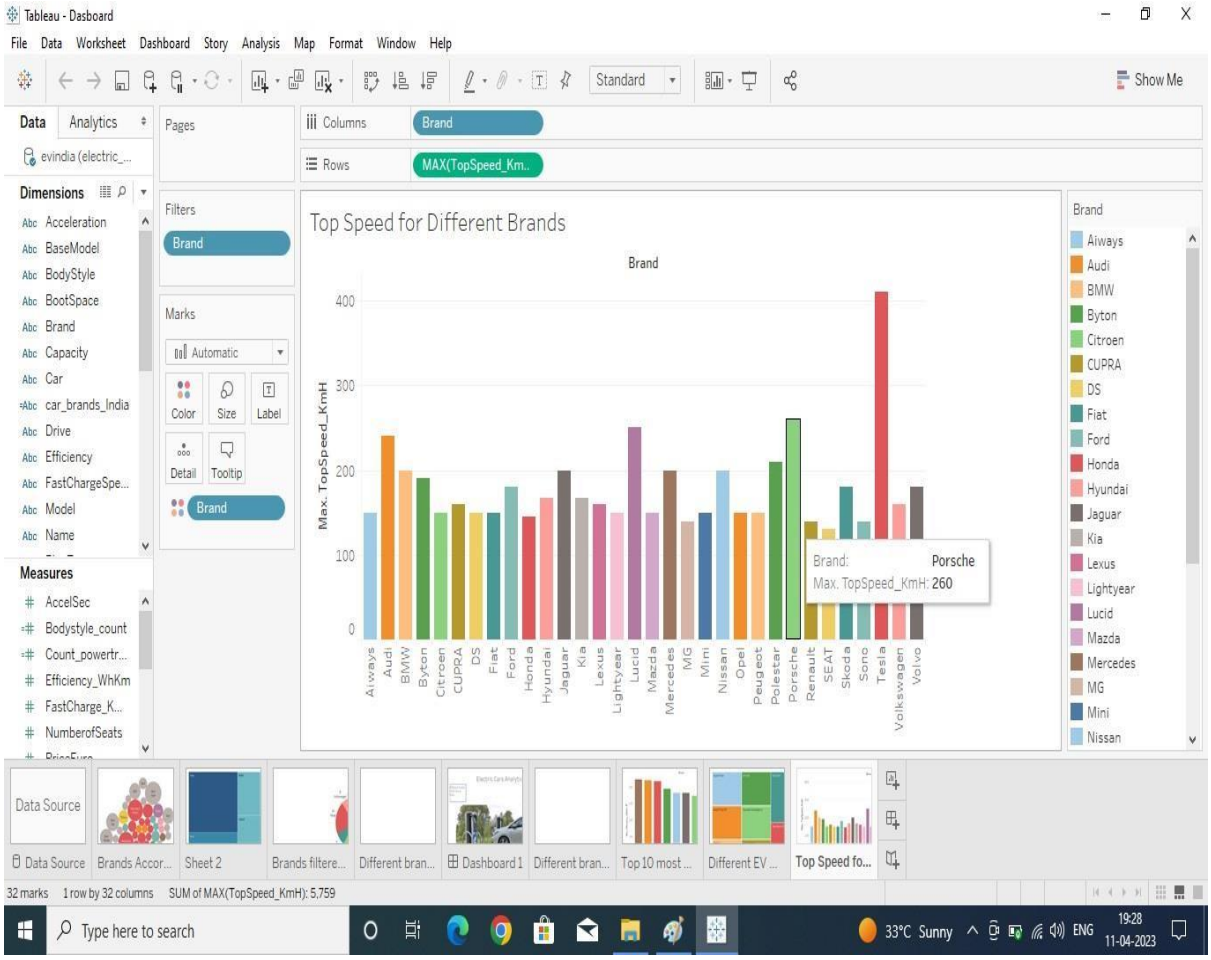


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Top Speed for Different Brands
Brand
Max. TopSpeed_KmH
Brand: Porsche
Max. TopSpeed_KmH: 260
Aiways
Audi
BMW
Byton
Citroen
CUPRA
DS
Fiat
Ford
Honda
Hyundai
Jaguar
Kia
Lexus
Lightyear
Lucid
Mazda
Mercedes
MG
Mini
Nissan
Opel
Peugeot
Polestar
Porsche
Renault
SEAT
Skoda
Sono
Tesla
Volkswagen
Volvo
32 marks 1 row by 32 columns SUM of MAX(TopSpeed_KmH): 5,759

