📦 Amazon SCM Dashboard – Vendor Analytics & Automation

A streamlined tool for analyzing Amazon sales and inventory.

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❗ Problem Statement

- - Vendors on Amazon lack:
- • Actionable sales insights
- • Easy-to-use interface for analytics
- • Inventory planning tools
- • Bulk analysis and operational decisions

✅ Our Solution

- - Dashboard using Streamlit to:
- • Visualize revenue, product & regional trends
- • Simulate inventory restocking
- • Provide insights with minimal overhead
- • AI-assisted SKU analysis (future-ready)

🛠️ Tech Stack Used

- - Frontend: Streamlit (Python)

- - Backend (original): Node.js + Express (retired)

- - Data: SQL Database (Amazon Sales Report)

- - Visualization: Plotly, Seaborn, Matplotlib

- - Other: Pandas, NumPy, OpenAI

Dataset

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|  3 | 403-9615377-8133951 | Cancelled                  | Merchant | Amazon.in | Standard  | J0341   | J0341-DR-L       | Oven    | L   | B099NRCT7B |          |  0 | INR | 753.33 | PUDUCHERRY | PUDUCHERRY    | 605008 |      | IN
|    |                     |                            |          |           |           |         |                  |         |     |            |          |    |     |        |            |               |        |      |
|                                                                                                                                          |      |  0 | Easy Ship
|  4 | 407-1069790-7240320 | Shipped                    | Amazon   | Amazon.in | Expedited | JNE3671 | JNE3671-TU-XXXL  | Watch   | 3XL | B098714BZP | Shipped  |  1 | INR | 574.00 | CHENNAI    | TAMIL NADU    | 600073 |      | IN
