**Retail Business Performance & Profitability Analysis**

**Executive Summary**

This project aims to analyze a large-scale transactional retail dataset to uncover insights about sales performance, profit-draining categories, inventory behavior, and seasonal trends. The objective is to optimize business strategies, increase profitability, and make data-driven decisions.

The tools used for this project include SQL (for querying and cleaning data), Python (for data transformation), and Power BI (for dashboard creation and data visualization). The dataset consists of 1 million transactions with attributes such as customer details, product purchases, payment methods, discounts, promotions, and store types.

**Key Insights**

**📊 Sales Overview**

* **Total Sales** across all transactions are significant, with thousands of items sold and a healthy average order value.
* **Average Order Value** indicates consistent consumer behavior, with moderate variance between segments.
* **Highest transaction volume** occurred during the **Winter season**, suggesting a need for seasonal inventory planning.

**📦 Product Performance**

* **Top-selling products** include frequently used household items such as *Milk*, *Bread*, and *Detergents*.
* Several **low-performing products** with low sales and low margins were identified, ideal candidates for bundling or clearance promotions.

**🎯 Promotion & Discount Effectiveness**

* Orders with **discounts applied** had a slightly higher volume but slightly lower average value.
* **“BOGO (Buy One Get One)”** and **“Discount on Selected Items”** were the most effective promotions in terms of transaction counts.
* Promotions with "No Offer" led to higher-value purchases, suggesting quality buyers are less promotion-sensitive.

**🏪 Store & Region Analysis**

* **Department Stores** and **Warehouse Clubs** had the highest sales volume.
* Cities like **Los Angeles** and **Houston** contributed most to revenue.
* **Specialty Stores** had a smaller number of transactions but higher average order values.

**🗓️ Seasonal Trends**

* **Winter and Fall** seasons showed peaks in purchase volume and revenue.
* Spring saw a slight dip, signaling potential for targeted seasonal campaigns or stock reduction strategies.

**Recommendations**

* 📉 **Phase out low-margin, slow-moving items** to reduce inventory costs.
* 📦 **Increase inventory** for high-performing products before **Winter and Fall**.
* 🛍️ **Limit heavy discounting** except during promotional seasons with strategic campaigns.
* 🧑‍💼 **Target customer segments** like **Homemakers** and **Professionals**, who show consistent high-value transactions.
* 🏬 **Invest in expanding store types** like Department Stores in underperforming regions.

**Tools Used**

* **SQL:** For data cleaning and profit-based queries
* **Power BI:** For data visualization and interactive dashboards

**Conclusion**

The analysis successfully identifies actionable insights from transactional retail data. The business can improve profit margins, optimize inventory, and improve marketing strategies by focusing on customer behavior, store performance, and seasonal trends.