

# **Customer Analytics Project**

(SQL Analysis & Power BI Dashboard)

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Tools Used: SQL, Power BI

## **Problem Statement :**

This project focuses on analyzing customer data to understand customer distribution, revenue patterns, and churn behavior. SQL is used for data cleaning and analysis, and insights are visualized using Power BI.

## **Dataset Overview :**

The dataset contains approximately 1000 customer records.

Columns included:

- CustomerID
- Gender
- Age
- Location
- SubscriptionPlan
- TotalSpent
- Churned
- SignupDate

## **Data Preparation :**

The dataset used for this project was already clean and did not require additional data cleaning steps. The data was reviewed for consistency and correctness before performing analysis.

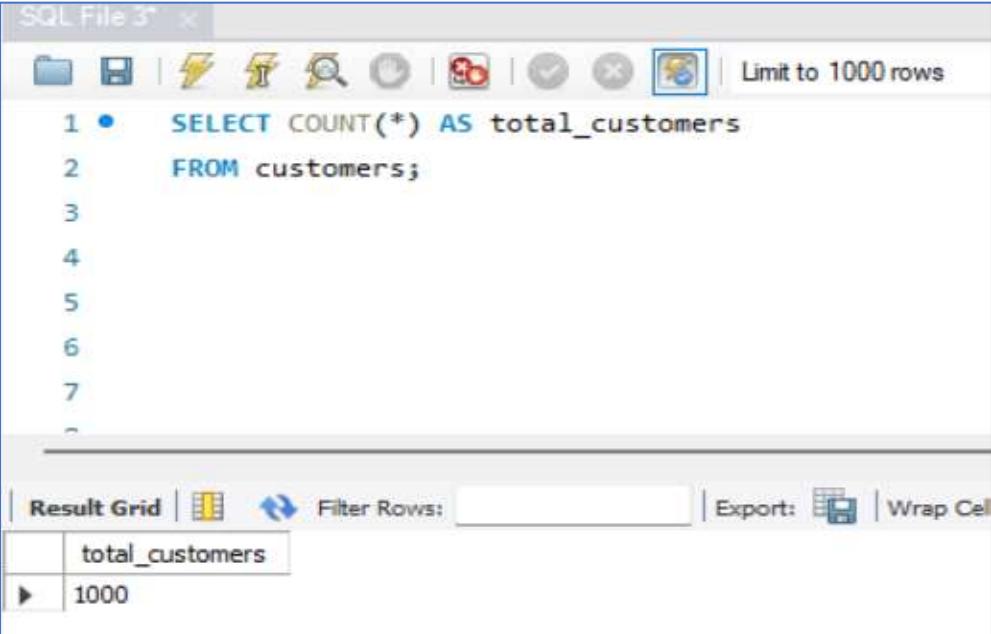
## **SQL Analysis :**

### **Analysis 1: Total Customers**

#### **Objective:**

Determine the total number of unique customers in the dataset.

#### **SQL Query:**



The screenshot shows a SQL query editor window titled "SQL File 3". The query is:

```
1 •   SELECT COUNT(*) AS total_customers
2     FROM customers;
```

The result grid shows one row:

total_customers
1000

#### **Insight:**

The dataset consists of 1,000 unique customers, which provides a sufficiently large and balanced base for analyzing revenue patterns, customer distribution, and churn behavior.

### **Analysis 2: Total Revenue**

#### **Objective:**

Calculate the total revenue generated from all customers.

#### **SQL Query:**

The screenshot shows a MySQL Workbench interface. The query window contains the following SQL code:

```
1 •  SELECT SUM(TotalSpent) AS TotalRevenue
2   FROM customers;
3
4
5
6
7
```

The result grid shows one row with the column 'TotalRevenue' containing the value '29518251.00'.

**Insights :** The total revenue generated from the customer base is 29,518,251, indicating a strong overall business value derived from 1,000 customers. This figure serves as a key financial benchmark for evaluating revenue contribution across different subscription plans, locations, and churn segments.

### Analysis 3 : Average Revenue Per User (ARPU)

#### Objective:

Calculate the average revenue generated per customer.

#### SQL Query:

The screenshot shows a MySQL Workbench interface. The query window contains the following SQL code:

```
1 •  SELECT
2      ROUND(SUM(TotalSpent) / COUNT(DISTINCT CustomerID), 2) AS ARPU
3   FROM customers;
4
5
6
7
```

The result grid shows one row with the column 'ARPU' containing the value '29518.25'.

