Challenge 1 - Steve's Car Showroom

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?

```sql
select distinct(s.car_id),make,type,style,cost_$
from cars c
join sales s using(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

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

select salesman_id, name, count(sale_id) as no_of_cars_sold
from salespersons sp
join sales s
using (salesman_id)
group by 1, 2;
```

	salesman_id	name	no_of_cars_sold
▶	1	John Smith	5
	2	Emily Wong	5
	3	Tom Lee	6
	4	Lucy Chen	4

Result Grid | Filter Rows:

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

select sales.salesman_id ,name , sum(cost_$) as total_revenue
from cars
join sales using(car_id)
join salespersons using(salesman_id)
group by 1,2;
```

Result Grid		Filter Rows:	
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?

```sql
select distinct(sales.salesman_id), name, sales.car_id,make,type,style,cost_$
from cars
join sales using(car_id)
join salespersons using(salesman_id);
```

salesman_id	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	2	Toyota	Corolla	Hatchback	25000
3	Tom Lee	6	Audi	A4	Sedan	48000
4	Lucy Chen	5	BMW	X5	SUV	55000
4	Lucy Chen	2	Toyota	Corolla	Hatchback	25000
4	Lucy Chen	4	Chevrolet	Camaro	Coupe	36000

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

- ```sql
select type, sum(cost_$) as revenue
from cars
join sales using (car_id)
group by 1;
```

| type | revenue |
| --- | --- |
| Civic | 90000 |
| Corolla | 100000 |
| Explorer | 80000 |
| Camaro | 72000 |
| X5 | 220000 |
| A4 | 48000 |
| C-Class | 120000 |
| Altima | 52000 |
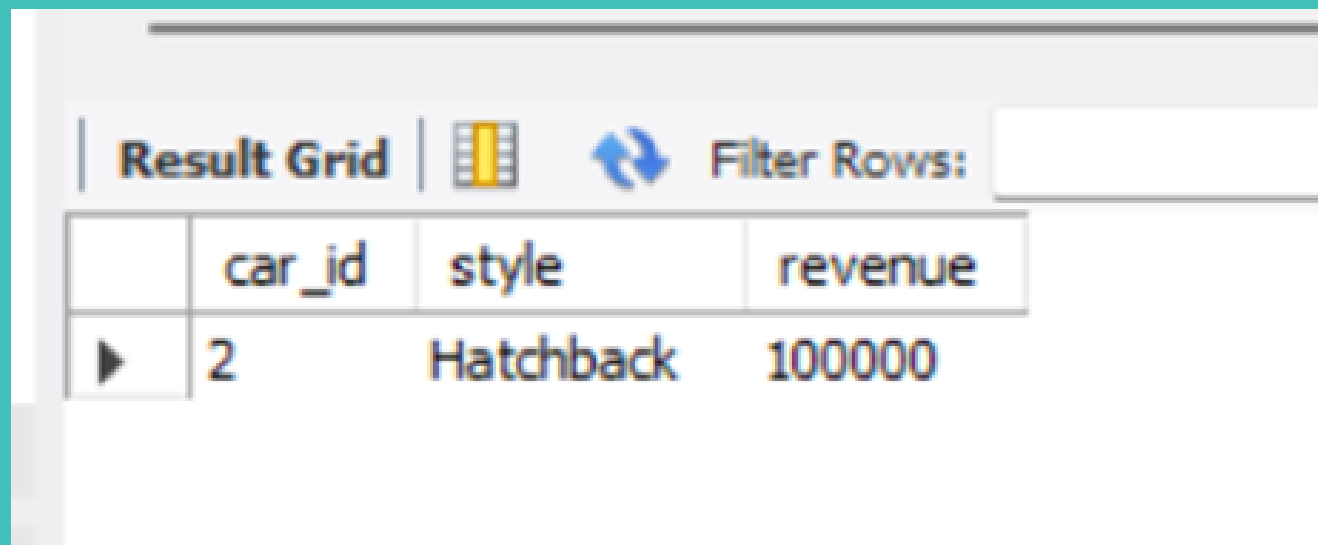
```sql
-- 6. What are the details of the cars sold in the year 2021 by salesperson 'Emily Wong'?

