SQL Challenge 1

Challenge 1 - Steve's Car Showroom

https://www.steeldata.org.uk/sql1.html

INTRODUCTION

Steve runs a top-end car 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?

DATASETS FOR THIS STUDY:

- Cars
- Salespersons
- Sales

TABLES

sustainable_clothing

Product ID	Product Name	Category	Size	Price
1	Organic Cotton T-Shirt	Tops	S	$29.99
2	Recycled Denim Jeans	Bottoms	M	$79.99
3	Hemp Crop Top	Tops	L	$24.99
4	Bamboo Lounge Pants	Bottoms	XS	$49.99
5	Eco-Friendly Hoodie	Outerwear	XL	$59.99
6	Linen Button-Down Shirt	Tops	M	$39.99
7	Organic Cotton Dress	Dresses	S	$69.99
8	Sustainable Swim Shorts	Swimwear	L	$34.99
9	Recycled Polyester Jacket	Outerwear	XL	$89.99
10	Bamboo Yoga Leggings	Activewear	XS	$54.99
11	Hemp Overalls	Bottoms	M	$74.99
12	Organic Cotton Sweater	Tops	L	$49.99
13	Cork Sandals	Footwear	S	$39.99
14	Recycled Nylon Backpack	Accessories	One Size	$59.99
15	Organic Cotton Skirt	Bottoms	XS	$34.99
16	Hemp Baseball Cap	Accessories	One Size	$24.99
17	Upcycled Denim Jacket	Outerwear	M	$79.99
18	Linen Jumpsuit	Dresses	L	$69.99
19	Organic Cotton Socks	Accessories	M	$9.99
20	Bamboo Bathrobe	Loungewear	XL	$69.99

transactions (first 10 shown)

transaction_id	product_id	quantity	purcahse_date
1	2	2	2023-06-02
1	14	1	2023-06-02
2	5	2	2023-06-05
3	2	1	2023-06-07
4	19	2	2023-06-10
5	2	1	2023-06-13
5	16	1	2023-06-13
6	10	2	2023-06-15
7	2	1	2023-06-18
8	4	1	2023-06-22
9	18	2	2023-06-26
10	2	1	2023-06-30
10	13	1	2023-06-30

marketing_campaigns

campaign_id	campaign_name	product_id	start_date	end_date
1	Summer Sale	2	2023-06-01	2023-06-30
2	New Collection Launch	10	2023-07-15	2023-08-15
3	Super Save	7	2023-08-20	2023-09-15

CASE STUDY QUESTIONS

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

```
70 •  SELECT c.*
71    FROM cars c
72    JOIN sales s ON s.car_id = c.car_id
73    WHERE YEAR(s.purchase_date) = '2022'
74    ORDER BY car_id ASC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

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

```
77
78 •  SELECT sp.name AS SALESPERSON_NAME, COUNT(s.car_id) AS TOTAl_CARS
79    FROM sales s
80    JOIN salespersons sp ON s.salesman_id = sp.salesman_id
81    GROUP BY 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

