

# Customer Analytics

## SQL Data Analysis Report

**Introduction** : This SQL analysis explores customer behavior, product performance, and sales trends using data from three core tables: customers, products, and sales. The objective is to extract valuable business insights from raw transactional data using structured SQL queries. Below is a brief summary of the key queries used in this report:

### Queries & thier Results

#### 1 Total Revenue by Country

Identifies which countries generate the highest sales revenue to evaluate geographic performance.

```
mysql> SELECT Country, SUM(TotalPrice) AS TotalRevenue
-> FROM sales
-> GROUP BY Country
-> ORDER BY TotalRevenue DESC;
```

```
+-----+-----+
| Country | TotalRevenue |
+-----+-----+
| Canada  | 7475.00 |
| USA     | 4085.00 |
| Australia | 4066.00 |
| UK      | 2798.00 |
+-----+-----+
4 rows in set (0.00 sec)
```

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#### 2 Top 5 Selling Products by Quantity

Highlights the most popular products based on total quantity sold, useful for inventory and marketing strategy.

```
mysql> SELECT p.ProductName, SUM(s.Quantity) AS TotalSold
-> FROM sales s
```

```
-> JOIN products p ON s.ProductID = p.ProductID
-> GROUP BY p.ProductName
-> ORDER BY TotalSold DESC
-> LIMIT 5;
```

```
+-----+-----+
| ProductName | TotalSold |
+-----+-----+
| Tablet      | 9         |
| Coffee Maker | 5         |
| Bluetooth Speaker | 5         |
| Wireless Headphones | 4         |
| Air Conditioner | 3         |
+-----+-----+
5 rows in set (0.01 sec)
```

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### 3 Sales Revenue by Region and Month

Tracks regional sales performance over time to identify seasonal trends and high-performing areas.

```
mysql> SELECT SaleRegion, YEAR(SaleDate) AS Year, MONTH(SaleDate) AS Month,
SUM(TotalPrice) AS Revenue
-> FROM sales
-> GROUP BY SaleRegion, YEAR(SaleDate), MONTH(SaleDate)
-> ORDER BY Year, Month;
```

```
+-----+-----+-----+-----+
| SaleRegion | Year | Month | Revenue |
+-----+-----+-----+-----+
| North      | 2019 | 7     | 799.00  |
| North      | 2020 | 1     | 225.00  |
| South      | 2020 | 1     | 129.00  |
| East       | 2020 | 10    | 998.00  |
| South      | 2021 | 2     | 899.00  |
| West       | 2021 | 3     | 240.00  |
| North      | 2021 | 6     | 1200.00 |
| South      | 2021 | 6     | 49.00   |
| North      | 2021 | 8     | 196.00  |
| West       | 2021 | 9     | 199.00  |
| South      | 2021 | 10    | 350.00  |
```

West	2021	10	149.00	
East	2021	10	277.00	
South	2021	11	129.00	
South	2022	1	297.00	
West	2022	1	1198.00	
East	2022	3	1398.00	
West	2022	3	599.00	
West	2022	4	2495.00	
West	2022	5	599.00	
East	2022	5	267.00	
South	2022	6	2400.00	
South	2022	12	159.00	
East	2022	12	799.00	
North	2023	2	378.00	
North	2023	7	1996.00	

+-----+-----+-----+-----+

26 rows in set (0.00 sec)

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#### 4 Customer Count by Country

Measures customer distribution across countries, helpful for targeting growth regions.

```
mysql> SELECT Country, COUNT(*) AS CustomerCount
-> FROM customers
-> GROUP BY Country
-> ORDER BY CustomerCount DESC;
```

+-----+-----+
Country   CustomerCount
+-----+-----+
USA   14
Canada   13
UK   12
Australia   11
+-----+-----+

4 rows in set (0.01 sec)

---

#### 5 Revenue by Payment Method

Analyzes the preferred payment options by revenue share, useful for optimizing payment systems.

```
mysql> SELECT PaymentMethod, SUM(TotalPrice) AS Revenue
```

```
-> FROM sales
```

```
-> GROUP BY PaymentMethod
```

```
-> ORDER BY Revenue DESC;
```

```
+-----+-----+
| PaymentMethod | Revenue |
+-----+-----+
| Debit Card    | 8387.00 |
| Credit Card   | 5280.00 |
| PayPal        | 4757.00 |
+-----+-----+
3 rows in set (0.00 sec)
```