|    |                     |                            |          |           |           |         |                  |         |     |            |          |    |     |        |            |               |        |      |
|                                                                                                                                          |      |  0 |
|  5 | 404-1490984-4578765 | Shipped                    | Amazon   | Amazon.in | Expedited | Set264  | Set264-KR-NP-XL  | Toaster | XL  | B08YN7XDSG | Shipped  |  1 | INR | 824.00 | GHAZIABAD  | UTTAR PRADESH | 201102 |      | IN
|    | IN Core Free Shipping 2015/04/08 23-48-5-108
|                                                                                                                                          |      |  0 |
|  6 | 408-5748499-6859555 | Shipped                    | Amazon   | Amazon.in | Expedited | J0095   | J0095-Set-L      | Toaster | L   | B08CMHNWBN | Shipped  |  1 | INR | 653.00 | CHANDIGARH | CHANDIGARH    | 160036 |      | IN
|    | IN Core Free Shipping 2015/04/08 23-48-5-108
|                                                                                                                                          |      |  0 |
|  7 | 406-7807733-3785945 | Shipped - Delivered to Buyer | Merchant | Amazon.in | Standard | JNE3405 | JNE3405-KR-S     | trimmer | S   | B081WX4G4Q | Shipped  |  1 | INR | 399.00 | HYDERABAD  | TELANGANA     | 500032 |      | IN
|    | Amazon PLCC Free-Financing Universal Merchant AAT-WNKTBO3K27EJC,Amazon PLCC Free-Financing Universal Merchant AAT-QX3UCCJESKPA2,Amazon PLCC Free-Financing Universal Merchant AAT-5QQ7BIYYQEDN2,Amazon PLCC Free-Financing Universal Merchant AAT-DSJ2QRXXWXVMQ,Ama
zon PLCC Free-Financing Universal Merchant AAT-CXJHMC2YJUK76,Amazon PLCC Free-Financing Universal Merchant AAT-CC4FAVTYR4X7C,Amazon PLCC Free-Financing Universal Merchant AAT-XXRCW6NZEPZI4,Amazon PLCC Free-Financing Universal Merchant AAT-E0KPWFWYW7Y6I,Amazon PLCC Fre