**Insight:**

The Average Revenue Per User (ARPU) is 29,518, indicating that each customer contributes approximately this amount to the total revenue on average. This reflects the overall value of the customer base and helps assess revenue efficiency beyond just customer count.

## Analysis 4: Churn Rate

### Objective:

Calculate the percentage of customers who have churned to understand customer retention performance.

### SQL Query:

The screenshot shows a SQL query editor interface. The top bar includes various icons for file operations, search, and export. The main area displays the following SQL code:

```
1 •   SELECT
2     ROUND(
3       (SUM(CASE WHEN Churned = 1 THEN 1 ELSE 0 END) * 100.0) / COUNT(*),
4         2
5     ) AS churn_rate_percentage
6   FROM customers;
7
8
```

Below the code, there is a result grid with one row of data:

churn_rate_percentage
28.60

The result grid has a header row and a single data row containing the value 28.60.

### Insight:

The churn rate of 28.60% indicates that more than a quarter of the customer base has stopped using the service. This level of churn suggests noticeable retention challenges and highlights the need for targeted customer engagement and retention strategies to reduce customer loss.

## Analysis 5: Customer Distribution by Location

### Objective:

Analyze the distribution of customers across different locations to identify regions with higher customer concentration.

## SQL Query:

The screenshot shows a MySQL Workbench interface. At the top, there is a toolbar with various icons. Below the toolbar, a SQL editor window contains the following code:

```
1 •  SELECT Location, COUNT(*) AS total_customers
2   FROM customers
3   GROUP BY Location
4   ORDER BY total_customers DESC;
```

Below the SQL editor is a "Result Grid" table with two columns: "Location" and "total\_customers". The data is as follows:

Location	total_customers
Noida	154
Delhi	150
Bangalore	148
Pune	139
Gurugram	138
Mumbai	136
Dehradun	135

### Insight:

Customer distribution is relatively balanced across major cities, with Noida (154) having the highest number of customers, followed closely by Delhi (150) and Bangalore (148). Cities such as Pune (139), Gurugram (138), Mumbai (136), and Dehradun (135) also show comparable customer presence. This indicates a diversified geographic spread rather than dependency on a single location, reducing regional risk and offering opportunities for location-specific strategies.

## Analysis 6: Customer Distribution by Gender

### Objective:

Analyze the distribution of customers by gender to understand demographic composition.

## SQL Query:

The screenshot shows a MySQL Workbench interface. At the top, there is a toolbar with various icons. Below the toolbar, a SQL editor window contains the following code:

```
1 •  SELECT Gender, COUNT(*) AS total_customers
2   FROM customers
3   GROUP BY Gender;
```

Below the SQL editor is a "Result Grid" table with two columns: "Gender" and "total\_customers". The data is as follows:

Gender	total_customers
Female	495
Male	505

### **Insight:**

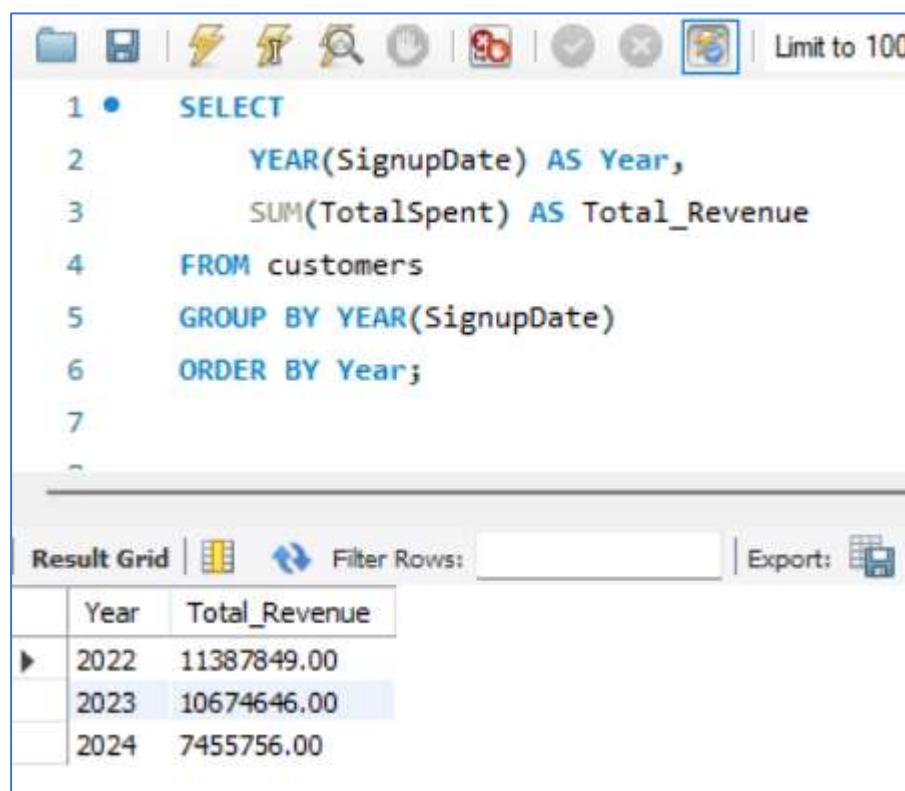
The customer base is almost evenly split by gender, with 505 male customers and 495 female customers. This near-equal distribution indicates balanced engagement across genders, suggesting that the product or service appeals broadly without a strong gender bias.

