

# E-Commerce Sales Analysis Using SQL

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# Project Background Tools

Analisis data penjualan e-commerce membantu memahami performa bisnis melalui pola pembelian pelanggan, tren pendapatan, serta produk paling laris.

Proyek ini bertujuan untuk mengeksplorasi data transaksi e-commerce dan menghasilkan insight berbasis data.

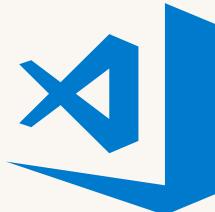
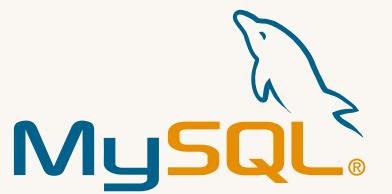
## Dataset

Sumber data: Kaggle – E-Commerce Data

Jumlah data: ±540.000 baris transaksi

Kolom penting:

InvoiceNo, StockCode, Description, Quantity,  
InvoiceDate, UnitPrice, CustomerID, Country



## Skills

SQL Querying, Data Cleaning,  
Data Aggregation,  
Visualization

# Data Preparation



```
1 CREATE DATABASE ecommerce_db;
2 USE ecommerce_db;
```



```
1 CREATE TABLE ecommerce_sales (
2     InvoiceNo VARCHAR(50),
3     StockCode VARCHAR(50),
4     Description TEXT,
5     Quantity VARCHAR(50),
6     InvoiceDate VARCHAR(100),
7     UnitPrice VARCHAR(50),
8     CustomerID VARCHAR(50),
9     Country VARCHAR(100)
10 );
```



```
1 LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/data.csv'
2 INTO TABLE ecommerce_sales
3 CHARACTER SET latin1
4 FIELDS TERMINATED BY ','
5 ENCLOSED BY ''
6 LINES TERMINATED BY '\n'
7 IGNORE 1 ROWS
8 (InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPrice, CustomerID, Country);
9
```

Sebagai langkah awal, saya membangun database beserta struktur tabel yang sesuai, kemudian melakukan import data dari file dataset.csv yang diperoleh melalui Kaggle.com untuk digunakan dalam proses analisis selanjutnya.

# Data Cleaning



```
1 DELETE FROM ecommerce_sales
2 WHERE InvoiceNo IS NULL OR TRIM(InvoiceNo) = ''
3 OR CustomerID IS NULL OR TRIM(CustomerID) = ''
4 OR Description IS NULL OR TRIM(Description) = '';
5 DELETE FROM ecommerce_sales
6 WHERE Quantity <= 0;
7 UPDATE ecommerce_sales
8 SET InvoiceDate = STR_TO_DATE(InvoiceDate, '%m/%d/%Y %H:%i');
```

Selanjutnya, saya melakukan data cleaning untuk memastikan kualitas data tetap terjaga, dengan cara menghapus data yang kosong (missing values) serta menyaring transaksi yang bukan merupakan retur agar analisis yang dilakukan lebih akurat dan relevan.