e-Financing Universal Merchant AAT-ZYL5UPUNW6T62,Amazon PLCC Free-Financing Universal Merchant AAT-ETXQ3XXWMRXBG,Amazon PLCC Free-Financing Universal Merchant AAT-7X3XCTYG64VBE,Amazon PLCC Free-Financing Universal Merchant AAT-7CHGD3WTS3MHM,Amazon PLCC Free-Financing
Universal Merchant AAT-26ZDKNME27X42,Amazon PLCC Free-Financing Universal Merchant AAT-4ZF5KN6E4LJK4,Amazon PLCC Free-Financing Universal Merchant AAT-7RCXIKUAX7DDY,Amazon PLCC Free-Financing Universal Merchant AAT-BRSZZ45H6MHAO,Amazon PLCC Free-Financing Universal Me
rchant AAT-MKLXOOZWQL7GO,Amazon PLCC Free-Financing Universal Merchant    |-CB7UNXEXGIJTC,Amazon PLCC Free-Financing Universal Merchant #MP-gzasho-1593152694811,Amazon PLCC Free-Financing Universal Merchant AAT-WLBA4GZ52EAH4 |   0 | Easy Ship
|  8 | 407-5443024-5233168 | Cancelled                  | Amazon   | Amazon.in | Expedited | Set200  | Set200-KR-NP-A-XXXL | Toaster | 3XL | B08L91ZZXN | Cancelled |  0 |     | NULL | HYDERABAD  | TELANGANA     | 500008 |      | IN
|    | IN Core Free Shipping 2015/04/08 23-48-5-108
|                                                                                                                                          |      |  0 |
|  9 | 402-4393761-0311520 | Shipped                    | Amazon   | Amazon.in | Expedited | JNE3461 | JNE3461-KR-XXL   | trimmer | XXL | B08B3XF5MH | Shipped  |  1 | INR | 363.00 | Chennai    | TAMIL NADU    | 600041 |      | IN
|    |                     |                            |          |           |           |         |                  |         |     |            |          |    |     |        |            |               |        |      |
