CHALLENGE 1 - 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.
Analyse the following data to provide him with all the answers he requires?

FUNCTIONS USED

- Joins
- Aggregate Functions
- Date Function
- Where clause
- Group by clause
- Order clause
- Limit in SQL

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

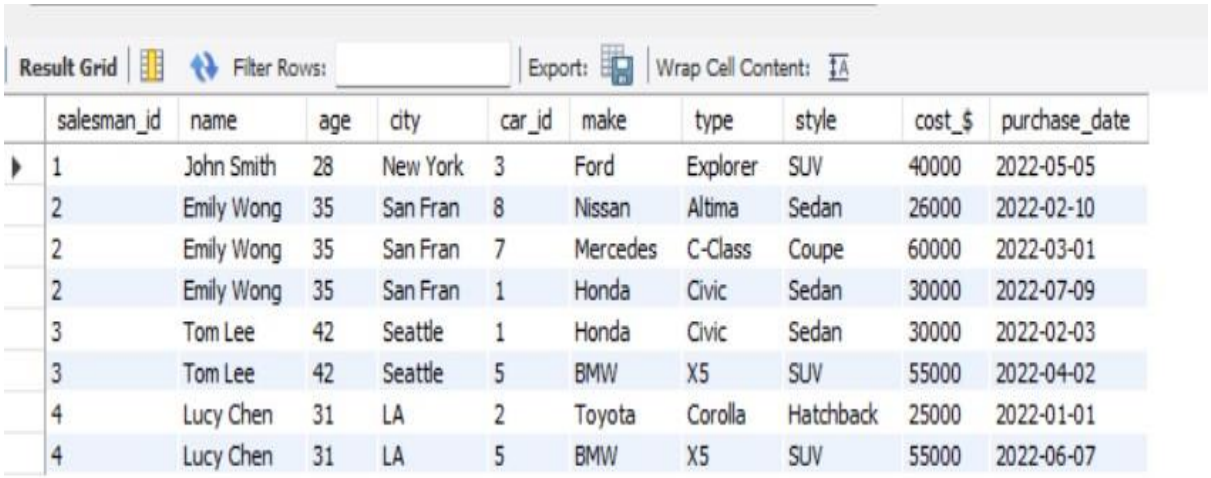
salespersons

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

CASE STUDY QUESTIONS

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

```
select sls.salesman_id,
       sls.name,
       sls.age,
       sls.city,
       c.car_id,
       c.make,
       c.type,
       c.style,
       c.cost_$,
       s.purchase_date
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
where extract(year from s.purchase_date) = 2022;
```



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

salesman_id	name	age	city	car_id	make	type	style	cost_$	purchase_date
1	John Smith	28	New York	3	Ford	Explorer	SUV	40000	2022-05-05
2	Emily Wong	35	San Fran	8	Nissan	Altima	Sedan	26000	2022-02-10
2	Emily Wong	35	San Fran	7	Mercedes	C-Class	Coupe	60000	2022-03-01
2	Emily Wong	35	San Fran	1	Honda	Civic	Sedan	30000	2022-07-09
3	Tom Lee	42	Seattle	1	Honda	Civic	Sedan	30000	2022-02-03
3	Tom Lee	42	Seattle	5	BMW	X5	SUV	55000	2022-04-02
4	Lucy Chen	31	LA	2	Toyota	Corolla	Hatchback	25000	2022-01-01
4	Lucy Chen	31	LA	5	BMW	X5	SUV	55000	2022-06-07

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

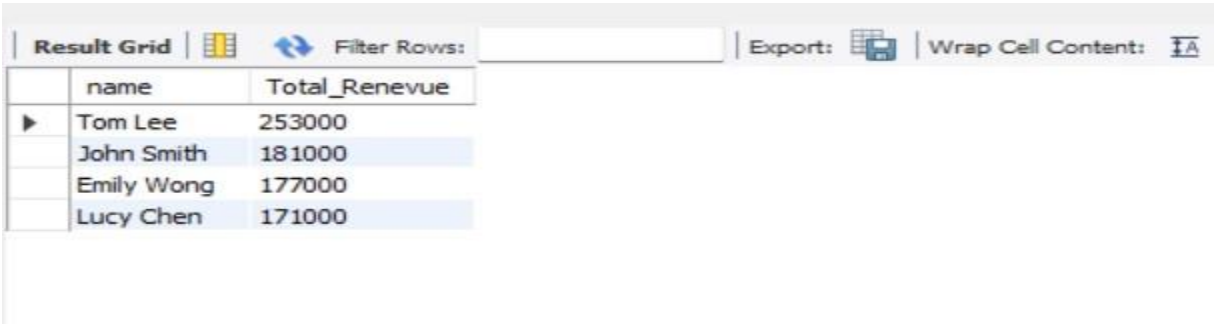
```
select sls.name,
       count(c.car_id) as Total_Cars
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
group by sls.name
order by count(c.car_id) desc;
```

