# Sales Performance and Trends Dashboard
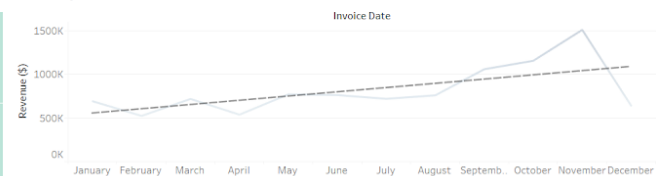
Project Overview

This project analyzes sales data from an online retail store to derive actionable insights into product demand, customer segmentation, and geographical revenue generation. The goal is to help the company identify high-demand regions, high-value customers, and optimize its sales strategy by understanding trends in its data.
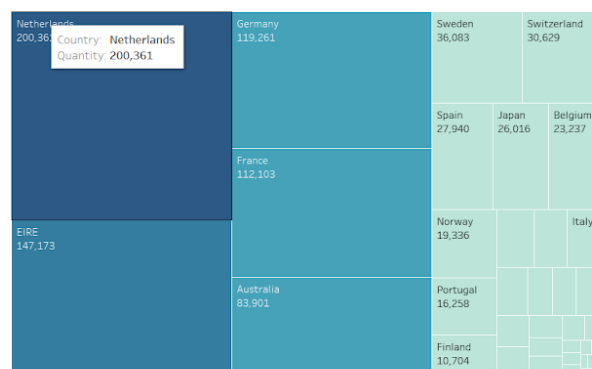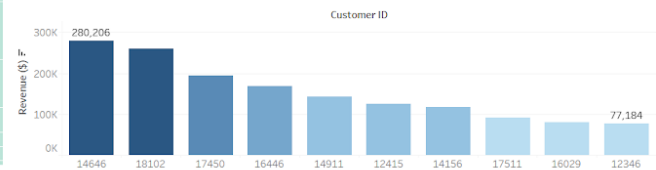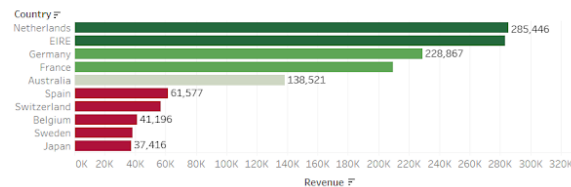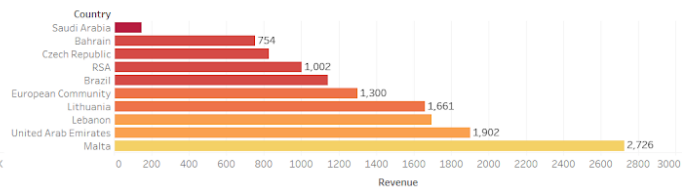

Data Analysis steps:

Data Cleaning:

- **Remove negative quantities**: Transactions where the quantity of the product was negative were excluded to ensure accurate demand analysis. These likely represented product returns or errors in data entry.

- **Filter out negative prices**: Similar to negative quantities, any transactions with a negative unit price were removed to avoid skewed revenue calculations.

Data Preparation:

- **Date formatting**: The InvoiceDate field was cleaned and formatted to create time series data for revenue trends.

- **Revenue calculation**: A calculated field was created to compute the total revenue for each transaction using Quantity * Unit Price.

- **Country filtering**: For certain analyses, the United Kingdom was excluded, focusing on other countries where expansion strategies are being considered.

Type	Field Name	Physical Table	Remote Field Name
#	Invoice No	Online Retail	InvoiceNo
Abc	Stock Code	Online Retail	StockCode
Abc	Description	Online Retail	Description
#	Quantity	Online Retail	Quantity
🗓	Invoice Date	Online Retail	InvoiceDate
#	Unit Price	Online Retail	UnitPrice
=#	Revenue	Calculation	Calculation_10403315185330257792
#	Customer ID	Online Retail	CustomerID
🌐	Country	Online Retail	Country

