

Key Observations

- **Product Popularity:** The most popular product in the "Furniture" category for 2016 was identified as "Eldon Expressions Wood Desk Accessories, Oak" with a total of 5 orders. This indicates customer interest in high-quality and aesthetically pleasing furniture products.
- **Customer Discounts Received:** It was observed that we could calculate the customer who received the most significant total discount, demonstrating that business databases can provide valuable insights into purchasing behavior and customer preferences.
- **Monthly Profit Variations:** The analysis of monthly profit changes in 2018 showed that it is possible to effectively measure the variability of financial performance, using window functions in SQL to calculate differences between consecutive months.
- **Manufacturers with Multiple Products:** It was discovered that some manufacturers offer more than two products, suggesting a product line diversification that could be a significant factor for their market success.

Challenges

- **Processing Large Data:** A major challenge was the management and analysis of large data, especially when requiring the joining of different tables and the calculation of complex statistics.
- **Interpreting Data Fields:** The accurate understanding and interpretation of columns like **order_discount**, which was used as a percentage, requires a clear grasp of the data structure and semantics.
- **Optimizing SQL Queries:** Constructing SQL queries that are efficient and produce accurate results without overly burdening the database system was essential, especially for complex queries and statistical analyses.

Summary

This analysis process highlighted the power of SQL in addressing various business queries and extracting useful insights from data. Despite the challenges, the use of advanced SQL functions and data analysis techniques can facilitate the identification of important trends, business performance, and customer preferences.