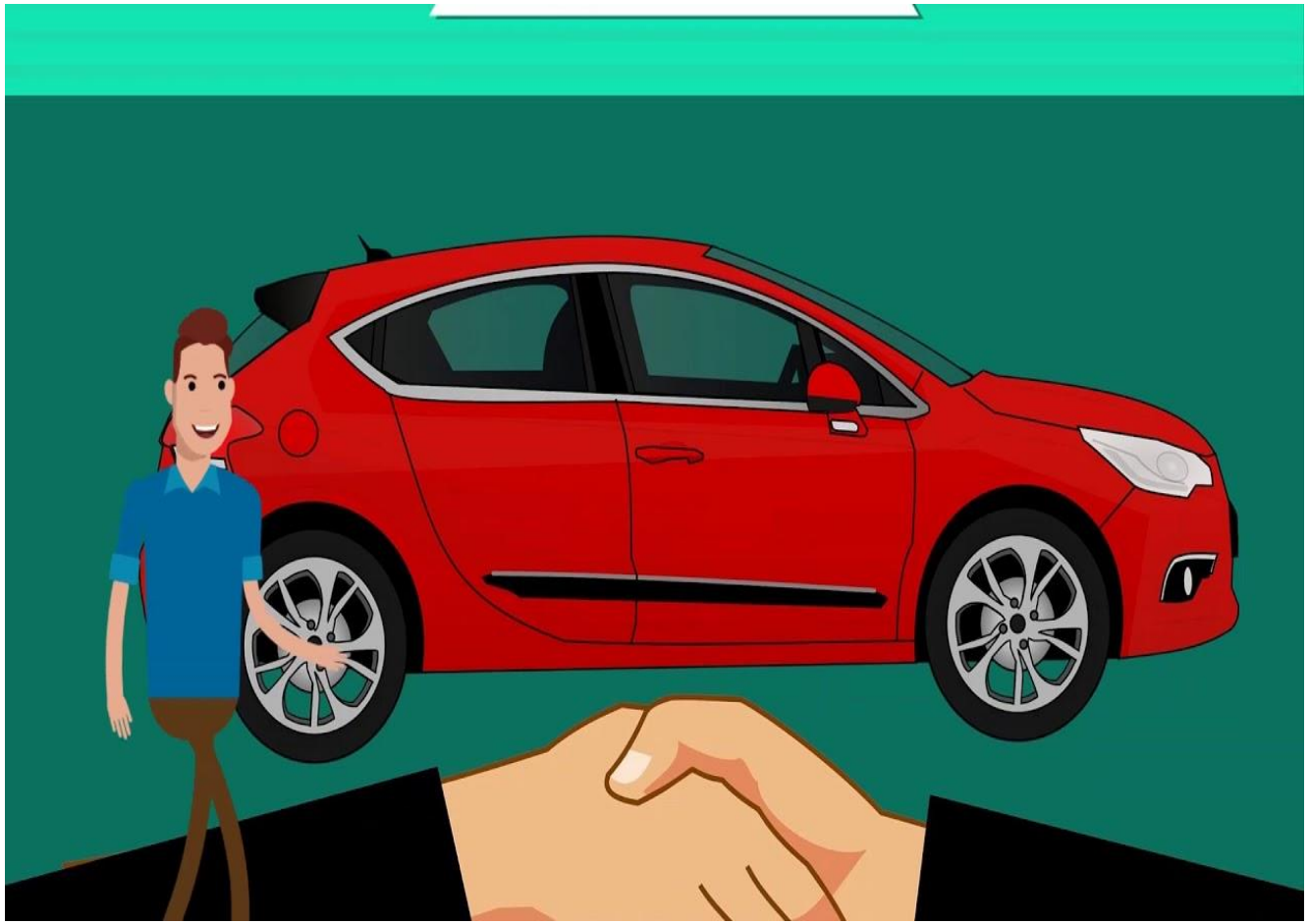
STEVE'S CAR SHOWROOM SQL CHALLENGE

JYOTI MANOJ MANDAL | DATA ANALYST

17/06/2023

INTRODUCTION

Steve runs a top-end car showroom but his data analyst has just quit and left him without his crucial insights.
Here I can **Analyze** the following data to provide him with all the answers he requires.



