CASE STUDY:

CREATE DATABASE TESTING3;

USE TESTING3;

CREATE OR REPLACE TABLE sales (

customer\_id VARCHAR(1),

order\_date DATE,

product\_id INT);

INSERT INTO sales

VALUES

('A', '2021-01-01', '1'),

('A', '2021-01-01', '2'),

('A', '2021-01-07', '2'),

('A', '2021-01-10', '3'),

('A', '2021-01-11', '3'),

('A', '2021-01-11', '3'),

('B', '2021-01-01', '2'),

('B', '2021-01-02', '2'),

('B', '2021-01-04', '1'),

('B', '2021-01-11', '1'),

('B', '2021-01-16', '3'),

('B', '2021-02-01', '3'),

('C', '2021-01-01', '3'),

('C', '2021-01-01', '3'),

('C', '2021-01-07', '3');

CREATE OR REPLACE TABLE menu (

product\_id INT,

product\_name VARCHAR(5),

price INT

);

INSERT INTO menu

VALUES

('1', 'sushi', '10'),

('2', 'curry', '15'),

('3', 'ramen', '12');

CREATE OR REPLACE TABLE members (

customer\_id VARCHAR(1),

join\_date DATE);

INSERT INTO members

VALUES

('A', '2021-01-07'),

('B', '2021-01-09');

SELECT \* FROM sales;

SELECT \* FROM menu;

SELECT \* FROM members;

--Case Study----

--1. What is the total amount each customer spent at the restaurant?

SELECT s.customer\_id

, SUM(m.price) AS total

FROM sales s

JOIN menu m USING(product\_id)

GROUP BY 1;

--2. How many days has each customer visited the restaurant?

SELECT customer\_id

,COUNT(DISTINCT order\_date) AS visits

FROM sales

GROUP BY 1;

--3. What was the first item from the menu purchased by each customer?

SELECT s.customer\_id,

m.product\_name

FROM sales s

JOIN menu m USING(product\_id)

WHERE s.order\_date IN (

SELECT MIN(order\_date)

FROM sales

GROUP BY customer\_id);

--4. What is the most purchased item on the menu and how many times was it purchased by all customers?--

SELECT m.product\_name,s.product\_id,

COUNT(s.product\_id) AS purchase\_frequency

FROM menu m

JOIN sales s USING(s.product\_id)

GROUP BY 1,2

ORDER BY s.product\_id DESC

LIMIT 1;

--5. Which item was the most popular for each customer?

WITH cust\_pop

AS (

SELECT customer\_id

, product\_id

, COUNT(product\_id) AS order\_count

FROM sales

GROUP BY customer\_id, product\_id)

SELECT customer\_id

, product\_name

FROM

(SELECT c.customer\_id, m.product\_name,

DENSE\_RANK() OVER(PARTITION BY customer\_id ORDER BY order\_count DESC) AS rank

FROM cust\_pop c

JOIN menu m USING(product\_id)) AS fav

WHERE rank = 1;

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

WITH after\_join

AS (

SELECT s.\*

, m.product\_name

, DENSE\_RANK() OVER(PARTITION BY s.customer\_id ORDER BY s.order\_date) AS first

FROM sales s

JOIN members mm USING(s.customer\_id)

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

WHERE s.order\_date >= mm.join\_date)

SELECT customer\_id,product\_name

FROM after\_join

WHERE first = 1;

---7. Which item was purchased just before the customer became a member?

WITH last\_order\_member

AS (

SELECT s.customer\_id,s.product\_id

, m.product\_name

, DENSE\_RANK() OVER(PARTITION BY customer\_id ORDER BY order\_date DESC)AS last

FROM sales s

JOIN members mm USING(customer\_id)

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

WHERE s.order\_date < mm.join\_date)

SELECT customer\_id,product\_name

FROM last\_order\_member

WHERE last = 1;

--8. What is the total items and amount spent for each member before they became a member?

SELECT s.customer\_id,

SUM(m.price) AS total\_spent,

COUNT(s.product\_id) AS total\_items

FROM sales s

JOIN members mm USING(customer\_id)

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

WHERE s.order\_date < mm.join\_date

GROUP BY 1;

--9. If each $1 spent equates to 10 points and sushi has a 2x points multiplier how many points would each customer have?

WITH points

AS (

SELECT s.customer\_id, s.product\_id,m.price,

CASE

WHEN product\_id = 1 THEN price \* 20

ELSE price \*10

END AS points

FROM sales s

JOIN menu m USING(product\_id))

SELECT customer\_id,

SUM(points) AS total\_points

FROM points

GROUP BY 1

;

--10. In the first week after a customer joins the program (including their join date) they earn 2x points on all items, not just sushi -

--how many points do customer A and B have at the end of January?

WITH cust\_points

AS(

SELECT s.customer\_id,

s.order\_date,

mm.join\_date,

DATEADD(DAY, '6',mm.join\_date) AS end\_promo,

s.product\_id,

m.price,

CASE

WHEN s.product\_id = 1

THEN m.price \* 20

WHEN s.product\_id != 1 AND

(s.order\_date BETWEEN mm.join\_date AND DATEADD(DAY,'6',mm.join\_date))

THEN (m.price \* 20)

ELSE m.price \* 10

END AS points

FROM sales s

JOIN members mm USING(customer\_id)

JOIN menu m USING(product\_id)

WHERE

s.order\_date <= '2021-01-31'

)

SELECT customer\_id

, SUM(points) AS total

FROM cust\_points

GROUP BY customer\_id;

----JOIN ALL TABLE--

SELECT s.customer\_id,

s.order\_date,

m.product\_name,

m.price,

CASE

WHEN s.order\_date < mm.join\_date THEN 'N'

WHEN s.order\_date >= mm.join\_date THEN 'Y'

ELSE 'N'

END AS member

FROM sales s

JOIN menu m USING(product\_id)

LEFT JOIN members mm USING(customer\_id);