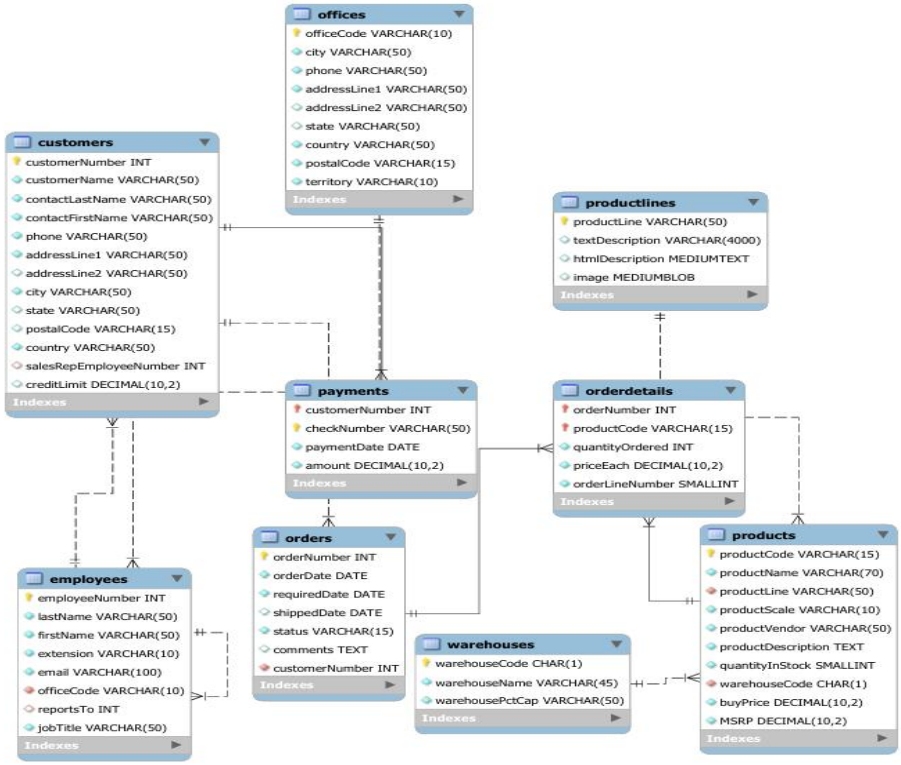
Mint Classics Inventory Analysis Report

This report analyzes inventory and sales data for Mint Classics Company using SQL queries. The goal is to recommend strategies to reduce or reorganize inventory to support the closure of a warehouse while maintaining service efficiency. Our findings highlight opportunities to drop non-selling items, redistribute stock, and optimize inventory levels, ensuring continued performance with lower operational costs.

Database & Business Understanding

Database Overview:

- **Tables used: products, warehouses, orderdetails**
- **Key Fields:**
    - productCode, quantityInStock, buyPrice
    - warehouseCode, warehouseName
    - quantity Ordered



Data Analysis & SQL Queries

1.View relationships (example: how products connect to warehouses)

This query shows which product is stored in which warehouse. It's useful to understand product distribution and how warehouses are being utilized.

```
#View relationships (example: how products connect to warehouses)
SELECT
    p.productCode,
    p.productName,
    p.warehouseCode,
    w.warehouseName
FROM
    products p
JOIN
    warehouses w ON p.warehouseCode = w.warehouseCode
LIMIT 10;
```

