

Inventory Analysis Management

Samsudeen Afolabi

Problem statement

In an organization, effective inventory management is critical for optimizing resources, minimizing costs, and maximizing profitability. The challenge lies in understanding the dynamics of inventory, sales, and procurement processes to make informed decisions. We seek to gain actionable insights into the inventory levels, sales performance, and optimal stock levels.

Overview

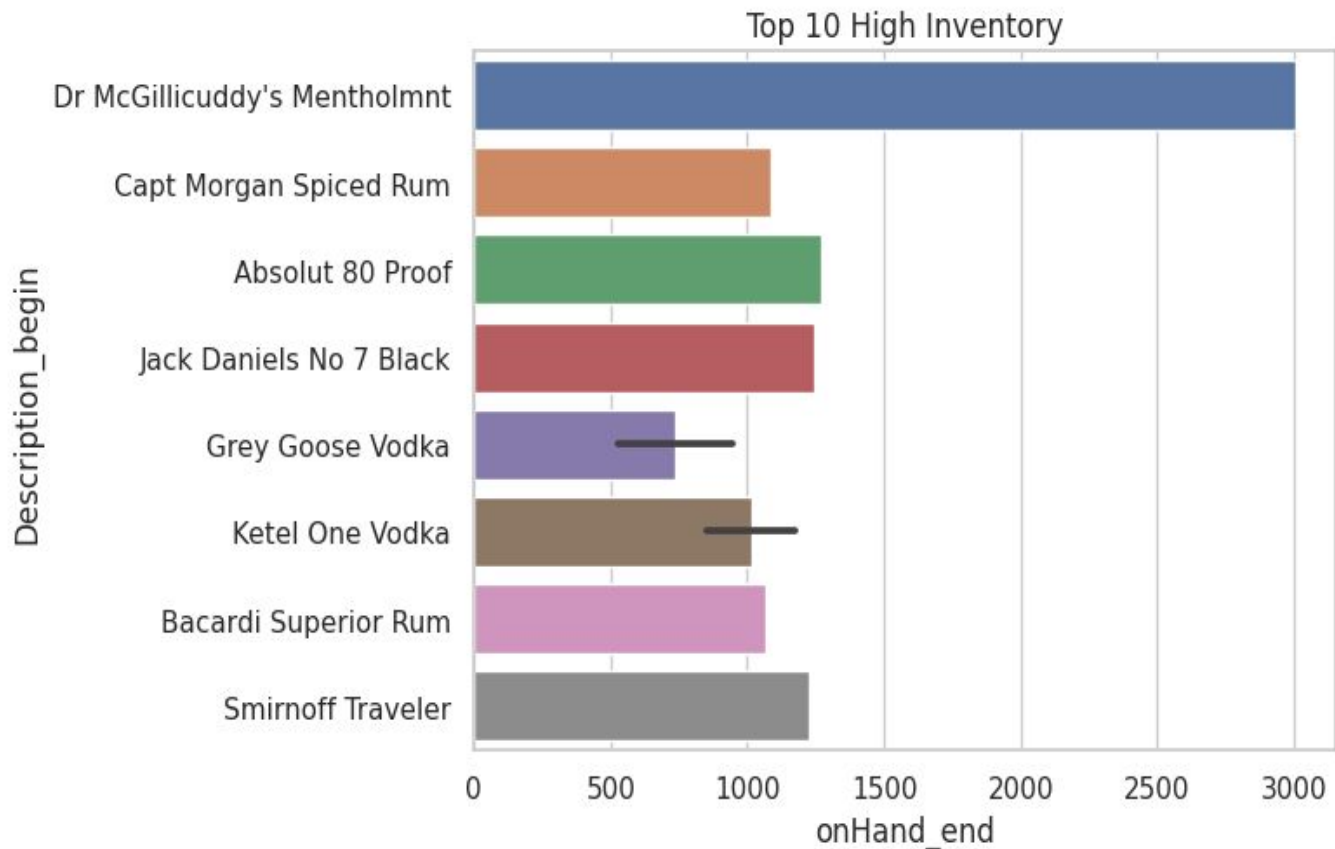
We'll delve into a comprehensive analysis of our inventory data using a combination of SQL, Python, Pandas, and visualization libraries such as Matplotlib and Seaborn. The focus areas include:

