

## PROJECT DEVELOPMENT PHASE

DATE	Feb 2026
TEAM ID	LTVIP2026TMIDS47701
PROJECT TITLE	Visualization Tool for Electric Vehicle Charge and Range Analysis
MAXIMUM MARKS	15Marks

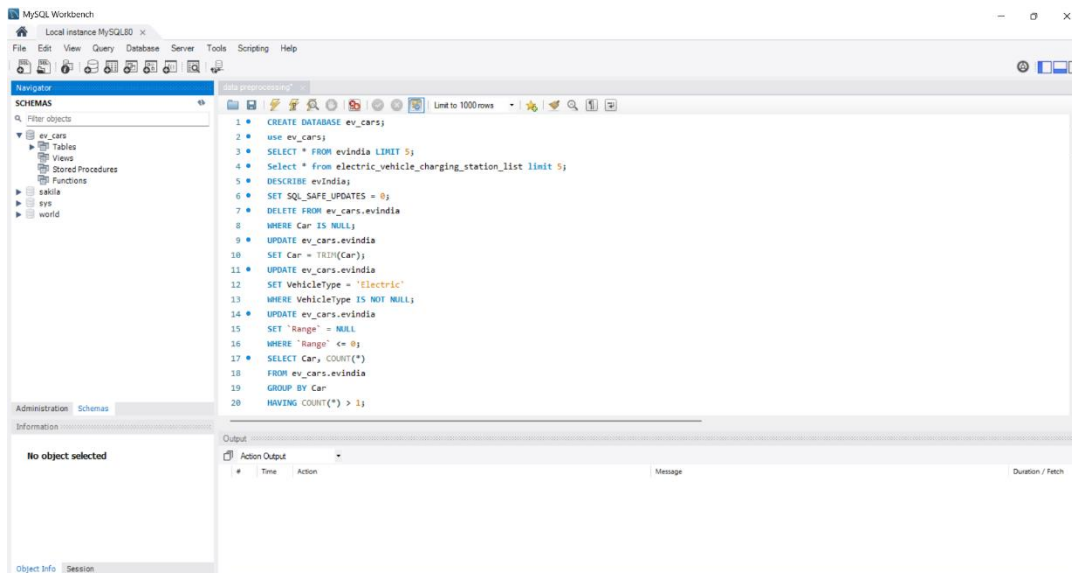
### 1. Data Connectivity

The data required for this project is collected from publicly available sources and stored in CSV file format. The datasets include electric vehicle specifications and charging station details. These CSV files are directly connected to Tableau for visualization and analysis.

### 2. Data Preparation

Data preparation is an important step to ensure accuracy and consistency. The following preprocessing steps were performed before visualization:

- Removed missing and null values
- Removed duplicate records
- Renamed column headers for better understanding
- Converted units such as range(km)and battery capacity(kWh)into standard formats
- Filtered unnecessary attributes
- Checked data consistency and corrected errors



MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- ev\_cars
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sakila
- sys
- world

Administration Schemas

Information

No object selected

Object Info Session

data preprocessing

Limit to 1000 rows

```

22 -- TABLE-2--
23
24 • DELETE FROM ev_cars.electriccardata_clean
25   WHERE Brand IS NULL OR Model IS NULL;
26
27 • UPDATE ev_cars.electriccardata_clean
28   SET PriceEuro = NULL
29   WHERE PriceEuro < 0;
30
31 • UPDATE ev_cars.electriccardata_clean
32   SET TopSpeed_KmH = NULL
33   WHERE TopSpeed_KmH < 50;
34
35 • UPDATE ev_cars.electriccardata_clean
36   SET RapidCharge = 'No'
37   WHERE RapidCharge IS NULL;
38
39 • UPDATE ev_cars.electriccardata_clean
40   SET BodyStyle = LOWER(BodyStyle);
41

```

Output

Action Output

#	Time	Action	Message	Duration / Fetch
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```

82 SET `Range` = REPLACE(`Range`, ' km', '');
83
84 • UPDATE ev_cars.'cheapestelectriccars-evdatabase'
85   SET PriceInGermany = NULL
86   WHERE PriceInGermany = '-';
87
88 • UPDATE ev_cars.'cheapestelectriccars-evdatabase'
89   SET Drive = LOWER(Drive);
90

```

Result Grid

Field	Type	Null	Key	Default	Extra
Name	text	YES		NULL	
Subtitle	text	YES		NULL	
Acceleration	text	YES		NULL	
TopSpeed	text	YES		NULL	
Range	text	YES		NULL	
Efficiency	text	YES		NULL	
FastChargeSpeed	text	YES		NULL	
Drive	text	YES		NULL	
NumberOfSeats	int	YES		NULL	
PriceInGermany	text	YES		NULL	

evindia 1 electric\_vehicle\_charging\_stat... Result 3 Result 4 electric\_vehicle\_charging\_stat... Result 6 Result 7 Result 8 x Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
25	14:57:21	DELETE FROM ev_cars.'cheapestelectriccars-evdatabase' WHERE Name IS NULL	0 row(s) affected	0.016 sec
26	14:57:21	UPDATE ev_cars.'cheapestelectriccars-evdatabase' SET Name = TRIM(Name)	0 row(s) affected Rows matched: 180 Changed: 0 Warnings: 0	0.000 sec
27	14:57:21	UPDATE ev_cars.'cheapestelectriccars-evdatabase' SET NumberOfSeats = NULL WHERE Number...	0 row(s) affected Rows matched: 0 Changed: 0 Warnings: 0	0.000 sec
28	14:57:21	UPDATE ev_cars.'cheapestelectriccars-evdatabase' SET `Range` = REPLACE(`Range`, ' km', '')	0 row(s) affected Rows matched: 180 Changed: 0 Warnings: 0	0.000 sec
29	14:57:21	UPDATE ev_cars.'cheapestelectriccars-evdatabase' SET PriceInGermany = NULL WHERE PriceIn...	0 row(s) affected Rows matched: 0 Changed: 0 Warnings: 0	0.000 sec
30	14:57:21	UPDATE ev_cars.'cheapestelectriccars-evdatabase' SET Drive = LOWER(Drive)	0 row(s) affected Rows matched: 180 Changed: 0 Warnings: 0	0.000 sec

