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Decode your dreams

Case Study On EV sales Data Analysis

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Introduction!

The project is about electric vehicle data analysis with the help of SQL. In this, we are exploring different aspects of ev sales took place in Washington DC..

20,000

No. of rows of data we used for the analysis

Maps

The first Ev

Around 1832, Robert Anderson develops the first crude electric vehicle, but it isn't until the 1870s or later that electric cars become practical. Pictured here is an electric vehicle built by an English inventor in 1884.

Growth of ev sales over the years

- From the given data we sorted the data according to sales of evs on the basis of years

Command used

For that we used group by and order by for filtering and ordering the data

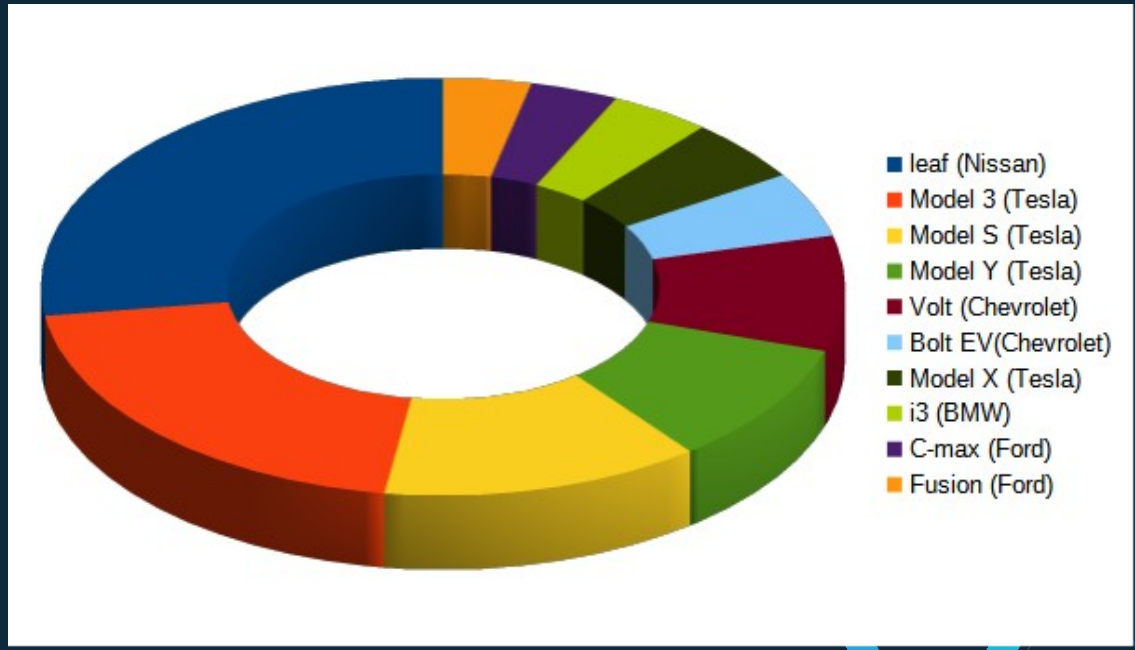
```
update project_ev set sale_price = 80215 where Model = 'A7';
#for dropping column
#alter table project_ev drop column Sr_no;
#drop database project_ev;
select make,model,count(model) as 'No. of sales' from project_ev group by model order by count(model) desc;
select transaction_year, count(transaction_year) from project_ev group by transaction_year order by transaction_year asc;
select make, count(make) from project_ev group by make order by count(make);
select model from project_ev where meets_2019_hb_2042_electric_range_requirement= 'TRUE' group by model;
select vehicle_primary_use, count(vehicle_primary_use) from project_ev group by vehicle_primary_use;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

transaction_year	count(transaction_year)
2011	87
2012	139
2013	380
2014	537
2015	796
2016	1014
2017	1383
2018	1935
2019	2434
2020	2791
2021	3965
2022	4543

Result 4

Most Popular Models



The most popular models whose sales took place in the span of the 2011-22

Are listed here

As we can see here Nissan leaf is the most popular car beside the popularity of the tesla brand

Commands used

- For that we used select, group by and and order by functions
- As we can see the nissan leaf is the most popular car with sales around 4000.

