Online Retail Data Analysis Report

This report analyzes the UK Online Retail Dataset (2010–2011).
The goal is to answer business questions, find insights, and support decision-making.
We used SQL for queries, Python for visualizations, and Power BI for an interactive dashboard.

Business Goals:
1. Measure the total sales revenue.
2. Find sales patterns by day of the week.
3. Identify top countries by revenue.
4. Analyze top revenue products.
5. Find the most valuable customers.
6. Measure the impact of cancelled orders.

Key Insights:

1) Revenue by Day of the Week
- Friday is the highest (~370,000£).
- Thursday is the lowest (~200,000£).
→ Sales campaigns can focus on Thursday and Wednesday.

2) Top 10 Countries by Revenue
- Netherlands (~290k£), Ireland (~260k£), Germany (~230k£), France (~210k£).
→ Western Europe is the strongest market. Japan (~90k£) shows growth potential.

3) Top Revenue Products
- Best products: DOTCOM POSTAGE, CAKESTAND 3 TIER, ART T-LIGHT HOLDER.
→ Keep high stock and expand similar product lines.

4) Total Sales Revenue
- Strong overall revenue in the dataset.

5) Top Customers
- Customer IDs like 12748, 12971, 13089 are the most profitable.
→ Customer loyalty programs can help keep them.

6) Cancelled Orders & Lost Revenue
- ~4,000 cancelled orders caused ~100,000£ in lost revenue.
→ Improve return policy and customer experience.

Power BI Dashboard:
- Page 1: Overview (KPIs, Sales Trend)
- Page 2: Customer Analysis (Top Customers, Frequency)
- Page 3: Product Analysis (Best-selling, Top Revenue Products)
- Page 4: Geography & Market Insights (Countries, Weekdays)

Conclusion:
- Friday and Western Europe drive sales growth.
- Few products and customers generate most revenue.
- Cancelled orders cause important losses.
- Recommendations: focus on high-value customers, reduce cancellations, and expand in high-potential markets.

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