### **Analysis: Year-wise Revenue Trend**

#### **Objective:**

Analyze how total revenue has changed over different years to understand overall business performance trends over time.

#### **SQL Query:**



A screenshot of a MySQL Workbench query editor. The top bar includes standard icons for file operations, search, and help, followed by a 'Limit to 100' button. The main area contains a numbered SQL query:

```
1 •  SELECT
2      YEAR(SignupDate) AS Year,
3      SUM(TotalSpent) AS Total_Revenue
4  FROM customers
5  GROUP BY YEAR(SignupDate)
6  ORDER BY Year;
7
```

Below the query, there is a 'Result Grid' section with a table showing the results:

	Year	Total_Revenue
▶	2022	11387849.00
	2023	10674646.00
	2024	7455756.00

Buttons for 'Result Grid', 'Filter Rows:', and 'Export:' are visible at the bottom of the grid area.

### **Insight:**

Year-wise revenue shows a declining trend over time, with revenue decreasing from 11,387,849 in 2022 to 10,674,646 in 2023, and further dropping to 7,455,756 in 2024. This consistent decline indicates a slowdown in revenue generation, which may be linked to increased customer churn, reduced customer spending, or lower customer acquisition in recent years. The trend highlights the

need to focus on retention strategies and revenue growth initiatives to stabilize and improve future performance

## Analysis 7 : Customer Churn Distribution

### Objective:

Determine the number of active and churned customers to understand customer retention levels.

### SQL Query:

The screenshot shows a SQL query editor interface. At the top, there are various toolbar icons. Below the toolbar, the query code is displayed:

```
1 •  SELECT
2      Churned,
3      COUNT(CustomerID) AS Total_Customers
4  FROM customers
5  GROUP BY Churned;
```

Below the code, there is a result grid with two columns: "Churned" and "Total\_Customers". The data shows two rows: one for Churned = 0 with 714 total customers, and one for Churned = 1 with 286 total customers.

	Churned	Total_Customers
0	714	
1	286	

### Insight:

Out of 1,000 customers, 714 customers remain active (Churned = 0) while 286 customers have churned (Churned = 1). This confirms the churn rate of 28.6%, indicating that although a majority of customers are retained, a significant portion of the customer base is being lost and requires focused retention efforts.

## Analysis 8 : Revenue by Subscription Plan

### Objective:

Analyze how total revenue is distributed across different subscription plans to identify high-performing plans.

### SQL Query:

The screenshot shows a database interface with a query editor and a result grid. The query is:

```
1 •   SELECT
2       SubscriptionPlan,
3           SUM(TotalSpent) AS Total_Revenue
4   FROM customers
5   GROUP BY SubscriptionPlan
6   ORDER BY Total_Revenue DESC;
7
```

The result grid displays the following data:

	SubscriptionPlan	Total_Revenue
▶	Basic	12842896.00
	Standard	10670903.00
	Premium	6004452.00

### Insight:

Revenue is primarily driven by the Basic plan (12,842,894), followed by the Standard plan (10,670,903), while the Premium plan (6,004,452) contributes comparatively less. This indicates that lower- and mid-tier plans have higher customer adoption and collectively generate the majority of revenue, whereas the Premium plan has a smaller but potentially high-value customer segment that could be expanded through targeted offerings or pricing strategies.

# Final Insights Summary

- **Customer Base:**

The analysis is based on a dataset of 1,000 customers, providing a stable foundation for evaluating customer behavior, revenue performance, and churn patterns.

- **Revenue Performance:**

The total revenue generated is 29,518,251, with an Average Revenue Per User (ARPU) of 29,518, indicating that each customer contributes a significant average value to the business.

