## CASE STUDY - Customer Behaviour Analysis on Dummy Data

It focuses on examining patterns, trends, and factors influencing customer spending in order to gain insights into their preferences, purchasing habits, and potential areas for improvement in menu offerings or marketing strategies in a dining establishment.

## Background:

2

3

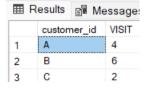
В

С

Fazrina seriously loves Japanese food so in the beginning of 2021, he decides to embark upon a risky venture and opens up a cute little restaurant that sells his 3 favourite foods: sushi, curry and ramen. Danny's Diner is in need of your assistance to help the restaurant stay afloat - the restaurant has captured some very basic data from their few months of operation but have no idea how to use their data to help them run the business.

```
SELECT *
FROM members
SELECT*
FROM sales
SELECT
FROM menu
--1. What is the total amount each customer spent at the restaurant?
SELECT customer_id,sum(price) AS total_spent
FROM sales s
INNER JOIN menu m
ON s.product id=m.product id
GROUP BY customer id
customer_id
              total_spent
              76
```

```
--2. How many days has each customer visited the restaurant? SELECT customer_id, COUNT(DISTINCT order_date) AS VISIT FROM sales s
INNER JOIN menu m
ON s.product_id=m.product_id
GROUP BY customer id
```



74

36

```
--3. What was the first item from the menu purchased by each customer? WITH cutomer_first AS

(SELECT customer_id,MIN(order_date) AS First_date
FROM sales

GROUP BY customer_id)

SELECT cf.customer_id,cf.First_date ,m.product_name
FROM cutomer_first cf
INNER JOIN sales s
ON s.customer_id=cf.customer_id
AND cf.First_date=s.order_date
INNER JOIN menu m ON m.product_id=s.product_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, COUNT(product\_name) Total\_pucrchased

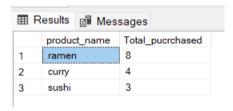
FROM sales s

INNER JOIN menu m

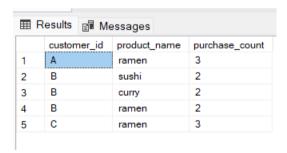
ON s.product\_id=m.product\_id

GROUP by product\_name

ORDER by Total\_pucrchased DESC



```
-- 5. Which item was the most popular for each customer?
WITH customer_popularity AS (
    SELECT s.customer_id, m.product_name, COUNT(*) AS purchase_count,
    DENSE_RANK() OVER (PARTITION BY s.customer_id ORDER BY COUNT(*) DESC) AS rank
    FROM sales s
    INNER JOIN menu m ON s.product_id = m.product_id
    GROUP BY s.customer_id, m.product_name
)
SELECT customer_id, product_name, purchase_count
FROM customer_popularity
WHERE rank = 1;
```



```
-- 6. Which item was purchased first by the customer after they became a member?
WITH first_purchase_after_membership AS (
    SELECT s.customer_id, MIN(s.order_date) AS first_purchase_date
    FROM dbo.sales s
    INNER JOIN dbo.members mb ON s.customer_id = mb.customer_id
WHERE s.order_date >= mb.join_date
GROUP BY s.customer_id
```

```
)
SELECT fpam.customer_id, m.product_name
FROM first_purchase_after_membership fpam
INNER JOIN dbo.sales s ON fpam.customer_id = s.customer_id
AND fpam.first_purchase_date = s.order_date
INNER JOIN dbo.menu m ON s.product id = m.product id;
```

1 A curry 2 B sushi
a P sushi
Z D Sustil

```
-- 7. Which item was purchased just before the customer became a member?
WITH last_purchase_after_membership AS (
    SELECT s.customer_id, Max(s.order_date) AS last_purchase_date
    FROM dbo.sales s
    INNER JOIN dbo.members mb ON s.customer_id = mb.customer_id
    WHERE s.order_date < mb.join_date
    GROUP BY s.customer_id
)
SELECT lpam.customer_id, m.product_name
FROM last_purchase_after_membership lpam
INNER JOIN dbo.sales s ON lpam.customer_id = s.customer_id
AND lpam.last_purchase_date = s.order_date
INNER JOIN dbo.menu m ON s.product id = m.product id;
```



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

SELECT s.customer\_id,COUNT(\*) ABC,SUM(m.price) AS spent

FROM sales s

INNER JOIN menu m

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

INNER JOIN members mb on s.customer\_id=mb.customer\_id

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

GROUP BY s.customer\_id;

	customer_id	ABC	spent
1	Α	2	25
2	В	3	40

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

SELECT s.customer_id, SUM(
CASE
```

```
WHEN m.product_name = 'sushi' THEN m.price*20
ELSE m.price*10 END) AS total_points
FROM dbo.sales s
INNER JOIN dbo.menu m ON s.product id = m.product id
GROUP BY s.customer id;
customer id
              total_points
              860
    Α
1
2
    В
              940
    С
              360
3
/* 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 s.customer id, SUM(
CASE
WHEN s.order_date BETWEEN mb.join_date AND DATEADD(day, 7, mb.join_date) THEN
m.price*20
WHEN m.product_name = 'sushi' THEN m.price*20
 ELSE m.price*10
 END) AS total points
FROM dbo.sales s
INNER JOIN dbo.menu m ON s.product_id = m.product_id
LEFT JOIN dbo.members mb ON s.customer id = mb.customer id
WHERE s.customer id IN ('A', 'B') AND s.order date <= '2021-01-31'
--WHERE s.customer id = mb.customer id AND s.order date <= '2021-01-31'
GROUP BY s.customer id;
customer_id
              total_points
               1370
     В
              940
2
--Q11 show the customer A and B order the same product and on same date?
SELECT s.order date, s.product id, s.customer id, m.product name, m.price
FROM sales s
JOIN menu m ON s.product_id = m.product_id
WHERE s.order_date IN (
 SELECT order_date
 FROM sales
WHERE customer id = 'A'
AND s.order date IN (
SELECT order_date
 FROM sales
WHERE customer_id = 'B'
AND s.product_id IN (
 SELECT product_id
 FROM sales
WHERE customer_id = 'A'
GROUP BY product_id
HAVING COUNT(DISTINCT order_date) > 1
AND s.customer id IN ('A', 'B');
```

⊞ Results								
	order_date	product_id	customer_id	product_name	price			
1	2021-01-01	2	A	curry	15			
2	2021-01-01	2	В	curry	15			
3	2021-01-11	3	A	ramen	12			
4	2021-01-11	3	Α	ramen	12			