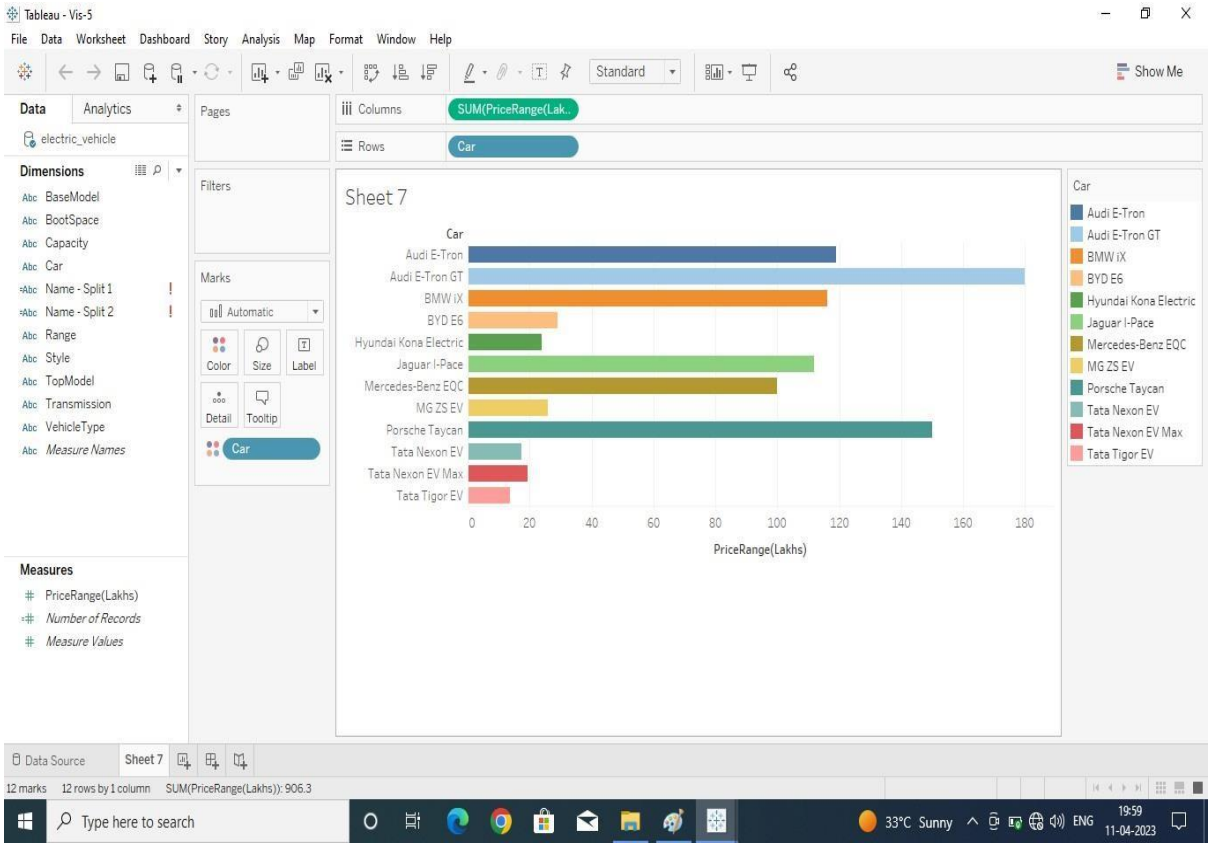


Tableau - Vis-5
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data Analytics
electric_vehicle
Dimensions
BaseModel
BootSpace
Capacity
Car
Name - Split 1
Name - Split 2
Range
Style
TopModel
Transmission
VehicleType
Measure Names
Measures
PriceRange(Lakhs)
Number of Records
Measure Values
Pages
Filters
Marks
Automatic
Color
Size
Label
Detail
Tooltip
Car
Columns
SUM(PriceRange(Lak..
Rows
Car
Sheet 7
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
0 20 40 60 80 100 120 140 160 180
PriceRange(Lakhs)
Data Source
Sheet 7
12 marks
12 rows by 1 column
SUM(PriceRange(Lakhs)): 906.3
Type here to search
33°C Sunny
ENG
19:59
11-04-2023

