Mini Project Report

Data-Driven Decision-Making Using Power BI

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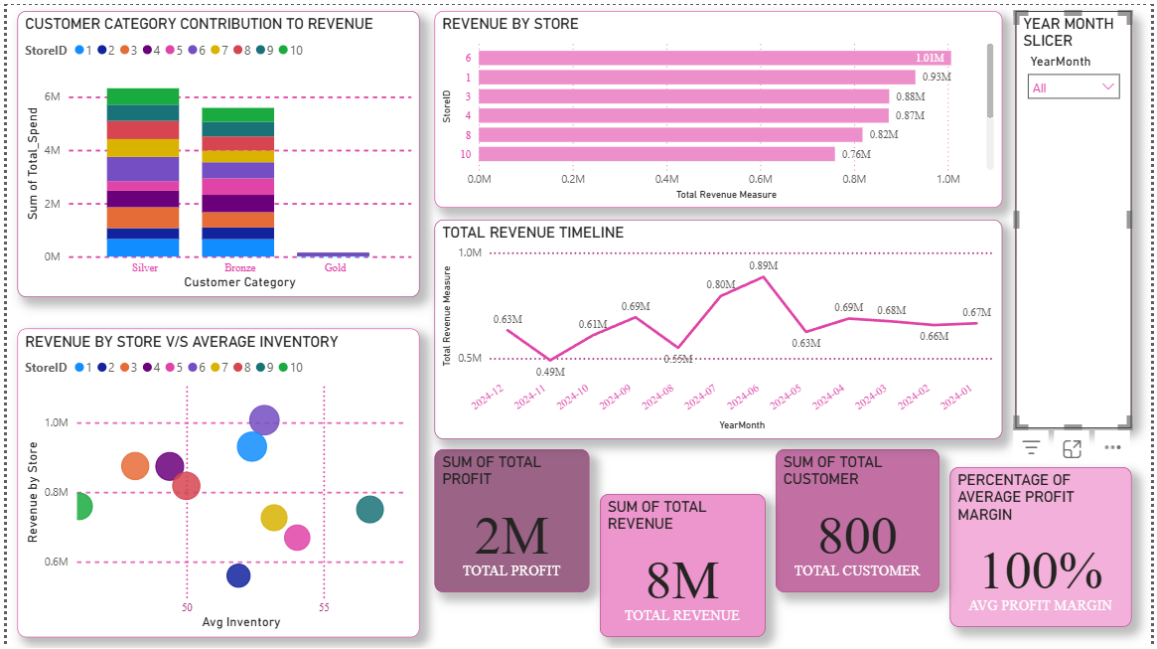
Course: BBA ABD



1. Objective

The main objective of this mini project was to take raw sales data and convert it into something meaningful using Business Intelligence concepts. I used Microsoft Power BI to create a dashboard that helps understand how the business is performing in terms of revenue, store efficiency, customer spending patterns, inventory management, and overall trends across months. The goal was to support data-driven decision-making instead of guessing or making decisions without proper insights.

2. Business Scenario

I chose a retail sales scenario involving 10 stores. The company deals with everyday retail products and gets hundreds of sales transactions each month. However, the management has very little clarity on:

- Which stores are performing well or poorly
- How monthly sales are changing
- Whether inventory levels are too high or too low
- Which customer segments bring in the most money

Because of this lack of visibility, the business struggles with stocking the right amount, identifying slow-moving stores, planning promotions, and understanding customer behavior.

3. Problem We Are Solving Using Power BI

The main business problem solved through this dashboard is that the company does not have a unified way to view revenue, inventory, and customer patterns. Decisions were being made blindly.

Power BI helps the business by:

- Showing which stores generate high or low revenue

- Highlighting months where sales dipped or increased

- Comparing inventory with revenue to find inefficiencies

- Classifying customers (Gold, Silver, Bronze) based on spending

- Allowing management to filter and explore data interactively

In simple words, the dashboard helps the business see what's happening, why it's happening, and what actions they need to take next.

4. Dataset Description

I used a dataset with around 850 rows of sales transactions. Each entry includes:

StoreID, CustomerID, Date, Product, Units Sold, Unit Price, Revenue, Cost, Total Spend, and Inventory Level.

I also created a separate DateTable using DAX.