| Invoice No	Stock Code	Description	Quantity	Invoice Date	Unit Price	C...	Country
541,696	21220	SET/4 BADGES DOGS	4	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21221	SET/4 BADGES CUTE CREAT...	1	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21222	SET/4 BADGES BEETLES	3	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21224	SET/4 SKULL BADGES	1	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21314	SMALL GLASS HEART TRINK...	1	1/20/2011 6:08:00 PM	4.1300	null	United Ki
541,696	21316	SMALL CHUNKY GLASS RO...	2	1/20/2011 6:08:00 PM	5.7900	null	United Ki
541,696	21363	HOME SMALL WOOD LETTE...	1	1/20/2011 6:08:00 PM	10.7900	null	United Ki
541,696	21383	PACK OF 12 STICKY BUNNIES	2	1/20/2011 6:08:00 PM	1.6300	null	United Ki
541,696	21385	IVORY HANGING DECORATI...	2	1/20/2011 6:08:00 PM	1.6300	null	United Ki
541,696	21402	RED EGG SPOON	2	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21403	BLUE EGG SPOON	2	1/20/2011 6:08:00 PM	0.8300	null	United Ki
541,696	21447	12 IVORY ROSE PEG PLACE S...	1	1/20/2011 6:08:00 PM	2.4600	null	United Ki
541,696	21448	12 DAISY PEGS IN WOOD BOX	1	1/20/2011 6:08:00 PM	3.2900	null	United Ki
541,696	21452	TOADSTOOL MONEY BOX	2	1/20/2011 6:08:00 PM	5.7900	null	United Ki
541,696	21484	CHICK GREY HOT WATER BO...	1	1/20/2011 6:08:00 PM	7.4600	null	United Ki

Key Insights & Visualizations

Global Product Demand:

1.

- A **Tree Map** was created to visualize product demand by country, based on the quantity of products sold. Larger boxes represent countries with higher demand.

- **Key Insight**: The **Netherlands**, **EIRE**, and **Germany** displayed the highest demand, suggesting strong market potential in these regions.
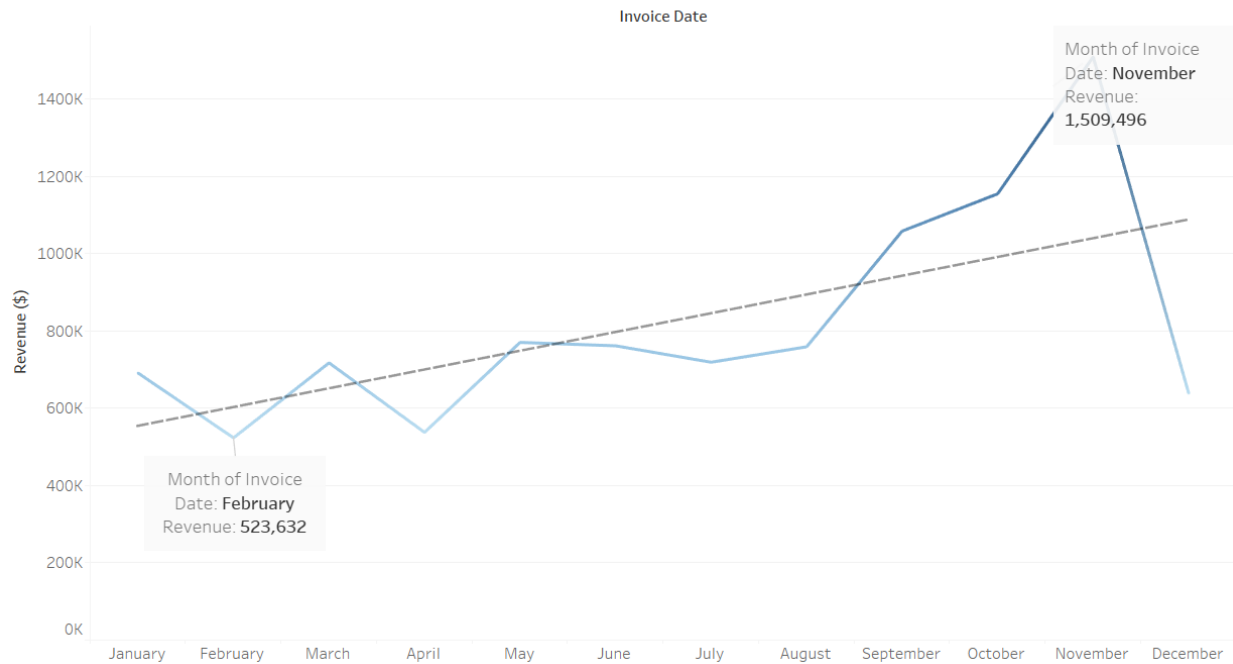
Global Product Demand
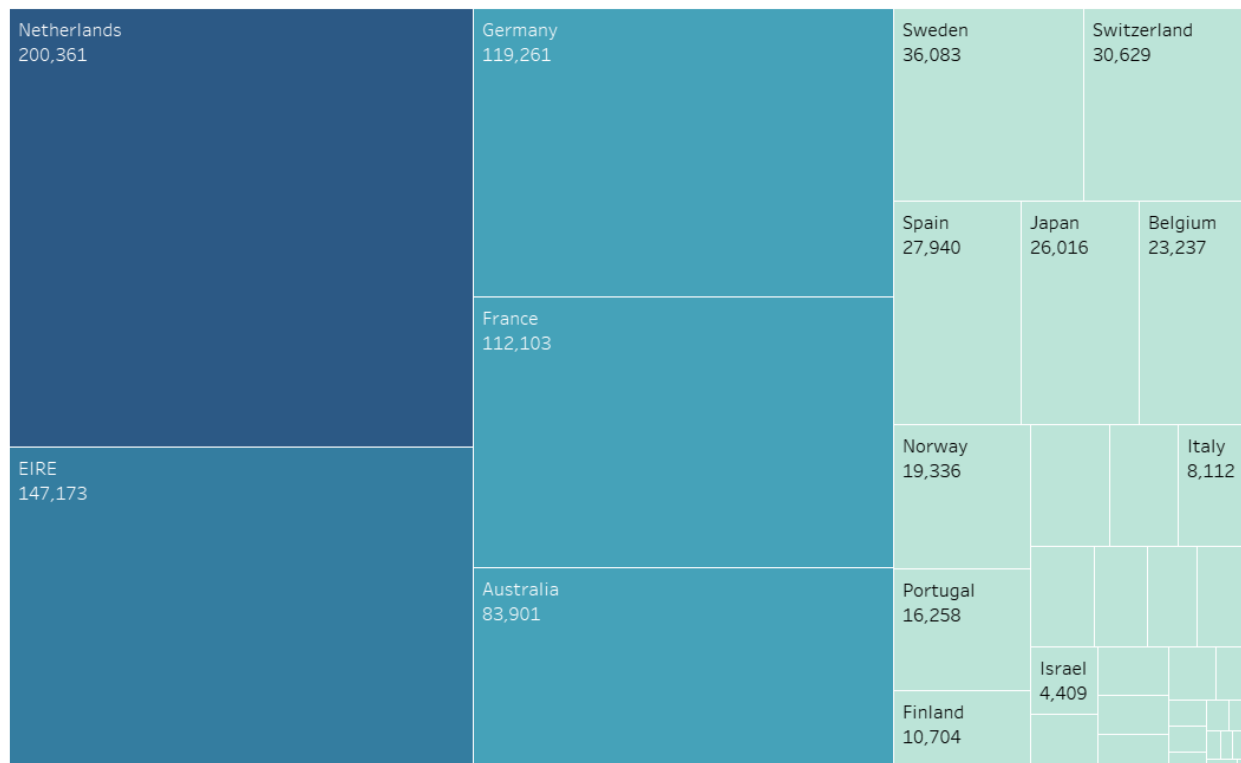
Monthly Revenue Trends - 2011:

