

Start



# DANNY'S DINER

A Recipe for Success: Leveraging Data to Boost Danny's Diner

Subject : CUSTOMER BEHAVIOR ANALYSIS

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# OBJECTIVES

The main objective of this project is to analyze customer behavior at Danny's Diner to uncover insights that can improve operations and boost customer satisfaction. By studying spending patterns, visit frequency, and menu preferences, the goal is to help Danny better understand his customers and personalize their dining experience, ultimately increasing loyalty.

Another key objective is to assess the effectiveness of the current loyalty program. By analyzing customer behavior before and after joining, and calculating points based on specific rules, the project aims to determine the program's impact and suggest improvements to maximize its effectiveness.

Lastly, the project will generate accessible datasets and summaries, enabling Danny's team to easily use the data without needing SQL skills. This will empower them to make informed, data-driven decisions to enhance the restaurant's success and growth.

# DATA OVERVIEW

- **SALES DATA:** INCLUDES CUSTOMER PURCHASE HISTORY WITH DATES AND PRODUCT DETAILS.
- **MENU DATA:** LISTS ALL AVAILABLE ITEMS AT DANNY'S DINER WITH THEIR PRICES.
- **MEMBERSHIP DATA:** ANALYZE CUSTOMER BEHAVIOR BEFORE AND AFTER JOINING THE LOYALTY PROGRAM.

## SALES

<b>CUSTOMER_ID</b>	VARCHAR
<b>ORDER_DATE</b>	DATE
<b>PRODUCT_ID</b>	INTEGER

## MENU

<b>PRODUCT_ID</b>	INTEGER
<b>PRODUCT_NAME</b>	VARCH
<b>PRICE</b>	INTEGER

## MEMBERS

<b>CUSTOMER_ID</b>	VARCHAR
<b>JOIN_DATE</b>	TIMESTAMP

# METHODOLOGY

- AGGREGATION FUNCTION
- SQL JOIN
- SUB QUERY
- WINDOW FUNCTION
- COMMON TABLE EXPRESSION
- CONDITIONAL FUNCTIONS

- DATA DEFINATION LANGUAGE
- DATA MANIPULATION LANGUAGE
- DATA RETRIEVAL LANGUAGE
- CONDITIONAL FUNCTIONS
- GROUP BY
- ORDER BY

# DETAILED ANALYSIS

WHAT IS THE TOTAL AMOUNT EACH CUSTOMER SPENT AT THE RESTAURANT?

Identifying High-Value Customers: This data helps identify which customers are spending the most. These customers can be targeted with loyalty rewards, special promotions, or personalized offers to enhance their experience and encourage repeat business.

# DETAILED ANALYSIS

HOW MANY DAYS HAS EACH CUSTOMER VISITED THE RESTAURANT?

Understanding Customer Loyalty: Tracking the number of days customers visit helps identify regular customers. Frequent visitors can be considered for special loyalty rewards, exclusive offers, or personalized services to reinforce their commitment to the diner.

# DETAILED ANALYSIS

WHAT WAS THE FIRST ITEM FROM THE MENU PURCHASED BY EACH CUSTOMER?

Personalized Marketing: Knowing the first item a customer purchased allows Danny's Diner to personalize marketing efforts. For example, if a customer's first purchase was sushi, they could receive tailored promotions or discounts on sushi, reinforcing their initial positive experience.



# DETAILED ANALYSIS

WHAT IS THE MOST PURCHASED ITEM ON THE MENU AND HOW MANY TIMES WAS IT PURCHASED BY ALL CUSTOMERS?

Menu Optimization: By identifying the most popular item, Danny's Diner can ensure that this product is always well-stocked, avoiding stockouts and potential customer dissatisfaction.

# DETAILED ANALYSIS

WHICH ITEM WAS THE MOST POPULAR FOR EACH CUSTOMER?

Customer Experience Enhancement: Understanding individual preferences allows the diner to offer a more personalized dining experience. Staff can suggest the customer's favorite item or recommend new items based on their tastes.

# DETAILED ANALYSIS

WHICH ITEM WAS PURCHASED FIRST BY THE CUSTOMER AFTER THEY BECAME A MEMBER?

Targeted Promotions: If certain items are consistently purchased first by new members, these products could be featured in targeted promotions to encourage more sign-ups.

# DETAILED ANALYSIS

WHICH ITEM WAS PURCHASED JUST BEFORE THE CUSTOMER BECAME A MEMBER?

Understanding Pre-Membership Behavior: This analysis sheds light on what motivates customers to join the loyalty program. If certain items are consistently the last purchase before membership, these might be the diner's most compelling offerings.

# DETAILED ANALYSIS

WHAT IS THE TOTAL ITEMS AND AMOUNT SPENT FOR EACH MEMBER BEFORE THEY BECAME A MEMBER?

Understanding Customer Value: By analyzing pre-membership spending, Danny's Diner can identify high-value customers who may have spent significantly before joining. This can inform targeted promotions to encourage similar behavior in non-members.

# DETAILED ANALYSIS

IF EACH \$1 SPENT EQUATES TO 10 POINTS AND SUSHI HAS A 2X POINTS MULTIPLIER - HOW MANY POINTS WOULD EACH CUSTOMER HAVE?

Loyalty Program Optimization: The results of this query can help the diner assess the effectiveness of the loyalty program and make adjustments, such as introducing additional multipliers for other high-margin products or offering bonuses for reaching certain point thresholds.

# DETAILED ANALYSIS

IN THE FIRST WEEK AFTER A CUSTOMER JOINS THE PROGRAM THEY EARN 2X POINTS ON ALL ITEMS - HOW MANY POINTS DO CUSTOMER A AND B HAVE AT THE END OF JANUARY?

Revenue Insights: Analyzing points earned correlates with revenue. If customers earn more points, they're spending more money, giving the business insights into how much additional revenue the loyalty program is driving.

# CHALLENGES

## COMPLEXITY OF QUERIES

The queries required to extract meaningful insights from large datasets often involve Intermediate SQL techniques such as window functions, subqueries, Common Table Expressions (CTEs), and complex joins. These queries are not just simple SELECT statements; they require a deep understanding of SQL syntax and Order of execution to ensure accurate and efficient data retrieval.



# CHALLENGES

## UNDERSTANDING BUSINESS CONTEXT

Beyond technical SQL knowledge, there's a need to understand the business context to frame queries that deliver actionable insights. For instance, identifying customer behavior trends, calculating customer lifetime value, or determining the impact of promotions requires a blend of business acumen and technical skills.

# RECOMMENDATION

## PRIORITIZE HIGH-IMPACT INSIGHTS

Focus on extracting and acting on insights that directly impact business performance, such as identifying top-performing products or understanding customer behavior trends.

# CONCLUSION

The project provided a comprehensive analysis of customer data for Danny's Diner, focusing on several key aspects. We evaluated customer spending to identify major spenders and spending patterns, assessed visit frequency to understand customer engagement, and analyzed first purchases to track behavior changes before and after joining membership. Additionally, we determined the most popular items both overall and per customer, reviewed pre-membership spending to gain insights into customer habits, and calculated loyalty points with a special multiplier for sushi to measure rewards effectively. These insights offer valuable information for enhancing marketing strategies and fostering customer loyalty.