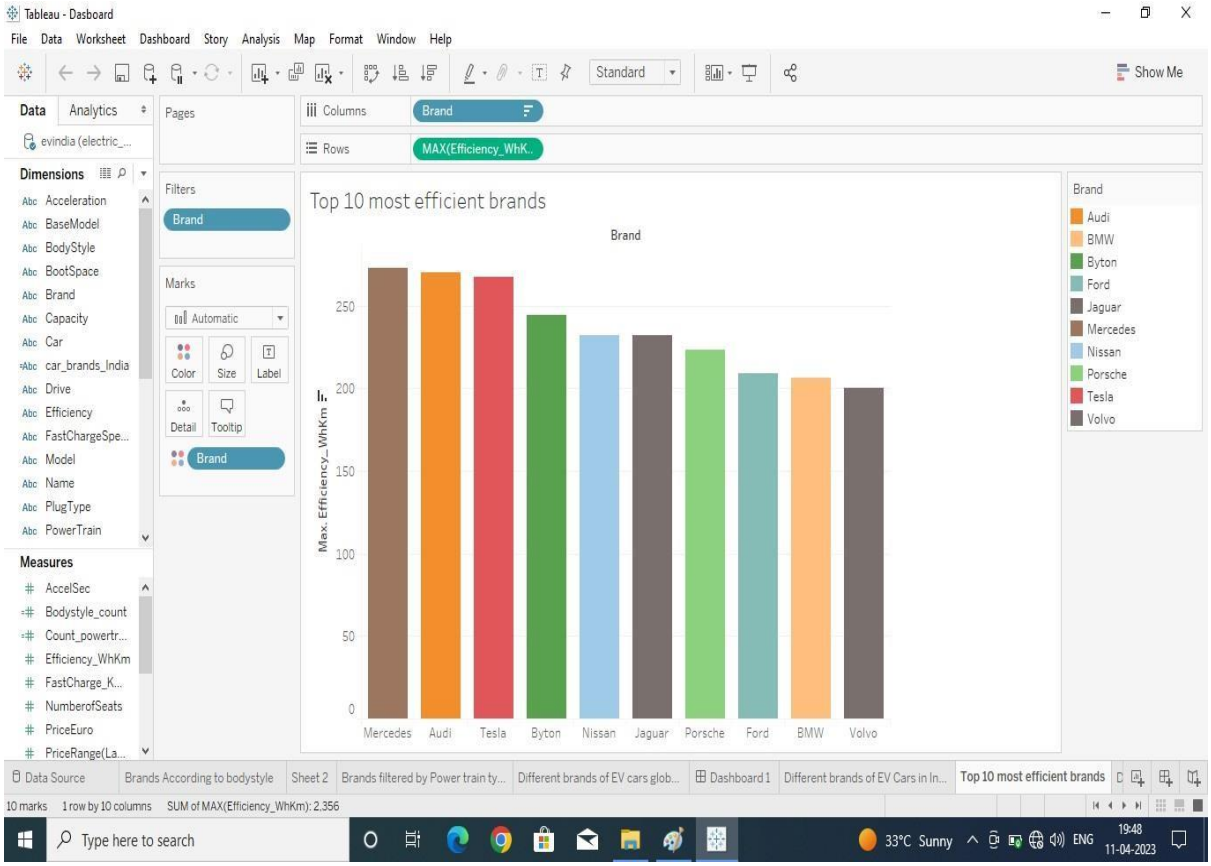


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data Analytics
evindia (electric_...
Dimensions
Acceleration
BaseModel
BodyStyle
BootSpace
Brand
Capacity
Car
car_brands_India
Drive
Efficiency
FastChargeSpe...
Model
Name
PlugType
PowerTrain
Measures
AccelSec
Bodystyle_count
Count_powertr...
Efficiency_WhKm
FastCharge_K...
NumberofSeats
PriceEuro
PriceRange(La...
Pages
Filters
Brand
Marks
Automatic
Color
Size
Label
Detail
Tooltip
Brand
Columns
Brand
Rows
MAX(Efficiency_WhK..
Top 10 most efficient brands
Brand
Max. Efficiency_WhKm
0 50 100 150 200 250
Mercedes Audi Tesla Byton Nissan Jaguar Porsche Ford BMW Volvo
Brand
Audi
BMW
Byton
Ford
Jaguar
Mercedes
Nissan
Porsche
Tesla
Volvo
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
10 marks
1 row by 10 columns
SUM of MAX(Efficiency_WhKm): 2,356
Type here to search
33°C Sunny
ENG
19:48
11-04-2023

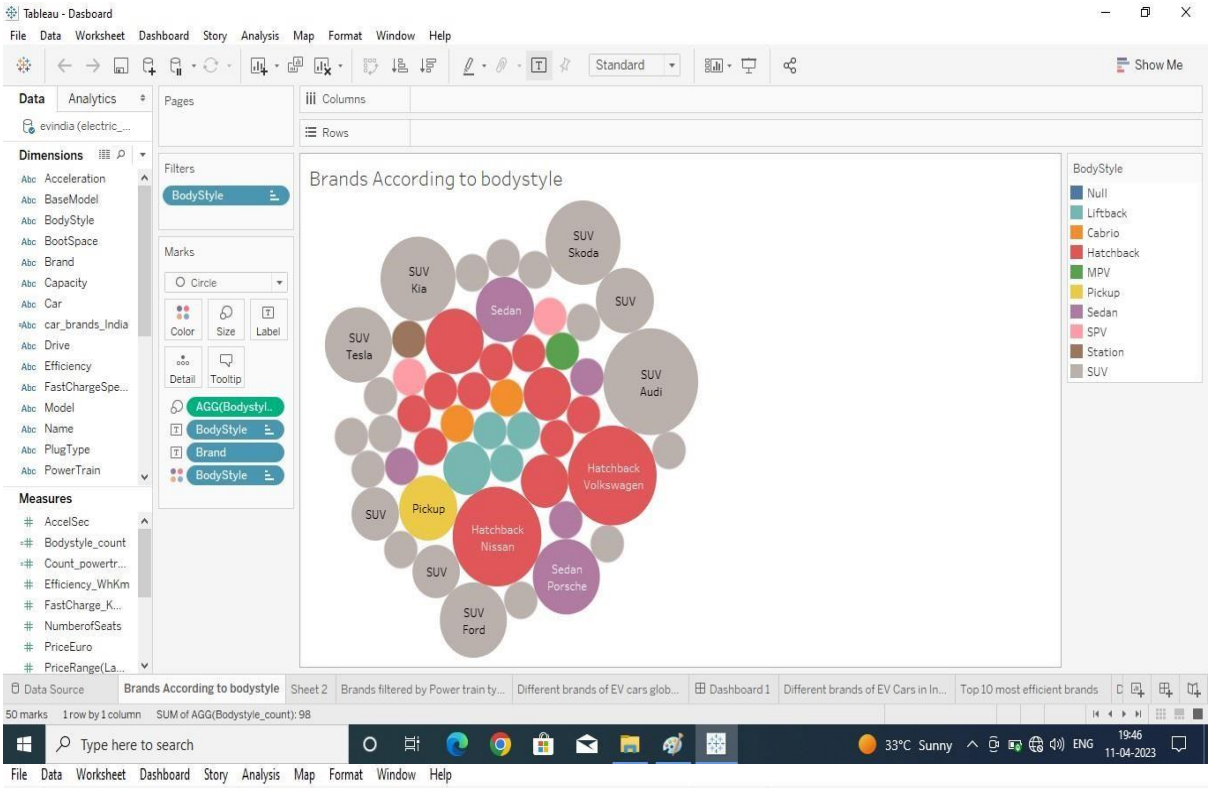
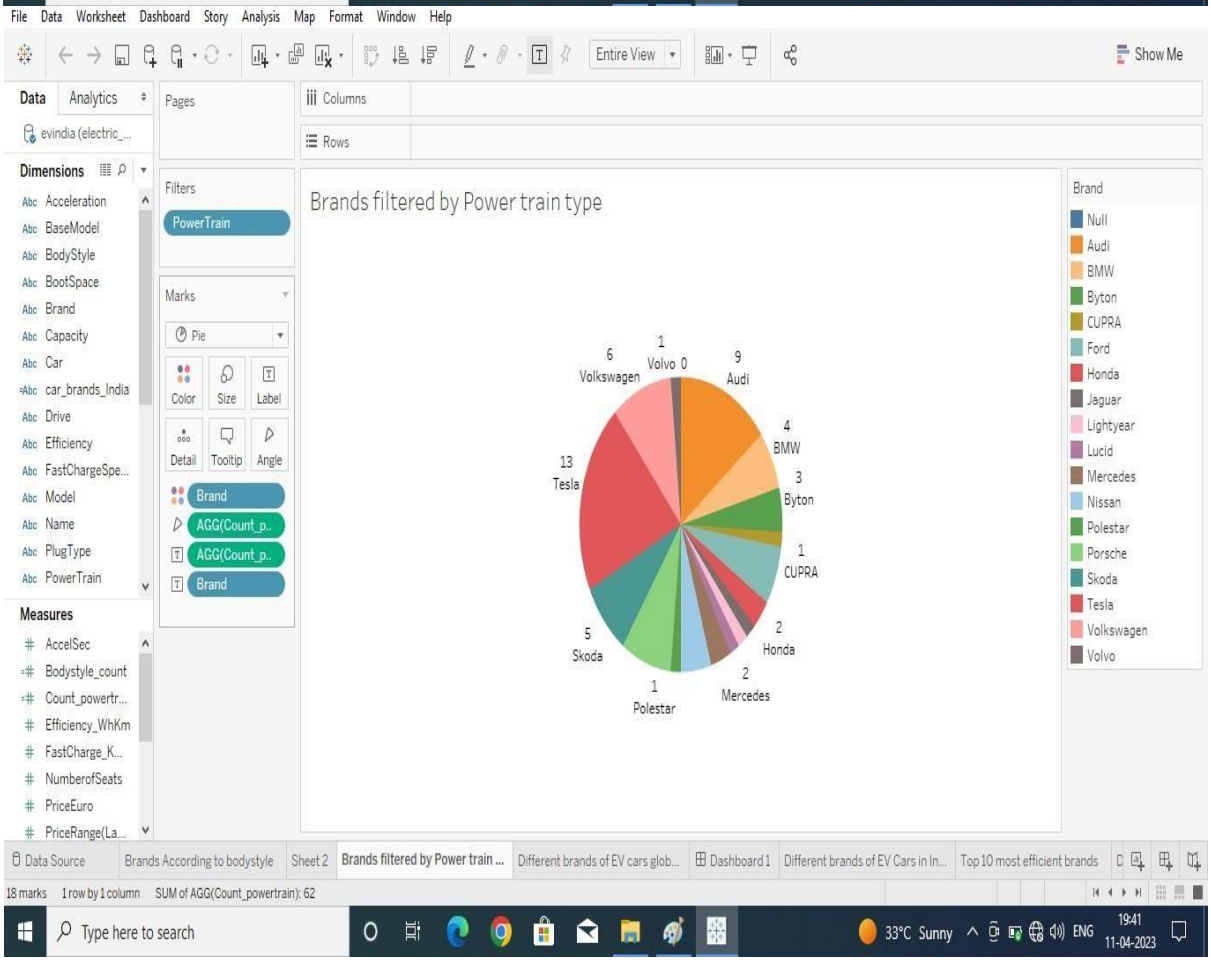


