Online Retail Store - Sales & Insights Report

# 1. Executive Summary

This report summarizes the key findings from the online retail store data after preprocessing and analysis using Power BI. It includes data cleaning observations, sales trends, customer behaviors, and recommendations to enhance business performance.

# 2. Data Overview

The dataset contains sales transactions including invoice numbers, product descriptions, quantities sold, unit prices, customer IDs, and geographic information. After data cleaning, null values were removed, duplicates were dropped, and proper data types were applied. The Power BI dashboard provided aggregate sales and customer insights.

# 3. Key Insights

## 3.1 Sales Trends

• Monthly sales show a consistent upward trend from March to November.  
• December saw a drop in sales, possibly due to incomplete data or post-holiday effects.  
• Most sales occur during weekdays, with Tuesday and Thursday being peak days.

## 3.2 Top Products and Categories

• The most popular items include 'WHITE HANGING HEART T-LIGHT HOLDER' and 'REGENCY CAKESTAND 3 TIER'.  
• Gift items and home decor products lead in total quantity sold.  
• High revenue-generating products are typically sold in larger quantities at mid-range prices.

## 3.3 Customer Segments

• Majority of revenue comes from a small portion of loyal customers (Pareto principle holds).  
• Top 10% customers contribute over 60% of total sales.  
• Several customers from UK and Germany show repeated high-value purchases.

## 3.4 Regional Performance

• The United Kingdom is the dominant market, contributing over 85% of total sales.  
• Germany and France are notable international markets with stable monthly sales.  
• Countries like Norway and Portugal showed inconsistent and low performance.

# 4. Data Cleaning Summary

• Removed rows with missing Customer IDs and descriptions.  
• Filtered out cancelled invoices and negative quantities.  
• Converted Invoice Date to datetime format and extracted month & weekday.  
• Removed 5000+ duplicate entries and corrected datatype mismatches.  
• Created a new feature 'TotalPrice = Quantity × UnitPrice' for aggregation.

# 5. Recommendations

• Focus marketing efforts on high-value customer segments using loyalty programs.  
• Optimize inventory and pricing for top-performing products.  
• Explore subscription or bundle strategies for seasonal low-sale months.  
• Target international markets like Germany and France with localized offers.  
• Continue regular data cleaning to maintain dashboard accuracy.