SALESPERSON_NAME	TOTAl_CARS
John Smith	5
Emily Wong	5
Tom Lee	6
Lucy Chen	4

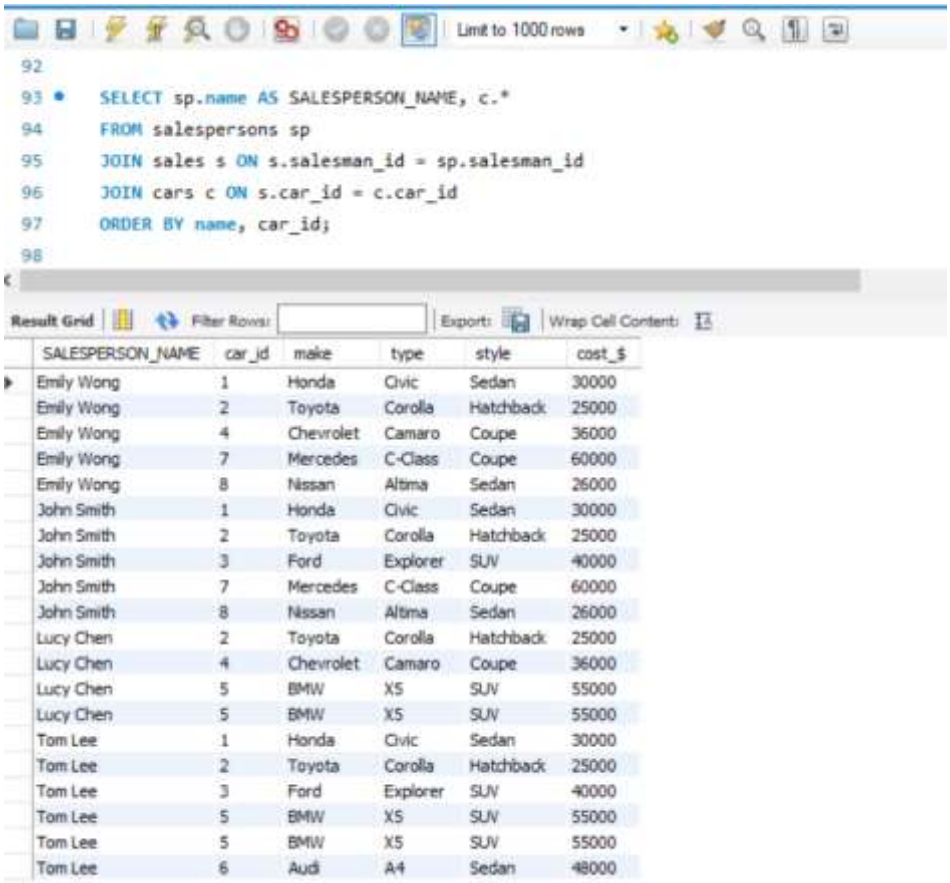
3. What is the total revenue generated by each salesperson?

```
84
85 •  SELECT sp.name AS SALESPERSON_NAME, SUM(c.cost_$)
86    FROM salespersons sp
87    JOIN sales s ON s.salesman_id = sp.salesman_id
88    JOIN cars c ON s.car_id = c.car_id
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

SALESPERSON_NAME	SUM(c.cost_$)
John Smith	181000
Emily Wong	177000
Tom Lee	253000
Lucy Chen	171000

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

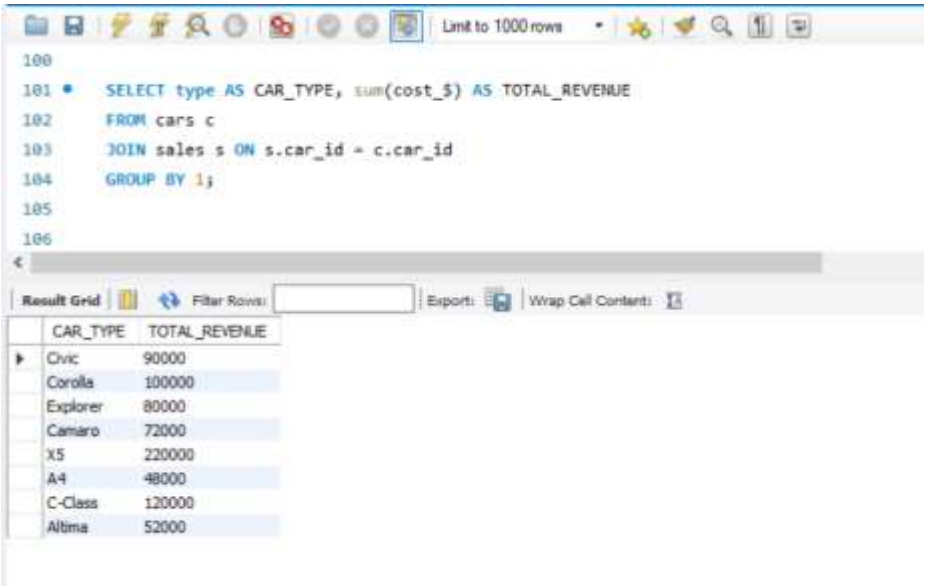


