G MOTORS INDIA EV-SALES

SQL ANALYTIC REPORT

FROM

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1. List the top 3 and bottom 3 makers for the fiscal years 2023 and 2024 in terms of the number of 2-wheelers sold.

```
#top

select  maker , sum(electric_vehicles_sold) as TotalSold

from dim_date inner join electric_vehicle_sales_by_makers on dim_date.ï»¿date = electric_vehicle_sales_by_makers.ï»¿date

WHERE vehicle_category = '2-Wheelers'

AND fiscal_year IN (2023 ,2024)

GROUP BY  maker

ORDER BY TotalSold DESC limit 3;
```

maker	TotalSold
OLA ELECTRIC	475072
TVS	262836
ATHER	184473

```
#BOTTOM

select  maker , sum(electric_vehicles_sold) as TotalSold

from dim_date inner join electric_vehicle_sales_by_makers on dim_date.ï»¿date = electric_vehicle_sales_by_makers.ï»¿date

WHERE vehicle_category = '2-Wheelers'

AND fiscal_year IN(2023,2024)

GROUP BY maker

ORDER BY TotalSold asc limit 3;
```

maker	TotalSold
BATTRE ELECTRIC	4841
JITENDRA	8563
KINETIC GREEN	9585

2. Find the overall penetration rate in India

```
SELECT (sum(electric_vehicles_sold) /

sum(total_vehicles_sold)) * 100  AS penetration_rate

FROM  electric_vehicle_sales_by_state ;
```

penetration_rate
3.6108

3. Identify the top 5 states with the highest penetration rate in 2-wheeler and 4-wheeler EV sales in FY 2024.

```
select state,
sum(electric_vehicles_sold)/
sum(total_vehicles_sold) * 100 as penetration_rate
from `dim_date` inner join `electric_vehicle_sales_by_state` on dim_date.ï»¿date = electric_vehicle_sales_by_state.ï»¿date
where fiscal_year = 2024
group by state
order by penetration_rate desc limit 5 ;
```

state	penetration_rate
Goa	13.7525
Kerala	11.5870
Karnataka	10.1764
Maharashtra	8.5950
Delhi	7.7058

4. List the top 5 states having highest number of EVs sold in 2023

```
SELECT YEAR(ï»¿date) AS fiscal_year,state,SUM(total_vehicles_sold) AS total_sold
FROM electric_vehicle_sales_by_state
WHERE YEAR(ï»¿date) = 2023
GROUP BY fiscal_year, state
ORDER BY total_sold DESC
LIMIT 5;
```

fiscal_year	state	total_sold
2023	Uttar Pradesh	2894626
2023	Maharashtra	2248017
2023	Tamil Nadu	1660684
2023	Gujarat	1560765
2023	Karnataka	1515274

5. Which are the Top 5 EV makers in India?

```
select maker , sum(electric_vehicles_sold)
from `electric_vehicle_sales_by_makers`
group by maker
order by sum(electric_vehicles_sold) desc
limit 5 ;
```

maker	sum(electric_vehicles_sold)
OLA ELECTRIC	489473
TVS	272575
ATHER	204449
HERO ELECTRIC	170394
AMPERE	167274

6. How many EV makers sell 4-wheelers in India?

```
select count(distinct maker)
from `electric_vehicle_sales_by_makers`
where vehicle_category = '4-Wheelers';
```

count(distinct maker)
10

7. What is ratio of 2-wheeler makers to 4-wheeler makers?

```
SELECT
(select count(distinct maker)from `electric_vehicle_sales_by_makers` where vehicle_category = '2-Wheelers')/
(select count(distinct maker)from `electric_vehicle_sales_by_makers` where vehicle_category = '4-Wheelers')
as ratio ;
```

