Data Exploration in MY SQL Workbench

1. See total number of rows

```sql
SELECT COUNT(*) AS total_rows FROM ev_trends;
```

total_rows
247344

2. Check column names and data types

```sql
DESCRIBE ev_trends;
```

Field	Type	Null	Key	Default	Extra
VIN (1-10)	text	YES		NULL	
County	text	YES		NULL	
City	text	YES		NULL	
State	text	YES		NULL	
Postal Code	double	YES		NULL	
Model Year	bigint	YES		NULL	

Result 4 ✕

3. Preview first 10 rows

```sql
SELECT * FROM ev_trends LIMIT 10;
```

VIN (1-10)	County	City	State	Postal Code	Model Year	Make	Model	Electric Vehicle Type	Clean Alternative Fuel Vehicle (CAFV) Eligibility	Electric Range	Base MSRP	Legislative District
1N4BZ0CP5G	King	Seattle	WA	98125	2016	NISSAN	LEAF	Battery Electric Vehicle (BEV)	Clean Alternative Fuel Vehicle Eligible	84	0	46
KNDJX3AEXG	King	Renton	WA	98058	2016	KIA	SOUL	Battery Electric Vehicle (BEV)	Clean Alternative Fuel Vehicle Eligible	93	31950	11
5YJ3E1EB2J	King	Seattle	WA	98115	2018	TESLA	MODEL 3	Battery Electric Vehicle (BEV)	Clean Alternative Fuel Vehicle Eligible	215	0	43
1C4RJXN64R	Kitsap	Bremerton	WA	98312	2024	JEEP	WRANGLER	Plug-in Hybrid Electric Vehicle (PHEV)	Not eligible due to low battery range	21	0	26

4. 4. Get summary stats for numeric columns (example: average, min, max)

```sql
SELECT
    AVG(`Electric Range`) AS avg_value,
    MIN(`Electric Range`) AS min_value,
    MAX(`Electric Range`) AS max_value
FROM ev_trends;
```

avg_value	min_value	max_value
44.64565913538516	0	337

5. Count distinct values in a categorical column

```sql
SELECT `Electric Vehicle Type`, COUNT(*) AS count
FROM ev_trends
GROUP BY `Electric Vehicle Type`
ORDER BY count DESC;
```

Electric Vehicle Type	count
Battery Electric Vehicle (BEV)	197146
Plug-in Hybrid Electric Vehicle (PHEV)	50198

6. Check for NULL values in each column

```sql
SELECT
  SUM(CASE WHEN `Electric Range` IS NULL THEN 1 ELSE 0 END) AS electric_range_nulls,
  SUM(CASE WHEN `Electric Vehicle Type` IS NULL THEN 1 ELSE 0 END) AS vehicle_type_nulls
FROM ev_trends;
```

electric_range_nulls	vehicle_type_nulls
20	0