5. BI Concepts Applied

5.1 Customer Segmentation (Branching Logic)

A calculated column was created:

Customer Category =

```
IF(SalesData[Total_Spend] > 50000, "Gold",
    IF(SalesData[Total_Spend] > 20000, "Silver", "Bronze"))
```

5.2 Time Intelligence and Trend Analysis (MoM Growth)

I created a DateTable:

```
DateTable = CALENDAR(MIN(SalesData[Date]), MAX(SalesData[Date]))
```

Total Revenue Measure = SUM(SalesData[Total_Revenue])

MoM Growth % =

VAR CurrentMonth = [Total Revenue Measure]

VAR PreviousMonth =

CALCULATE([Total Revenue Measure], DATEADD(DateTable[Date], -1, MONTH))

RETURN

IF(ISBLANK(PreviousMonth), BLANK(),

DIVIDE(CurrentMonth - PreviousMonth, PreviousMonth))

5.3 KPI Calculations

Total_Revenue = SalesData[Unit_Price] * SalesData[Units_Sold]

Total_Cost = SalesData[Cost]

Total_Profit = SalesData[Total_Revenue] - SalesData[Total_Cost]

Avg Profit Margin = DIVIDE([Total Profit], [Total Revenue Measure])

6. Dashboard Explanation

The dashboard contains:

- KPI section

- Revenue by Store chart

- Monthly Revenue Timeline

- Inventory vs Revenue scatter plot

- Customer Category contribution chart

- YearMonth slicer for filtering

7. Key Insights

1. Stores like Store 1 and Store 6 generate the highest revenue while others lag.

2. Monthly revenue shows clear seasonal patterns.

3. Some stores have inefficient inventory usage.

4. Silver customers contribute the most spending.

8. Recommendations

- Adjust inventory based on store performance.

- Provide targeted promotions to weak stores.

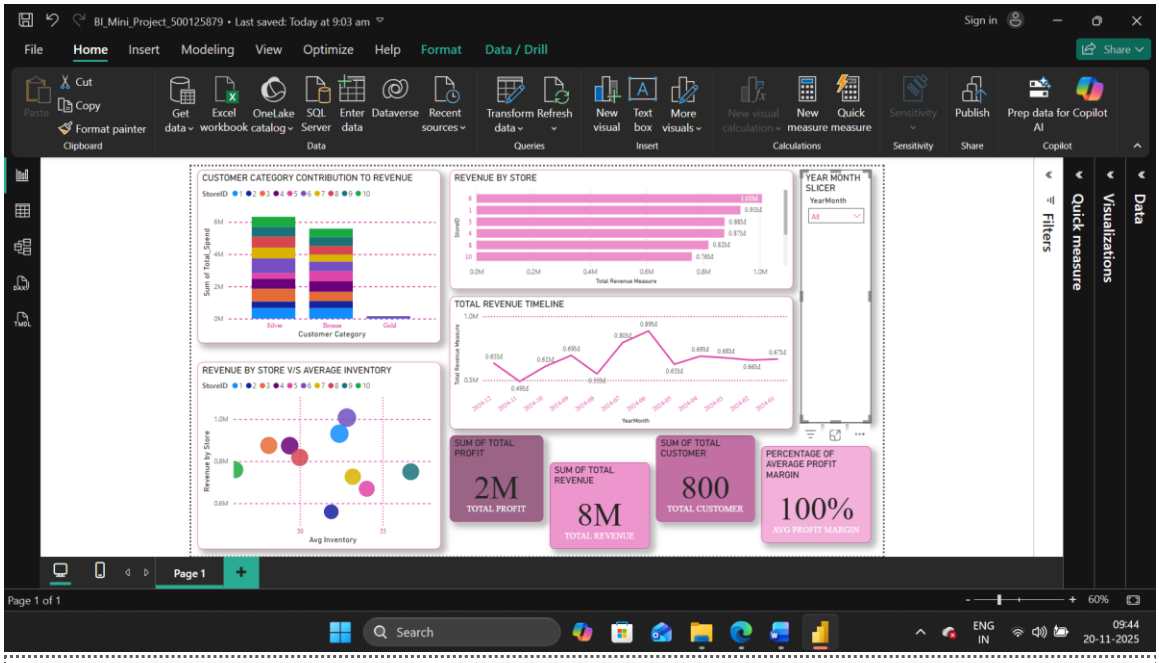
- Focus marketing on Silver customers.

