Challenge 1 - Steve's Car Showroom

Intro

Steve runs a top-end car showroom but his data analyst has just quit and left him without his crucial insights.
Can you analyse the following data to provide him with all the answers he requires?

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?

select distinct c.car_id, c.make,c.type,c.style, c.cost_$ from sales s

join cars c

on s.car_id = c.car_id

where year(s.purchase_date) = 2022;

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?

```sql
select salesman_id ,
count(distinct car_id) as total_cars_sold
from sales
group by salesman_id;
```

salesman_id	total_cars_sold
1	
2	
3	
4	

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

```sql
select s.salesman_id,sp.name,concat(sum(c.cost_$),"$") as total_revenue
from sales s
join cars c
on s.car_id = c.car_id
join salespersons  sp on sp.salesman_id = s.salesman_id
group by s.salesman_id,sp.name;
```

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?

select sp.salesman_id,make,type,style

from cars c

join sales s on c.car_id = s.car_id

left join salespersons sp on sp.salesman_id = s.salesman_id

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

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

select c.make,sum(c.cost_$) as total_revenue

from cars c

join sales s on c.car_id = s.car_id

group by c.make ;

make	total_revenue
Honda	90000
Toyota	100000
Ford	80000
Chevrolet	72000
BMW	220000
Audi	48000
Mercedes	120000
Nissan	52000

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

select c.make,c.type,c.style

from sales s

join cars c on s.car_id = c.car_id

join salespersons sp on sp.salesman_id = s.salesman_id

where year(s.purchase_date) = 2021 and sp.name = "Emily Wong";

make	type	style
Toyota	Corolla	Hatchback
Chevrolet	Camaro	Coupe

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

select c.style,concat(sum(cost_$),"$") as total_revenue_generated_by_hatchback

from cars c

join sales s

```
on c.car_id = s.car_id

where c.style = "hatchback"

group by c.style;
```

style	total_revenue_generated_by_hatchback			
Hatchback	100000$			

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

```
select c.style,concat(sum(cost_$),"$") as total_revenue_generated_by_suv_style_cars

from cars c

join  sales s on c.car_id = s.car_id

where c.style = "SUV" and year(s.purchase_date) = 2022

group by c.style;
```

style	total_revenue_generated_by_suv_style_cars			
SUV	150000$			

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

with salesman_cte as(select sp.name,sp.city,sp.salesman_id,count(distinct car_id) as total_cars_sold ,

rank() over(order by count(distinct car_id) desc) salesman_rank

from salespersons sp

join sales s on sp.salesman_id = s.salesman_id

where year(purchase_date)= 2022

group by sp.name,sp.city,sp.salesman_id)

select name,city

from salesman_cte

where salesman_rank= 1;

name	city	
Emily Wor	San Fran	

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

with salesman_table as(select salesman_id,sum(cost_$) as total_revenue_generated,

rank() over(order by sum(cost_$) desc) as salesman_rank

from sales s

join cars c

on s.car_id = c.car_id

where year(s.purchase_date)= 2022

group by salesman_id)

select name,age

from salespersons sp

join salesman_table st

on sp.salesman_id = st.salesman_id

where st.salesman_rank = 1;

name	age
Emily Wong	35