---

## 6 Monthly Sales Trend

Visualizes revenue flow over time to spot business cycles and growth patterns.

```
mysql> SELECT
```

```
-> YEAR(SaleDate) AS Year,
```

```
-> MONTH(SaleDate) AS Month,
```

```
-> SUM(TotalPrice) AS MonthlyRevenue
```

```
-> FROM sales
```

```
-> GROUP BY YEAR(SaleDate), MONTH(SaleDate)
```

```
-> ORDER BY Year, Month;
```

```
+-----+-----+-----+
| Year | Month | MonthlyRevenue |
+-----+-----+-----+
| 2019 | 7 | 799.00 |
| 2020 | 1 | 354.00 |
| 2020 | 10 | 998.00 |
| 2021 | 2 | 899.00 |
| 2021 | 3 | 240.00 |
| 2021 | 6 | 1249.00 |
| 2021 | 8 | 196.00 |
| 2021 | 9 | 199.00 |
| 2021 | 10 | 776.00 |
```

2021	11	129.00
2022	1	1495.00
2022	3	1997.00
2022	4	2495.00
2022	5	866.00
2022	6	2400.00
2022	12	958.00
2023	2	378.00
2023	7	1996.00

+-----+-----+-----+

18 rows in set (0.00 sec)

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## 7 Average Age of Customers by Region

Provides demographic insight by showing how age groups vary by region.

```
mysql> SELECT Region, AVG(Age) AS AverageAge
```

```
-> FROM customers
```

```
-> GROUP BY Region
```

```
-> ORDER BY AverageAge DESC;
```

+-----+-----+

Region	AverageAge
--------	------------

+-----+-----+

East	40.6923
------	---------

West	38.4615
------	---------

North	37.2500
-------	---------

South	35.5833
-------	---------

+-----+-----+

4 rows in set (0.00 sec)

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## 8 Revenue by Product Category

Breaks down total revenue by product categories to identify high-performing segments.

```
mysql> SELECT p.Category, SUM(s.TotalPrice) AS Revenue
```

```
-> FROM sales s
```

```
-> JOIN products p ON s.ProductID = p.ProductID
```

```
-> GROUP BY p.Category
```

-> ORDER BY Revenue DESC;

```
+-----+-----+
| Category | Revenue |
+-----+-----+
| Electronics | 12085.00 |
| Appliances | 3539.00 |
| Furniture | 2001.00 |
| Vehicles | 799.00 |
+-----+-----+
4 rows in set (0.00 sec)
```

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### 9 Repeat Customers (More than 1 Purchase)

Detects loyal customers who have made multiple purchases, valuable for customer retention efforts.

```
mysql> SELECT CustomerID, COUNT(*) AS PurchaseCount
-> FROM sales
-> GROUP BY CustomerID
-> HAVING PurchaseCount > 1
-> ORDER BY PurchaseCount DESC;
Empty set (0.01 sec)
```

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### 10 Top 5 Suppliers by Sales Revenue

Shows which suppliers contribute the most to overall sales, useful for supply chain decisions.

```
mysql> SELECT p.Supplier, SUM(s.TotalPrice) AS SupplierRevenue
-> FROM sales s
-> JOIN products p ON s.ProductID = p.ProductID
-> GROUP BY p.Supplier
-> ORDER BY SupplierRevenue DESC
-> LIMIT 5;
+-----+-----+
| Supplier | SupplierRevenue |
+-----+-----+
| TabletWorks | 4491.00 |
| ComputeInc | 3600.00 |
```

CoolBreeze	2596.00
TechCorp	1597.00
HomeFurn	1048.00
+-----+	+-----+

5 rows in set (0.00 sec)

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## Summary of Findings:

This analysis uncovered key revenue-generating regions (Canada, USA), top-selling products (Tablet, Coffee Maker), and strong payment method preferences (Debit Card). Electronics lead in category-wise sales, and the North and East regions show higher average customer ages. No repeat purchases were observed, highlighting an opportunity for customer retention strategies.