SQL CASE-STUDY

TITLE : DANNY'S DINER ANALYSIS

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INTRODUCTION

Danny 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 favorite foods: sushi, curry and ramen.

Danny’s Diner is in need of 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.

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

SELECT s.customer_id, SUM(m.price) AS total_amount
FROM  sales s
JOIN  menu m
  ON s.product_id=m.product_id
GROUP BY s.customer_id;
```

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

SELECT  customer_id, COUNT(DISTINCT order_date) AS days
FROM sales
GROUP BY customer_id;
```

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

WITH CTE AS (
SELECT s.customer_id,s.product_id,m.product_name,
ROW_NUMBER() OVER(PARTITION BY s.customer_id ORDER BY s.order_date) AS num
FROM sales s
JOIN  menu m
ON s.product_id=m.product_id)
SELECT customer_id,product_name
FROM CTE
WHERE num=1;
```

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

SELECT m.product_name,COUNT(*) AS purchase_count
FROM sales s
JOIN menu m
ON s.product_id=m.product_id
GROUP BY m.product_name
ORDER BY purchase_count DESC
LIMIT 1;
```

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

WITH CTE AS (
SELECT s.customer_id,m.product_name,COUNT(product_name) AS product_count,
ROW_NUMBER() OVER(PARTITION BY customer_id ORDER BY COUNT(product_name) DESC) AS num
FROM sales s
JOIN menu m
ON s.product_id=m.product_id
GROUP BY s.customer_id,m.product_name)
SELECT customer_id,product_name
FROM CTE
WHERE num=1;
```

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

WITH CTE AS (
SELECT s.customer_id,s.order_date,s.product_id,m2.product_name,
ROW_NUMBER() OVER(PARTITION BY customer_id ORDER BY order_date) AS num
FROM sales s
JOIN members m
ON s.customer_id = m.customer_id
JOIN menu m2
ON s.product_id=m2.product_id
WHERE s.order_date > m.join_date)
SELECT customer_id,product_name
FROM CTE
WHERE num=1;
```

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

WITH CTE AS (
SELECT s.customer_id, s.order_date, s.product_id,m2.product_name,
ROW_NUMBER() OVER(PARTITION BY customer_id ORDER BY order_date ) AS num
FROM sales s
LEFT JOIN members m
ON s.customer_id = m.customer_id
JOIN menu m2
ON s.product_id=m2.product_id
WHERE s.order_date < m.join_date)
SELECT customer_id,product_name
FROM CTE
WHERE num=1;
```

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

SELECT s.customer_id,COUNT(s.product_id) AS Total_items, SUM(m.price) AS Spent_amou
nt
FROM sales s
JOIN menu m
ON s.product_id=m.product_id
JOIN members m2
ON s.customer_id=m2.customer_id
WHERE s.order_date < m2.join_date
GROUP BY s.customer_id
ORDER BY s.customer_id;
```

```sql
-- 9.  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,m.product_name,SUM(m.price) AS Spent_amount,
CASE
WHEN product_name="sushi" THEN SUM(m.price)*20
ELSE SUM(m.price)*10
END AS Points
FROM sales s
JOIN menu m
ON s.product_id=m.product_id
GROUP BY s.customer_id,m.product_name)
SELECT customer_id,SUM(Points) AS Points
FROM CTE
GROUP BY customer_id;
```

```sql
-- 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 CTE AS (
SELECT s.customer_id,s.order_date,m2.join_date,m.product_name,SUM(m.price) AS Spent_amount,
CASE
WHEN s.order_date BETWEEN m2.join_date AND DATE_ADD(m2.join_date, INTERVAL 7 DAY) THEN SUM(m.price)*20
ELSE SUM(m.price)*10
END AS Initial_points
FROM sales s
JOIN menu m
ON s.product_id=m.product_id
JOIN members m2
ON s.customer_id=m2.customer_id
WHERE MONTH(s.order_date)=1
GROUP BY s.customer_id,s.order_date,m2.join_date,m.product_name
ORDER BY s.customer_id,s.order_date)
SELECT customer_id,SUM(Initial_points) AS Points
FROM CTE
GROUP BY customer_id;
```

```sql
-- Bonus Questions

--  creating basic data tables

SELECT s.customer_id,s.order_date,m.product_name,m.price,
IF(s.order_date>=m2.join_date ,"Y","N") AS member
FROM sales s
LEFT JOIN menu m
ON s.product_id=m.product_id
LEFT JOIN members m2
ON s.customer_id=m2.customer_id
ORDER BY s.customer_id,s.order_date,m.product_name;
```

```sql
-- Ranking of customers excluding non-member purchases

WITH CTE AS (
SELECT s.customer_id,s.order_date,m.product_name,m.price,
IF(s.order_date>=m2.join_date ,"Y","N") AS member
FROM sales s
LEFT JOIN menu m
ON s.product_id=m.product_id
LEFT JOIN members m2
ON s.customer_id=m2.customer_id
ORDER BY s.customer_id,s.order_date,m.product_name)
SELECT *,
CASE
WHEN  member="Y" THEN RANK() OVER(PARTITION BY customer_id,member ORDER BY order_date)
ELSE "NULL"
END AS Ranking
FROM CTE;
```

INSIGHTS

- Customer A spent most amount $76 followed by Customer B-$74
- Customer B is the most frequent customer
- ramen is the most purchased item with 8 times.
- Popular item for each customer A-ramen, B-curry, C-ramen
- Customer A purchase percentage increased to 104% and B decreased by 15% after becoming a member
- Customer preference changed after they becoming a member.
- Customer B leads points table base on purchase value and product value with 940 points and A with 860 and C with 360 points.

THANK YOU