- ❖ Inventory Analysis
- ❖ Sales Analysis
- ❖ Optimal Stock Level

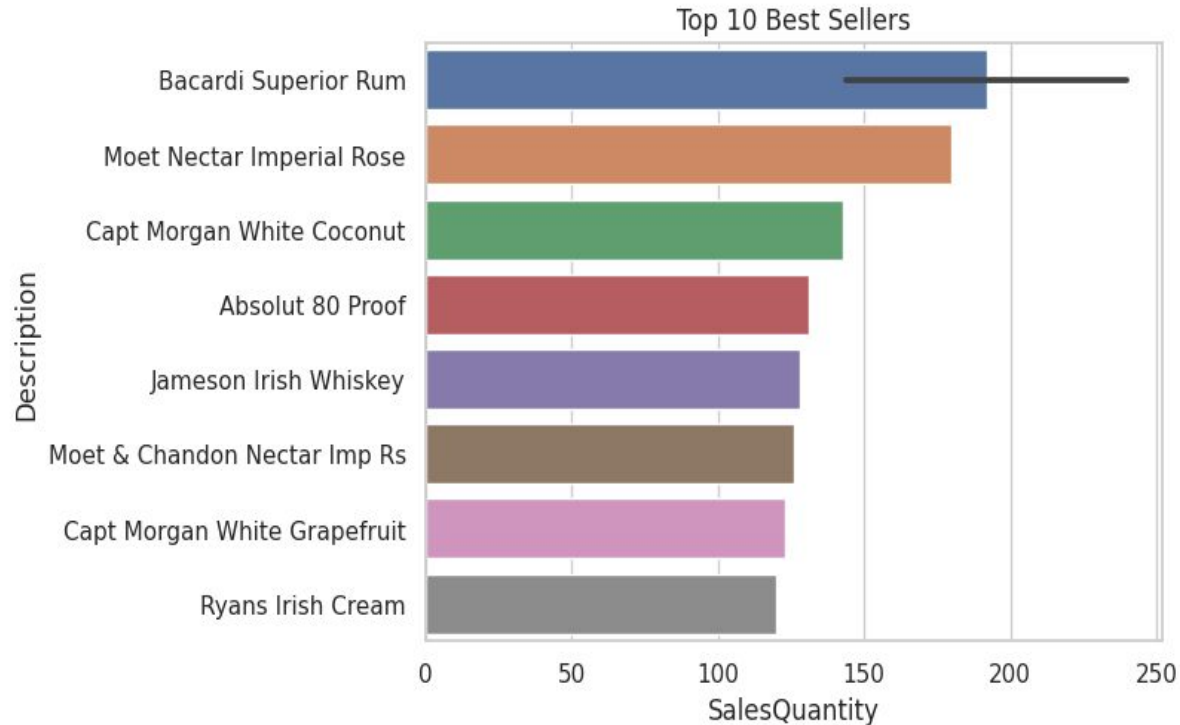
Datasets Overview

- ❖ Ending Inventory : Details products at the end of the inventory period.
- ❖ Purchases : Captures details of all purchases made.
- ❖ Beginning Inventory : Contains information about products at the beginning of the inventory period.
- ❖ Invoice Purchases : Provides insights into invoice-related purchases.
- ❖ Sales : Purpose: Records sales transactions.
- ❖ Purchase Prices : Enlists the purchase prices of products