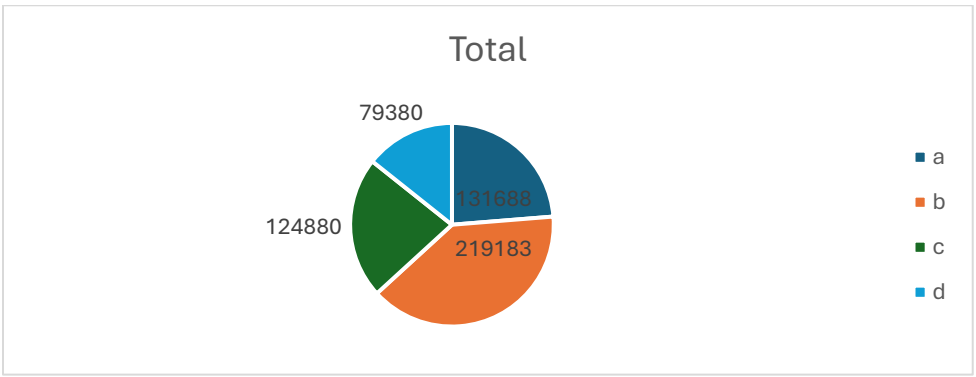
Result Grid

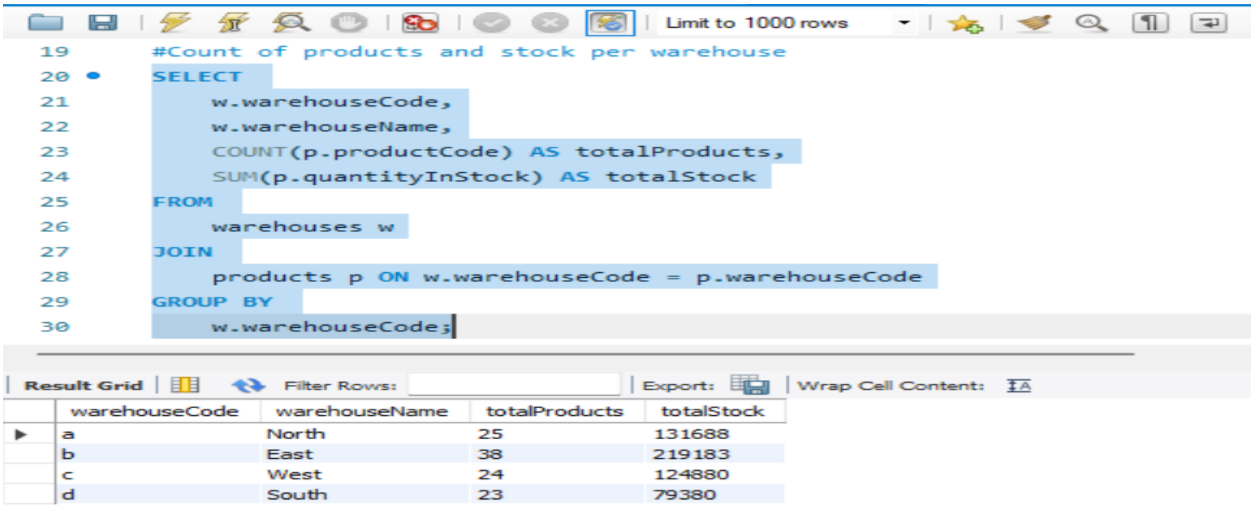
productCode	productName	warehouseCode	warehouseName
S10_1678	1969 Harley Davidson Ultimate Chopper	a	North
S10_2016	1996 Moto Guzzi 1100i	a	North
S10_4698	2003 Harley-Davidson Eagle Drag Bike	a	North
S12_2823	2002 Suzuki XREO	a	North
S18_1662	1980s Black Hawk Helicopter	a	North
S18_2581	P-51-D Mustang	a	North
S18_2625	1936 Harley Davidson El Knucklehead	a	North

Result 16

2.Count of products and stock per warehouse

This summarizes the number of different products and the total stock held in each warehouse. Helps identify which warehouse has more stock and potentially which can be considered for closure.