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data Analytics
Pages
Columns
Rows
Filters
BodyStyle
Marks
Circle
Color Size Label
Detail Tooltip
AGG(Bodystyl..
BodyStyle
Brand
BodyStyle
Brands According to bodystyle
SUV Skoda
SUV Kia
Sedan
SUV
SUV Tesla
SUV Audi
Hatchback Volkswagen
SUV
Pickup
Hatchback Nissan
Sedan Porsche
SUV
SUV Ford
BodyStyle
Null
Liftback
Cabrio
Hatchback
MPV
Pickup
Sedan
SPV
Station
SUV
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
50 marks 1 row by 1 column SUM of AGG(Bodystyle_count): 98
Type here to search
33°C Sunny
ENG
19:46
11-04-2023


File Data Worksheet Dashboard Story Analysis Map Format Window Help
Entire View
Show Me
Data Analytics
Pages
Columns
Rows
Filters
PowerTrain
Marks
Pie
Color Size Label
Detail Tooltip Angle
Brand
AGG(Count_p..
AGG(Count_p..
Brand
Brands filtered by Power train type
1 Volvo
6 Volkswagen
0
9 Audi
4 BMW
3 Byton
1 CUPRA
2 Honda
2 Mercedes
1 Polestar
5 Skoda
13 Tesla
Brand
Null
Audi
BMW
Byton
CUPRA
Ford
Honda
Jaguar
Lightyear
Lucid
Mercedes
Nissan
Polestar
Porsche
Skoda
Tesla
Volkswagen
Volvo
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
18 marks 1 row by 1 column SUM of AGG(Count_powertrain): 62
Type here to search
33°C Sunny
ENG
19:41
11-04-2023