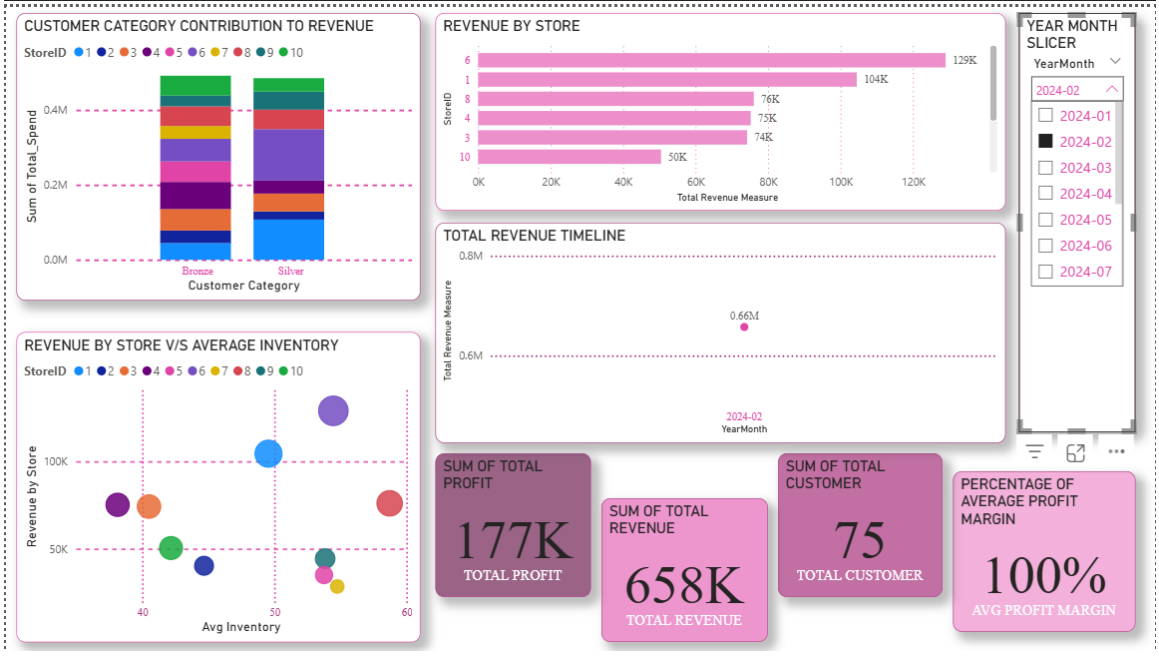
- Use trend data for better stock planning.