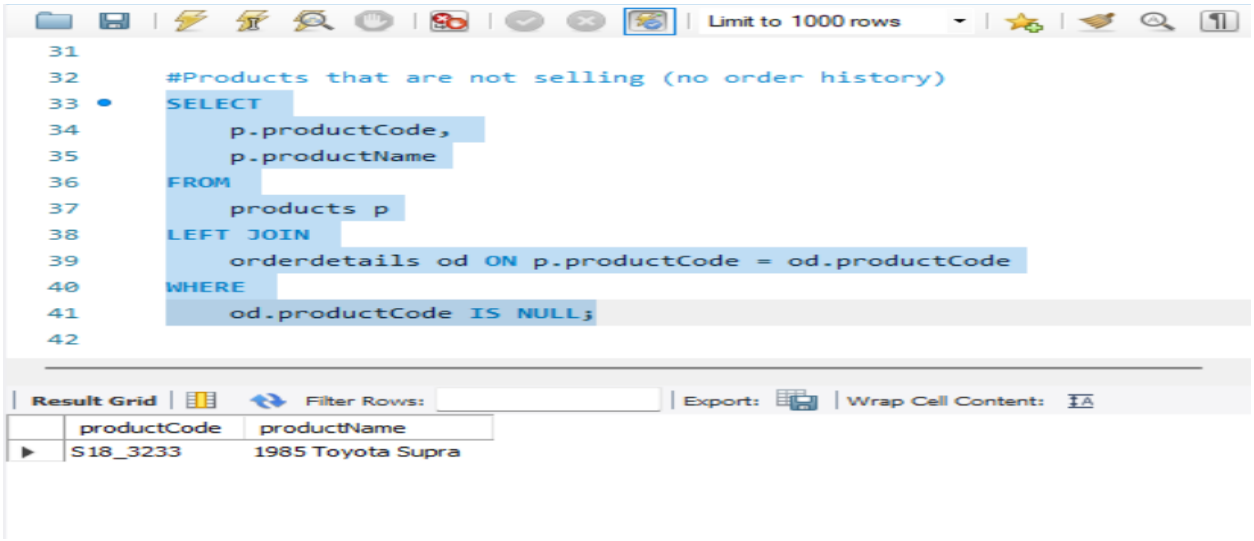
```sql
#Count of products and stock per warehouse
SELECT
    w.warehouseCode,
    w.warehouseName,
    COUNT(p.productCode) AS totalProducts,
    SUM(p.quantityInStock) AS totalStock
FROM
    warehouses w
JOIN
    products p ON w.warehouseCode = p.warehouseCode
GROUP BY
    w.warehouseCode;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

warehouseCode	warehouseName	totalProducts	totalStock
a	North	25	131688
b	East	38	219183
c	West	24	124880
d	South	23	79380

3.Products that are not selling (no order history)

Lists products that have never been ordered. These are candidates for being discontinued or removed from inventory to save storage space.



```sql
#Products that are not selling (no order history)
SELECT
    p.productCode,
    p.productName
FROM
    products p
LEFT JOIN
    orderdetails od ON p.productCode = od.productCode
WHERE
    od.productCode IS NULL;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

productCode	productName
S18_3233	1985 Toyota Supra

4.Low and Top selling Products

Identifies products that sold less than 10 units. Helps to target low-performing items which might be removed to reduce inventory.