```
3 • alter table project_ev add Sr_no integer first ;
4 • alter table project_ev modify Sr_no integer primary key auto_increment;
5 • update project_ev set sale_price = 80215 where Model = 'A7';
6   #for dropping column
7   #alter table project_ev drop column Sr_no;
8   #drop database project_ev;
9 • select make,model,count(model) as 'No. of sales' from project_ev group by model order by count(model) desc;
10 • select transaction_year, count(transaction_year) from project_ev group by transaction_year order by transac
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

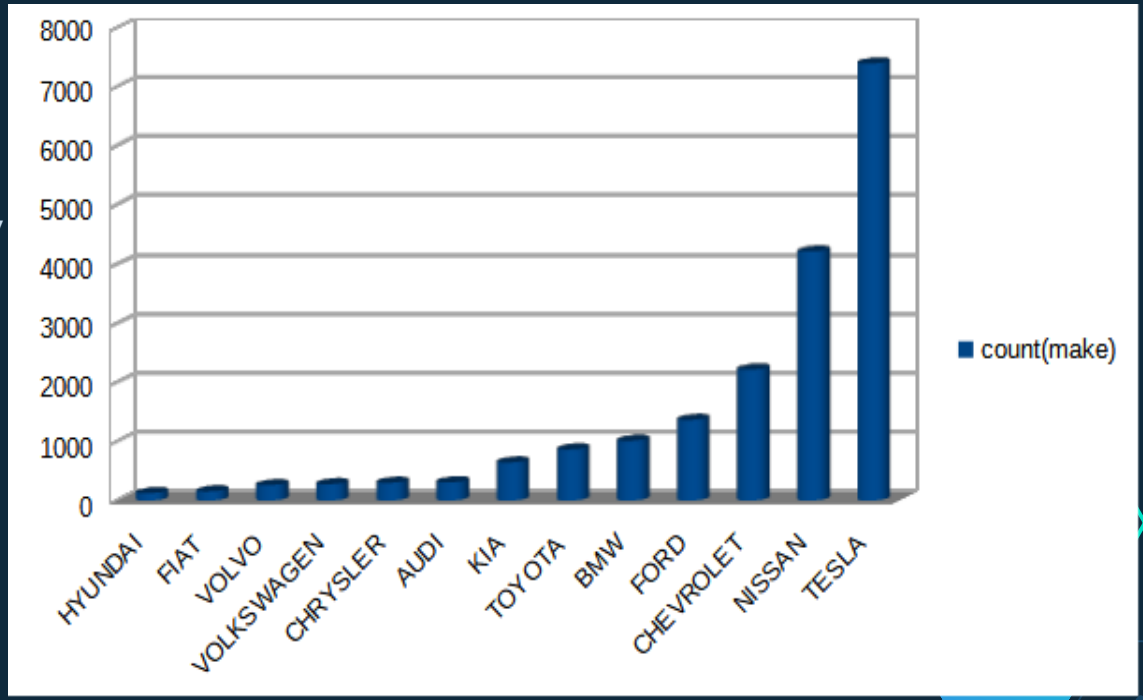
make	model	No. of sales
NISSAN	leaf	4213
TESLA	Model 3	3159
TESLA	Model S	1991
TESLA	Model Y	1461
CHEVROLET	Volt	1384
CHEVROLET	Bolt EV	781
TESLA	Model X	752
BMW	i3	629
FORD	C-max	550
FORD	Fusion	548
TOYOTA	Prius P...	415
TOYOTA	Prius Pl...	328
CHRYSLER	Pacifica	299
KIA	Niro	297
BMW	X5	180

Result 5 | Read Only

Most popular Car Company

For finding which is the most popular car company we filtered and sorted the data on the basis of sales and companies respectively

- As we can see tesla is the most popular brand followed by nissan cheverlet , ford as a market leader
- To Show the model of EV cars in count(model).



Command used

```
9  select make,model,count(model) as 'No. of sales' from project_ev group by model orde
10 select transaction_year, count(transaction_year) from project_ev group by transactio
11 select make, count(make) from project_ev group by make order by count(make) desc;
12 select model from project_ev where meets_2019_hb_2042_electric_range_requirement= 'T
13 select vehicle_primary_use, count(vehicle_primary_use) from project_ev group by vehi
14 select clean_alternative_fuel_vehicle_type,count(clean_alternative_fuel_vehicle_type
```