|                                                                                                                                          |      |  0 |
| 10 | 407-5633625-6970741 | Shipped                    | Amazon   | Amazon.in | Expedited | JNE3160 | JNE3160-KR-G-S   | trimmer | S   | B07K3YQLF1 | Shipped  |  1 | INR | 685.00 | CHENNAI    | TAMIL NADU    | 600073 |      | IN
|    |                     |                            |          |           |           |         |                  |         |     |            |          |    |     |        |            |               |        |      |
|                                                                                                                                          |      |  0 |
```

Main Dashboard

- Four tabs for revenue analysis, product performance, regional trends , inventory planner and AI insights
- Filters on the left , allowing vendor to select product category and month .

🎯 Revenue Analysis

- - Total Revenue, Avg Order Value, Returns

💰 Revenue Performance
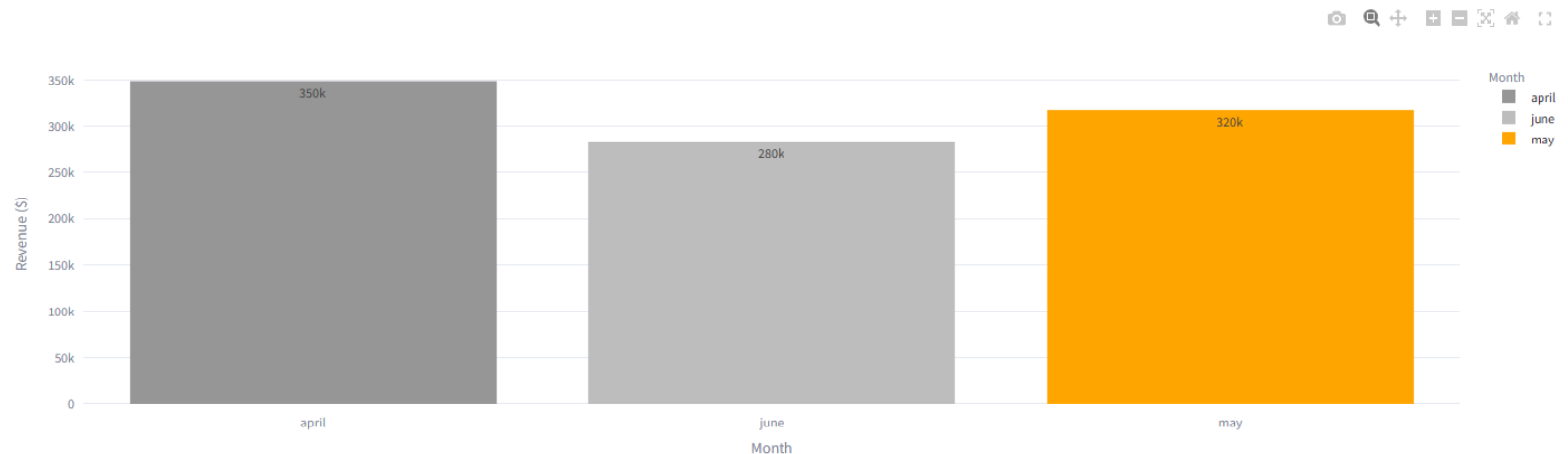
Total Sales	Avg Order Value	Cancelled Orders	Returned Orders
$949,646.84	$7.85	18,319	2,097

- - Monthly revenue trends

Monthly Revenue Trend

🎯 Revenue Analysis

- - Revenue by category

Revenue by Product Category

■	Set
■	kurta
■	Western Dress
■	Top
■	Ethnic Dress
□	Blouse
□	Bottom
■	Saree
■	Dupatta

27.1%

49.9%

14.3%

6.81%

1.01% 0.00117%

0.584% 0.158%

0.192%

📦 Product Insights

- - Top-selling product categories

Top Products by Revenue
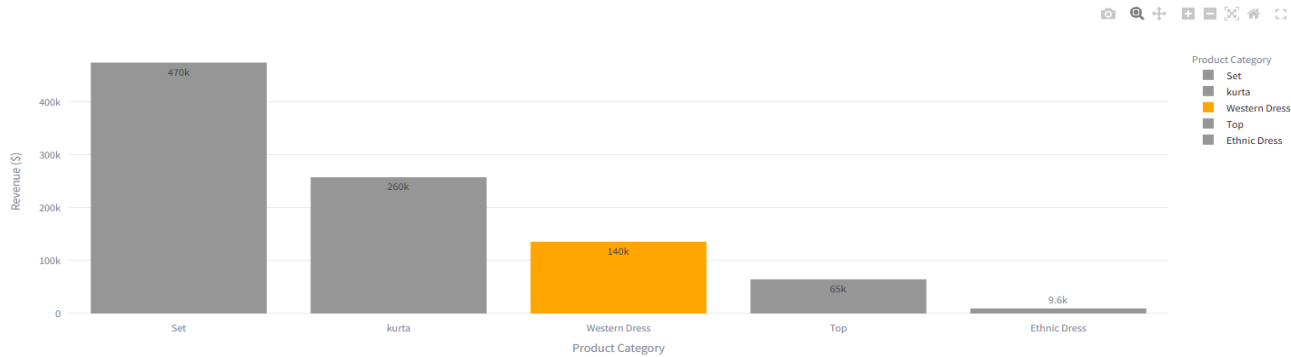
- - Revenue by size

Sales by Product Size
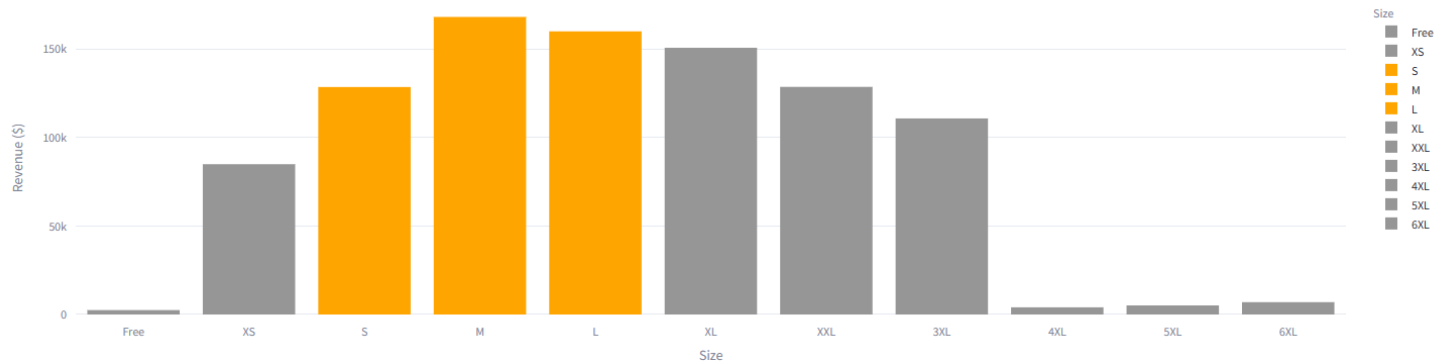
🌍 Regional Trends

- - Top states by revenue

Top States by Revenue
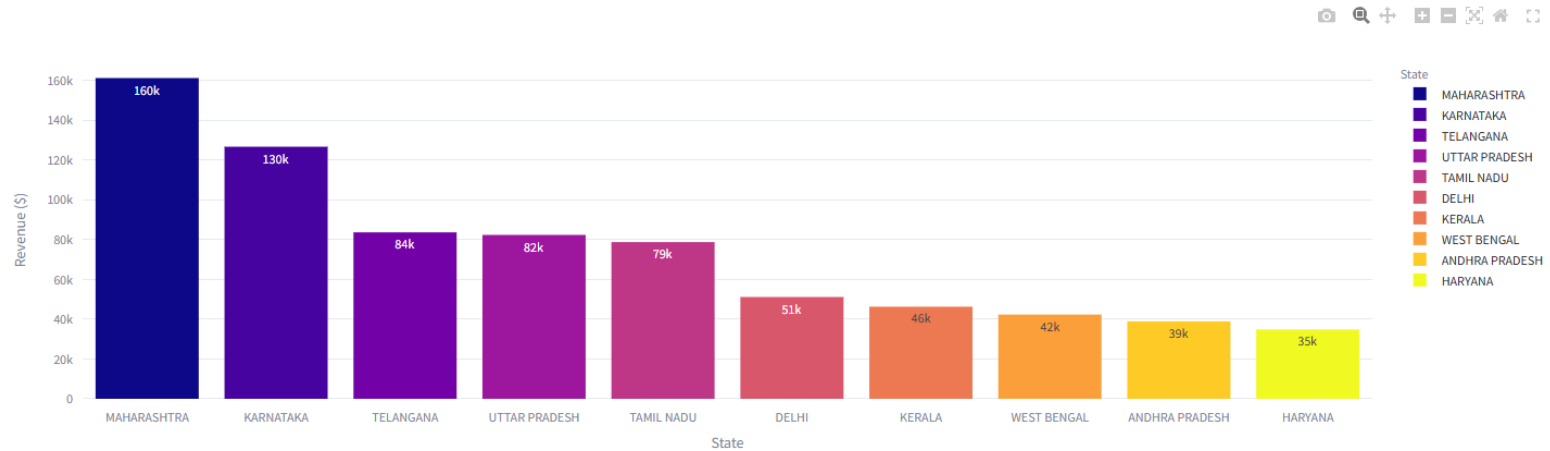
- - Popular categories per region