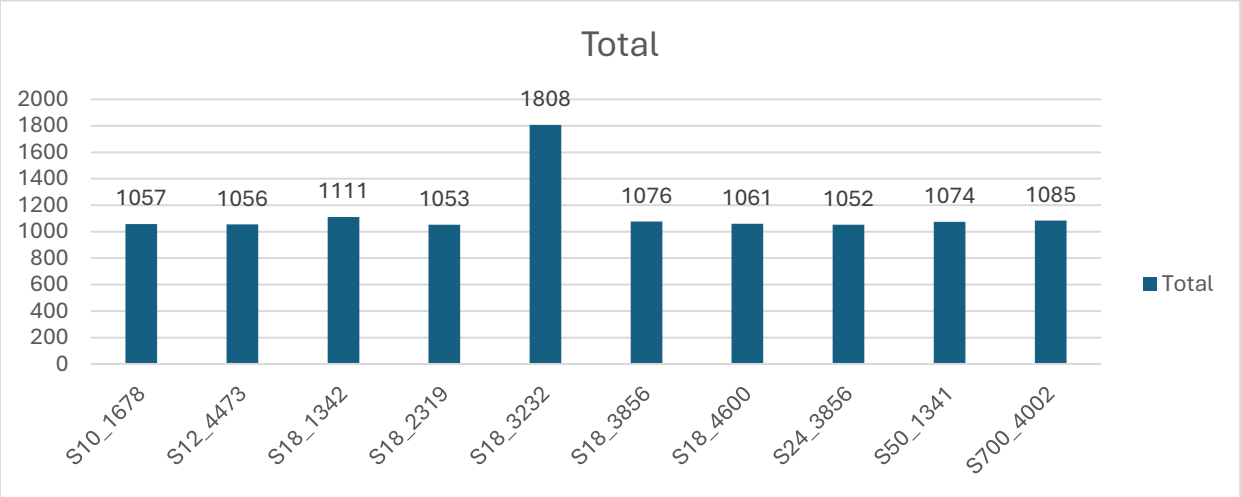
Lists the 10 best-selling products. These items are important to keep in stock and should not be impacted by warehouse closure.

```sql
#Top-selling products
SELECT
    p.productCode,
    p.productName,
    SUM(od.quantityOrdered) AS totalSold
FROM
    products p
JOIN
    orderdetails od ON p.productCode = od.productCode
GROUP BY
    p.productCode
ORDER BY
    totalSold DESC
LIMIT 10;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

productCode	productName	totalSold
S18_3232	1992 Ferrari 360 Spider red	1808
S18_1342	1937 Lincoln Berline	1111
S700_4002	American Airlines: MD-11S	1085
S18_3856	1941 Chevrolet Special Deluxe Cabriolet	1076
S50_1341	1930 Buick Marquette Phaeton	1074

Result 11



5.Compare inventory vs total sold

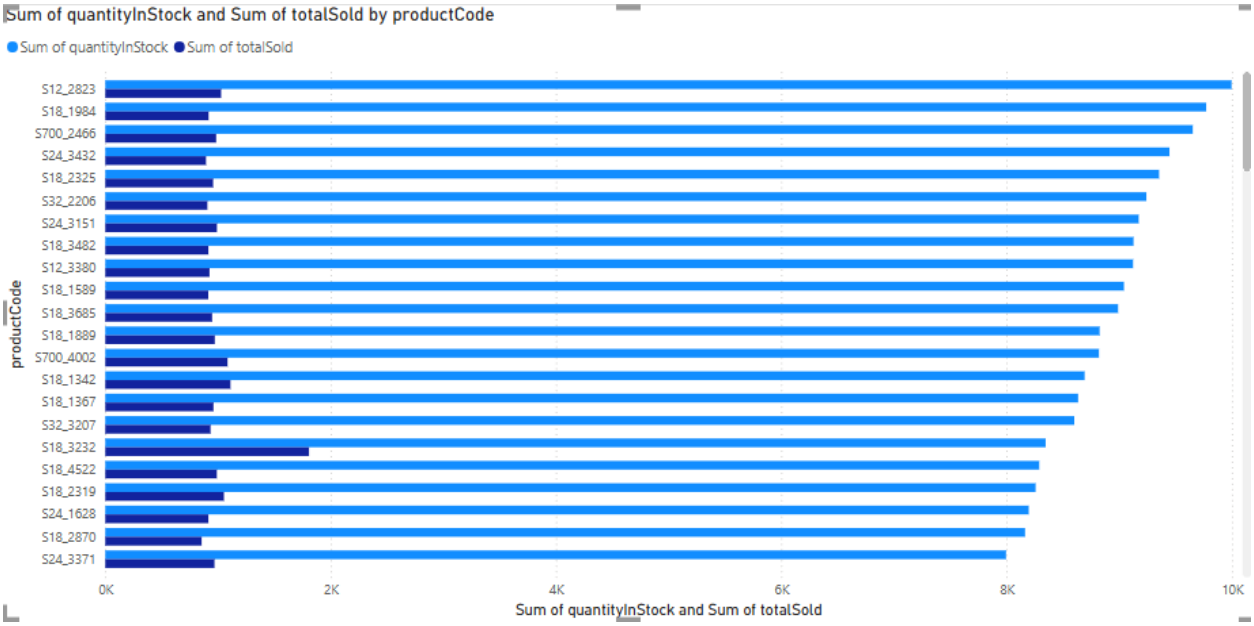
Compares how many units are in stock vs. how many have been sold. Helps in adjusting inventory levels to match demand and avoid overstocking.

```sql
#Compare inventory vs total sold
SELECT
    p.productCode,
    p.productName,
    p.quantityInStock,
    COALESCE(SUM(od.quantityOrdered), 0) AS totalSold
FROM
    products p
LEFT JOIN
    orderdetails od ON p.productCode = od.productCode
GROUP BY
    p.productCode
ORDER BY
    quantityInStock DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