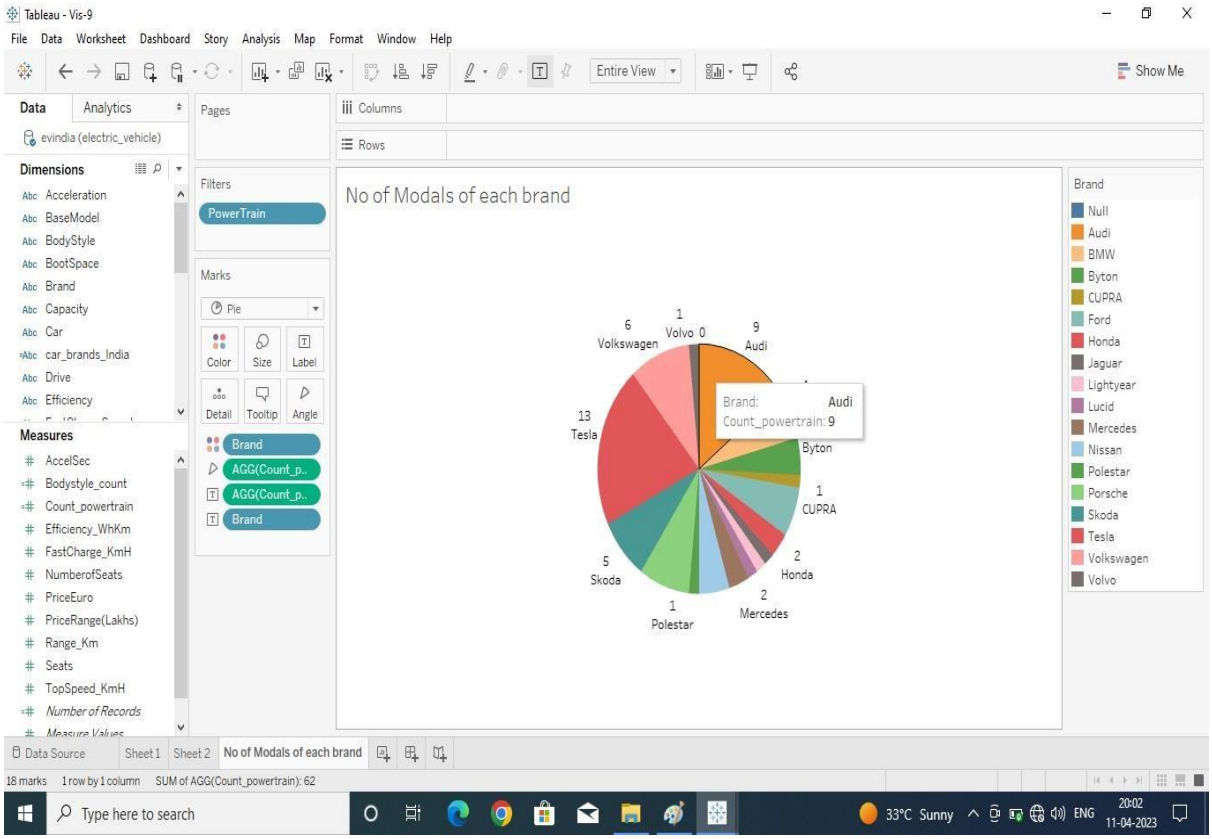


Tableau - Vis-9
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Entire View
Show Me
Data Analytics
evindia (electric_vehicle)
Dimensions
Acceleration
BaseModel
BodyStyle
BootSpace
Brand
Capacity
Car
car_brands_India
Drive
Efficiency
Measures
AccelSec
Bodystyle_count
Count_powertrain
Efficiency_WhKm
FastCharge_KmH
NumberofSeats
PriceEuro
PriceRange(Lakhs)
Range_Km
Seats
TopSpeed_KmH
Number of Records
Pages
Filters
PowerTrain
Marks
Pie
Color
Size
Label
Detail
Tooltip
Angle
Brand
AGG(Count_p..
AGG(Count_p..
Brand
Columns
Rows
No of Modals of each brand
6 Volkswagen
1 Volvo
0
9 Audi
13 Tesla
Brand: Audi
Count_powertrain: 9
Byton
1 CUPRA
2 Honda
2 Mercedes
1 Polestar
5 Skoda
Brand
Null
Audi
BMW
Byton
CUPRA
Ford
Honda
Jaguar
Lightyear
Lucid
Mercedes
Nissan
Polestar
Porsche
Skoda
Tesla
Volkswagen
Volvo
Data Source
Sheet 1
Sheet 2
No of Modals of each brand
18 marks
1 row by 1 column
SUM of AGG(Count_powertrain): 62
Type here to search
33°C Sunny
ENG
20:02
11-04-2023

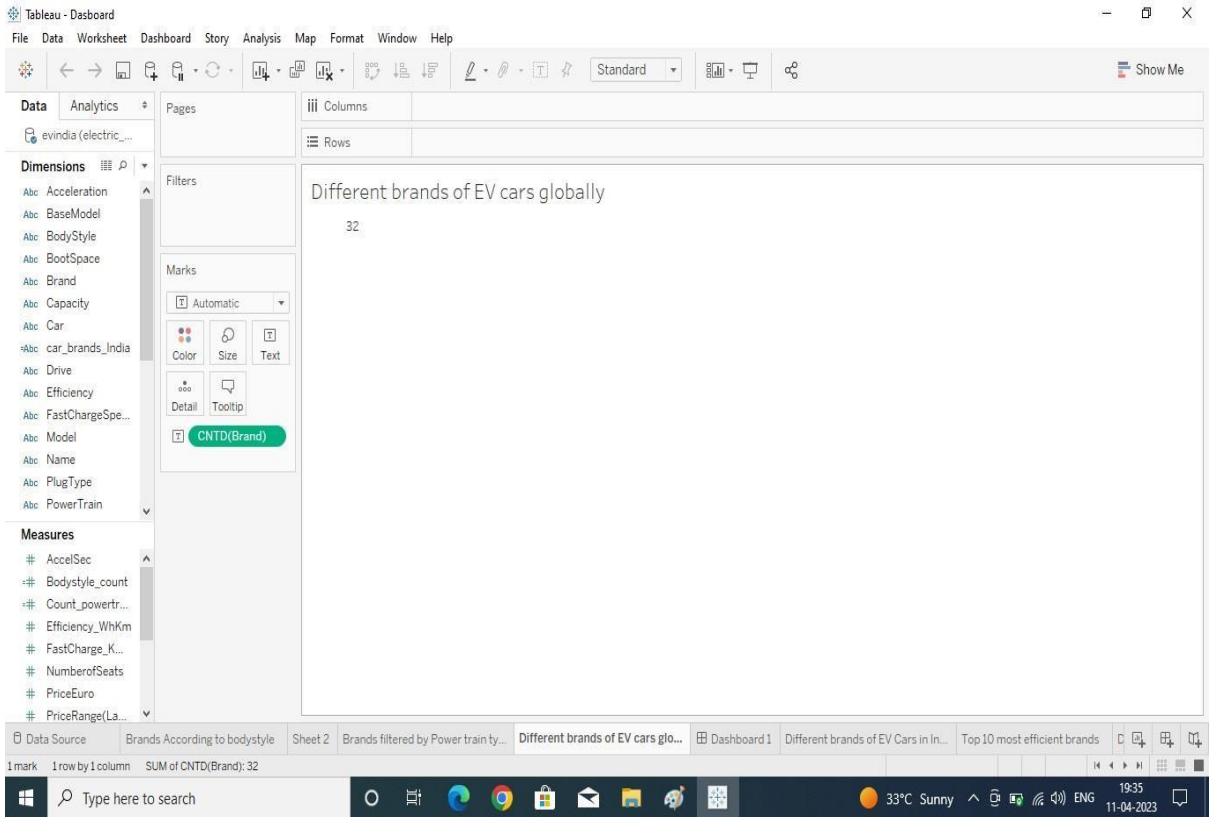


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data Analytics
evindia (electric_...
Dimensions
Acceleration
BaseModel
BodyStyle
BootSpace
Brand
Capacity
Car
car_brands_India
Drive
Efficiency
FastChargeSpe...
Model
Name
PlugType
PowerTrain
Measures
AccelSec
Bodystyle_count
Count_powertr...
Efficiency_WhKm
FastCharge_K...
NumberofSeats
PriceEuro
PriceRange(La...
Pages
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
CNTD(Brand)
Columns
Rows
Different brands of EV cars globally
32
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glo...
Dashboard 1
Different brands of EV Cars in In...
Top 10 most efficient brands
1 mark
1 row by 1 column
SUM of CNTD(Brand): 32
Type here to search
33°C Sunny
ENG
19:35
11-04-2023

