CREATE DATABASE Case\_Study\_SQL;

USE Case\_Study\_SQL;

CREATE TABLE sales(

customer\_id varchar(2),

order\_date date,

product\_id integer

);

INSERT INTO sales

(customer\_id, order\_date, product\_id)

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 TABLE menu (

product\_id INTEGER,

product\_name VARCHAR(5),

price INTEGER

);

INSERT INTO menu

(product\_id, product\_name, price)

VALUES

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

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

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

CREATE TABLE members (

customer\_id VARCHAR(1),

join\_date DATE

);

INSERT INTO members

(customer\_id, join\_date)

VALUES

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

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

**------------------------------ Case Study Questions ---------------------------------**

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

SELECT s.customer\_id as Customer, sum(m.price) as Total\_money\_spent

FROM sales s

INNER JOIN menu m USING(product\_id)

GROUP BY 1

ORDER BY 2 DESC;

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

SELECT customer\_id as Customer, count(distinct order\_date) AS No\_of\_visits

FROM sales

GROUP BY 1

ORDER BY 2 DESC;

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

WITH cte AS

(

SELECT customer\_id, product\_id ,

ROW\_NUMBER() OVER(PARTITION BY customer\_id ORDER BY order\_date) AS pur\_order

FROM sales)

SELECT cte.customer\_id, m.product\_name

FROM cte

JOIN menu m USING(product\_id)

WHERE pur\_order = 1;

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

SELECT m1.product\_name AS Most\_Purchased\_Item, count(1) as purchased\_times

FROM sales s1

LEFT JOIN menu m1 ON s1.product\_id = m1.product\_id

GROUP BY 1

ORDER BY 2 DESC

LIMIT 1;

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

SELECT s1.customer\_id, m1.product\_name, COUNT(\*) AS purchase\_counts

FROM sales s1

INNER JOIN menu m1 ON s1.product\_id = m1.product\_id

GROUP BY 1,2

HAVING COUNT(\*) = (

SELECT max(purchase\_count) FROM

(SELECT customer\_id, COUNT(\*) AS purchase\_count

FROM sales

GROUP BY customer\_id, product\_id) AS counts

WHERE s1.customer\_id = counts.customer\_id);

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

SELECT ROW\_NUMBER() OVER (PARTITION BY s1.customer\_id ORDER BY s1.order\_date) AS row\_no,

s1.customer\_id as Customer, m1.product\_name as First\_Item\_Purchased

FROM members m2

LEFT JOIN sales s1 ON m2.customer\_id = s1.customer\_id

LEFT JOIN menu m1 ON m1.product\_id = s1.product\_id

WHERE m2.join\_date < s1.order\_date

ORDER BY 1 LIMIT 2;

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

SELECT ROW\_NUMBER() OVER (PARTITION BY s1.customer\_id ORDER BY s1.order\_date) AS row\_no,

s1.customer\_id as Customer, m1.product\_name as Purchased\_before\_membership

FROM members m2

LEFT JOIN sales s1 ON m2.customer\_id = s1.customer\_id

LEFT JOIN menu m1 ON m1.product\_id = s1.product\_id

WHERE m2.join\_date > s1.order\_date

ORDER BY 1 DESC LIMIT 2;

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

SELECT s1.customer\_id as Customer, COUNT(1) as Total\_Item\_Purchased, SUM(m1.price) as Amount\_Spent

FROM members m2

LEFT JOIN sales s1 ON m2.customer\_id = s1.customer\_id

LEFT JOIN menu m1 ON m1.product\_id = s1.product\_id

WHERE m2.join\_date > s1.order\_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?**

SELECT sub.Customer, sum(points) as Total\_points

FROM

(SELECT s1.customer\_id as Customer,

CASE WHEN m1.product\_name = 'sushi' THEN 2\*10\*m1.price

ELSE 10\*m1.price END AS points

FROM sales s1

LEFT JOIN menu m1 ON m1.product\_id = s1.product\_id) sub

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?**

SELECT s1.customer\_id,

SUM(CASE

WHEN s1.order\_date BETWEEN m2.join\_date AND DATE\_ADD(m2.join\_date, INTERVAL 6 DAY)

THEN m1.price \* 10 \* 2

WHEN m1.product\_name = 'sushi' THEN m1.price \* 10 \* 2

ELSE m1.price \* 10 END) AS Total\_points

FROM sales s1

INNER JOIN menu m1 ON m1.product\_id = s1.product\_id

INNER JOIN members m2 ON s1.customer\_id = m2.customer\_id

WHERE DATE\_FORMAT(s1.order\_date,'%Y-%m-01') = '2021-01-01'

GROUP BY 1 ORDER BY 1;