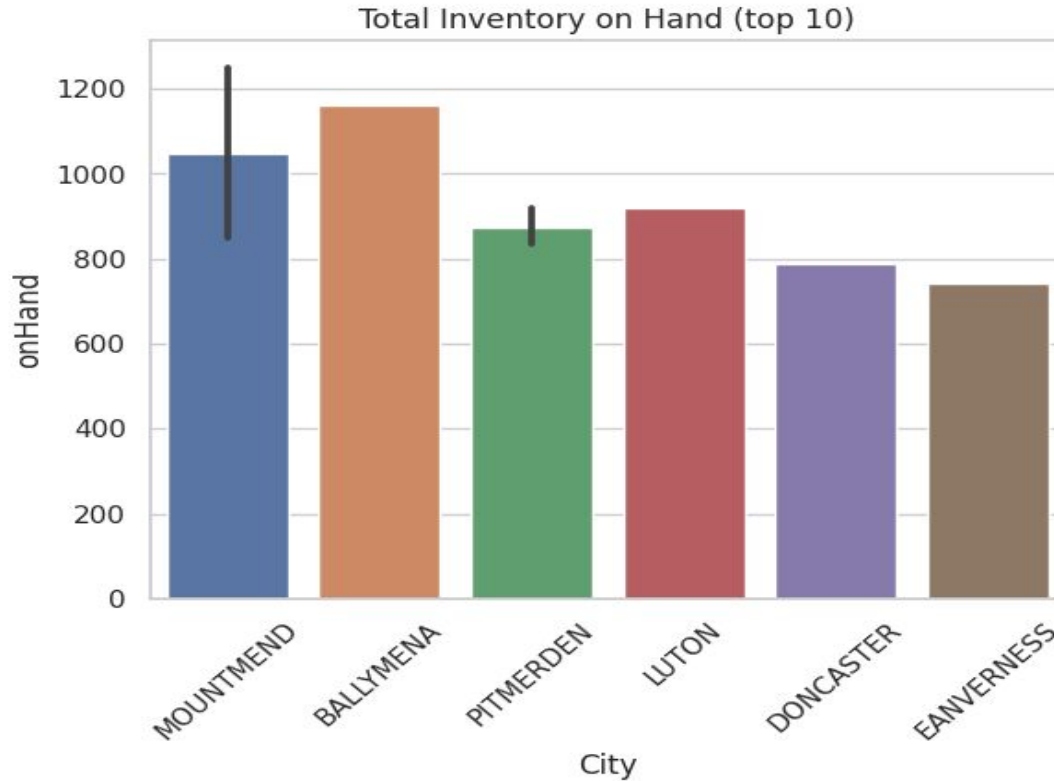
Insights and Visuals : Inventory Analysis



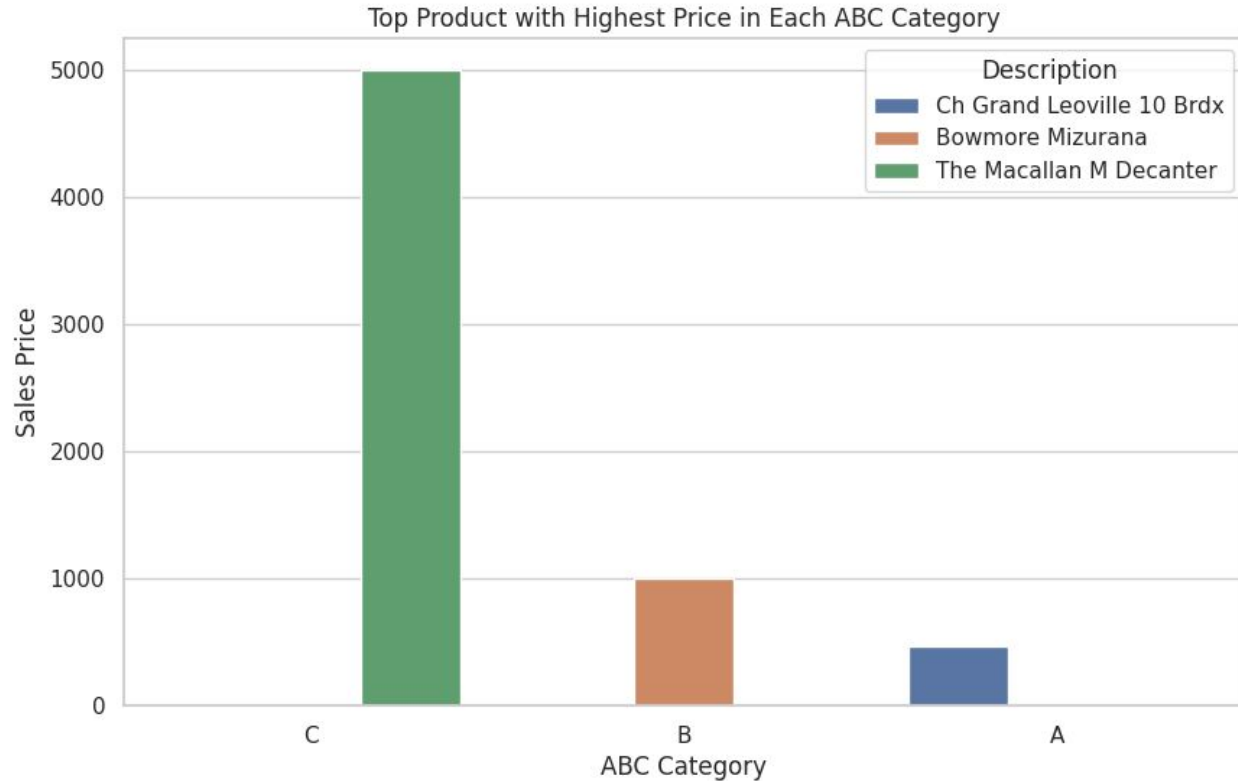
Insights and Visuals : Inventory Analysis



