

Challenge 1 - Steve's Car Showroom



Problem Statement -

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

Now we have to analyse the data provided by Steve and find meaningful insights by solving the queries of Mr. Steve.

Tables -

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?

Query -

```
SELECT DISTINCT c.car_id, c.make, c.type, c.style, c.cost_$  
FROM cars AS c  
INNER JOIN sales AS s ON c.car_id = s.car_id  
WHERE YEAR(s.purchase_date) = '2022';
```

Results -

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

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

Query -

```
SELECT sp.salesman_id, sp.name AS 'salesman name', COUNT(s.sale_id) AS 'Sold number of car'
FROM salespersons AS sp
INNER JOIN sales AS s ON sp.salesman_id = s.salesman_id
GROUP BY 1, 2;
```

Results -

salesman_id	salesman name	Sold number of car
1	John Smith	5
2	Emily Wong	5
3	Tom Lee	6
4	Lucy Chen	4

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

Query -

```
SELECT sp.salesman_id, sp.name, SUM(c.cost_$) AS `Total Revenue`  
FROM salespersons AS sp  
INNER JOIN sales AS s ON sp.salesman_id = s.salesman_id  
INNER JOIN cars AS c ON c.car_id = s.car_id  
GROUP BY 1, 2;
```

Results -

salesman_id	name	Total Revenue
1	John Smith	181000
2	Emily Wong	177000
3	Tom Lee	253000
4	Lucy Chen	171000

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

Query -

```
SELECT
    sp.salesman_id, sp.name AS 'Salesperson Name', c.car_id, c.make, c.type, c.style, c.cost_$
FROM salespersons AS sp
JOIN sales AS s ON sp.salesman_id = s.salesman_id
JOIN cars AS c ON s.car_id = c.car_id;
```

Results -

salesman_id	Salesperson Name	car_id	make	type	style	cost_\$
1	John Smith	1	Honda	Civic	Sedan	30000
1	John Smith	8	Nissan	Altima	Sedan	26000
1	John Smith	2	Toyota	Corolla	Hatchback	25000
1	John Smith	3	Ford	Explorer	SUV	40000
1	John Smith	7	Mercedes	C-Class	Coupe	60000
2	Emily Wong	2	Toyota	Corolla	Hatchback	25000
2	Emily Wong	4	Chevrolet	Camaro	Coupe	36000
2	Emily Wong	8	Nissan	Altima	Sedan	26000
2	Emily Wong	7	Mercedes	C-Class	Coupe	60000
2	Emily Wong	1	Honda	Civic	Sedan	30000
3	Tom Lee	3	Ford	Explorer	SUV	40000
3	Tom Lee	5	BMW	X5	SUV	55000
3	Tom Lee	1	Honda	Civic	Sedan	30000
3	Tom Lee	5	BMW	X5	SUV	55000
3	Tom Lee	2	Toyota	Corolla	Hatchback	25000

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

Query -

```
SELECT c.type, SUM(c.cost_$) AS 'Total Revenue'  
FROM cars AS c  
INNER JOIN sales AS s ON c.car_id=s.car_id  
GROUP BY c.type  
ORDER BY 2 DESC;
```

Results -

type	Total Revenue
X5	220000
C-Class	120000
Corolla	100000
Civic	90000
Explorer	80000
Camaro	72000
Altima	52000
A4	48000

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

Query -

```
SELECT
    c.*
FROM cars AS c
INNER JOIN sales AS s ON c.car_id = s.car_id
INNER JOIN salespersons AS sp ON sp.salesman_id = s.salesman_id
WHERE YEAR(s.purchase_date) = 2021 AND sp.name = 'Emily Wong';
```

Results -

car_id	make	type	style	cost_
2	Toyota	Corolla	Hatchback	25000
4	Chevrolet	Camaro	Coupe	36000

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

Query -

```
SELECT
    c.style, SUM(c.cost_$) AS 'Total Revenue Hatchback'
FROM cars AS c
INNER JOIN sales AS s ON c.car_id = s.car_id
WHERE c.style = 'Hatchback'
GROUP BY c.style;
```

Results -

style	Total Revenue Hatchback
Hatchback	100000

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

Query -

```
SELECT c.style, SUM(c.cost_$) AS 'Total Revenue SUV'
FROM cars AS c
INNER JOIN sales AS s ON c.car_id=s.car_id
WHERE c.style='SUV' AND YEAR(s.purchase_date)='2022'
GROUP BY 1;
```

Results -

style	Total Revenue SUV
SUV	150000

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

Query -

```
SELECT
    sp.name AS 'SalesPerson Name',
    sp.city
FROM salespersons AS sp
INNER JOIN sales AS s ON sp.salesman_id = s.salesman_id
WHERE YEAR(s.purchase_date) = '2023'
GROUP BY sp.name, sp.city
ORDER BY COUNT(s.sale_id) DESC
LIMIT 1;
```

Results -

SalesPerson Name	city
Tom Lee	Seattle

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

Query -

```
SELECT
    sp.name AS 'SalesPerson Name',
    sp.age AS 'SalesPerson Age'
FROM salespersons AS sp
JOIN sales AS s ON sp.salesman_id = s.salesman_id
JOIN cars AS c ON s.car_id = c.car_id
WHERE YEAR(s.purchase_date) = '2022'
GROUP BY sp.name, sp.age
ORDER BY SUM(c.cost_$) DESC
LIMIT 1;
```

Results -

SalesPerson Name	SalesPerson Age
Emily Wong	35