ratio
1.6000

8. What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheelers) from 2022 to 2024?

```
WITH top5M AS (
SELECT maker
FROM dim_date
INNER JOIN electric_vehicle_sales_by_makers
ON dim_date.ï»¿date = electric_vehicle_sales_by_makers.ï»¿date
WHERE vehicle_category = '4-Wheelers' AND fiscal_year BETWEEN 2022 AND 2024
GROUP BY maker
ORDER BY SUM(electric_vehicles_sold) DESC
```

```
LIMIT 5 )

SELECT fiscal_year, quarter, top5M.maker,

SUM(electric_vehicles_sold) AS sales_volume

FROM dim_date

INNER JOIN electric_vehicle_sales_by_makers

ON dim_date.ï»¿date = electric_vehicle_sales_by_makers.ï»¿date

join Top5M  on electric_vehicle_sales_by_makers.maker = Top5M.maker

WHERE vehicle_category = '4-Wheelers'

AND fiscal_year BETWEEN 2022 AND 2024

GROUP BY fiscal_year, top5M.maker, quarter

ORDER BY fiscal_year, quarter, sales_volume DESC;
```

fiscal_year	quarter	maker	sales_volume
2022	Q1	Tata Motors	1031
2022	Q1	Mahindra & Mahindra	355
2022	Q1	MG Motor	285
2022	Q1	Hyundai Motor	25
2022	Q1	BYD India	0
2022	Q2	Tata Motors	2052
2022	Q2	MG Motor	798
2022	Q2	Mahindra & Mahindra	651
2022	Q2	Hyundai Motor	34
2022	Q2	BYD India	0
2022	Q3	Tata Motors	3791
2022	Q3	Mahindra & Mahindra	1383
2022	Q3	MG Motor	411
2022	Q3	Hyundai Motor	25
2022	Q3	BYD India	1
2022	Q4	Tata Motors	5834
2022	Q4	Mahindra & Mahindra	1653
2022	Q4	MG Motor	153
2022	Q4	BYD India	32
2022	Q4	Hyundai Motor	26
2023	Q1	Tata Motors	5675
2023	Q1	Mahindra & Mahindra	2020
2023	Q1	MG Motor	531
2023	Q1	BYD India	81
2023	Q1	Hyundai Motor	75

fiscal_year	quarter	maker	sales_volume
2023	Q1	Hyundai Motor	75
2023	Q2	Tata Motors	6192
2023	Q2	Mahindra & Mahindra	3164
2023	Q2	MG Motor	635
2023	Q2	Hyundai Motor	155
2023	Q2	BYD India	113
2023	Q3	Tata Motors	6651
2023	Q3	Mahindra & Mahindra	3378
2023	Q3	MG Motor	1165
2023	Q3	Hyundai Motor	191
2023	Q3	BYD India	103
2023	Q4	Tata Motors	9528
2023	Q4	Mahindra & Mahindra	5243
2023	Q4	MG Motor	946
2023	Q4	BYD India	623
2023	Q4	Hyundai Motor	155
2024	Q1	Mahindra & Mahindra	10911
2024	Q1	Tata Motors	7247
2024	Q1	MG Motor	1493
2024	Q1	BYD India	406
2024	Q1	Hyundai Motor	292
2024	Q2	Tata Motors	10337
2024	Q2	Mahindra & Mahindra	5855
2024	Q2	MG Motor	2524
2024	Q2	Hyundai Motor	390

2024	Q2	MG Motor	2524
2024	Q2	Hyundai Motor	390
2024	Q2	BYD India	310
2024	Q3	Tata Motors	13236
2024	Q3	Mahindra & Mahindra	4264
2024	Q3	MG Motor	2190
2024	Q3	Hyundai Motor	370
2024	Q3	BYD India	350
2024	Q4	Tata Motors	17361
2024	Q4	MG Motor	2622
2024	Q4	Mahindra & Mahindra	2316
2024	Q4	BYD India	400
2024	Q4	Hyundai Motor	338

9. How do the EV sales and penetration rates in Maharashtra compare to Tamil Nadu for 2024?

```
select state,sum(electric_vehicles_sold) as EV_SALES,

sum(electric_vehicles_sold)/

sum(total_vehicles_sold) * 100 as penetration_rate

from `dim_date` inner join `electric_vehicle_sales_by_state` on dim_date.ï»¿date = electric_vehicle_sales_by_state.ï»¿date

where state in ('Maharashtra' , 'Tamil Nadu')

and fiscal_year = 2024

group by state ;
```

	state	EV_SALES	penetration_rate
▶	Maharashtra	197169	8.5950
	Tamil Nadu	94314	5.4931