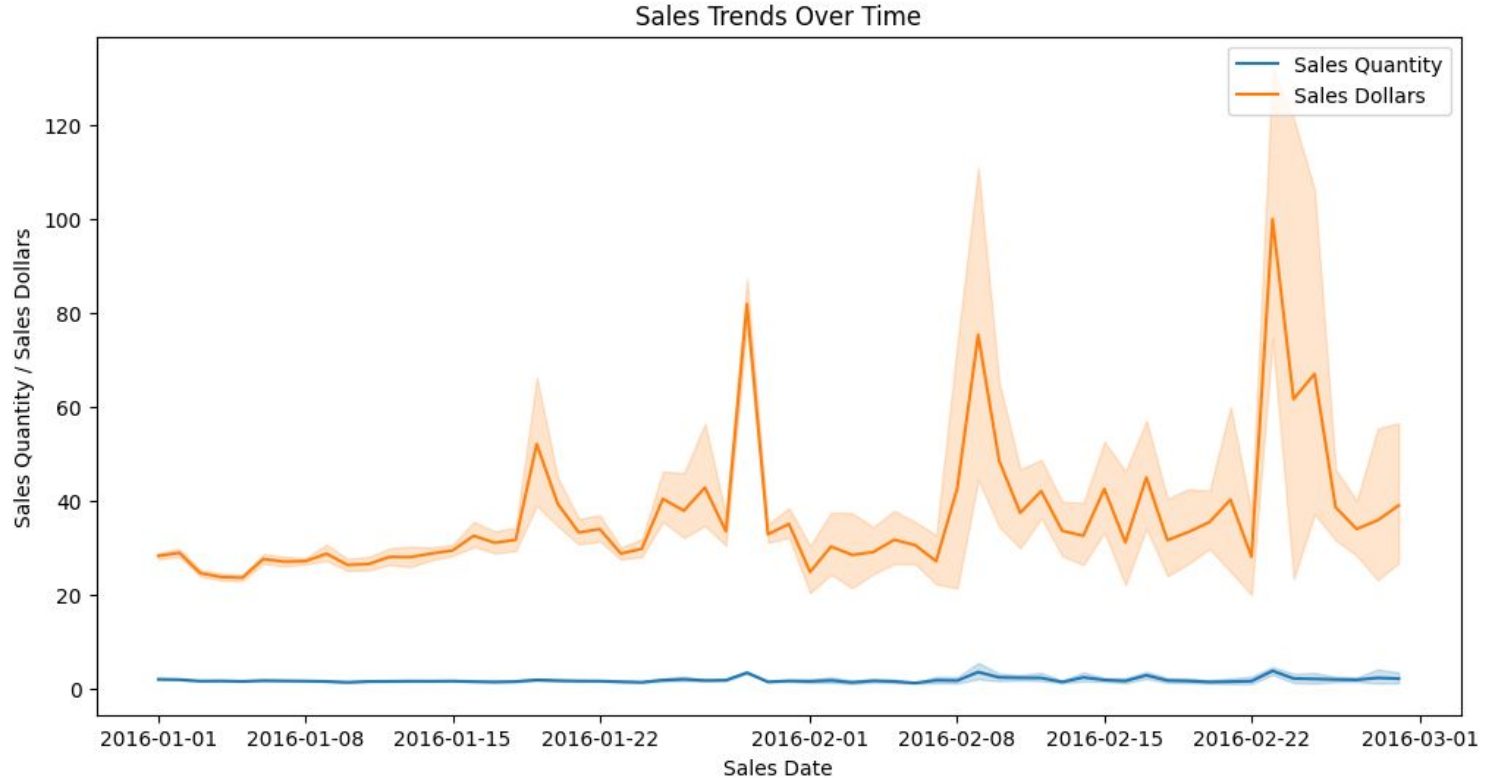
Insights and Visuals: Inventory Analysis