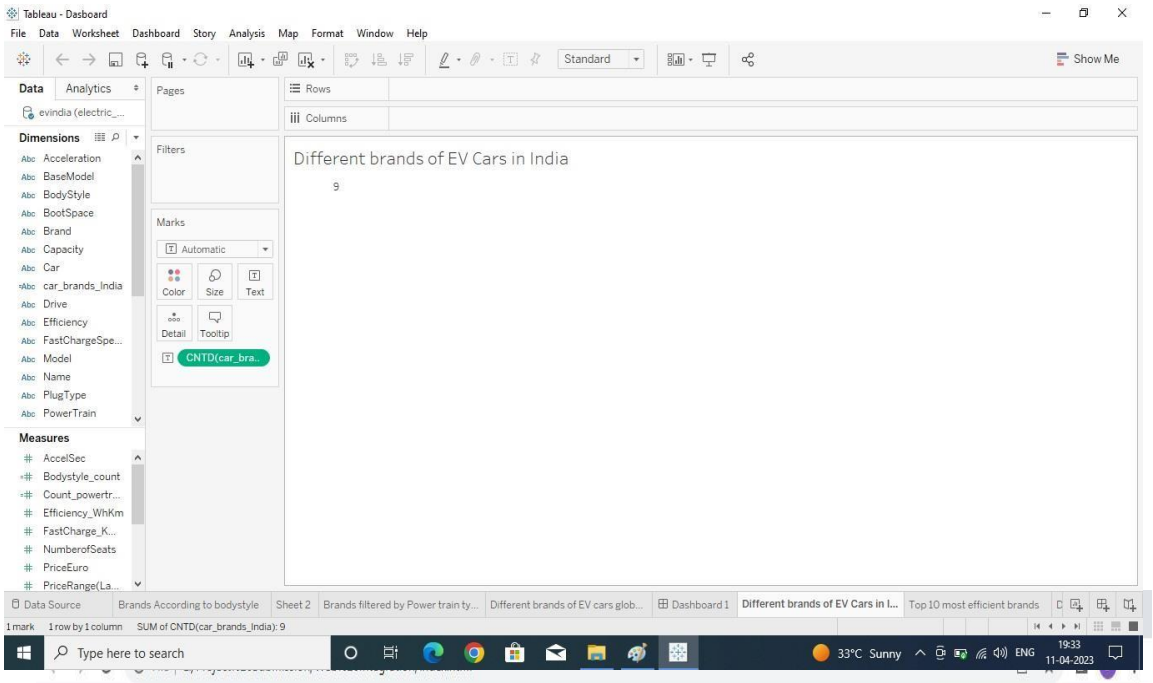
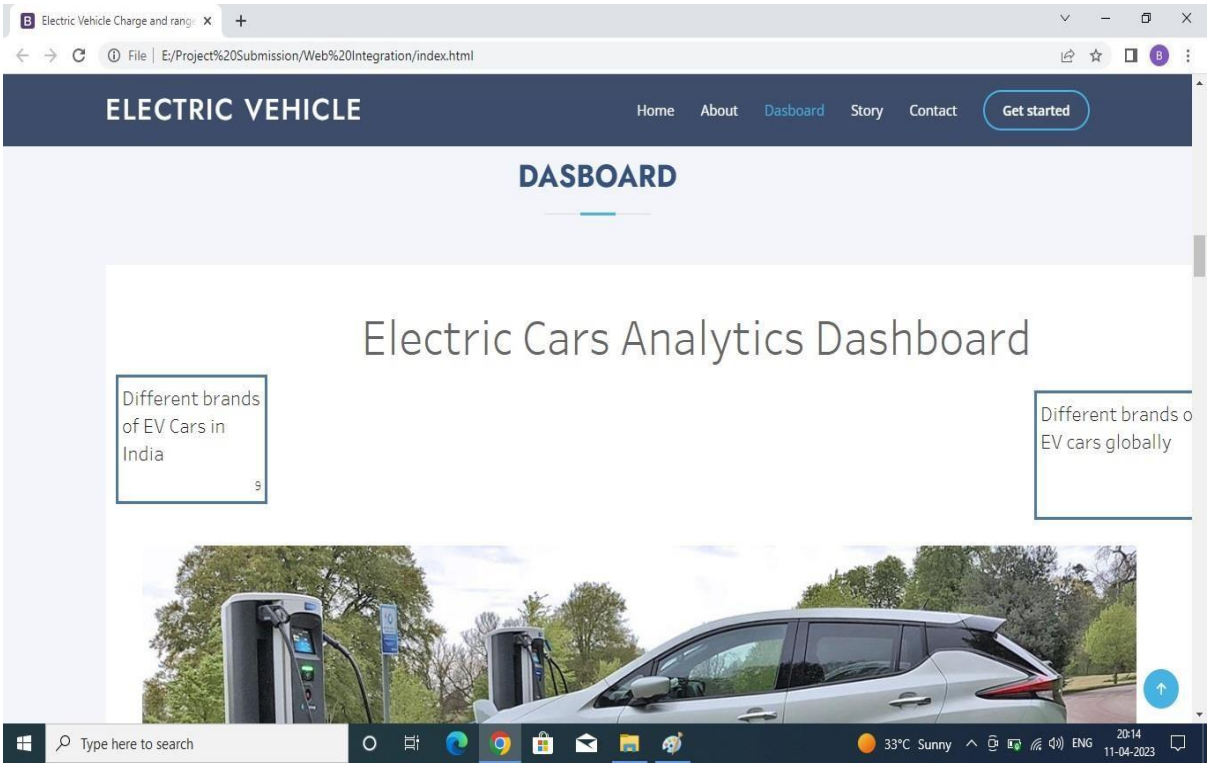
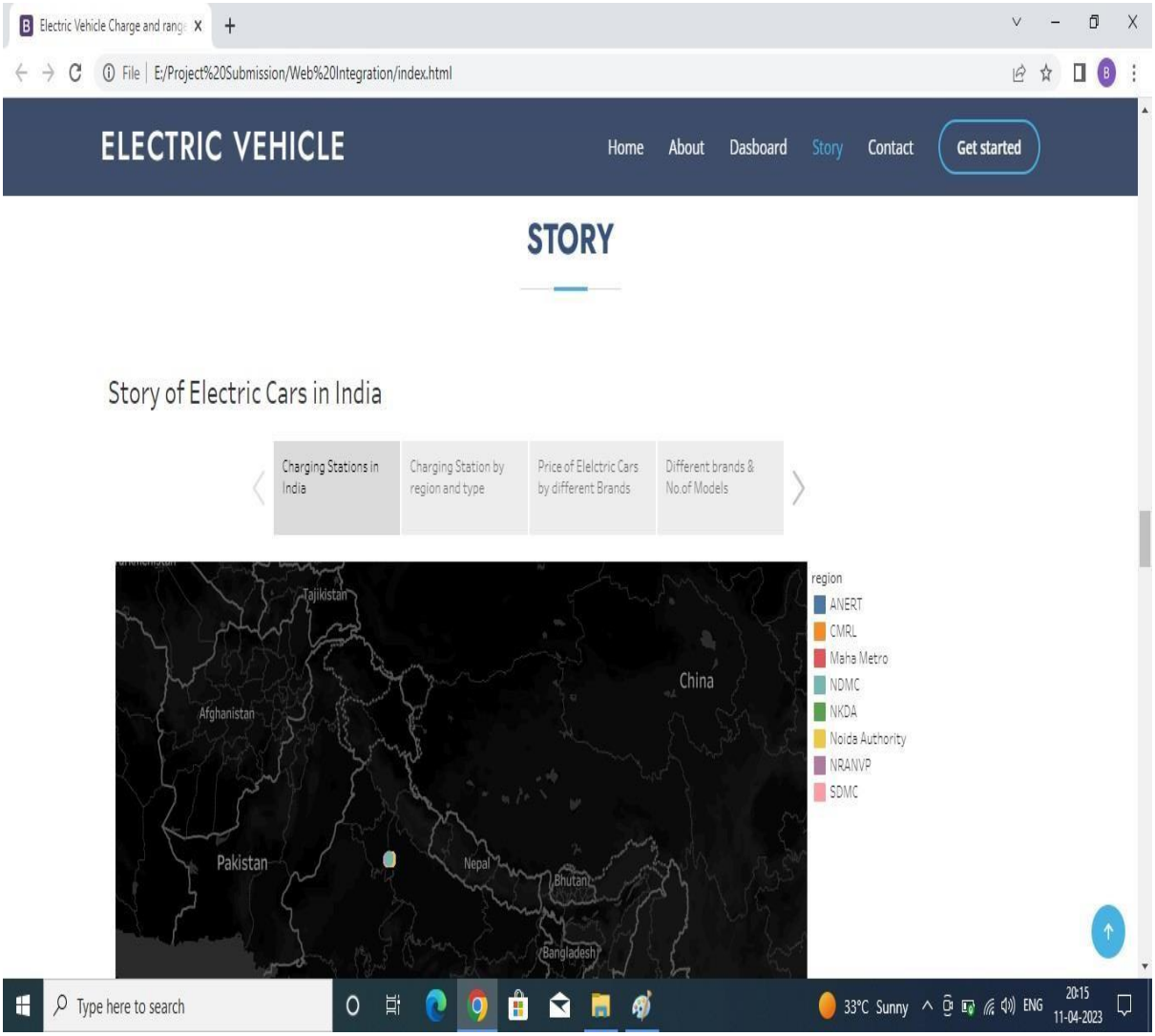


