Steve's Car Showroom

SQL Case Study

Problem Statement

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.

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

Solutions

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

Query SQL

```sql
-- 1. What are the details of all cars purchased in the year 2022?
select
    c.car_id,
    make,
    type,
    style,
    cost_$,
    purchase_date
from cars c join sales s on c.car_id=s.car_id
where purchase_date between '2022/01/01' and '2022/12/31';
```

Results

Query #1 Execution time: 1ms

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

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

Query SQL

```
11
12
13 -- 2. What is the total number of cars sold by each salesperson?
14
15 select
16     distinct name,
17     count(s.salesman_id) as Total_sold_car
18 from salespersons sp join sales s
19 on sp.salesman_id=s.salesman_id group by s.salesman_id,name;
20
```

Query #2 Execution time: 13ms

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

The maximum number of car sold by Tom Lee.

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

Query SQL

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

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

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

Highest revenue is generated by Tom Lee.

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

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

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

car_id	make	type	style	name	total_revenue
1	Honda	Civic	Sedan	John Smith	30000
2	Toyota	Corolla	Hatchback	John Smith	25000
3	Ford	Explorer	SUV	John Smith	40000
7	Mercedes	C-Class	Coupe	John Smith	60000
8	Nissan	Altima	Sedan	John Smith	26000
1	Honda	Civic	Sedan	Emily Wong	30000
2	Toyota	Corolla	Hatchback	Emily Wong	25000
4	Chevrolet	Camaro	Coupe	Emily Wong	36000
7	Mercedes	C-Class	Coupe	Emily Wong	60000
8	Nissan	Altima	Sedan	Emily Wong	26000
1	Honda	Civic	Sedan	Tom Lee	30000

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

Query SQL

```
33
34
35 -- 5. What is the total revenue generated by each car type?
36
37 select
38     type,
39     sum(cost_$) as total_revenue_by_car_type
40 from sales s
41 join cars c
42 on s.car_id=c.car_id
43 group by s.car_id,type
44 order by total_revenue_by_car_type desc;
```

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

As we can see the most revenue generate car type is X5.

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

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

select
    s.car_id,
    sp.name,
    make,
    type,
    style,
    cost_$
from sales s join cars c
on
    s.car_id=c.car_id
join salespersons sp
on
    s.salesman_id=sp.salesman_id
where sp.name='Emily Wong' and s.purchase_date between '2021/01/01' and '2021/12/31'
group by s.car_id,s.salesman_id;
```

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

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

Query SQL

```
66 -- 7. What is the total revenue generated by the sales of hatchback cars?
67
68 select sum(cost_$) as Total_revenue_of_hatchback from sales s join cars c on
   s.car_id=c.car_id
69 where style='Hatchback' group by s.car_id,cost_$;
70
```

Total_revenue_of_hatchback
100000

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

Query SQL

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

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

```

Total_revenue_of_SUV
150000

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

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

select
    sp.name,
    sp.city,
    count(s.salesman_id) as max_no_of_car
from sales s
join salespersons sp
on
    s.salesman_id=sp.salesman_id
where purchase_date between '2023/01/01' and '2023/12/31'
group by s.salesman_id,name,city
order by count(s.salesman_id) desc;
```

name	city	max_no_of_car
Tom Lee	Seattle	2
John Smith	New York	1
Lucy Chen	LA	1

Tom Lee is one who sold maximum number of cars in the year of 2023 also.

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

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

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

name	age	highest_revenue
Emily Wong	35	60000