Retail Sales Analysis & Consumer Behavior Study

This project provides a data-driven analysis of 1,000 retail transactions to identify seasonal peaks, gender-based spending anomalies, and product demand.

Key Performance Indicators (KPIs)

- **Total Revenue:** $456,000
- **Total Customers:** 1,000
- **Avg Transaction (Mean):** $456 (Indicates high-value orders)
- **Median Transaction:** $135 (Reflects the typical customer spend)
- **Sales Variation (SD):** 559.71 (High volatility in transaction values)
- **Most Frequent Order Size (Mode):** 4 items

Deep-Dive Insights & Analysis

1. Seasonal Trends: The "May" Peak

- **Highest Revenue: May ($58,590)** stands out as the most successful month.
- **Low Periods: December ($28,175)**, **September ($28,605)**, and **March ($28,750)** show nearly 50% less revenue compared to May.
- **Observation:** The business faces high seasonality, requiring a strategy to stabilize cash flow in Q1 and Q3.

2. Gender Contribution & Anomalies

- **Overall Split:** Females lead with **51.06% ($233K)** vs Males at **48.94% ($223K)**.
- **The "Blind Spots":** Despite being the primary drivers, Female contribution drops drastically in:
    - **February:** Only $8,100 out of $39,430 total.
    - **November:** Only $9,750 out of $33,020 total.
- **Analysis:** These months represent a massive lost opportunity for the female segment.

3. Product Performance

- **Top Category: Electronics** (Highest Demand).

- **Followed by:** Clothing and Beauty.

Strategic Recommendations (Advice)

- **Targeted Marketing:** Launch female-centric campaigns (e.g., Valentine's Sale or Pre-Winter Fashion) in **February and November** to bridge the revenue gap.
- **Inventory Management:** Since **May and August** are high-performing months, ensure maximum stock of **Electronics** and **Clothing** during these periods.
- **Pricing Strategy:** Since the **Median ($135)** is much lower than the **Mean ($456)**, the store should focus on "Premium Upselling" to convert mid-tier spenders into high-tier buyers.

Tech Stack

- **Power BI:** Data Visualization & Dashboarding.
- **DAX:** Statistical Calculations (Mean, Median, Mode, SD).