8 WEEK SQL CHALLENGE: CASE STUDY #1 DANNY'S DINER

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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
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.

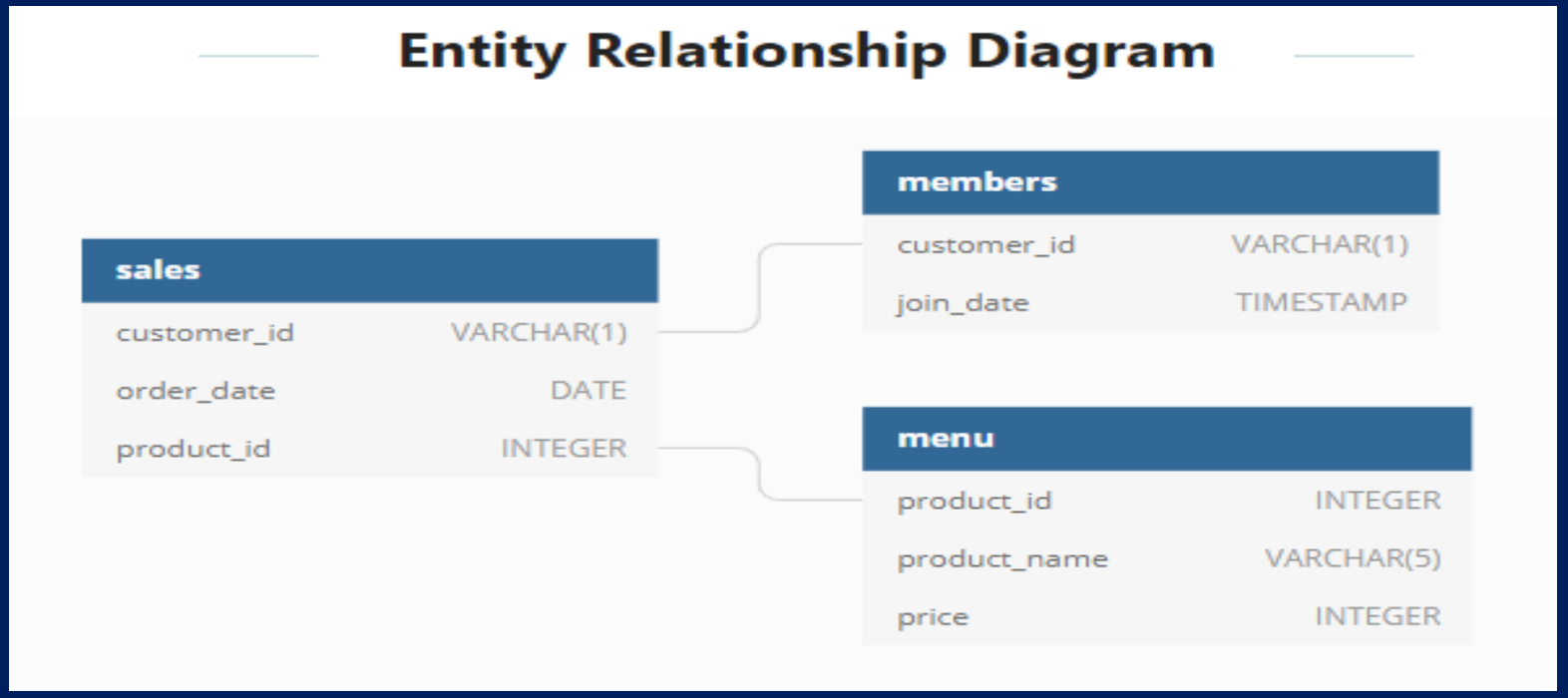
Problem Statement

Danny wants to use the data to answer a few simple questions about his customers, especially about their

- **visiting patterns**,
- **how much money they've spent,** and
- **which menu items are their favourite**.

The data set contains the following 3 tables which you may refer to the relationship diagram below to understand the connection.

- sales
- members
- menu



Case Study Questions

1.What is the total amount each customer spent at the restaurant?
2.How many days has each customer visited the restaurant?
3.What was the first item from the menu purchased by each customer?
4.What is the most purchased item on the menu and how many times was it purchased by all customers?
5.Which item was the most popular for each customer?
6.Which item was purchased first by the customer after they became a member?
7.Which item was purchased just before the customer became a member?
8.What is the total items and amount spent for each member before they became a member?
9.If each $1 spent equates to 10 points and sushi has a 2x points multiplier — how many points would each customer have?
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?

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

```
select customer_id,sum(price) as total_spending
from menu me join sales s on me.product_id=s.product_id
group by customer_id
```

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

```
select customer_id, count(distinct order_date) as customer_visit
from  sales
group by customer_id
```

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

```
with order_no as
(
select customer_id, product_name, ROW_NUMBER() over(partition by customer_id order by order_date) as
rw_no, order_date
from menu me join sales s on me.product_id=s.product_id
)
select customer_id, product_name from order_no
where rw_no=1
```

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

```
select top 1 product_name, count(product_name)  as no_of_purchase
from menu me join sales s on me.product_id=s.product_id
group by product_name
order by count(product_name)  desc
```

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

```sql
WITH fav_item AS
(
SELECT s.customer_id, m.product_name,
COUNT(m.product_id) AS order_count,
DENSE_RANK() OVER(PARTITION BY s.customer_id
ORDER BY
COUNT(s.customer_id) DESC) AS rank
FROM menu AS m
JOIN sales AS s
ON m.product_id = s.product_id
GROUP BY s.customer_id, m.product_name
)
SELECT customer_id, product_name, order_count
FROM fav_item
WHERE rank = 1;
```

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

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

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

```sql
WITH cte AS
(
SELECT s.customer_id, m.join_date, s.order_date, s.product_id,
DENSE_RANK( ) OVER(PARTITION BY s.customer_id
ORDER BY s.order_date DESC) AS rank
FROM sales AS s
JOIN members AS m
ON s.customer_id = m.customer_id
WHERE s.order_date < m.join_date
)
SELECT s.customer_id, s.order_date, m2.product_name
FROM cte AS s
JOIN menu AS m2
ON s.product_id = m2.product_id
WHERE rank = 1;
```

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

```sql
SELECT s.customer_id,count(distinct product_name) as product_count, sum(me.price) as total_price
FROM sales AS s
JOIN members AS m
ON s.customer_id = m.customer_id
JOIN menu AS me
ON s.product_id = me.product_id
WHERE s.order_date < m.join_date
group by s.customer_id
```

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

```sql
WITH points AS
(
SELECT *,
CASE
WHEN product_id = 1 THEN price * 20
ELSE price * 10
END AS points
FROM menu
)
SELECT s.customer_id, SUM(p.points) AS total_points
FROM points AS p
JOIN sales AS s
ON p.product_id = s.product_id
GROUP BY s.customer_id;
```

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??

```sql
select distinct customer_id,sum(points) over (partition by customer_id) as total_points
from
(select s.customer_id as customer_id,order_date,price *20 as points
from sales s
join members m on s.customer_id=m.customer_id
join menu me on s.product_id=me.product_id
where order_date>=join_date and month(order_date)=1)ax
```