Tableau - Dasboard
File Data Worksheet Dashboard Story Analysis Map Format Window Help
Standard
Show Me
Data
Analytics
Pages
Rows
Columns
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
CNTD(car_bra..
Dimensions
Acceleration
BaseModel
BodyStyle
BootSpace
Brand
Capacity
Car
car_brands_India
Drive
Efficiency
FastChargeSpe...
Model
Name
PlugType
PowerTrain
Measures
AccelSec
Bodystyle_count
Count_powertr...
Efficiency_WhKm
FastCharge_K...
NumberofSeats
PriceEuro
PriceRange(La...
Different brands of EV Cars in India
9
Data Source
Brands According to bodystyle
Sheet 2
Brands filtered by Power train ty...
Different brands of EV cars glob...
Dashboard 1
Different brands of EV Cars in I...
Top 10 most efficient brands
1 mark
1 row by 1 column
SUM of CNTD(car_brands_India): 9
Type here to search
33°C Sunny
ENG
19:33
11-04-2023

ELECTRIC VEHICLE
Home
About
Dasboard
Story
Contact
Get started
Visualization tool for Electric Vehicle Charge and Range Analysis
We are team of talented designers making websites with Bootstrap
Get Started
Watch Video
Type here to search
33°C Sunny
ENG
20:10
11-04-2023


Electric Vehicle Charge and rang
File | E:/Project%20Submission/Web%20Integration/index.html
ELECTRIC VEHICLE
Home
About
Dasboard
Story
Contact
Get started
DASBOARD
Electric Cars Analytics Dashboard
Different brands of EV Cars in India
Different brands o EV cars globally
Type here to search
33°C Sunny
ENG
20:14
11-04-2023


Electric Vehicle Charge and rang
File | E:/Project%20Submission/Web%20Integration/index.html
ELECTRIC VEHICLE
Home
About
Dasboard
Story
Contact
Get started
STORY
Story of Electric Cars in India
Charging Stations in India
Charging Station by region and type
Price of Elelctric Cars by different Brands
Different brands & No.of Models
Tajikistan
China
Afghanistan
Pakistan
Nepal
Bhutan
Bangladesh
region
ANERT
CMRL
Maha Metro
NDMC
NKDA
Noida Authority
NRANVP
SDMC
Type here to search
33°C Sunny
ENG
20:15
11-04-2023

4. ADVANTAGES AND DISADVANTAGES

4.1 ADVANTAGES:

Eco -friendly: Because electric vehicles do not utilize fuel for combustion, there are no emissions or gas exhaust. Vehicles that run on fossil fuels contribute significantly to hazardous gas accumulation in the environment, thus driving an electric car can help contribute to a cleaner environment.