```
92
93 •  SELECT sp.name AS SALESPERSON_NAME, c.*
94    FROM salespersons sp
95    JOIN sales s ON s.salesman_id = sp.salesman_id
96    JOIN cars c ON s.car_id = c.car_id
97    ORDER BY name, car_id;
98
```

Result Grid

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

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



```
100
101 •  SELECT type AS CAR_TYPE, sum(cost_$) AS TOTAL_REVENUE
102    FROM cars c
103    JOIN sales s ON s.car_id = c.car_id
104    GROUP BY 1;
105
106
```

Result Grid

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

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

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

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

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

```
SELECT c.style AS CAR, SUM(c.cost_$) as TOTAL_REVENUE
FROM cars c
JOIN sales s ON s.car_id = c.car_id
WHERE style = 'hatchback';
```

CAR	TOTAL_REVENUE
Hatchback	100000

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

```
SELECT c.style AS CAR, SUM(c.cost_$) as TOTAL_REVENUE
FROM cars c
JOIN sales s ON s.car_id = c.car_id
WHERE style = 'SUV'
AND YEAR(purchase_date) = '2022';
```

CAR	TOTAL_REVENUE
SUV	150000

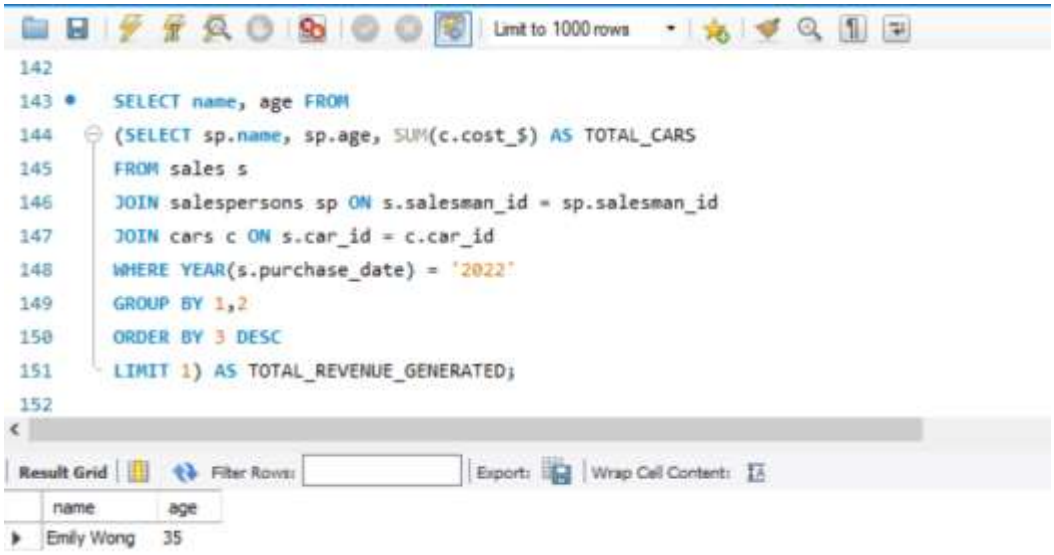
9. What is the name and city of the salesperson who sold the most number of cars in the year 2023?

```
132 •  SELECT name, city FROM
133    (SELECT sp.name, sp.city, COUNT(s.car_id) AS TOTAL_CARS
134    FROM sales s
135    JOIN salespersons sp ON s.salesman_id = sp.salesman_id
136    WHERE YEAR(s.purchase_date) = '2023'
137    GROUP BY 1,2
138    ORDER BY 3 DESC
139    LIMIT 1) AS TOTAL_CARS_SOLD;
140
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	city
Tom Lee	Seattle

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



```
142
143 •  SELECT name, age FROM
144    (SELECT sp.name, sp.age, SUM(c.cost_$) AS TOTAL_CARS
145    FROM sales s
146    JOIN salespersons sp ON s.salesman_id = sp.salesman_id
147    JOIN cars c ON s.car_id = c.car_id
148    WHERE YEAR(s.purchase_date) = '2022'
149    GROUP BY 1,2
150    ORDER BY 3 DESC
151    LIMIT 1) AS TOTAL_REVENUE_GENERATED;
152
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	age
Emily Wong	35