- A **line chart** was created to show the revenue trend across 2011. This helped identify seasonal patterns in sales, with a noticeable peak in November.

- **Key Insight: November** saw the highest revenue, which might indicate a promotional event or holiday season impact.
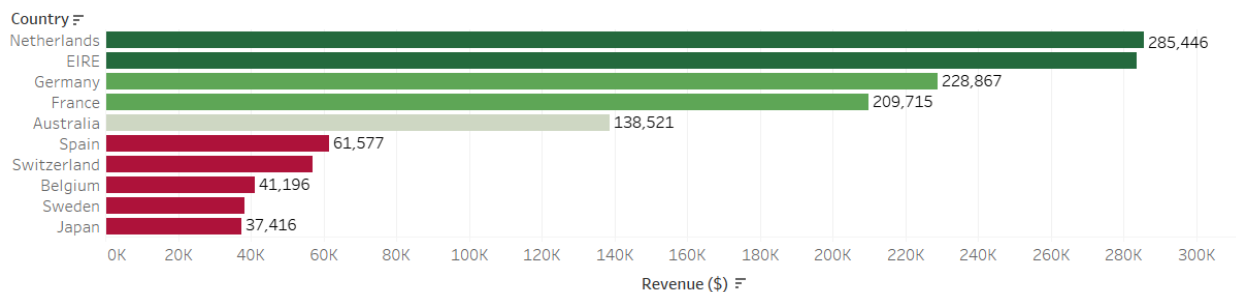
Monthly Revenue Trends - 2011

Top 10 Countries by Revenue:

- This **bar chart** ranks the top 10 countries by revenue. Countries with higher revenue were identified to prioritize marketing and sales efforts.