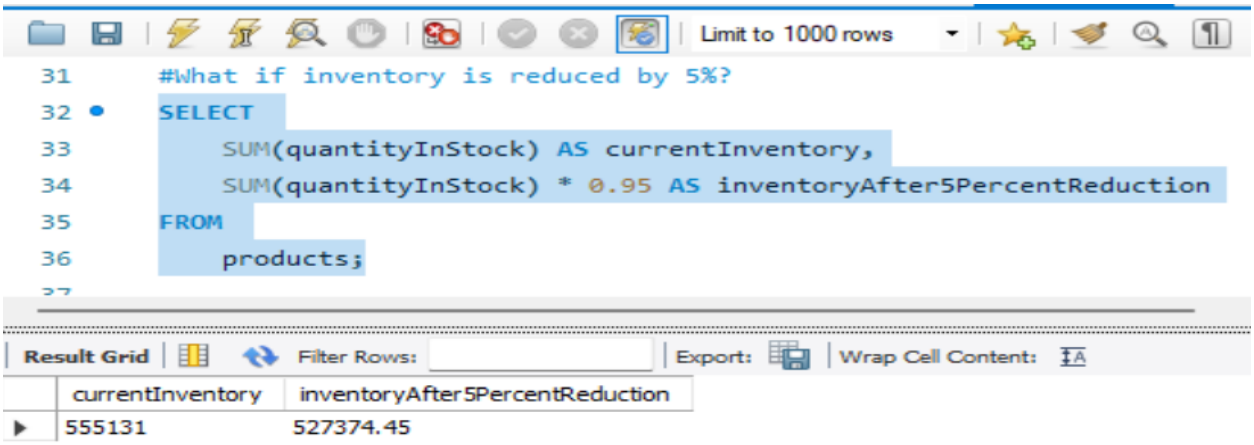
productCode	productName	quantityInStock	totalSold
S12_2823	2002 Suzuki XREO	9997	1028
S18_1984	1995 Honda Civic	9772	917
S700_2466	America West Airlines B757-200	9653	984
S24_3432	2002 Chevy Corvette	9446	894
S18_2325	1932 Model A Ford J-Coupe	9354	957

Result 12



5.What if inventory is reduced by 5%?

Simulates the effect of reducing total inventory by 5%. Useful for a what-if analysis to see if this reduction could help close a warehouse without hurting sales.



