

Exploring Customer Behavior Through Database Analysis

INTRODUCTION

As a data analyst, one of the most intriguing aspects of my job is uncovering insights about customer behavior through database analysis. Recently, I had the opportunity to work on a Case Study that involved analyzing multiple tables in a database to gain a better understanding of customer behavior for a popular online retailer.

The database consisted of five tables: Sales, Product, Goldusers_Signup, Users, and User_name. Each table contained unique information about the customers and products sold on the website.

The Sales table provided details about each Sale, including the date of the sale, the product sold, the price, and the user who made the purchase. By analyzing this table, we were able to identify the top-selling products and the most active users on the website.

The product table contained information about each product sold on the website, including the product ID, Product Name and price of a Product. . Using this table, we were able to identify the prices for each product and compare them to determine which products are more expensive and which are less expensive.

The goldusers_signup table contained data about customers who signed up for the website's premium membership program. We were able to use this table to identify the demographics of customers who were most likely to sign up for the program and which benefits of the program were the most appealing to customers.

The users table provided information about each customer who created an account on the website, including their name, Signup Date. By analyzing this table, we were able to identify trends in customer demographics.

The user_name table contains information about each user's UserID and User_Name. We utilized this table to link with other tables and use their User ID to join with other tables. Specifically, the table includes the UserID and the corresponding Names of the users. The UserID can be used as a linking factor to connect with other tables in the

Exploring Customer Behavior Through Database Analysis

database. The Names column provides the name of each user corresponding to their UserID.

By analyzing these tables in conjunction with each other, we were able to gain a comprehensive understanding of customer behavior on the website. We were able to identify the top-selling products, the most active users, and the demographics of customers who were most likely to sign up for the premium membership program. This information allowed us to make data-driven decisions about marketing, product development, and customer engagement.

Overall, this Case Study was a fascinating exploration of customer behavior through database analysis. By leveraging the power of data, we were able to uncover insights that would have been impossible to discover through intuition alone. Let Start with some Problem Statement.

Problem Statement

I wants to use the data to answer a few questions about the customers, especially about their visiting patterns, how much money they've spent and also which menu items are their favourite. Having this deeper connection with his customers will help him deliver a better and more personalised experience for his loyal customers.

Based on the insights gained from the data, the client plans to decide whether to expand the existing customer loyalty program. Additionally, they require assistance in generating some basic datasets so that their team can easily inspect the data without the need for using SQL.

This problem statement was solved using SQL, which was used to analyze and query the database to generate insights and datasets. SQL was utilized to extract the necessary data and generate reports to provide insights into the customer behavior, sales trends, and product performance, which helped the client make data-driven decisions regarding the loyalty program. SQL was also used to create datasets that could be easily accessed and

SQL CASE STUDY

Exploring Customer Behavior Through Database Analysis

analyzed by the client's team, allowing them to understand the data without needing to have expertise in SQL.

I has shared with you 5 key datasets for this case study:

- Sales
- Product
- Username
- Users
- Gold users_Signup

Entity Relationship Diagram

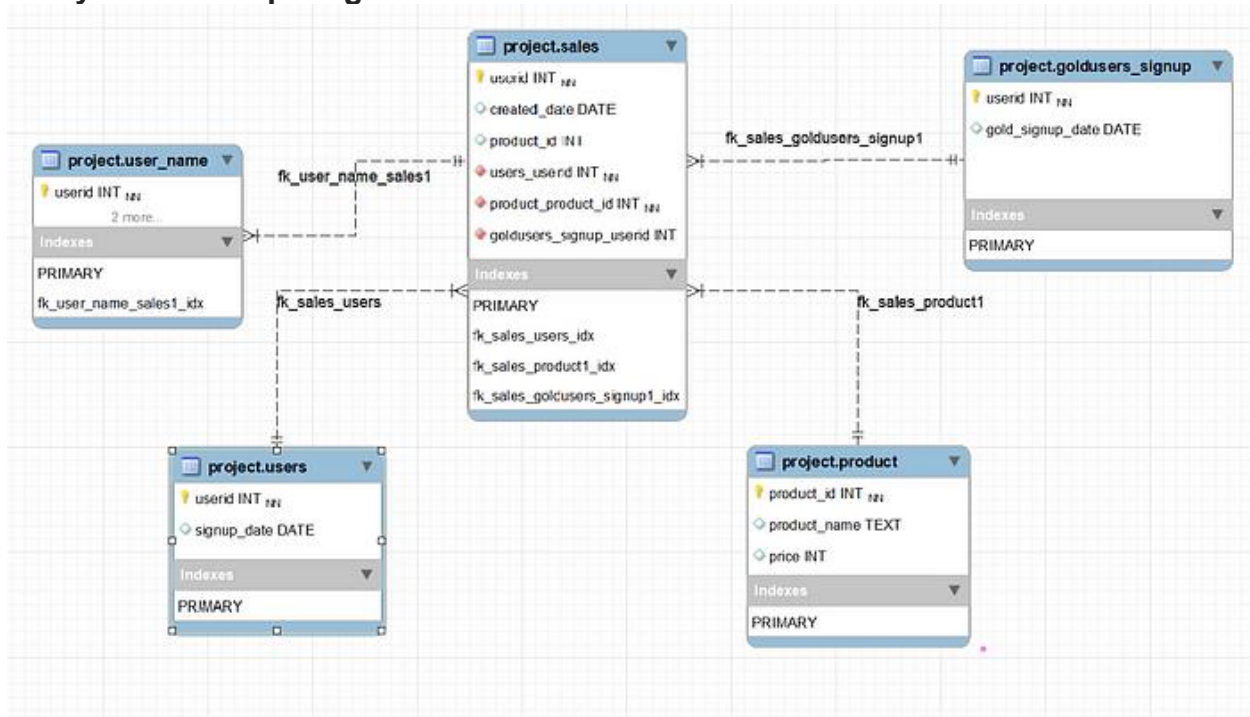


Table of Content

1. Data Information
2. Summary
3. Problems
4. Conclusion

Data Summary

SQL CASE STUDY

Exploring Customer Behavior Through Database Analysis

Table 1: Sales

The Sales table consists of 62 rows and 3 columns: user_id, created_date, and product_id. The product_id ranges from 1 to 11, and the user_id ranges from 1 to 10. This table provides information on which user_id has confirmed an order, which product they have purchased, and the date on which the order was placed.

Sales

userid	created_date	product_id
1	19-04-2017	2
3	18-12-2019	1
2	20-07-2020	3
1	23-10-2019	2
1	19-03-2018	3
3	20-12-2016	2
1	09-11-2016	1
1	20-05-2016	3
2	24-09-2017	1
1	11-03-2017	2
1	11-03-2016	1
3	10-11-2016	1
3	07-12-2017	2
3	15-12-2016	2
2	08-11-2017	2
2	10-09-2018	3
4	01-05-2019	1
5	23-11-2018	3
6	30-06-2017	9
7	12-08-2018	8
8	19-03-2019	7
9	04-12-2017	6
10	22-09-2018	2
4	17-08-2020	1
5	12-05-2017	10
6	27-01-2014	11
7	02-04-2014	7
8	15-12-2020	8
9	08-09-2017	8

Table 2: Product

The second table provides more information about the products that are being sold in the first table. It includes 11 rows, each representing a unique product, with columns for the product ID, product name, and price. The product IDs range from 1 to 11 and correspond to the product IDs in the first table.

SQL CASE STUDY

Exploring Customer Behavior Through Database Analysis

Each product has a unique name that describes the dish, such as Dal Makhani, Butter Chicken, or Fish Curry. The prices of the products range from 80 to 450, with Mango Lassi being the least expensive and Mutton Biryani being the most expensive.

This information can be used to analyze the sales data in the first table, to determine which products are the most popular and which products generate the most revenue. It can also be used to make decisions about pricing and product offerings in the future.

Product

product_id	product_name	price
1	Dal Makani	160
2	Shahi Panner	170
3	Butter Chicken	340
4	Aloo Gobi	150
5	Chole Bhature	100
6	Fish Curry	380
7	Chicken Tikka	300
8	Mutton Biryani	450
9	Veg Pulao	200
10	Mango Lassi	80
11	Gulab Jamun	100

Table 3: User Name

The table Below shows a list of user IDs and corresponding names. There are 10 users in total, each with a unique user ID ranging from 1 to 10. The names of the users are listed in the column next to their respective user ID. This table could be used to track user information in a database or to provide a reference for user identification in a software system. The names provided in this table are fictional and are used for demonstration purposes only.