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

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

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

```
select sls.name,
       sum(c.cost_$) as Total_Renevue
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
group by sls.name
order by sum(c.cost_$) desc;
```



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

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

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

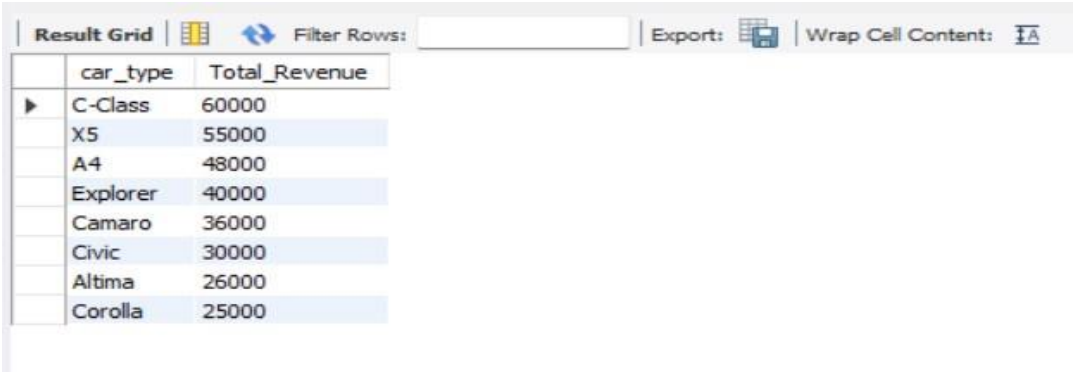
```
select distinct sls.name,
       c.make,
       c.type,
       c.style,
       c.cost_$,
       s.purchase_date
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
;
```

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

name	make	type	style	cost_$	purchase_date
John Smith	Honda	Civic	Sedan	30000	2021-01-01
John Smith	Nissan	Altima	Sedan	26000	2021-04-02
John Smith	Toyota	Corolla	Hatchback	25000	2021-05-05
John Smith	Ford	Explorer	SUV	40000	2022-05-05
John Smith	Mercedes	C-Class	Coupe	60000	2023-02-10
Emily Wong	Toyota	Corolla	Hatchback	25000	2021-02-10
Emily Wong	Chevrolet	Camaro	Coupe	36000	2021-06-07
Emily Wong	Nissan	Altima	Sedan	26000	2022-02-10
Emily Wong	Mercedes	C-Class	Coupe	60000	2022-03-01
Emily Wong	Honda	Civic	Sedan	30000	2022-07-09
Tom Lee	Ford	Explorer	SUV	40000	2021-02-03
Tom Lee	BMW	X5	SUV	55000	2021-07-09
Tom Lee	Honda	Civic	Sedan	30000	2022-02-03
Tom Lee	BMW	X5	SUV	55000	2022-04-02
Tom Lee	Toyota	Corolla	Hatchback	25000	2023-01-01
Tom Lee	Audi	A4	Sedan	48000	2023-02-03
Lucy Chen	BMW	X5	SUV	55000	2021-03-01
Lucy Chen	Toyota	Corolla	Hatchback	25000	2022-01-01
Lucy Chen	BMW	X5	SUV	55000	2022-06-07
Lucy Chen	Chevrolet	Camaro	Coupe	36000	2023-03-01

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

```
select type as car_type,
       sum(cost_$) as Total_Revenue
from cars
group by type
order by sum(cost_$) desc;
```