- **Subscription Plan Contribution:**

Revenue is largely driven by the Basic plan (12,842,894) and Standard plan (10,670,903), which together contribute the majority of total revenue. The Premium plan (6,004,452) has a lower contribution, suggesting potential opportunities for upselling or targeted premium offerings.

- **Customer Retention:**

Out of 1,000 customers, 714 are active while 286 have churned, resulting in a churn rate of 28.6%. This indicates noticeable retention challenges and highlights the importance of improving customer engagement and loyalty strategies.

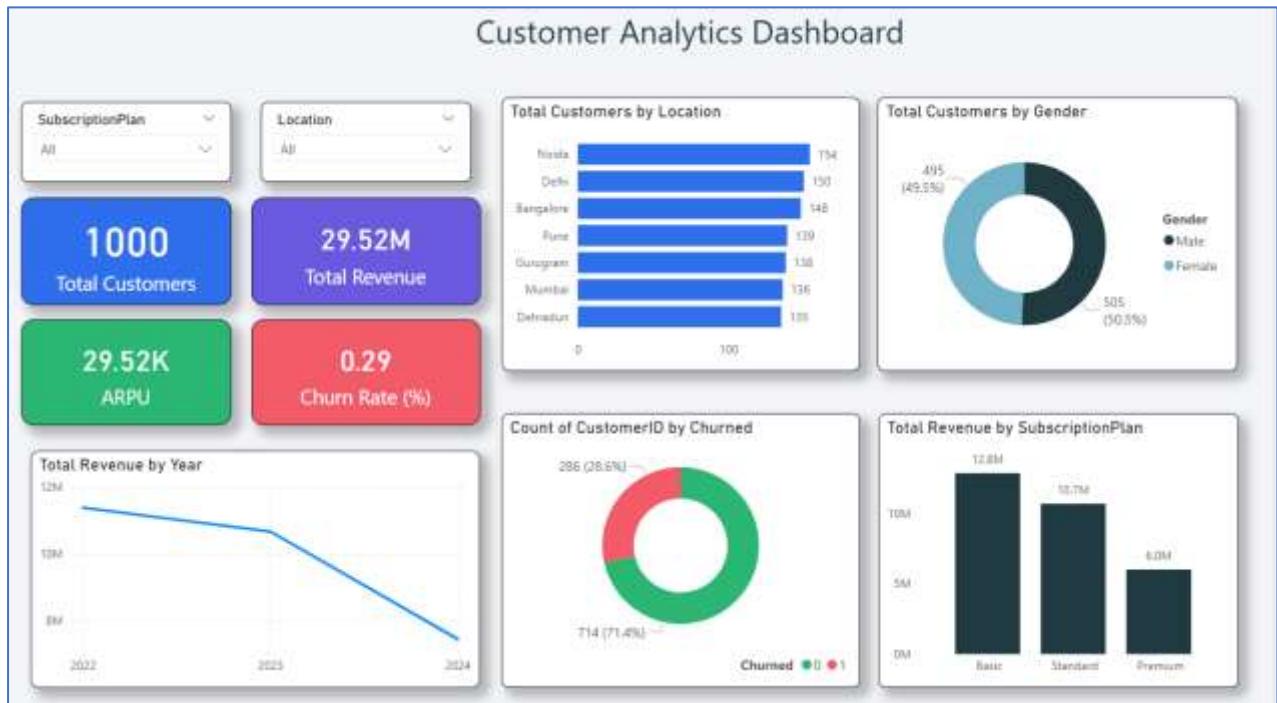
- **Geographic Distribution:**

Customers are evenly distributed across multiple cities, with Noida (154), Delhi (150), and Bangalore (148) having the highest counts. This balanced geographic spread reduces dependency on a single region and supports region-specific marketing strategies.

- **Demographic Distribution:**

The customer base shows a nearly equal gender split, with 505 male and 495 female customers, indicating broad and gender-neutral product appeal.

## Power BI Dashboard :-



The insights obtained from SQL analysis were visualized using Power BI to create an interactive customer analytics dashboard. The dashboard uses KPI cards to display key metrics such as total customers, total revenue, ARPU, and churn rate.

Charts are used to represent revenue distribution by subscription plan, customer distribution by location and gender, and churn status. These visuals help present complex analytical results in a simple and easy-to-understand format.

Overall, the dashboard enables quick interpretation of customer behavior and revenue patterns, supporting data-driven business decision-making.