# insight

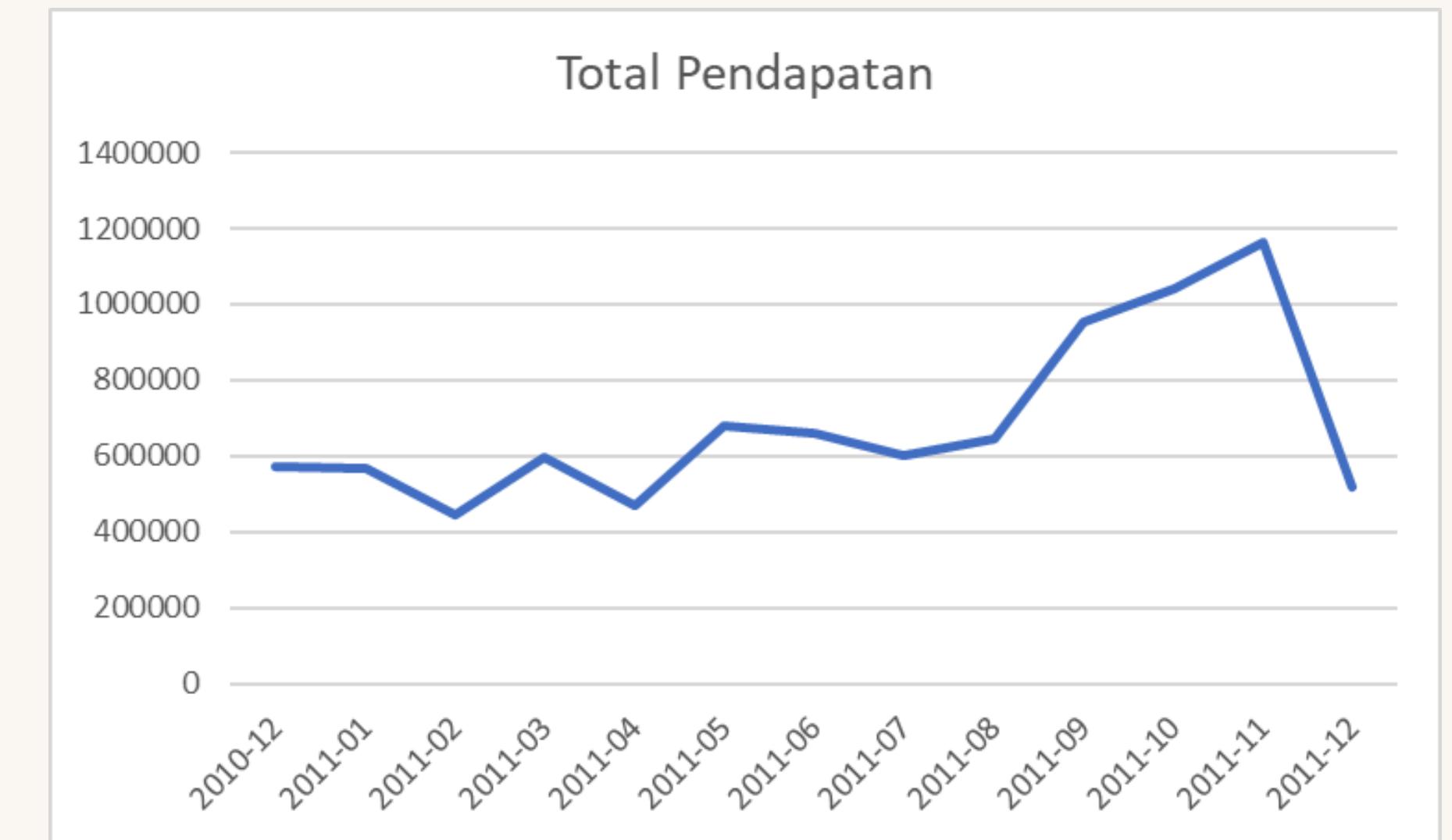
**E-Commerce Sales Analysis**

# Monthly Revenue Trend



```
1 SELECT
2   DATE_FORMAT(InvoiceDate, '%Y-%m') AS bulan,
3   ROUND(SUM(Quantity * UnitPrice), 2) AS total_pendapatan
4 FROM ecommerce_sales
5 GROUP BY DATE_FORMAT(InvoiceDate, '%Y-%m')
6 ORDER BY bulan;
```

Pendapatan meningkat signifikan di Q4 (Oktober–Desember), menandakan puncak belanja akhir tahun.