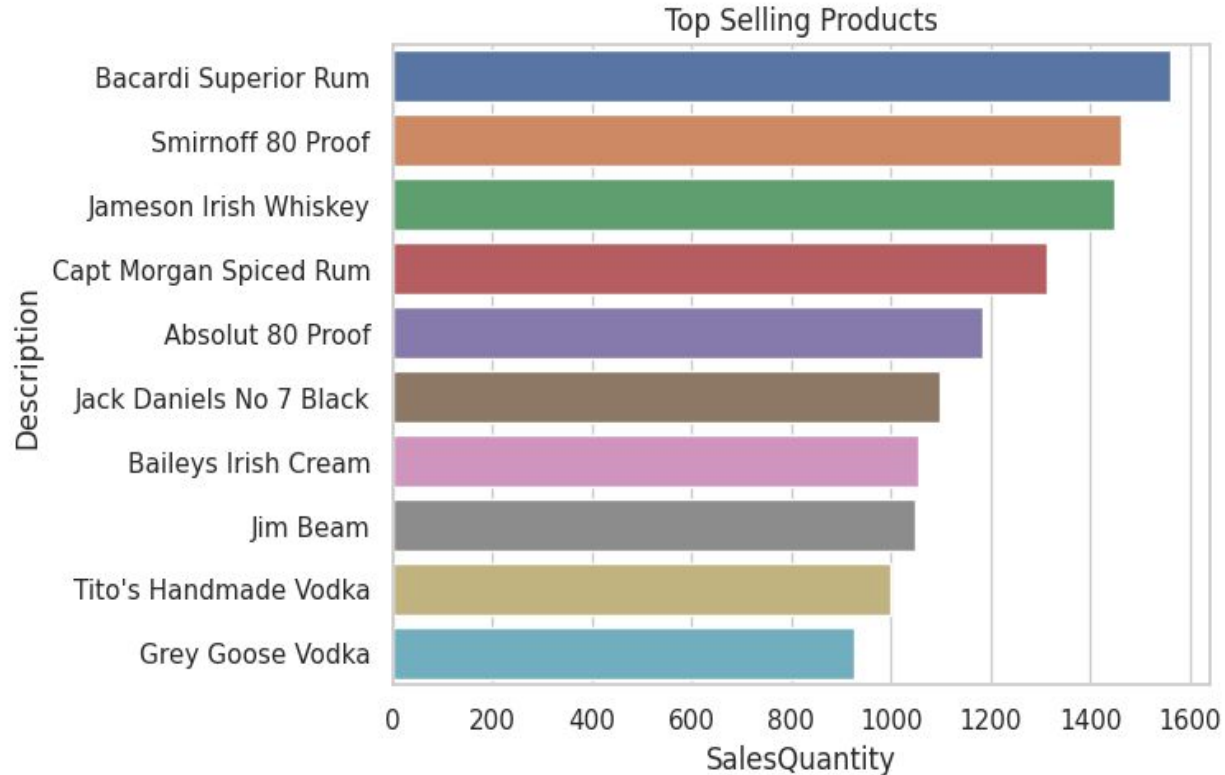
Insights and Visuals: Inventory analysis