TABLES

Here are the tables I will be using:

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

The Following CODE into the "Schema SQL" section to create above tables:

```
CREATE TABLE cars (
car_id INT PRIMARY KEY,
make VARCHAR(50),
type VARCHAR(50),
style VARCHAR(50),
cost_$ INT
);
INSERT INTO cars (car_id, make, type, style, cost_$)
VALUES (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);

CREATE TABLE salespersons (
salesman_id INT PRIMARY KEY,
name VARCHAR(50),
age INT,
city VARCHAR(50)
);
INSERT INTO salespersons (salesman_id, name, age, city)
VALUES (1, 'John Smith', 28, 'New York'),
(2, 'Emily Wong', 35, 'San Fran'),
(3, 'Tom Lee', 42, 'Seattle'),
(4, 'Lucy Chen', 31, 'LA');
--------------------
CREATE TABLE sales (
sale_id INT PRIMARY KEY,
car_id INT,
salesman_id INT,
purchase_date DATE,
FOREIGN KEY (car_id) REFERENCES cars(car_id),
FOREIGN KEY (salesman_id) REFERENCES salespersons(salesman_id)
);
--------------------
INSERT INTO sales (sale_id, car_id, salesman_id, purchase_date)
VALUES (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, '2022-02-10'),
(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');
```

1. WHAT ARE THE DETAILS OF ALL CARS PURCHASED IN THE YEAR 2022?

```sql
SELECT sales.car_id, COUNT(sales.car_id) AS total_number_of_cars,
       make, type, style, cost_$, SUM(cost_$) AS total_$
FROM sales
JOIN cars ON cars.car_id = sales.car_id
WHERE EXTRACT(YEAR FROM purchase_date) = 2022
GROUP BY sales.car_id, make, type, style, cost_$;
```

car_id	total_number_of_cars	make	type	style	cost_$	total_$
1	2	Honda	Civic	Sedan	30000	60000
2	1	Toyota	Corolla	Hatchback	25000	25000
3	1	Ford	Explorer	SUV	40000	40000
5	2	BMW	X5	SUV	55000	110000
7	1	Mercedes	C-Class	Coupe	60000	60000
8	1	Nissan	Altima	Sedan	26000	26000

2. WHAT IS THE TOTAL NUMBER OF CARS SOLD BY EACH SALESPERSON?

```sql
SELECT salesman_id, COUNT(car_id) as total_cars_sold
FROM sales
GROUP BY salesman_id;

SELECT SP.SALESMAN_ID, NAME, COUNT(CAR_ID) NUMBER_OF_CARS_SOLD
FROM SALES
JOIN SALESPERSONS SP
ON SP.SALESMAN_ID = SALES.SALESMAN_ID
GROUP BY SP.SALESMAN_ID
ORDER BY SP.SALESMAN_ID;
```

salesman_id	name	number_of_cars_sold
1	John Smit	5
2	Emily Wor	5
3	Tom Lee	6
4	Lucy Chen	4

3. WHAT IS THE TOTAL REVENUE GENERATED BY EACH SALESPERSON?

```sql
SELECT SALES.SALESMAN_ID, SALESPERSONS.NAME, SUM(CARS.COST_$) AS REVENUE
FROM SALES
JOIN CARS ON SALES.CAR_ID = CARS.CAR_ID
JOIN SALESPERSONS ON SALESPERSONS.SALESMAN_ID = SALES.SALESMAN_ID
GROUP BY SALES.SALESMAN_ID, SALESPERSONS.NAME
ORDER BY SALES.SALESMAN_ID;
```

salesman_id	name	revenue
1	John Smit	181000
2	Emily Wor	177000
3	Tom Lee	253000
4	Lucy Chen	171000

4. WHAT ARE THE DETAILS OF THE CARS SOLD BY EACH SALESPERSON?

```sql
SELECT SALES.SALESMAN_ID, SALESPERSONS.NAME, SALES.CAR_ID, COUNT(SALES.CAR_ID) AS NUMBER_OF_CARS,
       CARS.MAKE, CARS.TYPE, CARS.STYLE, SUM(CARS.COST_$) AS PRICE
FROM SALES
JOIN CARS ON SALES.CAR_ID = CARS.CAR_ID
JOIN SALESPERSONS ON SALESPERSONS.SALESMAN_ID = SALES.SALESMAN_ID
GROUP BY SALES.SALESMAN_ID, SALESPERSONS.NAME, SALES.CAR_ID, CARS.MAKE, CARS.TYPE, CARS.STYLE;
```