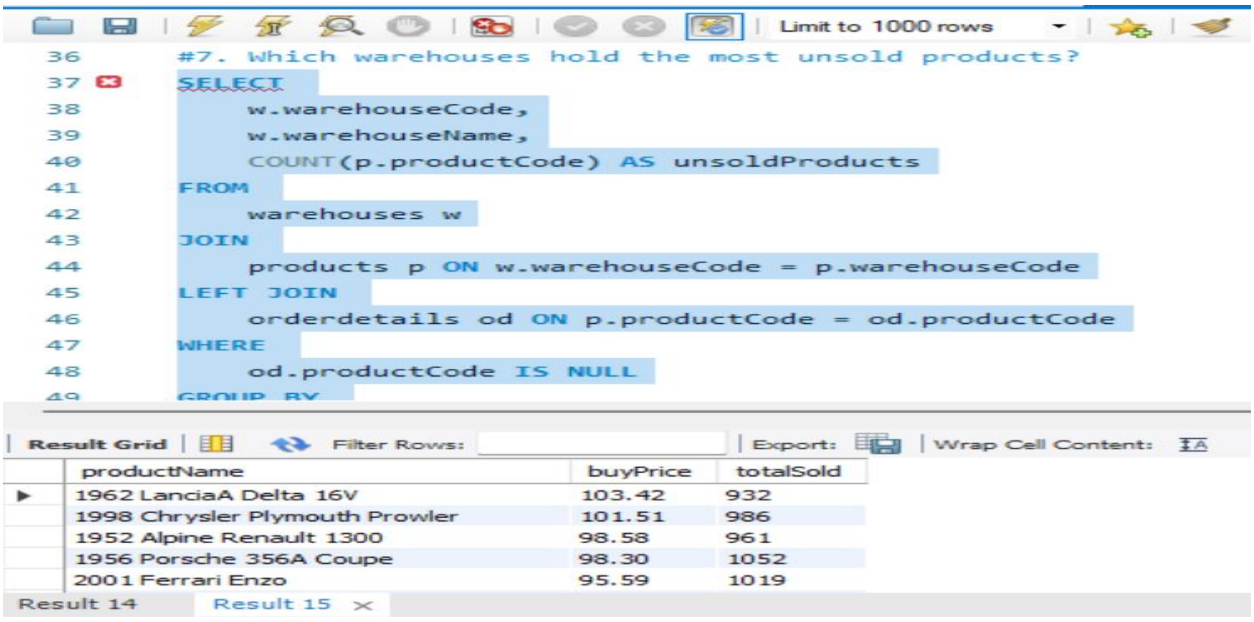
```
31    #What if inventory is reduced by 5%?
32    SELECT
33        SUM(quantityInStock) AS currentInventory,
34        SUM(quantityInStock) * 0.95 AS inventoryAfter5PercentReduction
35    FROM
36        products;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

currentInventory	inventoryAfter5PercentReduction
555131	527374.45

6. Which warehouses hold the most unsold products?

Shows which warehouses store the highest number of products that were never sold. This can indicate which warehouses are underperforming and might be closed.

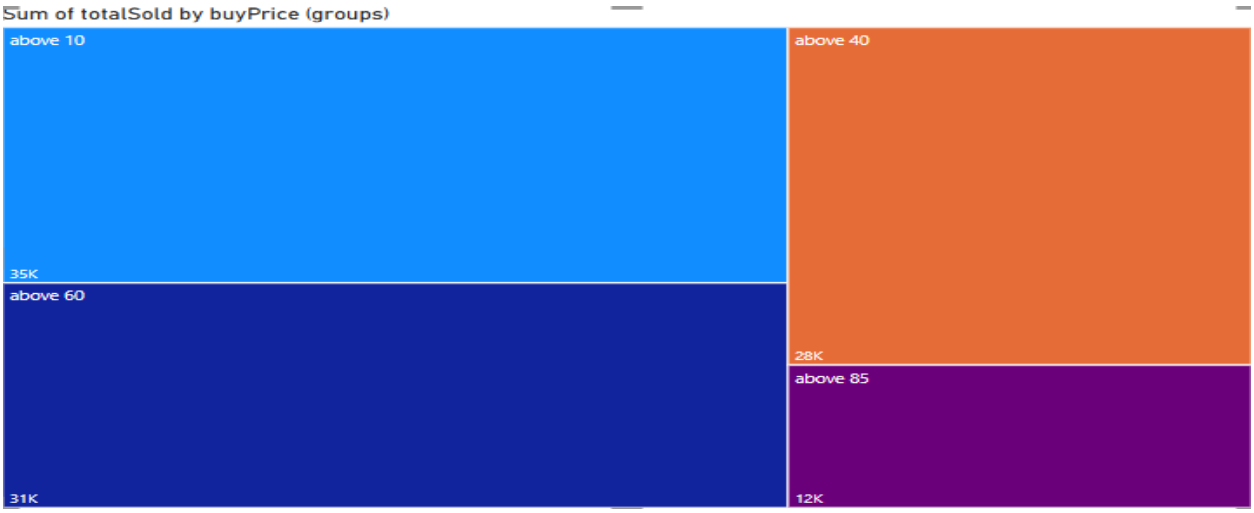


```
36    #7. Which warehouses hold the most unsold products?
37    SELECT
38        w.warehouseCode,
39        w.warehouseName,
40        COUNT(p.productCode) AS unsoldProducts
41    FROM
42        warehouses w
43    JOIN
44        products p ON w.warehouseCode = p.warehouseCode
45    LEFT JOIN
46        orderdetails od ON p.productCode = od.productCode
47    WHERE
48        od.productCode IS NULL
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

productName	buyPrice	totalSold
1962 LanciaA Delta 16V	103.42	932
1998 Chrysler Plymouth Prowler	101.51	986
1952 Alpine Renault 1300	98.58	961
1956 Porsche 356A Coupe	98.30	1052
2001 Ferrari Enzo	95.59	1019

Result 14 | Result 15



Conclusion

Based on the above analysis, the following actions are recommended:

1. Consider closing the warehouse with the highest volume of unsold products, as it contributes least to revenue while occupying storage space.
2. Phase out or heavily discount non-selling and low-selling products to free up space.
3. Adjust inventory levels based on product sales performance, especially for overstocked low-demand items.
4. Maintain stock for top-selling products across fewer warehouses to ensure customer orders can still be fulfilled within 24 hours.
5. Re-evaluate pricing strategy for higher-priced items to improve movement.