SQL CASE STUDY

Exploring Customer Behavior Through Database Analysis

User_name

userid	Names
1	Anshul
2	Rohan
3	Shreya
4	Priya
5	Aryan
6	Sara
7	Sahil
8	Tanvi
9	Ritika
10	Gaurav

Table 4: Users

This table shows the signup dates for the users in the system. The dates range from 2013 to 2016, indicating that the system has been active for several years. It also shows that some users signed up on the same day, such as users 10 and 9, and users 7 and 8. This could be an indication that they signed up together, or that the system was launched on those dates. The signup dates could also be useful for analyzing user behavior, such as how long they have been active on the system and if there are any patterns in signup dates.

Users

userid	signup_date
1	02-09-2014
2	15-01-2015
3	11-04-2014
4	17-11-2015
10	02-01-2016
9	02-01-2016
7	02-04-2013
8	15-12-2013
5	08-09-2015
6	13-07-2014

Table 5: Golduser_Signup

The given table shows the gold_signup_date for a few users, where the users with their respective user IDs have upgraded to gold membership. Gold membership usually comes with additional perks and benefits like exclusive offers, faster shipping, and priority customer support, among others.

Exploring Customer Behavior Through Database Analysis

It can be observed that the gold_signup_date for the users ranges from 2017 to 2019, which indicates that they have been gold members for a while now. It's interesting to note that not all users who signed up earlier have upgraded to gold membership, as seen in the case of user ID 2, who signed up in 2015 but is not a gold member. This could be due to various reasons like personal preference, lack of interest in the offered benefits, or inability to pay the additional fees for gold membership.

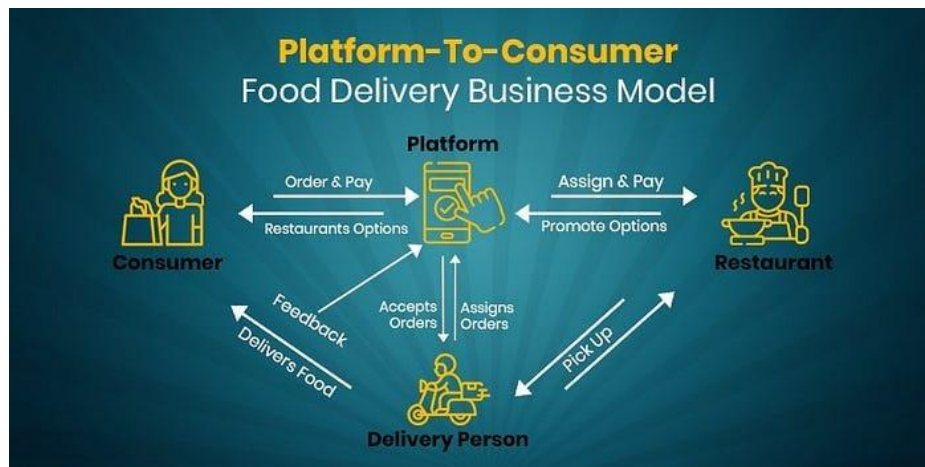
Users

userid	signup_date
1	02-09-2014
2	15-01-2015
3	11-04-2014
4	17-11-2015
10	02-01-2016
9	02-01-2016
7	02-04-2013
8	15-12-2013
5	08-09-2015
6	13-07-2014

2. Summary

Based on the provided information, this is an analysis of an online food ordering platform. The analysis includes information about the sales made on the platform, the products available for purchase, and the users who have signed up and become gold members. The sales table contains 62 rows and includes columns for user ID, product ID, and order date, which can be used to track which users have ordered which products and when. There are 11 products available for purchase, each with a different price. The user table includes information about 10 users, including their names and signup dates. Finally, the gold member table includes information about five users who have signed up for a premium membership on the platform. Overall, this analysis provides a basic understanding of the platform's sales and user data, which can be used to identify trends and opportunities for growth.

Exploring Customer Behavior Through Database Analysis



3. Problems

Before looking at the solution, it is important to try and solve the problem yourself and explore different methods to solve this real-world problem. You can find the problem question on this view this page if you would like to attempt it yourself. For the dataset used in this project, you can access it on the same page. By attempting the problem yourself and exploring different solutions, you can gain a deeper understanding of the challenges faced by companies in the online delivery industry and the potential for data analysis to provide valuable insights.