SQL

DATA ANALYSIS PROJECT

8WEEKSQLCHALLENGE.COM

CASE STUDY #1

THE TASTE OF SUCCESS

DATAWITHDANNY.COM

- Ayan Khan | Data Analyst

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 needs your assistance to help the restaurant stay afloat - the restaurant has captured some very basic data from thier few months of operation but have no idea how to use their data to help them run the business.

PROBLEM STATEMENT:

Danny wants to learn about his customers' visiting patterns, spending habits, and favorite menu items. This will help him provide a more personalized experience and improve customer satisfaction.

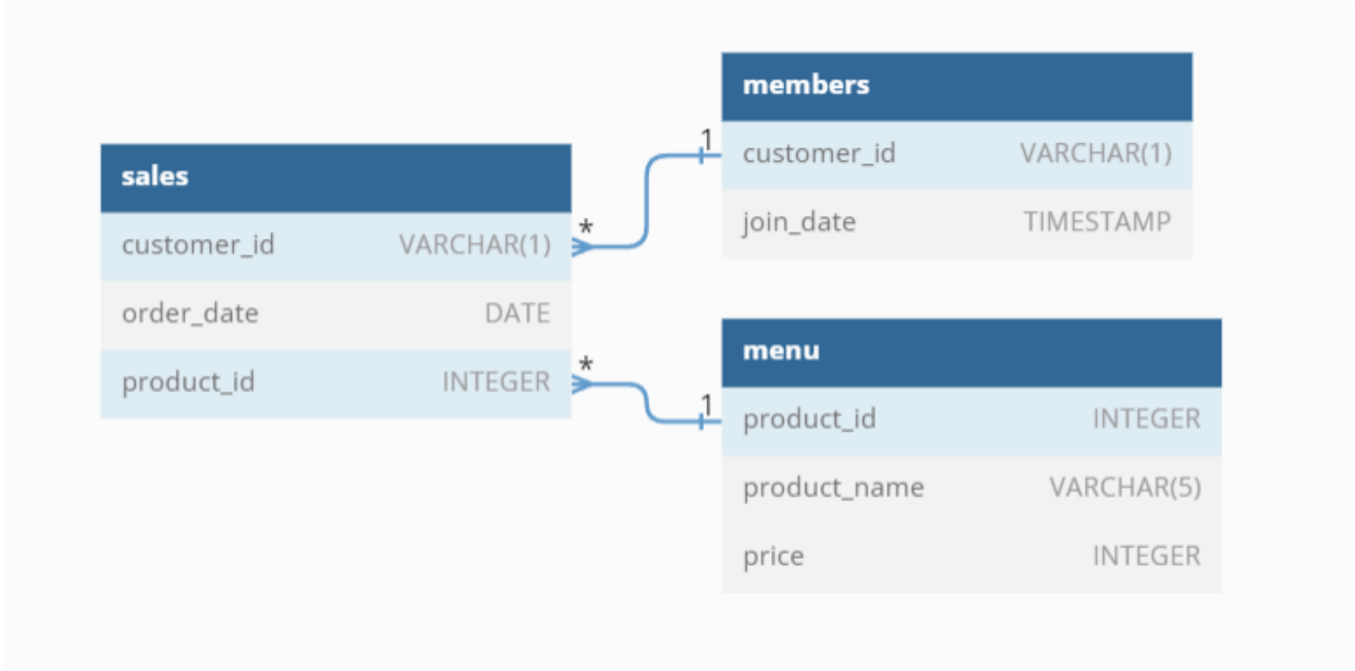
He wants to expand the loyalty program and needs easy-to-use data sets to analyze the information.

Danny shared sample customer data for privacy reasons. Use it to create functional SQL queries that help answer his questions.

Danny has shared with you 3 key datasets for this case study:

- Sales
- Menu
- Members

ENTITY RELATIONSHIP DIAGRAM:



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


select sales.customer_id, sum(price) as total_spent
from sales
  join menu on (sales.product_id = menu.product_id)
group by customer_id;
```

customer_id	total_spent
A	76
B	74
C	36

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


select sales.customer_id,
  count(distinct(order_date)) as days
from sales
group by customer_id;
```

customer_id	days
A	4
B	6
C	2

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


with info as (
select customer_id, sales.product_id,
    product_name,
    row_number() over(partition by customer_id) as rn
from sales
  join menu on (sales.product_id = menu.product_id))

select customer_id, product_id, product_name as item_name
from info
where rn = 1;
```

customer_id	product_id	item_name
A	1	sushi
B	2	curry
C	3	ramen

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


select count(sales.product_id) as total_count,
  product_name as item_name
from sales
  join menu on (sales.product_id = menu.product_id)
group by item_name
order by total_count desc
limit 1;
```

	total_count	item_name
▶	8	ramen

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


with fav_item_cte as(
   select customer_id, product_name,
      count(product_id) as order_count,
      dense_rank() over(partition by customer_id
   order by count(customer_id) desc) as rank_
   from menu
   join sales on product_id = product_id
   group by customer_id, product_name)

select customer_id, product_name, order_count
from fav_item_cte
where rank_ = 1;
```

customer_id	product_name	order_count
A	ramen	3
B	curry	2
B	sushi	2
B	ramen	2
C	ramen	3

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


with info as (
select sales.customer_id,
    product_name as item_name,
    order_date, row_number() over(partition by sales.customer_id) as rn,
    join_date
from sales
  join menu on (sales.product_id = menu.product_id)
  join members on (sales.customer_id = members.customer_id)
where order_date ⩾ join_date
)
select customer_id, item_name, order_date, join_date
from info
where rn = 1
order by customer_id;
```

customer_id	item_name	order_date	join_date
A	curry	2021-01-07	2021-01-07
B	sushi	2021-01-11	2021-01-09

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


select sales.customer_id,
    sum(price) as total_price,
    count(sales.product_id) as total_items
from sales
  join menu on (sales.product_id = menu.product_id)
  join members on (sales.customer_id = members.customer_id)
where order_date < join_date
group by customer_id
order by customer_id;
```

customer_id	total_price	total_items
A	25	2
B	40	3

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


select customer_id,
  sum(case
    when product_name = 'sushi' then price * 20
        else price * 10
        end) as total_points
from sales
  join menu on (sales.product_id = menu.product_id)
group by customer_id
order by customer_id;
```

customer_id	total_points
A	860
B	940
C	360

```sql
-- 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 info as (
select sales.customer_id,
    order_date, price * 20 as total_points,
        join_date
from sales
  join menu on (sales.product_id = menu.product_id)
  join members on (sales.customer_id = members.customer_id))

select distinct(customer_id), sum(total_points) over(partition by customer_id)
from info
where order_date ⩾ join_date and month(order_date) = 1
```

	customer_id	points
▶	A	1020
	B	440

THANK YOU!