Renewable energy source: Electric vehicles run on renewable power, whereas conventional automobiles function on the combustion of fossil fuels, which reduces the world's fossil-fuel stocks.

Less noise and smoother motion: Driving an electric car is significantly smoother. Because they lack fast-moving elements, they are quieter and produce less noise.

Cost-effective: Electricity is far less expensive than fuels such as gasoline and diesel, which are subject to regular price increases. When solar electricity is utilized at home, battery recharging is cost-effective.

Low maintenance: Because electric cars have fewer moving components, wear and tear is reduced when compared to traditional auto parts. Repairs are also simpler and less expensive than combustion engines.

4.2 DISADVANTAGES:

High initial cost: Electric vehicles continue to be quite expensive, and many buyers believe they are not as inexpensive as traditional automobiles.

Charging station limitations: People who need to travel long distances are concerned about finding adequate charging stations in the middle of their journey, which are not always accessible.

Recharging takes time: Unlike conventional automobiles, which require only a few minutes to replenish their gas tanks, charging an electric vehicle takes many hours.

Limited options: Currently, there aren't many electric car models to pick from in terms of appearance, style, or customized variations.

Less driving range: When compared to conventional automobiles, electric vehicles have a shorter driving range. Electric cars can be convenient for short-distance travel but are

5. APPLICATIONS

- It helps to know the region and type wise charging station in india .
- Total different electric cars in India list out. ➢ Top speed for Different Brands.
- Price for different cars in india
- Top10 most efficient electric vehicle brands.
- Brands according to Bodystyle.
- Brand filtered by Power train type.
- No of modals by each brand
- Summary Cards for Different brands of EV cars globally.
- Summary Cards for Different brands of EV cars in india.

6. CONCLUSION

This project provides many details for electric Vehicle so it’s help for buying electric cars. This project helps for our future because we handle for many software and specify business problem defining and problem understanding. Comparing the many brands and the best reasonable EV Cars. Although electric vehicle must solve the hurdles that are currently preventing people from purchasing, the future is clear. Evs will outlast gas powered automobiles in the in the long run. Both GM and Nissan declared in January 2021 that they will go all- electric by the 2030s. other automakers will undoubtedly follow suit

7. FUTURE SCOPE

There are no emissions:

Electric automobiles are being developed primarily because they do not emit any pollution when driving. An electric vehicle is propelled by a battery-powered electric motor. There is no burning of fuel. An electric vehicle does not have an exhaust system. It's the best road transportation solution at a time when global CO2 emissions and air pollution must be drastically cut.

Access to city centres is unrestricted:

Aside from the fact that more cities are implementing LEZs, these zones are also growing in size and strictness with time. With an electric car, you have limitless access to low-emission zones, now and in the future, wherever and whenever you want.

Electricity is less expensive than gasoline:

Electricity is less expensive than gasoline and fuel. In this regard, an electric automobile is less expensive than a car with a combustion engine. The most cost-effective solution is to charge at home.

Comfortable and quiet:

Unlike a combustion engine, an electric motor produces very little noise. As a result, the silence inside an electric vehicle is unmistakable. Additionally, unlike a combustion engine, an electric motor does not produce any vibrations or resonance. The vibration-free and silent drivetrain adds to the relaxation.

There's no need to switch gears:

An electric automobile does not have a traditional gearbox, which is another key distinction from a car with a combustion engine. An electric car always works like a car with an automatic transmission, which eliminates the need to shift gears. You also don't have to pay more for it. Driving in busy start-stop traffic in the city or traffic congestion has never been more comfortable, thanks to the quietness of an electric motor.

Torque on the fly:

The incredibly high torque of an electric motor is a distinct feature. Much more powerful than a typical internal combustion engine. Furthermore, an electric motor responds rapidly to throttle motions and generates peak torque right from a standstill. Internal combustion engines have an unavoidable response time and can only generate maximum torque in a specific speed range. All of this assures enticing performance thanks to the smooth and powerful acceleration, as well as a great deal of driving pleasure.

Extremely effective:

At the moment, the most efficient combustion engines have an efficiency of around 40%. That means they only put 40% of the energy in the fuel into motion. Heat and friction account for the remaining 60%.

An electric motor has a 90 per cent efficiency, which means it uses the battery's energy far more efficiently. Furthermore, because an electric motor can be transformed into a generator in the blink of an eye, an electric car can swiftly recover kinetic energy.

Requires less maintenance:

Electric drivetrain technology is much simpler than that of a combustion engine. Because only a few sections need to be lubricated, it has far fewer (spinning) parts and fluids. So, as you may have guessed, an electric vehicle requires less maintenance.

Generate your power:

Having your oil refinery in your garden to make your auto fuel is impossible. It's hardly unexpected, though, that you can create your electricity. For example, solar panels on the top of your home or office building can provide energy. You may further lower your kilometre cost by charging your battery with this renewable energy.

8. APPENDIX

8.1 SOURCE CODE:

DASHBOARD:

https://public.tableau.com/views/Dasboard_16811353129130/Dashboard1?:langu age=en-US&:display_count=n&:origin=viz_share_link

8.2 STORY:

https://public.tableau.com/views/Story_16811350752970/StoryofElectricCarsinIndia?:language=en-US&:display_count=n&:origin=viz_share_link