- **Key Insight**: The **Netherlands** and **EIRE** were the top two revenue-generating countries.

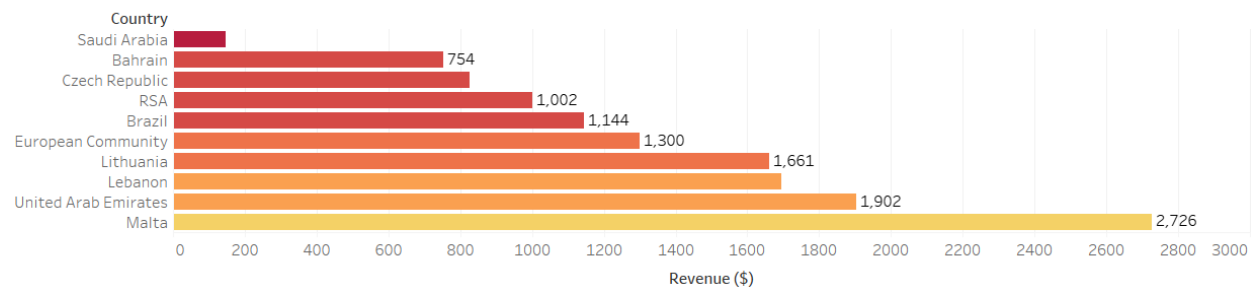### Top 10 Countries by Revenue

Bottom 10 Countries by Revenue:

- A **bar chart** displaying the bottom 10 countries by revenue. This highlights areas where the company may have lower penetration and could either focus on improving or reconsider.

- **Key Insight**: Countries like **Saudi Arabia**, **Bahrain**, and the **Czech Republic** generated the least revenue.
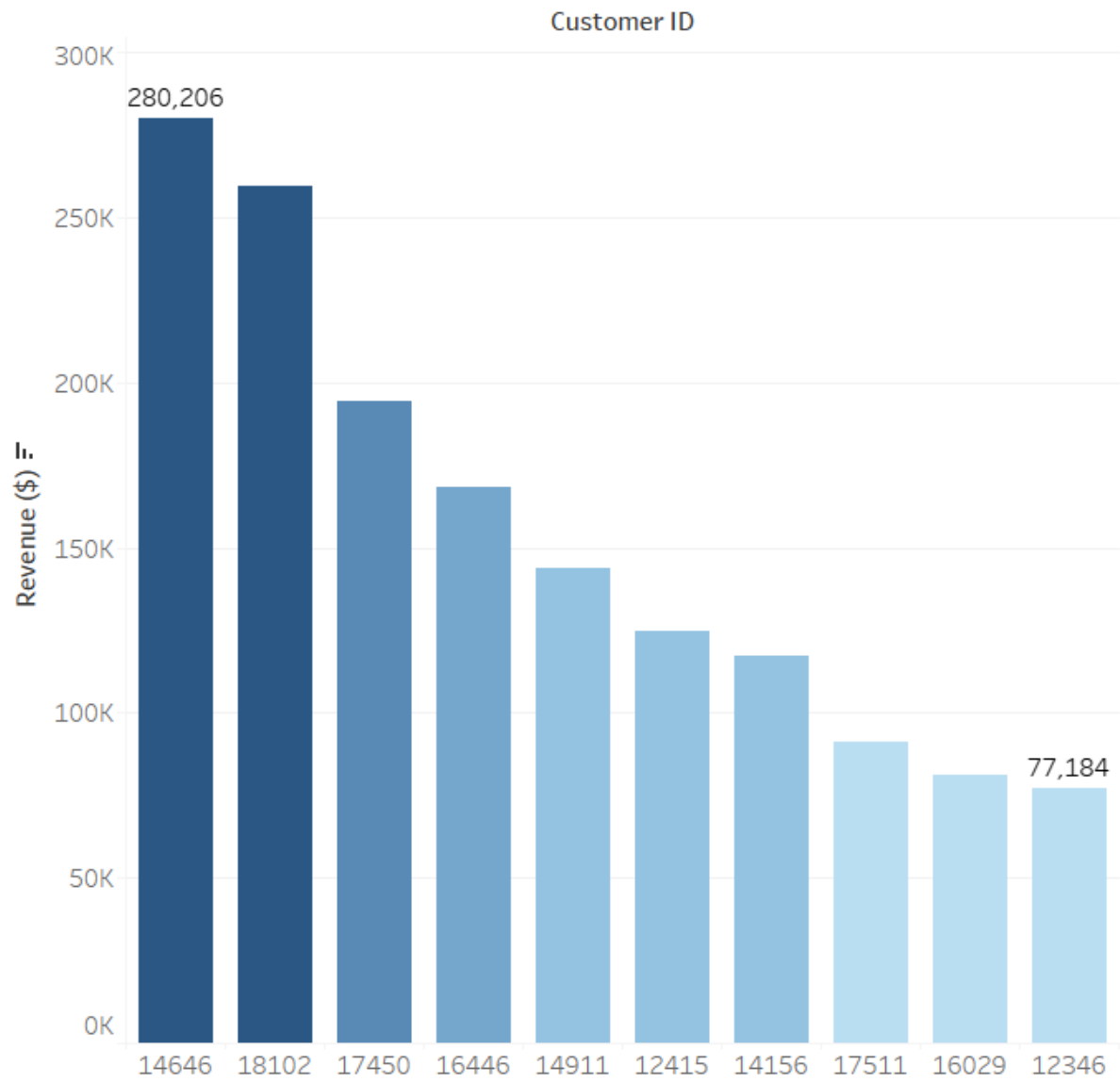
Bottom 10 Countries by Revenue

