8 Week SQL challenge

<https://8weeksqlchallenge.com/>

CASE STUDY 1 - <https://8weeksqlchallenge.com/case-study-1/>

-- create a table

CREATE TABLE members (

customer\_id VARCHAR(1) PRIMARY KEY,

join\_date TIMESTAMP

);

CREATE TABLE menu (

product\_id INTEGER PRIMARY KEY,

product\_name VARCHAR(5),

price INTEGER

);

CREATE TABLE sales (

customer\_id VARCHAR(1),

product\_id INTEGER,

order\_date DATE

);

-- insert some values

INSERT INTO menu VALUES (1, 'sushi', 10);

INSERT INTO menu VALUES (2, 'curry', 15);

INSERT INTO menu VALUES (3, 'ramen', 12);

INSERT INTO members VALUES ('A', '2021-01-07');

INSERT INTO members VALUES ('B', '2021-01-09');

INSERT INTO sales VALUES ('A', 1, '2021-01-01');

INSERT INTO sales VALUES ('A', 2, '2021-01-01');

INSERT INTO sales VALUES ('A', 2, '2021-01-07');

INSERT INTO sales VALUES ('A', 3, '2021-01-10');

INSERT INTO sales VALUES ('A', 3, '2021-01-11');

INSERT INTO sales VALUES ('A', 3, '2021-01-11');

INSERT INTO sales VALUES ('B', 2, '2021-01-01');

INSERT INTO sales VALUES ('B', 2, '2021-01-02');

INSERT INTO sales VALUES ('B', 1, '2021-01-04');

INSERT INTO sales VALUES ('B', 1, '2021-01-11');

INSERT INTO sales VALUES ('B', 3, '2021-01-16');

INSERT INTO sales VALUES ('B', 3, '2021-02-01');

INSERT INTO sales VALUES ('C', 3, '2021-01-01');

INSERT INTO sales VALUES ('C', 3, '2021-01-01');

INSERT INTO sales VALUES ('C', 3, '2021-01-07');

-- fetch some values

/\*SELECT \* FROM members;

SELECT \* FROM menu;

SELECT \* FROM sales;\*/

--QUERIES

--What is the total amount each customer spent at the restaurant?

/\*SELECT s.customer\_id as Customer, sum(m.price) as Amount\_spent

FROM sales s

JOIN menu m

ON s.product\_id = m.product\_id

GROUP BY 1

ORDER BY 2 DESC;\*/

--How many days has each customer visited the restaurant?

/\*SELECT s.customer\_id as Customer,count(s.order\_date) as Number\_of\_visits

FROM sales s

GROUP BY 1

ORDER BY 2 DESC, 1;\*/

--What was the first item from the menu purchased by each customer?

/\*WITH cte as

(

SELECT s.customer\_id as Customer, min(s.order\_date) as First\_order, s.product\_id

FROM sales s

GROUP BY 1

ORDER BY 2 DESC, 1

)

SELECT c.Customer, m.product\_name as First\_item

FROM cte c

JOIN menu m

ON c.product\_id = m.product\_id;\*/

--What is the most purchased item on the menu and how many times was it purchased by all customers?

/\*SELECT m.product\_name as Item, count(s.product\_id) as Number\_of\_orders

FROM menu m

JOIN sales s

ON m.product\_id = s.product\_id

GROUP BY 1

ORDER BY 2 DESC;\*/

--Which item was the most popular for each customer?

/\*WITH rnk as

(

WITH cte as

(

SELECT s.customer\_id as Customer, m.product\_name as Fav\_item, count(s.product\_id) as Number\_of\_orders

FROM menu m

JOIN sales s

ON m.product\_id = s.product\_id

GROUP BY 1, 2

ORDER BY 1, 3 DESC

)

SELECT Customer, Fav\_item,

RANK() over(Partition by Customer Order by Number\_of\_orders DESC, Customer) as ranking

FROM cte

)

SELECT \*

FROM rnk

WHERE ranking = 1\*/

--Which item was purchased first by the customer after they became a member?

/\*With mini as

(

WITH cte as

(

SELECT mb.customer\_id as Customer, m.product\_name as Item, mb.join\_date as join\_date, s.order\_date as order\_date

FROM sales s

JOIN menu m

ON s.product\_id = m.product\_id

JOIN members mb

ON mb.customer\_id = s.customer\_id

WHERE s.order\_date >= mb.join\_date

)

SELECT \*,

ROW\_NUMBER() Over(Partition by Customer Order by order\_date)

FROM cte

)

SELECT Customer, min(order\_date) as first\_order\_post\_membership

FROM mini

GROUP BY 1;\*/

/\*

WITH cte as

(

SELECT mb.customer\_id as Customer, m.product\_name as Item, mb.join\_date as join\_date, s.order\_date as order\_date

FROM sales s

JOIN menu m

ON s.product\_id = m.product\_id

JOIN members mb

ON mb.customer\_id = s.customer\_id

WHERE s.order\_date >= mb.join\_date

),

mini as(

SELECT cte.Customer, min(cte.order\_date) as first\_order\_post\_membership

FROM cte

GROUP BY 1

)

SELECT cte.Customer, mini.first\_order\_post\_membership

FROM cte

JOIN mini

ON cte.Customer = mini.Customer\*/

-----------------Error above--------------------------------

--Which item was purchased just before the customer became a member?

--------------Try later------------------------

--What is the total items and amount spent for each member before they became a member?

/\*SELECT s.customer\_id as Customer, sum(me.price) as total\_amount, count(s.product\_id) as total\_items

FROM sales s

JOIN members m

ON s.customer\_id = m.customer\_id

JOIN menu me

ON s.product\_id = me.product\_id

WHERE s.order\_date >= m.join\_date

GROUP BY 1

ORDER BY 2 DESC;\*/

--If each $1 spent equates to 10 points and sushi has a 2x points multiplier - how many points would each customer have?

With cte as

(

SELECT s.customer\_id as Customer, me.product\_name as Item, sum(me.price) as total\_points

FROM sales s

JOIN menu me

ON s.product\_id = me.product\_id

GROUP BY 1, 2

ORDER BY 1

)

SELECT cte.customer, cte.Item,

CASE

WHEN cte.Item = 'sushi' THEN (cte.total\_points \* 10 \* 2)

ELSE (cte.total\_points \* 10)

END as Points

FROM cte