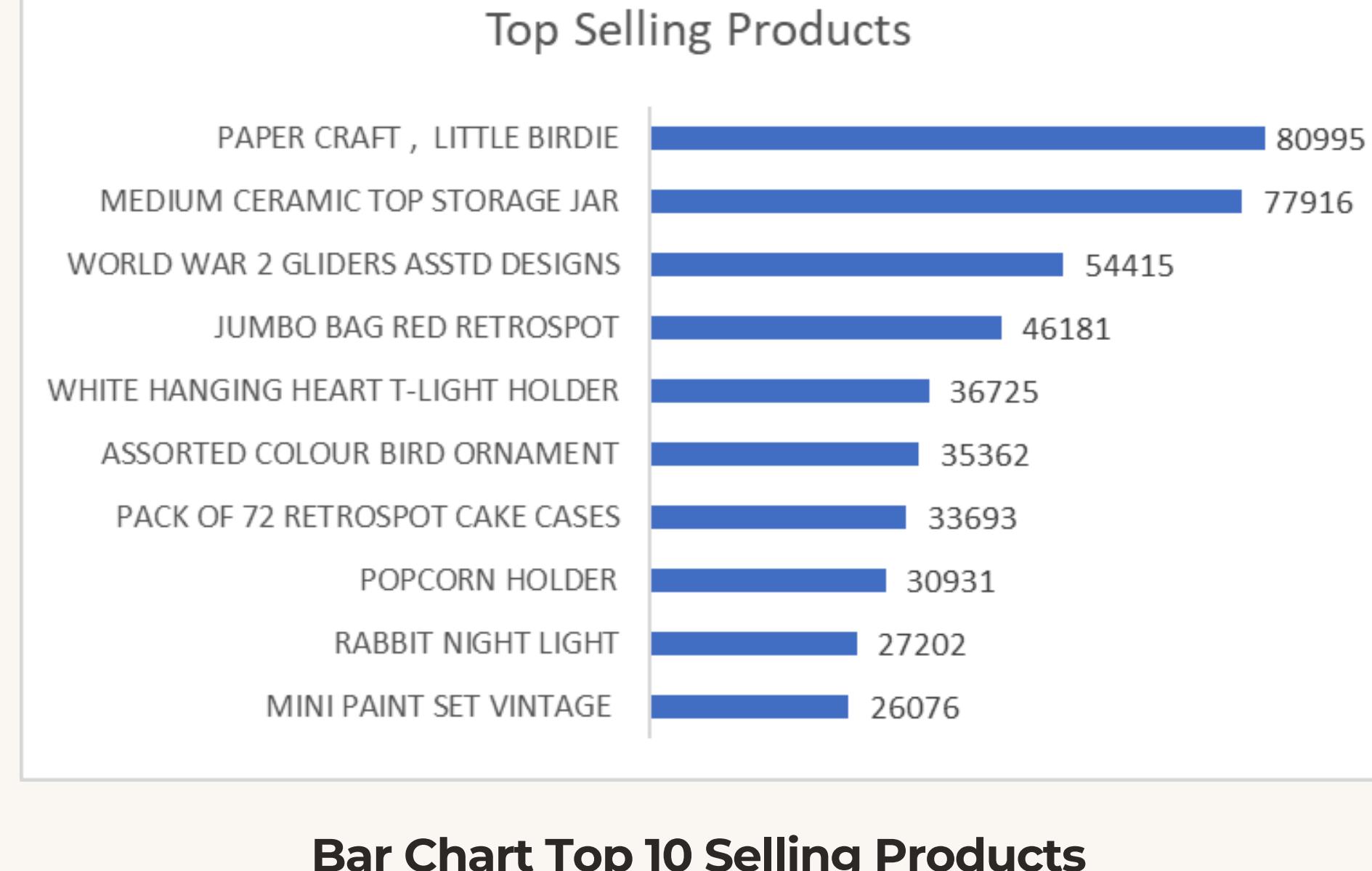
Line Chart Monthly Revenue Trend

# Top Selling Products



```
1 SELECT
2 Description,
3 SUM(Quantity) AS total_terjual
4 FROM ecommerce_sales
5 GROUP BY Description
6 ORDER BY total_terjual DESC
7 LIMIT 10;
```

Produk seperti “Paper Craft Set” menjadi item paling populer di toko online ini.

