SQL CASE STUDY

Challenge 1
Steve's Car Showroom

@Steel Data @Matthew Steel

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INTRODUCTION AND TABLES

Steve runs a top-end car showroom but his data analyst has just quit and left him without his crucial insights.

Can you analyze the following data to provide him with all the answers he requires?

sales

sale_id	car_id	salesman_id	purchase_date
1	1	1	2021-01-01
2	3	3	2021-02-03
3	2	2	2021-02-10
4	5	4	2021-03-01
5	8	1	2021-04-02
6	2	1	2021-05-05
7	4	2	2021-06-07
8	5	3	2021-07-09
9	2	4	2022-01-01
10	1	3	2022-02-03
11	8	2	2022-02-1-
12	7	2	2022-03-01
13	5	3	2022-04-02
14	3	1	2022-05-05
15	5	4	2022-06-07
16	1	2	2022-07-09
17	2	3	2023-01-01
18	6	3	2023-02-03
19	7	1	2023-02-10
20	4	4	2023-03-01

cars

car_id	make	type	style	cost_$
1	Honda	Civic	Sedan	30000
2	Toyota	Corolla	Hatchback	25000
3	Ford	Explorer	SUV	40000
4	Chevrolet	Camaro	Coupe	36000
5	BMW	X5	SUV	55000
6	Audi	A4	Sedan	48000
7	Mercedes	C-Class	Coupe	60000
8	Nissan	Altima	Sedan	26000

salespersons

salesman_id	name	age	city
1	John Smith	28	New York
2	Emily Wong	35	San Fran
3	Tom Lee	42	Seattle
4	Lucy Chen	31	LA

1. What are the details of all cars purchased in the year 2022?

```sql
SELECT *
FROM cars c
JOIN saless s ON c.car_id = s.car_id
WHERE YEAR(s.purchase_date) = 2022;
```

car_id	make	type	style	cost_$	sale_id	car_id	salesman_id	purchase_date
1	Honda	Civic	Sedan	30000	10	1	3	2022-02-03
1	Honda	Civic	Sedan	30000	16	1	2	2022-07-09
2	Toyota	Corolla	Hatchback	25000	9	2	4	2022-01-01
3	Ford	Explorer	SUV	40000	14	3	1	2022-05-05
5	BMW	X5	SUV	55000	13	5	3	2022-04-02
5	BMW	X5	SUV	55000	15	5	4	2022-06-07
7	Mercedes	C-Class	Coupe	60000	12	7	2	2022-03-01
8	Nissan	Altima	Sedan	26000	11	8	2	2022-02-10

2. What is the total number of cars sold by each salesperson?

```
SELECT
salesman_id,
COUNT(car_id) AS Total_cars_sold
FROM saless
GROUP BY salesman_id;
```

salesman_id	Total_cars_sold
1	5
2	5
3	6
4	4

3. What is the total revenue generated by each salesperson?

```sql
SELECT
s.salesman_id, SUM(cost_$) AS Total_revenue
FROM cars c
JOIN saless s ON c.car_id = s.car_id
GROUP BY s.salesman_id;
```

salesman_id	Total_revenue
1	181000
3	253000
2	177000
4	171000

4. What are the details of the cars sold by each salesperson?

```sql
SELECT

s.salesman_id, c.car_id, c.make, c.type, c.style, c.cost_$

FROM cars c

JOIN saless s ON c.car_id = s.car_id

GROUP BY s.salesman_id , c.car_id

ORDER BY s.salesman_id;
```

salesman_id	car_id	make	type	style	cost_$
1	1	Honda	Civic	Sedan	30000
1	2	Toyota	Corolla	Hatchback	25000
1	3	Ford	Explorer	SUV	40000
1	7	Mercedes	C-Class	Coupe	60000
1	8	Nissan	Altima	Sedan	26000
2	1	Honda	Civic	Sedan	30000
2	2	Toyota	Corolla	Hatchback	25000
2	4	Chevrolet	Camaro	Coupe	36000
2	7	Mercedes	C-Class	Coupe	60000
2	8	Nissan	Altima	Sedan	26000
3	1	Honda	Civic	Sedan	30000
3	2	Toyota	Corolla	Hatchback	25000
3	3	Ford	Explorer	SUV	40000
3	5	BMW	X5	SUV	55000
3	6	Audi	A4	Sedan	48000
4	2	Toyota	Corolla	Hatchback	25000
4	4	Chevrolet	Camaro	Coupe	36000
4	5	BMW	X5	SUV	55000

5. What is the total revenue generated by each car type?

```
SELECT

type AS car_type, SUM(cost_$) AS Total_revenue

FROM cars c

JOIN saless s ON c.car_id = s.car_id

GROUP BY type;
```

car_type	Total_revenue
Civic	90000
Corolla	100000
Explorer	80000
Camaro	72000
X5	220000
A4	48000
C-Class	120000
Altima	52000

6. What are the details of the cars sold in the year 2021 by salesperson 'Emily Wong'?

```sql
SELECT
sp.name, c.car_id, c.make, c.type, c.style, c.cost_$
FROM cars c
JOIN saless s ON c.car_id = s.car_id
JOIN salespersons sp ON s.salesman_id = sp.salesman_id
WHERE
sp.name = 'Emily Wong'
AND YEAR(s.purchase_date) = 2021;
```

name	car_id	make	type	style	cost_$
Emily Wong	2	Toyota	Corolla	Hatchback	25000
Emily Wong	4	Chevrolet	Camaro	Coupe	36000

7. What is the total revenue generated by the sales of hatchback cars?

```sql
SELECT

style, SUM(cost_$) AS Total_revenue

FROM cars c

JOIN saless s ON c.car_id = s.car_id

WHERE style = 'Hatchback';
```

style	Total_revenue
Hatchback	100000

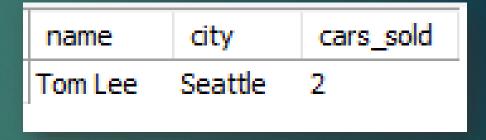# 8. What is the total revenue generated by the sales of SUV cars in the year 2022?

```sql
SELECT

c.style, SUM(c.cost_$) AS total_revenue

FROM cars c

JOIN saless s ON c.car_id = s.car_id

WHERE

c.style = 'SUV' AND

YEAR(s.purchase_date) = 2022;
```

style	total_revenue
SUV	150000

9. What is the name and city of the salesperson who sold the most number of cars in the year 2023?

```sql
SELECT

sp.name, sp.city, COUNT(s.car_id) AS cars_sold

FROM salespersons sp

JOIN saless s ON sp.salesman_id = s.salesman_id

WHERE YEAR(s.purchase_date) = 2023

GROUP BY sp.name , sp.city

ORDER BY cars_sold DESC

LIMIT 1;
```

name	city	cars_sold
Tom Lee	Seattle	2

10. What is the name and age of the salesperson who generated the highest revenue in the year 2022?

```sql
SELECT

sp.name, sp.age, SUM(c.cost_$) AS Highest_revenue

FROM cars c

JOIN saless s ON c.car_id = s.car_id

JOIN salespersons sp ON s.salesman_id = sp.salesman_id

WHERE YEAR(s.purchase_date) = 2022

GROUP BY sp.name , sp.age

ORDER BY highest_revenue DESC

LIMIT 1;
```

name	age	Highest_revenue
Emily Wong	35	116000

Thankyou