10. What are the peak and low season months for EV sales based on the data from 2022 to 2024?

```
#peak season months

select  month(ï»¿date) ,sum(electric_vehicles_sold)

from `electric_vehicle_sales_by_makers`

where year(ï»¿date) between 2022 and 2024

group by month(ï»¿date)

order by  sum(electric_vehicles_sold) desc ;
```

	month(ï»¿date)	sum(electric_vehicles_sold)
▶	3	291587

```
#low season months

select  month(ï»¿date) ,sum(electric_vehicles_sold)

from `electric_vehicle_sales_by_makers`

where year(ï»¿date) between 2022 and 2024

group by month(ï»¿date)

order by sum(electric_vehicles_sold) asc ;
```

	month(ï»¿date)	sum(electric_vehicles_sold)
▶	6	101222

11. Estimate the revenue growth rate of 4-wheeler and 2-wheelers EVs in India for 2022 vs 2024 and 2023 vs 2024, assuming an average unit price.

```
# 2-Wheelers

with revenue_per_year AS (

SELECT vehicle_category, fiscal_year,

SUM(electric_vehicles_sold *85000 ) AS total_revenue

FROM electric_vehicle_sales_by_makers

JOIN dim_date ON electric_vehicle_sales_by_makers.ï»¿date = dim_date.ï»¿date

where vehicle_category = '2-Wheelers'
```

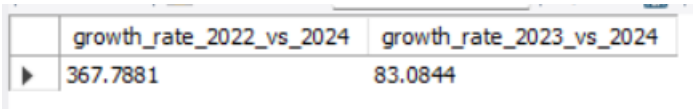
```
GROUP BY vehicle_category, fiscal_year),

pivot_revenue AS (
SELECT
MAX(CASE WHEN fiscal_year = 2022 THEN total_revenue ELSE 0 END) AS revenue_2022,
MAX(CASE WHEN fiscal_year = 2023 THEN total_revenue ELSE 0 END) AS revenue_2023,
MAX(CASE WHEN fiscal_year = 2024 THEN total_revenue ELSE 0 END) AS revenue_2024
FROM revenue_per_year)

SELECT
((revenue_2024 - revenue_2022) / revenue_2022) * 100 AS growth_rate_2022_vs_2024,
((revenue_2024 - revenue_2023) / revenue_2023) * 100 AS growth_rate_2023_vs_2024
FROM pivot_revenue ;
```

	growth_rate_2022_vs_2024	growth_rate_2023_vs_2024
▶	269.2762	28.1341

```
# 4-WHEELERS
with revenue_per_year AS (
SELECT vehicle_category, fiscal_year,
SUM(electric_vehicles_sold *1500000 ) AS total_revenue
FROM electric_vehicle_sales_by_makers
JOIN dim_date ON electric_vehicle_sales_by_makers.ï»¿date = dim_date.ï»¿date
where vehicle_category = '4-Wheelers'
GROUP BY vehicle_category, fiscal_year),
pivot_revenue AS (
SELECT
MAX(CASE WHEN fiscal_year = 2022 THEN total_revenue ELSE 0 END) AS revenue_2022,
MAX(CASE WHEN fiscal_year = 2023 THEN total_revenue ELSE 0 END) AS revenue_2023,
MAX(CASE WHEN fiscal_year = 2024 THEN total_revenue ELSE 0 END) AS revenue_2024
FROM revenue_per_year)
SELECT
((revenue_2024 - revenue_2022) / revenue_2022) * 100 AS growth_rate_2022_vs_2024,
```

((revenue_2024 - revenue_2023) / revenue_2023) * 100 AS growth_rate_2023_vs_2024

FROM pivot_revenue ;



	growth_rate_2022_vs_2024	growth_rate_2023_vs_2024
▶	367.7881	83.0844