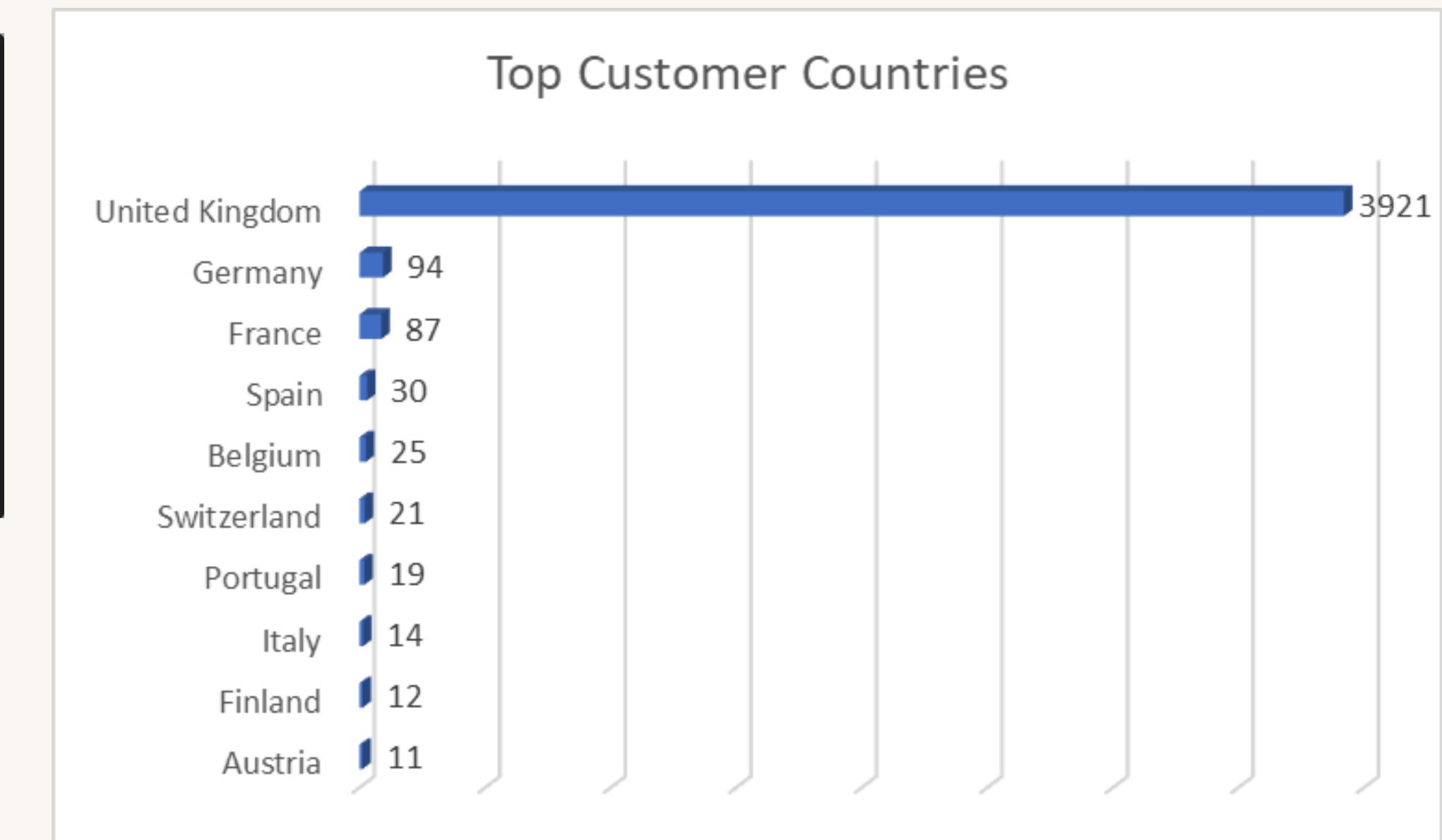


# Top Customer Countries



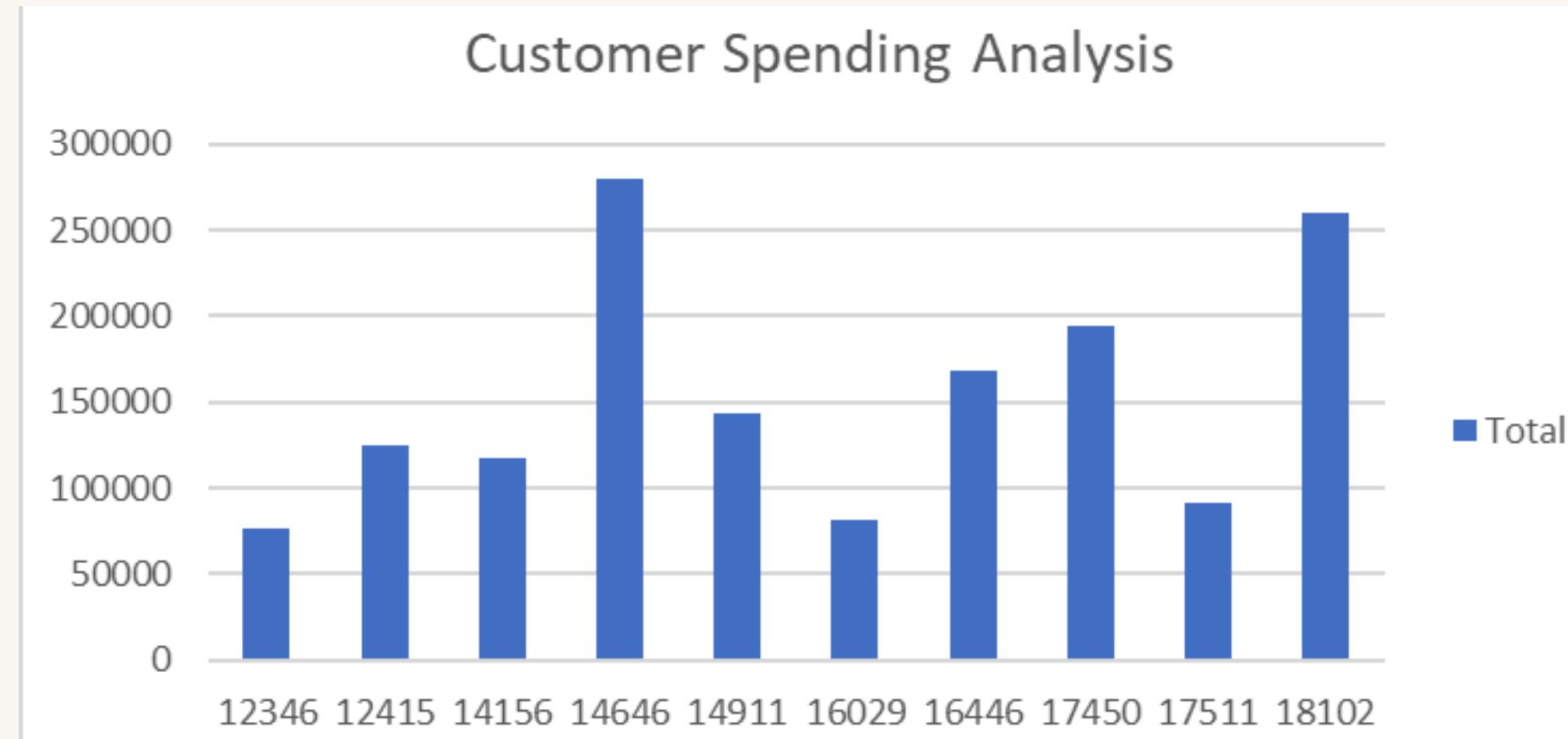
```
1 SELECT
2   Country,
3   COUNT(DISTINCT CustomerID) AS total_pelanggan
4 FROM ecommerce_sales
5 GROUP BY Country
6 ORDER BY total_pelanggan DESC
7 LIMIT 10;
```

Inggris menjadi negara dengan pelanggan terbanyak, diikuti Jerman dan Prancis.



Bar Chart Top 10 Customer Countries

# Top Customer Countries



**Bar Chart Top 10 Customer Spending Analysis**

```
1  SELECT CustomerID,  
2      ROUND(SUM(Quantity * UnitPrice), 2) AS total_spending,  
3      COUNT(InvoiceNo) AS total_transaksi  
4  FROM ecommerce_sales  
5  GROUP BY CustomerID  
6  ORDER BY total_spending DESC  
7  LIMIT 10;
```

10% pelanggan menghasilkan 60% dari total pendapatan

# Conclusion

- 1. SQL dapat digunakan secara efektif untuk analisis data berskala besar**
- 2. Data e-commerce menunjukkan pola musiman yang signifikan**
- 3. Pelanggan loyal berperan besar dalam pendapatan**
- 4. Analisis semacam ini bisa membantu strategi promosi dan inventory management**

**Thank You  
So Much!**

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