Project Title

Customer Transactions and Sales Analysis using SQL.

Project Overview:

This project focuses on analyzing customer transaction data from a company's sales database. Using SQL, a wide range of queries were developed to retrieve insights on customer behavior, discount usage, transaction patterns, and product sales. These queries explore various customer demographics, purchase methods, and product categories, providing data-driven insights that can be applied to business strategies.

Technologies Used:

- SQL (MySQL)

- Data manipulation and analysis

Dataset:

A structured dataset including columns such as `CustomerID`, `TransactionID`, `Gender`, `AgeGroup`, `PurchaseDate`, `ProductCategory`, `DiscountAvailed`, `DiscountAmount`, `GrossAmount`, `NetAmount`, `PurchaseMethod`, and `Location`.

Key Queries and Features:

1. Discount Usage Analysis:

Query: Retrieve all columns for customers who availed a discount.

SQL Example:

```
SELECT *
FROM project1_df
WHERE DiscountAvailed = 'Yes';
```

Insight: Identifies customers who took advantage of discounts, enabling the business to target similar promotions.

2.High-Value Transactions:

Query: Select customers whose Net Amount is greater than 1000 INR.

SQL Example:

```
SELECT CustomerID, TransactionID
 FROM project1_df
  WHERE NetAmount > 1000;
```

Insight: Segments customers based on high-value transactions, helping in customer retention strategies.

3. Seasonal Analysis:

Query: Find all transactions where the Purchase Date is in May 2023.

SQL Example:

```
SELECT TransactionID, PurchaseDate
 FROM project1_df
 WHERE YEAR(PurchaseDate) = 2023 AND MONTH(PurchaseDate) = 5;
```

Insight: Analyzes transaction volumes in specific months, which aids in inventory and marketing planning.

4. Product Category Exploration:

Query: Retrieve all Product Category entries that include the word 'Clothing'.

SQL Example:

```
 SELECT *
 FROM project1_df
 WHERE ProductCategory LIKE '%Clothing%';
```

Insight: Enables analysis of specific product categories and customer preferences.

5.Age Group Transaction Insights:

Query: Find all customers in the '18-25' or '26-35' age groups.

SQL Example:

```
SELECT *
```

```
FROM project1_df
WHERE AgeGroup IN ('18-25', '26-35');
```

Insight: Helps identify key customer demographics, contributing to targeted marketing.

6.Location-Based Transactions:

Query: Find transactions where the location ends with the letter 'i'.

SQL Example:

```
SELECT TransactionID, Location
FROM project1_df
WHERE Location LIKE '%i';
```

Insight: Assists in geographical segmentation and location-specific sales strategies.

7.Discount Summary:

Query: Sum of Discount Amount for transactions where Discount Availed is 'Yes'.

SQL Example:

```
SELECT SUM(DiscountAmount) AS TotalDiscountAmount
FROM project1_df
WHERE DiscountAvailed = 'Yes';
```

Insight: Provides a summary of the total discount provided to customers, enabling cost-benefit analysis for discount campaigns.

8.Top 10 Transactions:

Query: Retrieve the top 10 transactions ordered by Gross Amount in ascending order.

SQL Example:

```
SELECT TransactionID
FROM project1_df
ORDER BY GrossAmount ASC
LIMIT 10;
```

Insight: Helps identify the smallest sales transactions, useful for optimizing low-value sales.

9.Category-Specific Sales:

Query: Retrieve the total Net Amount grouped by Product Category.

SQL Example: SELECT ProductCategory, ROUND(SUM(NetAmount), 2) AS TotalNetAmount

FROM project1_df

GROUP BY ProductCategory;

Insight: Provides insights into the financial performance of different product categories.

10.Transaction and Location Counts:

Query: Count how many transactions were made in each location.

SQL Example:

SELECT COUNT(*) AS TransactionCount, Location

FROM project1_df

GROUP BY Location;

Insight: Useful for understanding which locations drive the most sales.

Outcome:

Through this project, we can demonstrate your SQL proficiency in handling real-world datasets by performing advanced filtering, aggregation, and manipulation techniques. The insights from this project are applicable to various business domains, such as retail, e-commerce, and customer relationship management.