select name,cars.car_id,make,type,style,cost_$,year(purchase_date) as year_no
from cars
join sales using(car_id)
join salespersons using(salesman_id)
where name='Emily Wong' and year(purchase_date)=2021;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	car_id	make	type	style	cost_$	year_no
Emily Wong	2	Toyota	Corolla	Hatchback	25000	2021
Emily Wong	4	Chevrolet	Camaro	Coupe	36000	2021

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

select sales.car_id, style, sum(cost_$) as revenue
from cars
join sales using(car_id)
where style='Hatchback'
group by 1,2;
```

	car_id	style	revenue
▶	2	Hatchback	100000

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

select style, sum(cost_$) as revenue,year(purchase_date) as year_no
from cars
join sales using(car_id)
where style = 'SUV' and year(purchase_date) = 2022
group by 1,3;
```

	style	revenue	year_no
▶	SUV	150000	2022

```sql
-- 9. What is the name and city of the salesperson who sold the most number of cars in the year 2023?
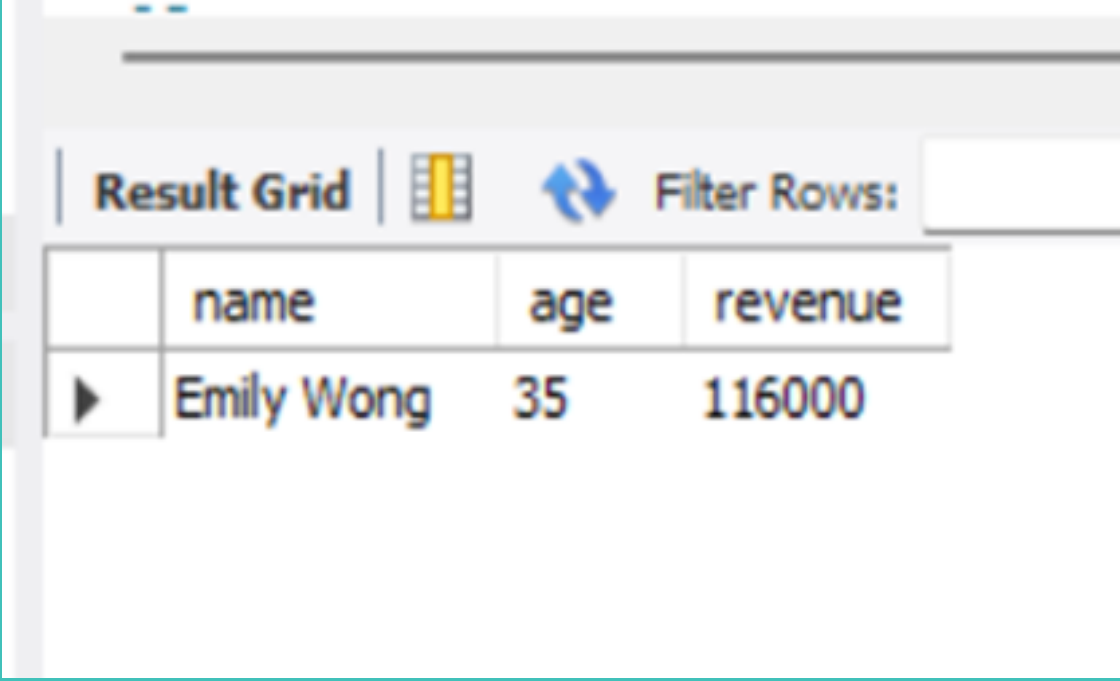
select year(purchase_date) as year_no,name,city, count(sale_id) as no_of_cars_sold
from sales
join salespersons
using(salesman_id)
where year(purchase_date) = 2023
group by 1,2,3
order by 4 desc
limit 1;
```

year_no	name	city	no_of_cars_sold
2023	Tom Lee	Seattle	2

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

select salespersons.name,age,  sum(cost_$) as revenue
from cars
join sales using(car_id)
join salespersons using(salesman_id)
where year(purchase_date) = 2022
group by 1,2
order by  3 desc
limit 1
```

	name	age	revenue
▶	Emily Wong	35	116000

Result Grid | Filter Rows: