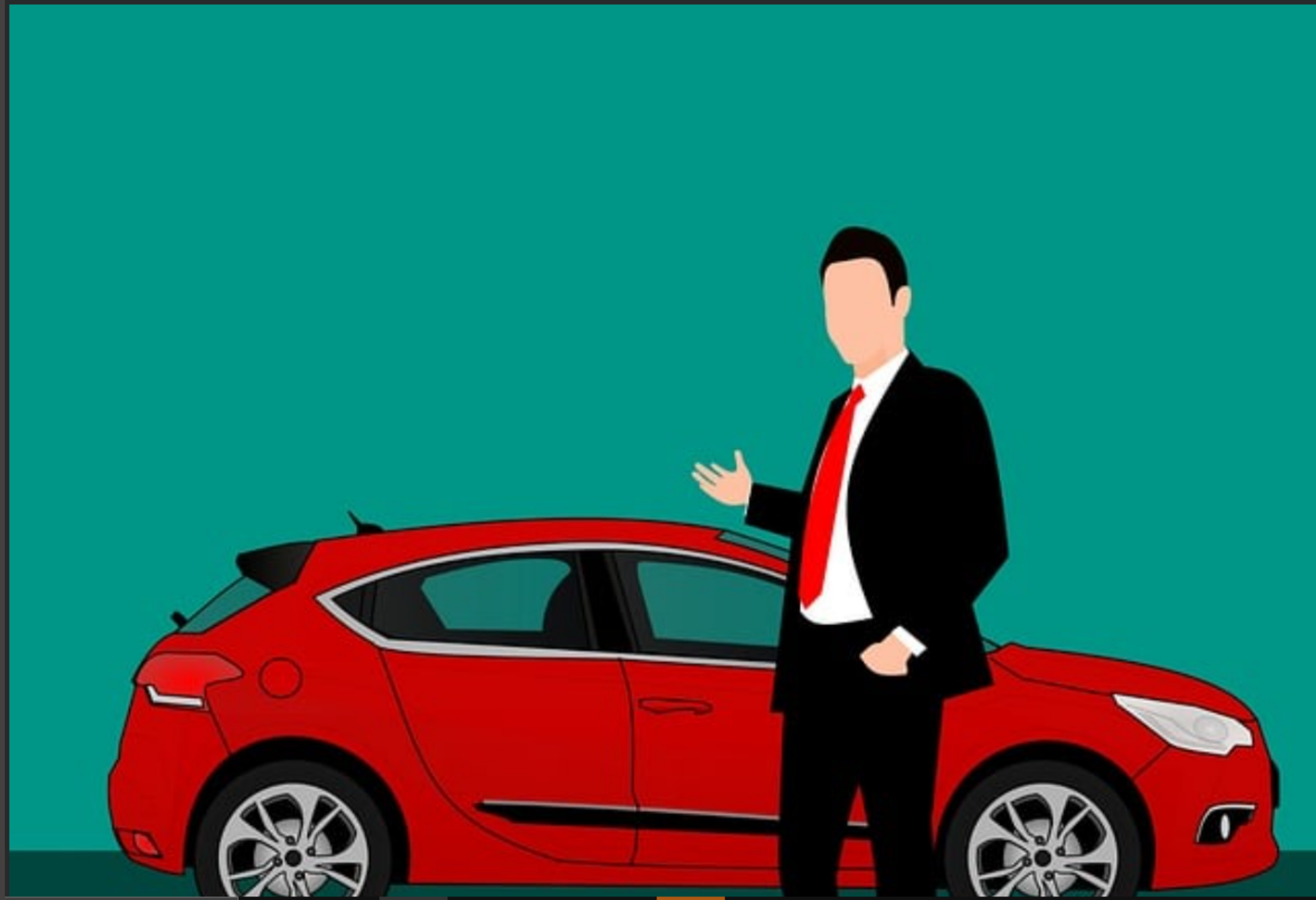
STEEL DATA

SQL

CHALLENGE

Challenge 1 - Steve's Car Showroom



Intro:- Steve runs a top-end car showroom but his data analyst has just quit and left him without his crucial insights.Can you analyse the following data to provide him with all the answers he requires?

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

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

```
SELECT * FROM cars AS c
INNER JOIN sales AS s
ON c.car_id = s.car_id
WHERE EXTRACT(YEAR FROM purchase_date) = 2022
GROUP BY c.car_id;
```

Output:-

car_id	make	type	style	cost_$	sale_id	car_id	salesman_id	purchase_date
1	Honda	Civic	Sedan	30000	10	1	3	2022-02-03
2	Toyota	Corolla	Hatchback	25000	9	2	4	2022-01-01
3	Ford	Explorer	SUV	40000	14	3	1	2022-05-05
5	BMW	X5	SUV	55000	13	5	3	2022-04-02
7	Mercedes	C-Class	Coupe	60000	12	7	2	2022-03-01
8	Nissan	Altima	Sedan	26000	11	8	2	2022-02-10

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

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

Output:-

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

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

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

Output:-

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

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

```
SELECT c.*, sp.*
FROM cars AS c
INNER JOIN sales AS s
ON c.car_id = s.car_id
INNER JOIN salespersons AS sp
ON sp.salesman_id = s.salesman_id;
```

Output:-

car_id	make	type	style	cost_$	salesman_id	name	age	city
1	Honda	Civic	Sedan	30000	1	John Smith	28	New York
8	Nissan	Altima	Sedan	26000	1	John Smith	28	New York
2	Toyota	Corolla	Hatchback	25000	1	John Smith	28	New York
3	Ford	Explorer	SUV	40000	1	John Smith	28	New York
7	Mercedes	C-Class	Coupe	60000	1	John Smith	28	New York
2	Toyota	Corolla	Hatchback	25000	2	Emily Wong	35	San Fran
4	Chevrolet	Camaro	Coupe	36000	2	Emily Wong	35	San Fran
8	Nissan	Altima	Sedan	26000	2	Emily Wong	35	San Fran
7	Mercedes	C-Class	Coupe	60000	2	Emily Wong	35	San Fran

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

```sql
SELECT style, SUM(cost_$) AS total_revenue
FROM cars
GROUP BY style
ORDER BY total_revenue DESC;
```

Output:-

style	total_revenue
Sedan	104000
Coupe	96000
SUV	95000
Hatchback	25000

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

```
SELECT c.*, s.salesman_id, sp.name
FROM cars AS c
INNER JOIN sales AS s
ON c.car_id = s.car_id
INNER JOIN salespersons AS sp
ON sp.salesman_id = s.salesman_id
WHERE EXTRACT(YEAR FROM s.purchase_date) = 2021 AND sp.name='Emily Wong'
GROUP BY s.salesman_id;
```

Output:-

car_id	make	type	style	cost_$	salesman_id	name
2	Toyota	Corolla	Hatchback	25000	2	Emily Wong

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

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

Output:-

style	total_revenue
Hatchback	100000

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

```sql
SELECT c.style, SUM(DISTINCT c.cost_$) AS total_revenue
FROM cars AS c
RIGHT JOIN sales AS s
ON c.car_id = s.car_id
WHERE c.style = 'SUV' AND EXTRACT(YEAR FROM s.purchase_date) = 2022;
```

Output:-

style	total_revenue
SUV	95000

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(DISTINCT s.sale_id) AS sold_no_of_cars
FROM cars c
INNER JOIN sales AS s
ON c.car_id = s.car_id
INNER JOIN salespersons AS sp
ON s.salesman_id = sp.salesman_id
WHERE EXTRACT(YEAR FROM purchase_date) = 2023
GROUP BY sp.name
ORDER BY sold_no_of_cars DESC LIMIT 1;
```

Output:-

name	city	sold_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(c.cost_$) AS total_revenue
FROM cars c
INNER JOIN sales AS s
ON c.car_id = s.car_id
INNER JOIN salespersons AS sp
ON s.salesman_id = sp.salesman_id
WHERE EXTRACT(YEAR FROM purchase_date) = 2022
GROUP BY s.salesman_id
ORDER BY total_revenue DESC LIMIT 1;
```

Output:-

name	age	total_revenue
Emily Wong	35	116000