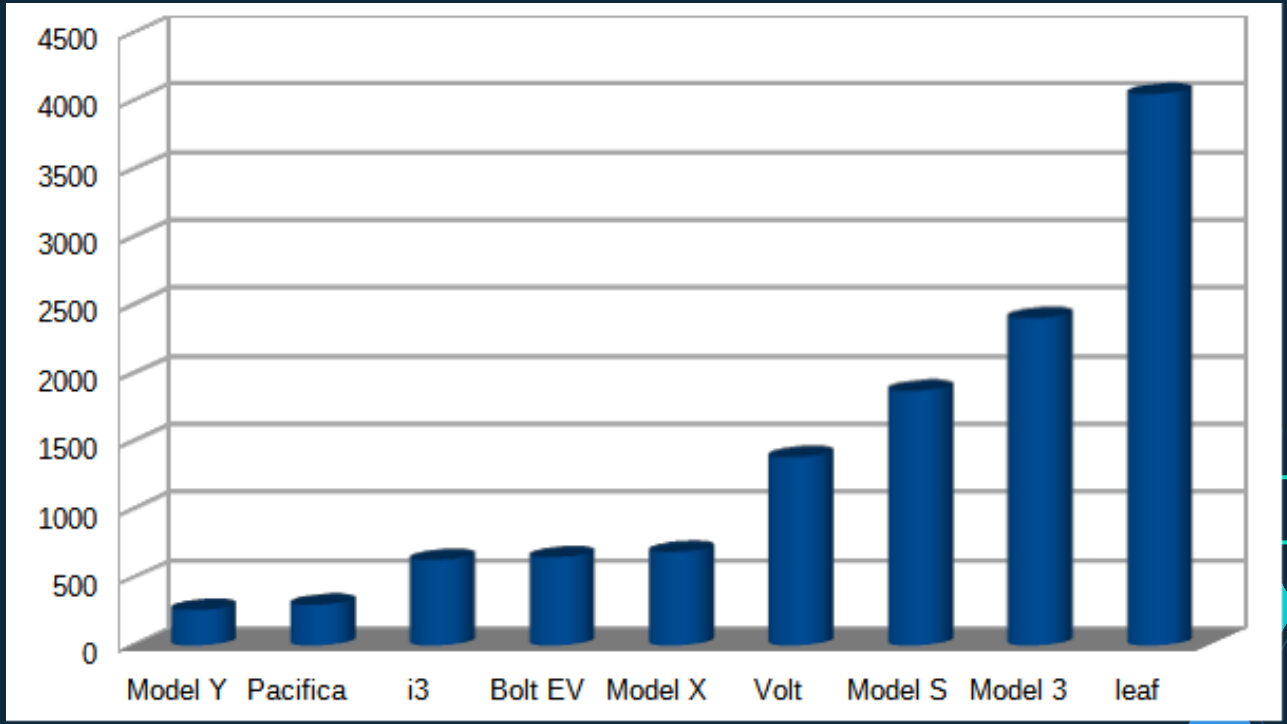
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

make	count(make)
TESLA	7397
NISSAN	4213
CHEVROLET	2216
FORD	1364
BMW	1010
TOYOTA	862
KIA	642
AUDI	309
CHRYSLER	299
VOLKSWAGEN	278
VOLVO	260
FIAT	153
HYUNDAI	124
HONDA	118
SMART	94
MITSUBISHI	86

- For this we used group by , order by and count functions for filtering and sorting the data

Passes 2019 HB regulations

Here is the graph about which car company make cars which meets 2019 HB regulations about subsidies for evs