Country	Revenue ($)
Saudi Arabia	
Bahrain	754
Czech Republic	
RSA	1,002
Brazil	1,144
European Community	1,300
Lithuania	1,661
Lebanon	
United Arab Emirates	1,902
Malta	2,726

Top 10 Customers by Revenue:

- A **bar chart** was used to display the top 10 customers by revenue. This allows the company to focus on customer retention and personalized marketing for their high-value customers.

- **Key Insight**: The top customer generated over **$280,000**, making customer retention for these clients critical.

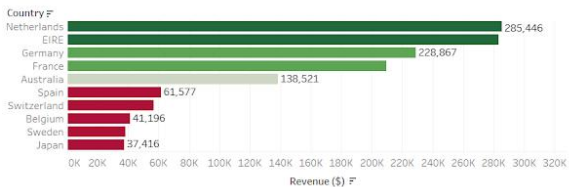# Top 10 Customers by Revenue

Customer ID

Dashboard Overview

Insights from Dashboard

1. **Seasonal Sales Fluctuations**:

Sales tend to peak during the holiday seasons, particularly in **November** and **December**. This suggests strong seasonal demand, which could be due to promotional events or consumer behavior around holidays.

2. **Top-Performing Regions**:

The **Netherlands**, **EIRE**, and **Germany** were identified as the highest revenue-generating regions. These countries consistently showed strong demand across multiple product categories.

3. **Customer Concentration**:

A small percentage of high-value customers contribute to a significant portion of the company's overall revenue. Focusing on these top 10 customers is key to maximizing revenue and ensuring customer loyalty.

4. **Underperforming Regions**:

Countries such as **Saudi Arabia**, **Bahrain**, and **Brazil** generated minimal revenue, indicating lower penetration or potential market challenges in these regions.

Recommendations

1. **Enhance Marketing Around Seasonal Peaks**:

Given the significant revenue spikes in **November**, the company should invest in **seasonal promotions** and **discounts** to capitalize on consumer behavior during these high-demand months.

2. **Customer Retention Strategy**:

Develop a **loyalty program** targeting the top 10 revenue-generating customers. Offering personalized discounts or early access to new products could ensure continued purchases from these high-value customers.

3. **Drive Sales During Off-Peak Seasons**:

Implement strategic promotions and targeted campaigns during historically low-sales periods such as **February** and **March**. Flash sales or product bundles could help boost revenue during these slower months.

4. **Expand Product Range in High-Demand Regions**:

In countries like **EIRE** and **France**, explore the possibility of introducing new product lines that cater to local preferences. Additionally, optimizing shipping times and offering region-specific promotions could encourage repeat purchases.

Conclusion

The **Retail Sales Performance Dashboard** provided key insights into regional demand, customer behavior, and sales trends. High-performing regions like the Netherlands and EIRE present strong opportunities for growth, while underperforming areas like Saudi Arabia and Brazil offer potential for market expansion. Seasonal trends show revenue peaks in November and December, highlighting the importance of targeted promotions during these periods.