Steve's Car Showroom Case Study Analysis Using SQL

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

SALES

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

SALES PERSONS

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

QUESTIONS

1. What are the details of all cars purchased in the year 2022?
2. What is the total number of cars sold by each salesperson?
3. What is the total revenue generated by each salesperson?
4. What are the details of the cars sold by each salesperson?
5. What is the total revenue generated by each car type?
6. What are the details of the cars sold in the year 2021 by salesperson 'Emily Wong'?
7. What is the total revenue generated by the sales of hatchback cars?
8. What is the total revenue generated by the sales of SUV cars in the year 2022?
9. What is the name and city of the salesperson who sold the most number of cars in the year 2023?
10. What is the name and age of the salesperson who generated the highest revenue in the year 2022?

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

```sql
SELECT ca.*,s.purchase_date FROM cars ca
JOIN sales s ON ca.car_id=s.car_id
WHERE DATE_PART('YEAR',s.purchase_date)=2022;
```

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

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

```sql
SELECT sp.salesman_id,sp.name,COUNT(s.car_id) AS no_of_cars FROM sales s
JOIN salespersons sp ON s.salesman_id=sp.salesman_id
GROUP BY sp.salesman_id
ORDER BY sp.salesman_id;
```

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

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

```sql
SELECT sp.salesman_id,sp.name,SUM(ca.cost_$) AS total_revenue FROM salespersons sp
JOIN sales s ON sp.salesman_id=s.salesman_id
JOIN cars ca ON s.car_id=ca.car_id
GROUP BY sp.salesman_id
ORDER BY sp.salesman_id;
```

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 sp.salesman_id,sp.name,ca.* FROM salespersons sp
JOIN sales s ON sp.salesman_id=s.salesman_id
JOIN cars ca ON s.car_id=ca.car_id
GROUP BY sp.salesman_id,ca.car_id
ORDER BY sp.salesman_id;
```

salesman_id	name	car_id	make	type	style	cost_$
1	John Smith	1	Honda	Civic	Sedan	30000
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
1	John Smith	8	Nissan	Altima	Sedan	26000
2	Emily Wong	1	Honda	Civic	Sedan	30000
2	Emily Wong	2	Toyota	Corolla	Hatchback	25000

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

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

```sql
SELECT ca.type,SUM(ca.cost_$) AS revenue FROM cars ca
JOIN sales s ON ca.car_id=s.car_id
GROUP BY ca.type
ORDER BY ca.type;
```

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

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

```sql
SELECT ca.*,s.purchase_date,sp.name FROM cars ca
JOIN sales s ON ca.car_id=s.car_id
JOIN salespersons sp ON s.salesman_id=sp.salesman_id
WHERE DATE_PART('YEAR',s.purchase_date)=2021 AND sp.name='Emily Wong';
```

car_id	make	type	style	cost_$	purchase...	name
2	Toyota	Corolla	Hatchback	25000	2021-02-10	Emily Wong
4	Chevrolet	Camaro	Coupe	36000	2021-06-07	Emily Wong

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

```sql
SELECT ca.style,SUM(ca.cost_$) AS total_revenue FROM cars ca
JOIN sales s ON ca.car_id=s.car_id
WHERE ca.style='Hatchback'
GROUP BY ca.style;
```

style	total_revenue
Hatchback	100000

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

```sql
SELECT ca.style,SUM(ca.cost_$) AS revenue FROM cars ca
JOIN sales s ON ca.car_id=s.car_id
WHERE ca.style='SUV' AND EXTRACT('YEAR' FROM s.purchase_date)=2022
GROUP BY ca.style;
```

style	revenue
SUV	150000

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

```sql
SELECT sp.name,sp.city,COUNT(s.car_id) AS no_of_cars FROM salespersons sp
JOIN sales s ON sp.salesman_id=s.salesman_id
WHERE EXTRACT('year' FROM purchase_date)=2023
GROUP BY sp.name,sp.city
ORDER BY no_of_cars DESC
LIMIT 1;
```

name	city	no_of_cars
Tom Lee	Seattle	2

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

```sql
SELECT sp.name,sp.age,SUM(ca.cost_$) AS highest_revenue FROM salespersons sp
JOIN sales s ON sp.salesman_id=s.salesman_id
JOIN cars ca ON s.car_id=ca.car_id
WHERE EXTRACT('year' FROM purchase_date)=2022
GROUP BY sp.name,sp.age
ORDER BY highest_revenue DESC
LIMIT 1;
```

name	age	highest_revenue
Emily Wong	35	116000