Popular Categories by State
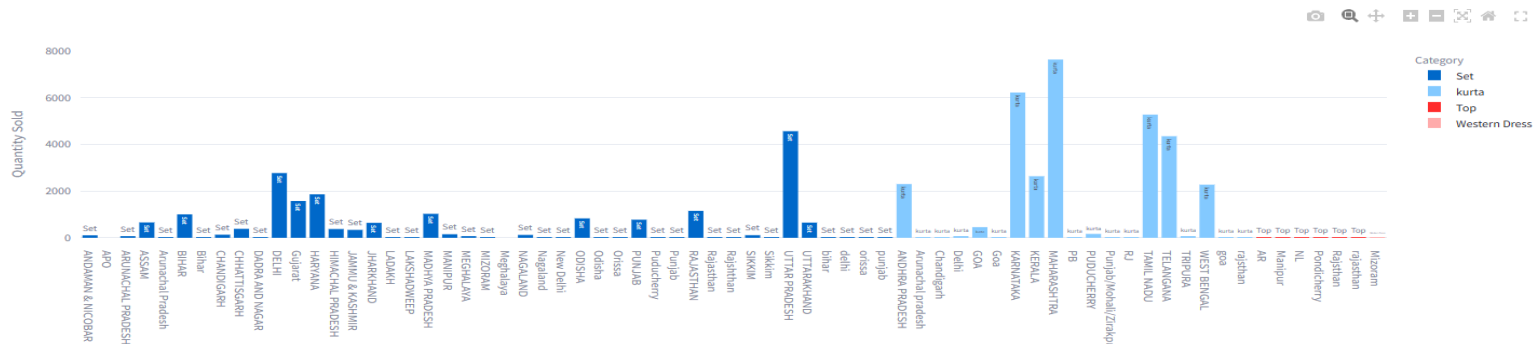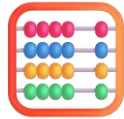
🧮 Inventory Planner

- - Input SKU + stock → get recommended stock
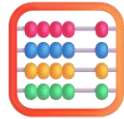
- - Based on existing buffer quantity logic

Choose Parameters

Buffer Percentage for Safety Stock

31

0   100

Forecasting based on average monthly demand (April - June) per SKU.

	sku	monthly_forecast	recommended_restock
4,547	JNE3797-KR-L	220.3333	289
4,548	JNE3797-KR-M	186.6667	245
4,549	JNE3797-KR-S	167.3333	219
2,746	JNE3405-KR-L	161.3333	211
1,346	J0230-SKD-M	155.6667	204
1,347	J0230-SKD-S	139.6667	183
4,550	JNE3797-KR-XL	138.3333	181
2,748	JNE3405-KR-S	133	174
4,551	JNE3797-KR-XS	128.6667	169
6,304	SET268-KR-NP-XL	124	162

🧮 Inventory Planner

- - Input SKU + stock → get recommended stock

- - Based on existing buffer quantity logic

📥 Stock Adjustment Calculator

Select SKU

SET268-KR-NP-XL	⌄

Enter Current Stock

50	− +

📦 Restock Summary for SET268-KR-NP-XL

- **Recommended Restock:** 162
- **Current Stock:** 50
- 👉 **Stock Needed:** 112

📥 Download Restock Plan

🤖 AI Integration (WIP/Future)

- - Autofill for SKU, ASIN, Style

Select SKU

SET2	⌄

SET279-LC-S

SET279-LC-M

SET279-LC-L

SET279-LC-XS

SET279-LC-XL

SET279-LC-XXL

SET299-KR-PP-S

SET299-KR-PP-M

🤖 AI Integration (WIP/Future)

- - Daily sales trends

- - Filterable by month/category

- - Identify spikes or dips

Daily Revenue Over Time

💡 AI Insights from the Data

- - Set & Western Dress top revenue

- - S, M, L dominate sizes

- - Business users spend more

- - April > June revenue trend

- Cancellation rate of 14.22% is a concern

Conclusion

- - All-in-one vendor reporting interface

- - Combines visualization + planning

- - Roadmap:

- • AI-powered analytics

- • Demand forecasting

- • Public deployment