

# Project Documentation

## 1 Project Title - Data-Driven Customer Insights Using SQL, Excel, and Power BI

### 2. Objective

The goal of this project is to analyze customer behavior, product performance, and sales trends using structured SQL queries. By leveraging a relational database with customers, products, and sales tables, we aim to extract meaningful insights that can assist in business decision-making.

### 3. Tools & Technologies

- **Database:** MySQL
- **Language:** SQL
- **Tools Used:** MySQL Workbench
- **Visualization:** Power BI / Excel / Google Sheets

### 4. Database Description

The database consists of the following key tables:

- **customers**
  - CustomerID (PK)
  - Name
  - Country
  - Age
  - Region

- **products**
  - ProductID (PK)
  - ProductName
  - Category
  - Supplier
  - Price
- **sales**
  - SaleID (PK)
  - ProductID (FK)
  - CustomerID (FK)
  - Quantity
  - SaleDate
  - Country
  - SaleRegion
  - PaymentMethod
  - TotalPrice

## 5. Key SQL Queries and Purpose

Summarized from your analysis report:

Sr.	Query Title	Purpose
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1	Total Revenue by Country	Identify countries with the highest revenue
2	Top 5 Selling Products by Quantity	Discover popular products by sales volume
3	Sales Revenue by Region and Month	Observe regional trends and seasonality
4	Customer Count by Country	Understand customer distribution
5	Revenue by Payment Method	Analyze preferred payment options
6	Monthly Sales Trend	Track sales growth or decline over time
7	Average Age of Customers by Region	Examine customer demographics
8	Revenue by Product Category	Identify top-performing product categories
9	Repeat Customers	Spot loyal customers for retention analysis
10	Top 5 Suppliers by Sales Revenue	Understand supplier impact on revenue

## 6. Insights & Recommendations

Based on the analysis:

- **Canada** generated the highest total revenue.
- **Tablet** was the most sold product.

- **Electronics** is the leading category in terms of revenue.
- **Debit Cards** are the most used payment method.
- **No repeat customers** were found — a potential area for loyalty programs.
- Seasonal and regional revenue spikes suggest planning targeted marketing campaigns.

## 7. Limitations

- The dataset may be synthetic or limited in scope (e.g., missing multiple purchases).
- Time coverage might be insufficient for long-term trend analysis.
- Assumes data is clean and without anomalies.

## 8. Conclusion

This SQL project demonstrates the ability to analyze business data stored in relational databases. Through well-structured queries, we extracted actionable insights that can guide business strategy across sales, customer engagement, and operations.