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.

❖ The following data is to provide Steve all the answers he requires to run his top end car showroom smoothly

❖ There are three tables for analysing the datasets
  ▪ Cars table
  ▪ Sales table
  ▪ Salespersons table

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

Q1. What are the details of all cars purchased in the year 2022?

```sql
select c.car_id, c.make, c.type,c.style,c.cost_$,s.purchase_date from cars c
left join sales s
on c.car_id=s.car_id
where year(purchase_date)='2022'
```

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

Q2 What is the total number of cars sold by each salesperson?

```sql
select sp.salesman_id,sp.name,count(s.car_id) as count_cars from salespersons sp
left join sales s
on sp.salesman_id=s.salesman_id
group by sp.salesman_id,sp.name
```

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

Q3. What is the total revenue generated by each salesperson?

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

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

Q4. What is the total revenue generated by each car type?

```
select  type,sum(cost_$) as Revenue from cars c
inner join sales s on c.car_id=s.car_id
group by type
```

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

Q5. What are the details of the cars sold by each salesperson?

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

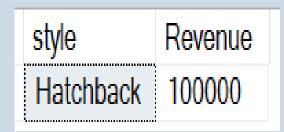| salesman_id	name	car_id	make	type	style	cost_$
1	John Smith	1	Honda	Civic	Sedan	30000
1	John Smith	8	Nissan	Altima	Sedan	26000
1	John Smith	2	Toyota	Corolla	Hatchback	25000
1	John Smith	3	Ford	Explorer	SUV	40000
1	John Smith	7	Mercedes	C-Class	Coupe	60000
2	Emily Wong	2	Toyota	Corolla	Hatchback	25000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

Q6. What are the details of the cars sold in the year 2021 by salesperson 'Emily Wong'?

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

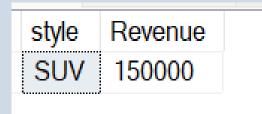| salesman_id	name	car_id	make	type	style	cost_$
2	Emily Wong	2	Toyota	Corolla	Hatchback	25000
2	Emily Wong	4	Chevrolet	Camaro	Coupe	36000

Q7. What `is` the total revenue `generated` `by` the sales `of` hatchback cars?

```
select  c.style, sum(c.cost_$) Revenue from salespersons sp
left join sales s
on sp.salesman_id=s.salesman_id
left join cars c
on c.car_id=s.car_id
where style='HatchBack'
group by c.style
```

style	Revenue
Hatchback	100000

Q8. What `is` the total revenue `generated` `by` the sales `of` SUV cars `in` the `year` 2022?

```
select  c.style, sum(c.cost_$) Revenue from salespersons sp
left join sales s
on sp.salesman_id=s.salesman_id
left join cars c
on c.car_id=s.car_id
where style='SUV'  and year(s.purchase_date)='2021'
group by c.style
```

style	Revenue
SUV	150000

Q9. What is the name and city of the salesperson who sold the most number of cars in the year 2023?

```sql
select top 1 sp.name as salesperson,sp.city, year(s.purchase_date) as year,count(s.car_id) as
Cars_sold
 from salespersons sp
left join sales s
on sp.salesman_id=s.salesman_id
where year(purchase_date)='2023'
group by sp.name,sp.city,year(s.purchase_date)
order by count(s.car_id) desc
```

salesperson	city	year	Cars_sold
Tom Lee	Seattle	2023	2

Q10. What is the name and age of the salesperson who generated the highest revenue in the year 2022?

```
select sp.name as salesperson, sp.age,   sum(c.cost_$) as Revenue from salespersons sp
join sales s on sp.salesman_id=s.salesman_id
join cars c on s.car_id=c.car_id
where year(purchase_date)='2022'
group by sp.name , sp.age
having sum(c.cost_$)=
(
select max (total_revenue)
from(
select sp.salesman_id ,   sum(c.cost_$) as total_Revenue from salespersons sp
join sales s on sp.salesman_id=s.salesman_id
join cars c on s.car_id=c.car_id
where year(purchase_date)='2022'
group by sp.salesman_id
)total_revenue
)
```

salesperson	age	Revenue
Emily Wong	35	116000