

CHALLENGE - 1

SQL CASE STUDY

STEVE'S CAR SHOWROOM

INTRODUCTION

- Steve runs a top-end car showroom but his data analyst has just quit and left him without his crucial insights.
- I was asked to analyze the following data to provide him with all the answers he requires.
- The case study consisting of Three Tables;
 - Cars
 - Sales
 - Salesperson

TABLE USED

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?

```
select * from cars c
inner join sales s
on c.car_id = s.car_id
where extract(year from purchase_date) = 2022;
```

Output:

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

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

```
select sp.name, count(c.car_id) as no_of_car from cars c
inner join sales s
on c.car_id = s.car_id
inner join salespersons sp
on s.salesman_id = sp.salesman_id
group by 1;
```

Output:

name	no_of_car
John Smith	5
Emily Wong	5
Tom Lee	6
Lucy Chen	4

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

```
select sp.name, sum(c.cost_$$) as Total_Revenue from cars c
inner join sales s
on c.car_id = s.car_id
inner join salespersons sp
on s.salesman_id = sp.salesman_id
group by 1;
```

Output:

name	Total_Revenue
John Smith	181000
Emily Wong	177000
Tom Lee	253000
Lucy Chen	171000

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

```
select c.car_id, c.make, c.type, c.style, c.cost_$, sp.name from
cars c
inner join sales s
on c.car_id = s.car_id
inner join salespersons sp
on s.salesman_id = sp.salesman_id;
```

Output:

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

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

```
select type, sum(cost_$$) as Total_Revenue  
from cars c group by 1;
```

Output:

Type	Total_Revenue
Civic	30000
Corolla	25000
Explorer	40000
Camaro	36000
X5	55000
A4	48000
C-Class	60000
Altima	26000

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

```
select * from cars c
inner join sales s
on c.car_id = s.car_id
inner join salespersons sp
on s.salesman_id = sp.salesman_id
where extract(year from purchase_date) = 2021 and
name = 'Emily Wong';
```

Output:

car_id	make	type	style	cost_\$	sale_id	car_id	salesman_id	purchase_date	salesman_id	name	age	city
2	Toyota	Corolla	Hatchback	25000	3	2	2	10-02-2021	2	Emily Wong	35	San Fran
4	Chevrolet	Camaro	Coupe	36000	7	4	2	07-06-2021	2	Emily Wong	35	San Fran

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

```
select sum(cost_)$ as Total_Revenue  
from cars  
where style = 'Hatchback'
```

Output:

Total_Revenue

25000

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

```
select sum(c.cost_$$) as Total_Revenue  
from cars c  
inner join sales s  
on c.car_id = s.car_id  
where style = 'SUV' and  
extract(year from purchase_date) = 2022
```

Output:

Total_Revenue

150000

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

```
with cte as (  
  select sp.name as name, sp.city as city, count(s.car_id) as no_car  
  from salespersons sp  
  inner join sales s  
  on sp.salesman_id = s.salesman_id  
  where extract(year from purchase_date) = 2023  
  group by 1,2  
  order by 3 desc  
)  
select name, city from cte  
limit 1;
```

Output:

Name	City
Tom Lee	Seattle

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

```
with cte as (  
  select sp.name as Name, sp.age as Age, sum(c.cost_$(c.cost_$(  
    from salespersons sp  
    inner join sales s  
    on sp.salesman_id = s.salesman_id  
    inner join cars c  
    on s.car_id = c.car_id  
    where extract(year from purchase_date) = 2022  
    group by 1,2  
    order by 3 desc  
  )  
  select name, age from cte  
  limit 1;
```

Output:

Name	Age
Emily Wong	35

THANK YOU



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GitHub: <http://github.com/Rsrinibas>