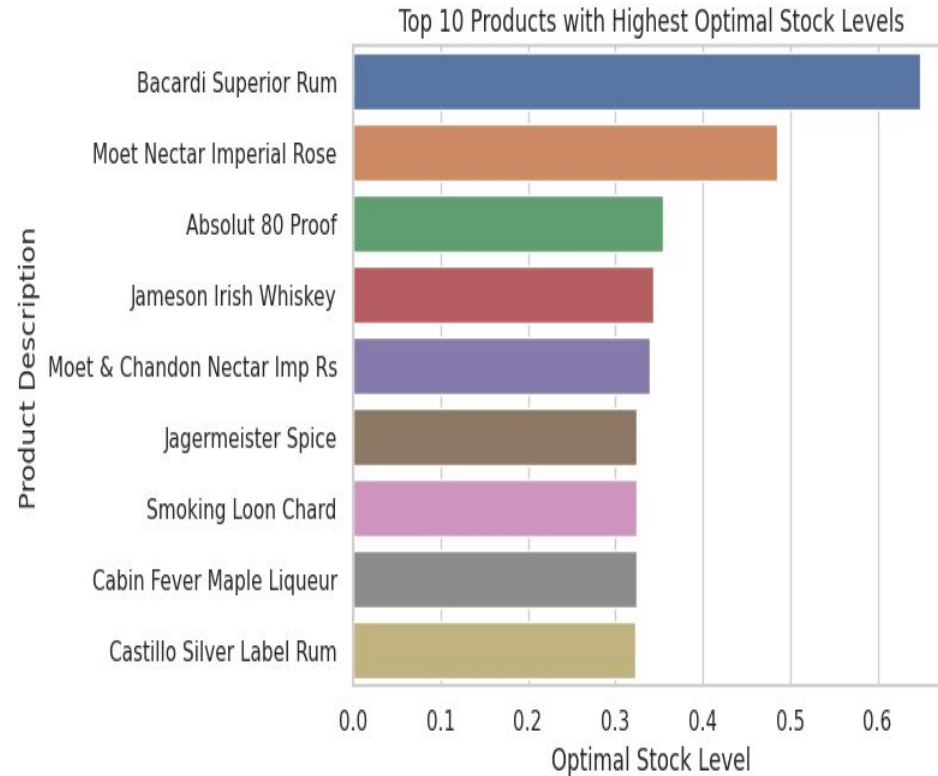
Insights and Visuals: Sales Analysis



Insights and Visuals: Sales Analysis



Insights and Visuals: Optimal Stock Level



Recommendations

- ❖ Strategic Stock Levels: Maintain strategic stock levels for high-demand products like *Bacardi Superior Rum* and *Moet Nectar Imperial Rose* to meet customer demand efficiently.
- ❖ ABC Analysis: Implement ABC analysis to categorize products into high-demand (A), medium-demand (B), and low-demand (C) categories, optimizing inventory management based on product importance.
- ❖ Zero Inventory Products: Investigate and address the reasons for zero inventory in certain products such as *Old New England Egg Nog* and *Barenjager Honey Liqueur*. Consider restocking or revising inventory management strategies.
- ❖ Top-Selling Products: Focus on promoting and ensuring the availability of top-selling products like *Bacardi Superior Rum* to capitalize on high demand. Explore bundling or promotional strategies for mid-range selling products.
- ❖ Optimal Stock Levels: Utilize optimal stock levels, such around 0.5, to strike the right balance. These levels ensure efficient customer demand fulfillment without excess inventory.