Commands used

```
29 • select make,model,count(model) as 'No. of sales' from project_ev group by model order by count(model) desc;
30
31   #For finding which models passes or meets 2019 regulations for subsidies
32
33   #For finding companies which gives most of the cars which meets required conditions for subsidies
34
35 • select model,count(model) from project_ev where meets_2019_hb_2042_electric_range_requirement= 'TRUE'
36   group by model order by count(model) desc;
37
38   #For finding types of vehicles accoridng to primary use
39
40 • select vehicle_primary_use, count(vehicle_primary_use) from project_ev group by vehicle_primary_use;
41
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

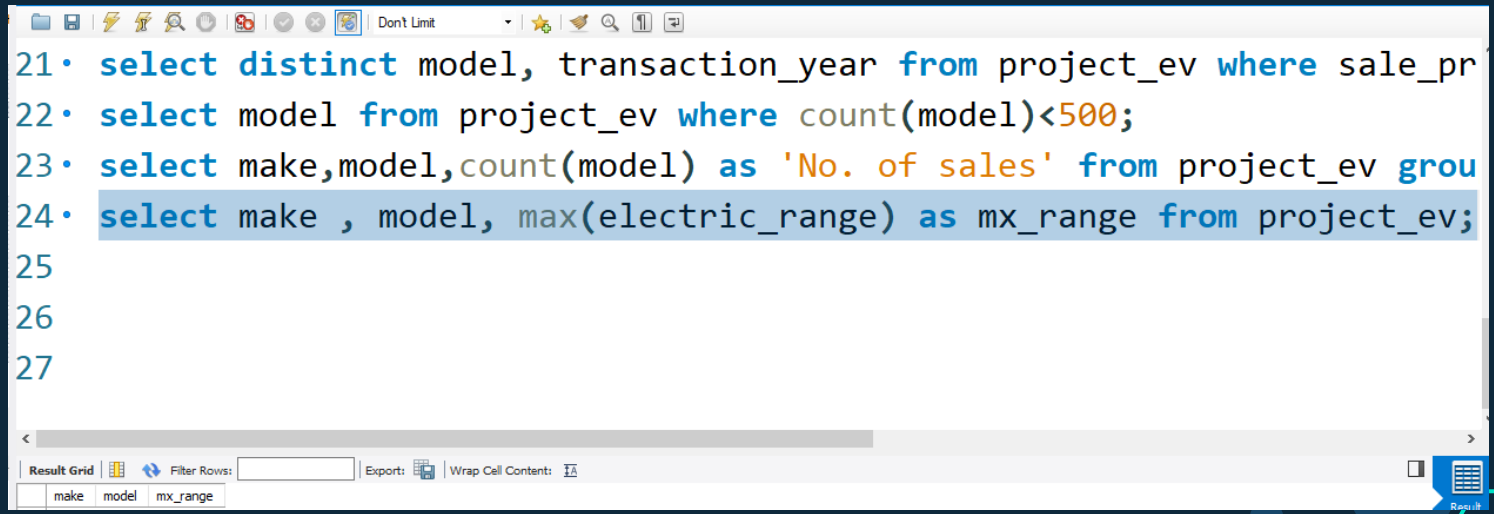
model	count(model)
leaf	4052
Model 3	2406
Model S	1872
Volt	1384
Model X	687
Bolt EV	649
i3	628

For finding which models meets subsidised cars we use count Function, where clause, group by and order by functions.

