### CASE STUDY ASSIGNMENT

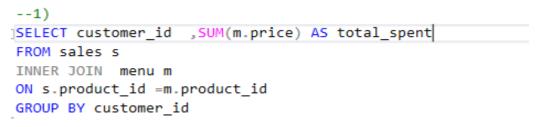
```
CREATE TABLE menu (
   product id INT PRIMARY KEY NOT NULL,
   product name VARCHAR(5),
   price INTEGER
);
CREATE TABLE members (
   customer id VARCHAR(1) PRIMARY KEY NOT NULL,
   join date DATE
);
CREATE TABLE sales (
   customer id VARCHAR(1) FOREIGN KEY REFERENCES
MEMBERS(customer id) ON DELETE CASCADE,
   order date DATE,
   product id INT FOREIGN KEY REFERENCES MENU(product id) ON DELETE
CASCADE
);
INSERT INTO sales
VALUES
('A', '2021-01-01', '1'),
('A', '2021-01-01', '2'),
('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')
```

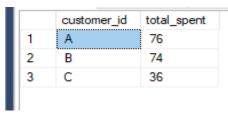
```
INSERT INTO menu
VALUES
('1', 'sushi', '10'),
('2', 'curry', '15'),
('3', 'ramen', '12');

INSERT INTO MEMBERS
VALUES
('A', '2021-01-07'),
('B', '2021-01-09'),
('C', '2021-01-07')
```

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

SELECT customer\_id ,SUM(m.price) AS total\_spent FROM sales s INNER JOIN menu m ON s.product\_id =m.product\_id GROUP BY customer\_id





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

SELECT customer\_id, COUNT(DISTINCT order\_date) AS no\_of\_days\_visited FROM sales GROUP BY customer\_id

```
--2)

SELECT customer_id, COUNT(DISTINCT order_date) AS no_of_days_visited FROM sales

GROUP BY customer_id
```

	customer_id	no_of_days_visited
1	Α	4
2	В	6
3	С	2

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

```
--3)

=SELECT DISTINCT d.customer_id ,d.product_id,d.product_name

FROM (

    SELECT s.customer_id ,s.product_id,m.product_name,

    DENSE_RANK() OVER(PARTITION BY customer_id ORDER BY order_date) AS rank
    FROM sales s

    INNER JOIN menu m

    ON s.product_id =m.product_id) AS d

WHERE d.rank=1
```

	customer_id	product_id	product_name
1	Α	1	sushi
2	Α	2	curry
3	В	2	curry
4	С	3	ramen

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

```
SELECT TOP 1 s.product_id ,M.product_name,COUNT(s.product_id) AS no_of_orders FROM sales s INNER JOIN menu m ON s.product_id =m.product_id GROUP BY s.product_id ,m.product_name ORDER BY COUNT(s.product_id) DESC
```

```
--4)
=SELECT TOP 1 s.product_id ,M.product_name,COUNT(s.product_id) AS no_of_orders
FROM sales s
INNER JOIN menu m
ON s.product_id =m.product_id
GROUP BY s.product_id ,m.product_name
ORDER BY COUNT(s.product_id) DESC
```

	product_id	product_name	no_of_orders
1	3	ramen	8

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

	customer_id	product_id	product_name
1	Α	3	ramen
2	В	1	sushi
3	В	2	cumy
4	В	3	ramen
5	C	3	ramen

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

```
WITH CTE_CUSOTMER_MEMBER
 AS
 (
       SELECT s.customer id,m.product name,s.product id,
       DENSE RANK() OVER(PARTITION BY s.customer id ORDER BY
 s.order date) AS rank
       FROM SALES S
       INNER JOIN MENU M
       ON M.product id=S.product id
       INNER JOIN MEMBERS D
       ON S.customer id=D.customer id
       WHERE S.order date > D.join date
 SELECT customer id ,product name,product id
  FROM CTE CUSOTMER MEMBER C
 WHERE RANK=1
 --6)
WITH CTE CUSOTMER MEMBER
 AS
    SELECT s.customer_id,m.product_name,s.product_id,
    DENSE RANK() OVER(PARTITION BY s.customer id ORDER BY s.order date) AS rank
    FROM SALES S
    INNER JOIN MENU M
    ON M.product id=S.product id
    INNER JOIN MEMBERS D
     ON S.customer id=D.customer id
    WHERE S.order_date > D.join_date
 SELECT customer_id ,product_name,product_id
 FROM CTE_CUSOTMER_MEMBER C
 WHERE RANK=1
```

	customer_id	product_name	product_id
1	Α	ramen	3
2	В	sushi	1

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

```
SELECT customer id, product name, product id, join date, order date
 FROM (
    SELECT s.customer id,m.product name,s.product id,D.join date,
 s.order date,
        DENSE RANK() OVER(PARTITION BY s.customer id ORDER BY
 s.order date DESC) AS RANK
        FROM SALES S
        INNER JOIN MENU M
        ON M.product id=S.product id
        INNER JOIN MEMBERS D
        ON S.customer id=D.customer id AND S.order date < D.join date
 ) AS A
 WHERE RANK=1
SELECT customer id, product name, product id, join date, order date
    SELECT s.customer_id,m.product_name,s.product_id,D.join_date, s.order_date,
    DENSE RANK() OVER(PARTITION BY s.customer id ORDER BY s.order date DESC) AS RANK
    FROM SALES S
    INNER JOIN MENU M
    ON M.product_id=S.product id
    INNER JOIN MEMBERS D
    ON S.customer_id=D.customer_id AND S.order_date < D.join_date</pre>
 ) AS A
WHERE RANK=1
```

	customer_id	product_name	product_id	join_date	order_date
1	Α	curry	2	2021-01-07	2021-01-01
2	A	sushi	1	2021-01-07	2021-01-01
3	В	sushi	1	2021-01-09	2021-01-04
4	С	ramen	3	2021-01-07	2021-01-01
5	С	ramen	3	2021-01-07	2021-01-01

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

SELECT s.customer\_id ,COUNT(S.customer\_id) AS total\_items ,SUM (m.price) AS amount

FROM SALES S
INNER JOIN MENU M
ON M.product\_id=S.product\_id
INNER JOIN MEMBERS D
ON S.customer\_id=D.customer\_id AND S.order\_date < D.join\_date
GROUP BY S.customer\_id

```
--8)

SELECT s.customer_id ,COUNT(S.customer_id) AS total_items ,SUM (m.price) AS amount FROM SALES S
INNER JOIN MENU M
ON M.product_id=S.product_id
INNER JOIN MEMBERS D
ON S.customer_id=D.customer_id AND S.order_date < D.join_date
GROUP BY S.customer_id
```

■ Results		E Messages ■			Client Statistics	
	custon	ner_id	total_ite	ms	amount	
1	Α		2		25	
2	В		3		40	
3	С		2		24	