**Project Overview:**

**Title: Inventory Optimization for Mint Classics Company**

**Objective:**

To conduct an exploratory data analysis using MySQL Workbench to investigate patterns and identify opportunities for reducing or reorganizing inventory in Mint Classics Company's storage facilities. The analysis aims to provide data-driven recommendations to support the decision of closing one of the storage facilities while maintaining timely service to customers.

**Data Model and Sample Data:**

I will begin by importing the provided Mint Classics relational database into MySQL Workbench. This database includes tables representing products, inventory, sales, and warehouse locations, among others. The data model will guide my exploration and analysis of the data.

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**Approach:**

**Explore Products in Inventory:**

Identify the types of products stored in the inventory.

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Analyze inventory levels and turnover rates for different product categories.

Determine which products contribute most to inventory levels.

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**Evaluate Inventory-Sales Relationship:**

Investigate the relationship between inventory numbers and sales figures.

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**Identify Slow-Moving Items:**

Analyze sales data to identify products with low or stagnant sales.

Determine if any items are candidates for discontinuation from the product line.

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**Assess Warehouse Utilization:**

Examine the current warehouse locations and storage arrangements.

Evaluate the potential for reorganizing inventory to optimize warehouse space.

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**Findings:**

1. Warehouse Analysis:Warehouse D has the lowest quantity of products at 79,380 and the fewest number of unique products (23). This suggests high sales turnover and lower stock levels. Conversely, Warehouse B has the highest quantity of products at 219,183 and the highest number of unique products (38), indicating either lower sales turnover or a larger inventory.
2. Product Analysis:
   1. Product with the Highest Sales: S18\_3232, 1992 Ferrari 360 Spider red, Total Quantity Ordered: 1808, Inventory Sales Difference: 6539, Warehouse: B (East).
   2. Product with the Lowest Sales: S18\_3233, 1985 Toyota Supra, Total Quantity Ordered: 0, Inventory Sales Difference: 7733, Warehouse: B (East).
   3. Product with the Highest Inventory: S12\_2823, 2002 Suzuki XREO, Quantity In Stock: 9997, Total Quantity Ordered: 1028, Inventory Sales Difference: 8969, Warehouse: A (North).
   4. Product with the Lowest Inventory: S24\_2000, 1960 BSA Gold Star DBD34, Quantity In Stock: 15, Total Quantity Ordered: 1015, Inventory Sales Difference: -1000, Warehouse: A (North).
   5. Product with the Highest Inventory Sales Difference: S12\_2823, 2002 Suzuki XREO, Quantity In Stock: 9997, Total Quantity Ordered: 1028, Inventory Sales Difference: 8969, Warehouse: A (North).
   6. Product with the Lowest Inventory Sales Difference: S24\_2000, 1960 BSA Gold Star DBD34, Quantity In Stock: 15, Total Quantity Ordered: 1015, Inventory Sales Difference: -1000, Warehouse: A (North).
3. Overall Assessment: The top 10 average quantity ordered products are spread across all warehouses, suggesting a balanced distribution of popular products.

**Recommendations:**

1. Don't Close Warehouses: Since the top 10 average quantity ordered products are distributed across all warehouses, closing any warehouse could potentially disrupt timely delivery and customer satisfaction. Maintaining warehouses in different geographical locations ensures efficient distribution and delivery of products to customers.
2. Match Inventory with Demand: Matching product inventory with the quantity ordered is crucial to avoid overstocking or understocking. By optimizing inventory management practices, the company can minimize carrying costs, reduce the risk of stockouts, and improve overall operational efficiency.

**SQL CODE**

[Insightful-Analytics-Hub/INVENTORY DATA ANALYSIS- SQL WORKBENCH.sql at main · Lape2/Insightful-Analytics-Hub (github.com)](https://github.com/Lape2/Insightful-Analytics-Hub/blob/main/INVENTORY%20DATA%20ANALYSIS-%20SQL%20WORKBENCH.sql)