salesman_id	name	car_id	number_of_cars	make	type	style	price
3	Tom Lee	5	2	BMW	X5	SUV	110000
3	Tom Lee	1	1	Honda	Civic	Sedan	30000
1	John Smit	8	1	Nissan	Altima	Sedan	26000
1	John Smit	3	1	Ford	Explorer	SUV	40000
4	Lucy Chen	4	1	Chevrolet	Camaro	Coupe	36000
2	Emily Wor	7	1	Mercedes	C-Class	Coupe	60000
4	Lucy Chen	2	1	Toyota	Corolla	Hatchback	25000
2	Emily Wor	2	1	Toyota	Corolla	Hatchback	25000
2	Emily Wor	8	1	Nissan	Altima	Sedan	26000
3	Tom Lee	2	1	Toyota	Corolla	Hatchback	25000
3	Tom Lee	6	1	Audi	A4	Sedan	48000
1	John Smit	2	1	Toyota	Corolla	Hatchback	25000
2	Emily Wor	4	1	Chevrolet	Camaro	Coupe	36000
1	John Smit	7	1	Mercedes	C-Class	Coupe	60000
2	Emily Wor	1	1	Honda	Civic	Sedan	30000
1	John Smit	1	1	Honda	Civic	Sedan	30000
4	Lucy Chen	5	2	BMW	X5	SUV	110000
3	Tom Lee	3	1	Ford	Explorer	SUV	40000

5. WHAT IS THE TOTAL REVENUE GENERATED BY EACH CAR TYPE?

```sql
SELECT S.CAR_ID, C.TYPE, SUM(C.COST_$) AS REVENUE
FROM SALES S
JOIN CARS C ON S.CAR_ID = C.CAR_ID
GROUP BY S.CAR_ID, C.TYPE
ORDER BY S.CAR_ID;
```

car_id	type	revenue
1	Civic	90000
2	Corolla	100000
3	Explorer	80000
4	Camaro	72000
5	X5	220000
6	A4	48000
7	C-Class	120000
8	Altima	52000

6. WHAT ARE THE DETAILS OF THE CARS SOLD IN THE YEAR 2021 BY SALESPERSON 'EMILY WONG'?

```
SELECT SALES.SALESMAN_ID, NAME, SALES.CAR_ID, MAKE, TYPE, STYLE, COST_$
FROM SALES
JOIN CARS ON SALES.CAR_ID = CARS.CAR_ID
JOIN SALESPERSONS ON SALESPERSONS.SALESMAN_ID = SALES.SALESMAN_ID
WHERE salespersons.name = 'Emily Wong' AND EXTRACT(YEAR FROM sales.purchase_date) = 2021;
```

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

7. WHAT IS THE TOTAL REVENUE GENERATED BY THE SALES OF HATCHBACK CARS?

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

style	revenue
Hatchback	100000

8. WHAT IS THE TOTAL REVENUE GENERATED BY THE SALES OF SUV CARS IN THE YEAR 2022?

```sql
SELECT CARS.STYLE, SUM(CARS.COST_$) AS REVENUE
FROM SALES S
JOIN CARS ON CARS.CAR_ID = S.CAR_ID
WHERE CARS.STYLE = 'SUV' AND EXTRACT(YEAR FROM S.PURCHASE_DATE) = 2022
GROUP BY CARS.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 sales.salesman_id, salespersons.name, salespersons.city, COUNT(sales.car_id) AS number_of_c
FROM sales
JOIN salespersons ON salespersons.salesman_id = sales.salesman_id
WHERE EXTRACT(YEAR FROM sales.purchase_date) = 2023
GROUP BY sales.salesman_id, salespersons.name, salespersons.city
ORDER BY COUNT(sales.car_id) DESC
LIMIT 1;
```

salesman_id	name	city	number_of_cars	Column1
3	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 sales.salesman_id, salespersons.name, salespersons.age, SUM(cars.cost_$) AS revenue
FROM sales
JOIN salespersons ON salespersons.salesman_id = sales.salesman_id
JOIN cars ON cars.car_id = sales.car_id
WHERE EXTRACT(YEAR FROM sales.purchase_date) = 2022
GROUP BY sales.salesman_id, salespersons.name, salespersons.age
ORDER BY SUM(cars.cost_$) DESC
LIMIT 1;
```

salesman_id	name	age	revenue
2	Emily Wor	35	116000

RESULTS

- In 2022 the most number of purchased cars were from Honda (2) and BMW (2), the highest revenue was made by BMW (110000$).
- Tom Lee sold the most number of cars (6) and the highest total revenue (1920000$) was generated by him as well.
- The highest total revenue was generated by Car Type X5 (220000$).
- Emily Wong sold a Toyota (25000$) and a Chevrolet (36000$) in 2021.
- Hatchback Style Cars generated 100000$ Revenue.
- SUV Style Cars generated 150000$ Revenue in 2022.
- In 2023 the most number of cars were sold by Tom Lee (2) in Seattle.
- In 2022 the highest revenue (116000$) was generated by Emily (age: 35).


THANK
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