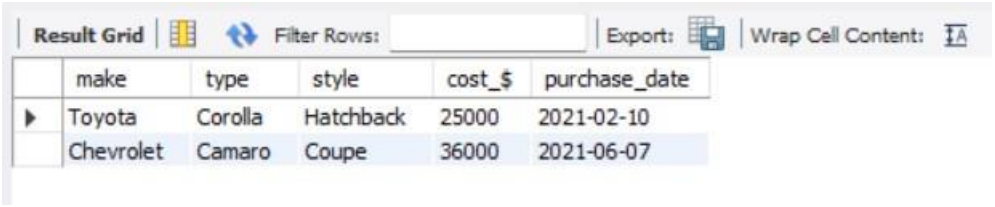


Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

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

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



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

make	type	style	cost_$	purchase_date
Toyota	Corolla	Hatchback	25000	2021-02-10
Chevrolet	Camaro	Coupe	36000	2021-06-07

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

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

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

style	Total_Revenue
Hatchback	25000

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

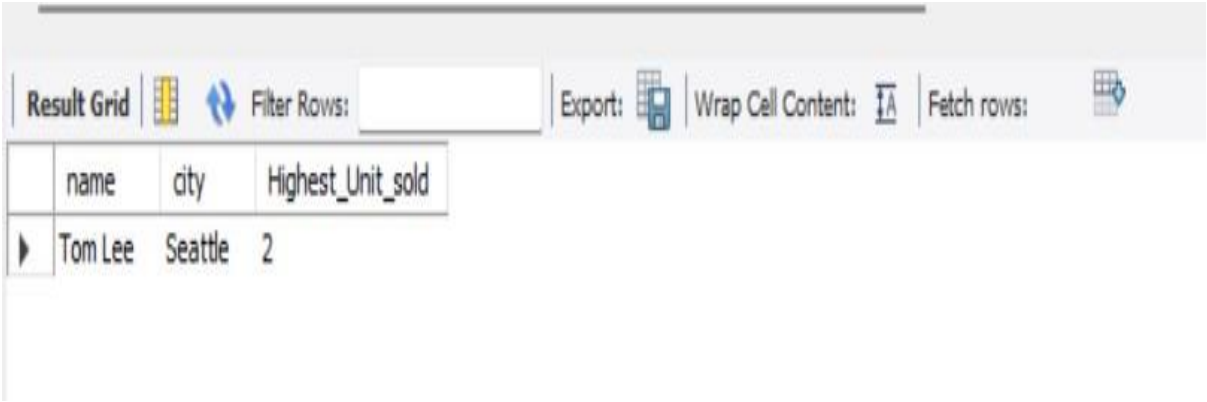
```
select c.style,
       sum(c.cost_$) as Total_Revenue
from cars as c
join sales as s
on c.car_id=s.car_id
where c.style = 'SUV' and extract(year from s.purchase_date) = 2022;
```

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

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?

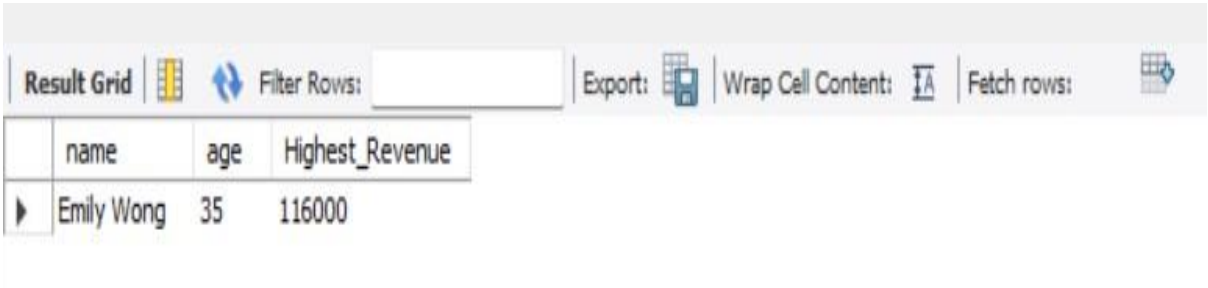
```
select sls.name,
       sls.city,
       count(s.sale_id) as Highest_Unit_sold
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
where extract(year from s.purchase_date) = 2023
group by sls.name,sls.city
order by count(s.sale_id) desc
limit 1
;
```



name	city	Highest_Unit_sold
Tom Lee	Seattle	2

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

```
select sls.name,
       sls.age,
       sum(c.cost_$) as Highest_Revenue
from cars as c
join sales as s
on c.car_id=s.car_id
join salespersons as sls
on s.salesman_id=sls.salesman_id
where extract(year from s.purchase_date) = 2022
group by sls.name,sls.age
order by sum(cost_$) desc
limit 1
;
```



name	age	Highest_Revenue
Emily Wong	35	116000