Data

Members ::

CUSTOMER_ID	JOIN_DATE
A	07-01-2021
B	09-01-2021

Menu ::

PRODUCT_ID	PRODUCT_NAME	PRICE
1	sushi	10
2	curry	15
3	ramen	12

Sales ::

CUSTOMER_ID	ORDER_DATE	PRODUCT_ID
A	01-01-2021	2
A	07-01-2021	2
A	10-01-2021	3
A	11-01-2021	3
A	11-01-2021	3
B	01-01-2021	2
B	02-01-2021	2
B	04-01-2021	1
B	11-01-2021	1
B	16-01-2021	3
B	01-02-2021	3
C	01-01-2021	3
C	01-01-2021	3
C	07-01-2021	3

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

   Output :

CUSTOMER	TOTAL_AMOUNT
A	66
B	74
C	36

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

   Output :

CUSTOMER	TOTAL_DAYS_VISITED
A	4
B	6
C	2

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

   Output :

CUSTOMER	PRODUCT_NAME
A	curry
B	curry
C	ramen

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

   Output :

PRODUCT_NAME	PURCHASE_CNT
ramen	8
curry	4
sushi	2

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

   Output :

CUSTOMER	MOST_POPULAR_PRODUCT
A	ramen
B	curry
B	ramen
B	sushi
C	ramen

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

   Output :

CUSTOMER	JOIN_DATE	ORDER_DATE	PRODUCT_NAME
A	07-01-2021	07-01-2021	curry
B	09-01-2021	11-01-2021	sushi

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

   Output :

CUSTOMER	JOIN_DATE	ORDER_DATE	PRODUCT_NAME
A	07-01-2021	01-01-2021	curry
B	09-01-2021	01-01-2021	curry
B	09-01-2021	02-01-2021	curry
B	09-01-2021	04-01-2021	sushi
C		01-01-2021	ramen
C		01-01-2021	ramen
C		07-01-2021	ramen

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

   Output :

CUSTOMER	TOTAL_ITEMS_PURCHASE	TOTAL_AMOUNT
A	2	15
B	3	40
C	3	36

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

   Output :

CUSTOMER	TOTAL_POINTS
A	50
B	80
C	30

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?

    Output :

CUSTOMER	TOTAL_POINTS
A	90
B	70

Bonus Questions

1. The following questions are related creating basic data tables that Danny and his team can use to quickly derive insights without needing to join the underlying tables using SQL.

Recreate the following table output using the available data:

customer_id	order_date	product_name	price	member
A	01-01-2021	curry	15	N
A	07-01-2021	curry	15	Y
A	10-01-2021	ramen	12	Y
A	11-01-2021	ramen	12	Y
A	11-01-2021	ramen	12	Y
B	01-01-2021	curry	15	N
B	02-01-2021	curry	15	N
B	04-01-2021	sushi	10	N
B	11-01-2021	sushi	10	Y
B	16-01-2021	ramen	12	Y
B	01-02-2021	ramen	12	Y
C	01-01-2021	ramen	12	N
C	01-01-2021	ramen	12	N
C	07-01-2021	ramen	12	N

Output :

CUSTOMER	ORDER_DATE	PRODUCT_NAME	PRICE	MEMBER
A	01-01-2021	curry	15	N
A	07-01-2021	curry	15	Y
A	10-01-2021	ramen	12	Y
A	11-01-2021	ramen	12	Y
A	11-01-2021	ramen	12	Y
B	04-01-2021	sushi	10	N
B	02-01-2021	curry	15	N
B	01-01-2021	curry	15	N
B	11-01-2021	sushi	10	Y
B	16-01-2021	ramen	12	Y
B	01-02-2021	ramen	12	Y
C	01-01-2021	ramen	12	N
C	01-01-2021	ramen	12	N
C	07-01-2021	ramen	12	N

2. Danny also requires further information about the `ranking` of customer products, but he purposely does not need the ranking for non-member purchases so he expects null `ranking` values for the records when customers are not yet part of the loyalty program.

customer_id	order_date	product_name	price	member	ranking
A	01-01-2021	curry	15	N	null
A	07-01-2021	curry	15	Y	1
A	10-01-2021	ramen	12	Y	2
A	11-01-2021	ramen	12	Y	3
A	11-01-2021	ramen	12	Y	3
B	01-01-2021	curry	15	N	null
B	02-01-2021	curry	15	N	null
B	04-01-2021	sushi	10	N	null
B	11-01-2021	sushi	10	Y	1
B	16-01-2021	ramen	12	Y	2
B	01-02-2021	ramen	12	Y	3
C	01-01-2021	ramen	12	N	null
C	01-01-2021	ramen	12	N	null
C	07-01-2021	ramen	12	N	null

Output:

CUSTOMER	ORDER_DATE	PRODUCT_NAME	PRICE	MEMBER	RANKING
A	01-01-2021	curry	15	N	null
A	07-01-2021	curry	15	Y	1
A	10-01-2021	ramen	12	Y	2
A	11-01-2021	ramen	12	Y	3
A	11-01-2021	ramen	12	Y	3
B	04-01-2021	sushi	10	N	null
B	02-01-2021	curry	15	N	null
B	01-01-2021	curry	15	N	null
B	11-01-2021	sushi	10	Y	1
B	16-01-2021	ramen	12	Y	2
B	01-02-2021	ramen	12	Y	3
C	01-01-2021	ramen	12	N	null
C	01-01-2021	ramen	12	N	null
C	07-01-2021	ramen	12	N	null

Conclusion

By analyzing the sample data, we've unearthed key findings that can be leveraged to optimize operations and drive long-term success.

- Customer Preferences Revealed: Ramen emerges as the undisputed champion, followed closely by curry and sushi. This knowledge empowers Danny to prioritize these top performers and explore menu expansion opportunities that complement these Asian cuisine favourites.
- Frequent Diners: The average customer visitation rate of four days highlights a loyal customer base. Understanding and catering to their preferences through targeted promotions and menu tweaks can significantly boost satisfaction and encourage repeat business.

With these insights, Danny's Diner can go on a data-driven mission to improve customer satisfaction and increase revenue. Here are a few possible courses of action:

- Menu Optimization: Highlighting Ramen, curry, and sushi while exploring complementary menu additions can cater to established preferences and attract new customers seeking a wider Asian cuisine experience.
- Targeted Marketing: Leveraging customer data, Danny can implement targeted marketing campaigns to promote popular dishes during off-peak hours or highlight specific offerings to existing customers based on their visitation patterns.
- Loyalty Program Enhancements: Understanding customer favourites allows the loyalty program to reward repeat purchases of these popular items, further incentivizing customer retention.

Using these insights into actionable strategies, Danny's Diner will not only meet customer expectations but exceed them. This data-driven approach positions the restaurant for sustained growth and competitive dominance in the ever-evolving culinary landscape.