The ev with best range

Audi A7
Range -: 405

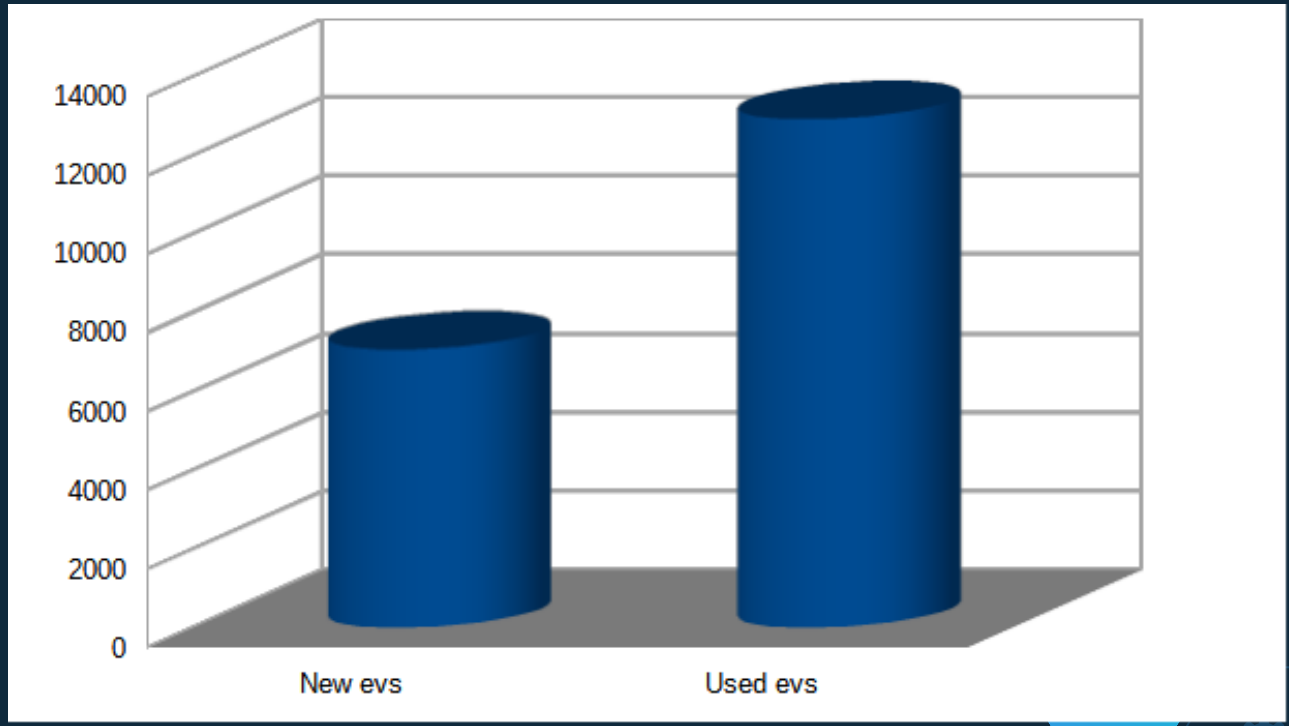
Command used



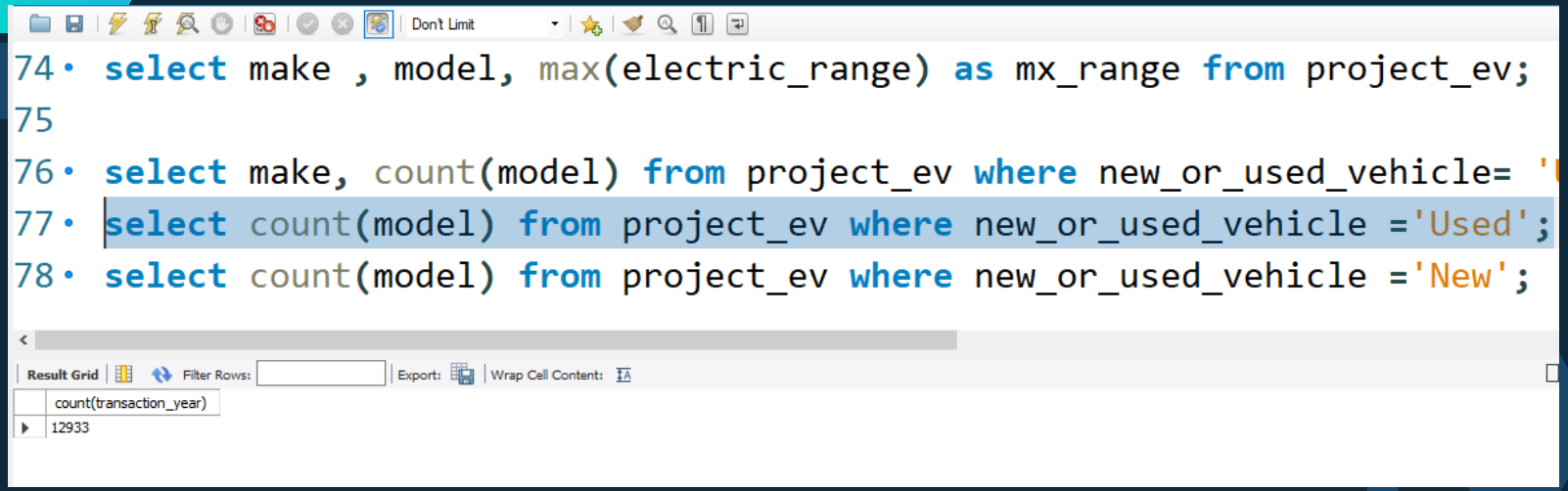
We Used max function and anti aliasing function for filtering the data and naming the field name

New vs Used evs

- Here we can see that purchase of used evs quite high! In-fact it is 50% greater than the purchases of the new evs!



Command used



```
74 • select make , model, max(electric_range) as mx_range from project_ev;
75
76 • select make, count(model) from project_ev where new_or_used_vehicle= '
77 • select count(model) from project_ev where new_or_used_vehicle ='Used';
78 • select count(model) from project_ev where new_or_used_vehicle ='New';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(transaction_year)
12933

For that we used count function and where clause.

Thanks!

Any questions?

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