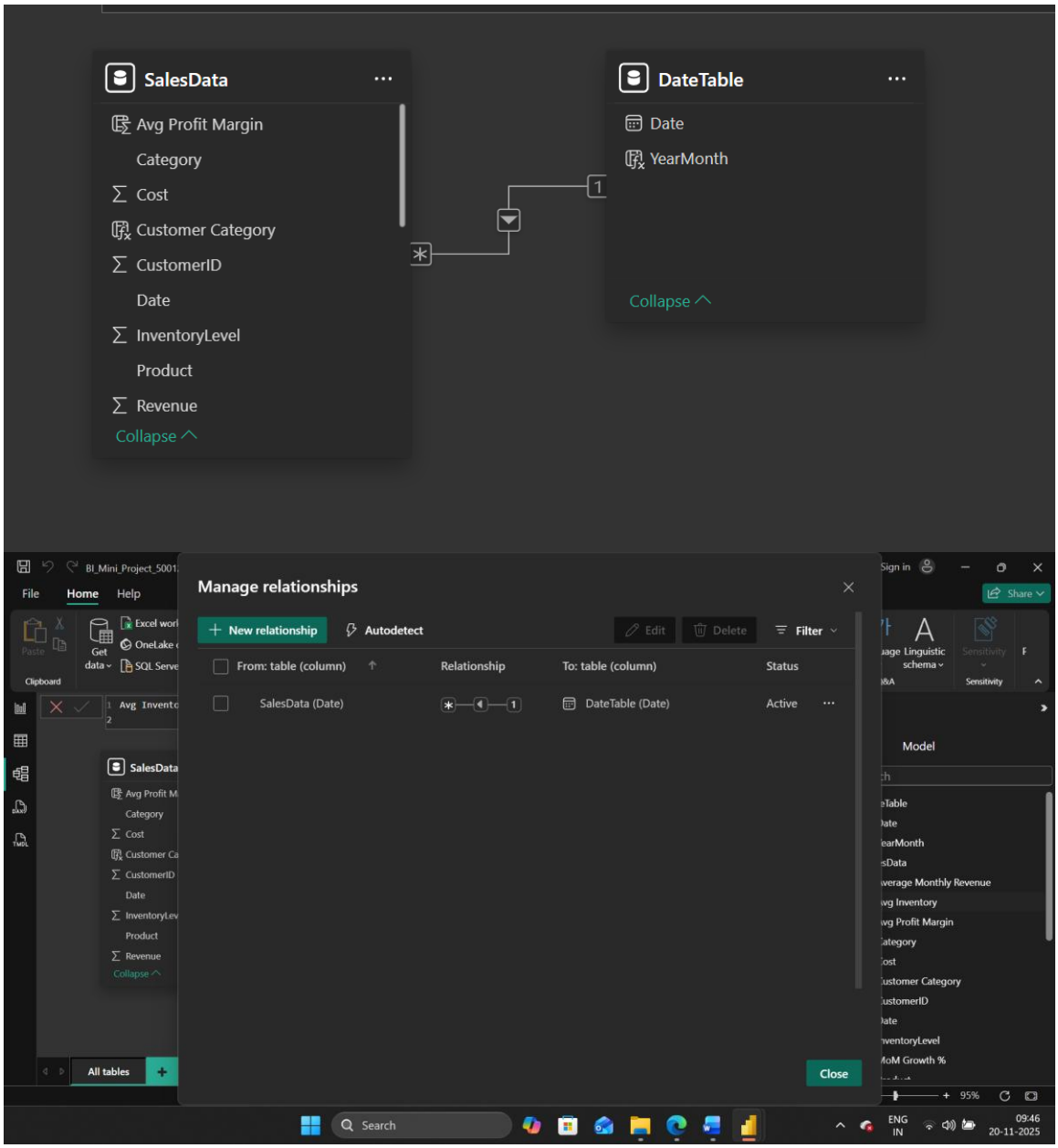
9. Conclusion

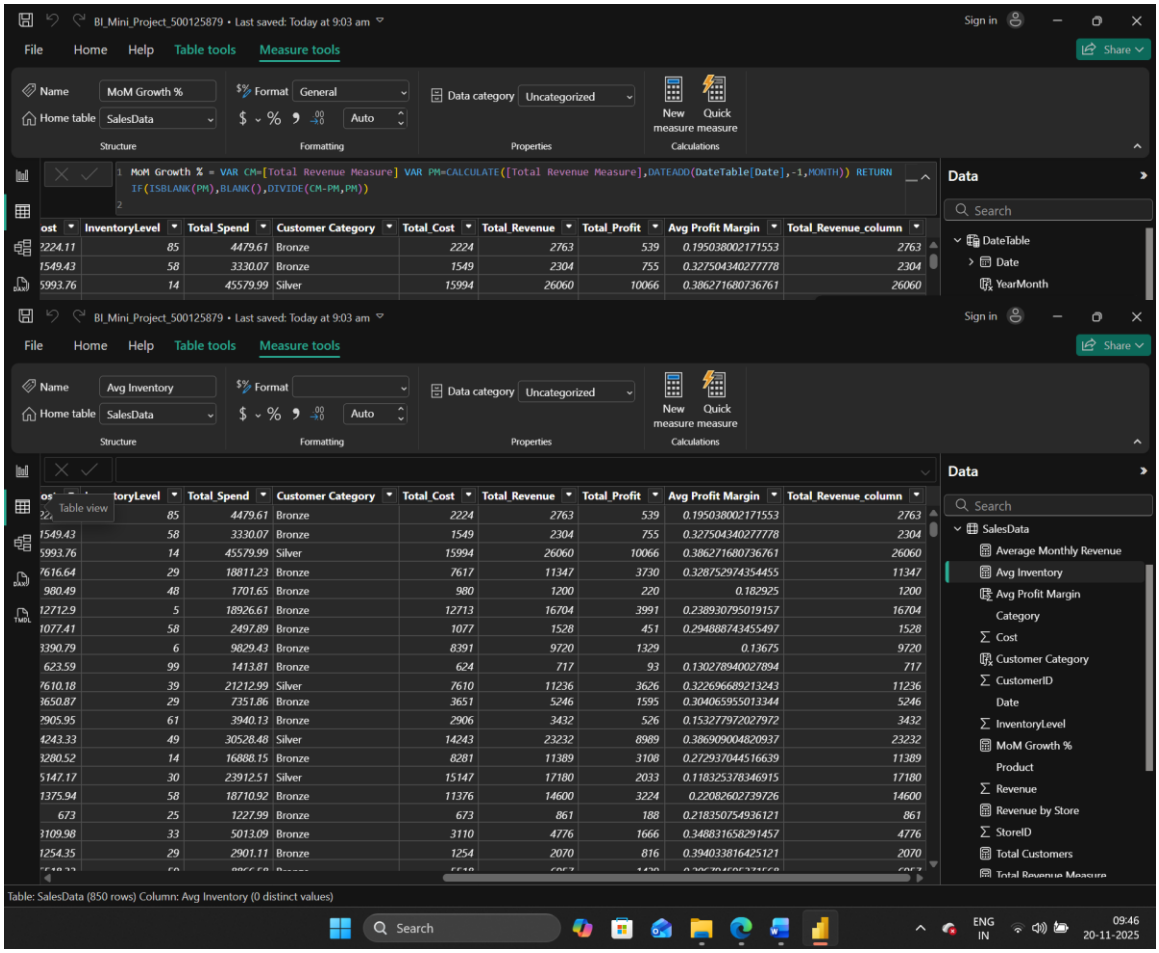
This Power BI dashboard successfully turned raw data into actionable insights. By applying BI concepts such as DAX, segmentation, time analysis, and dashboard design, the business can now make smarter and more confident decisions.

APPENDIX:


BI_Mini_Project_500125879 • Last saved: Today at 9:03 am
File
Home
Insert
Modeling
View
Optimize
Help
Format
Data / Drill
CUSTOMER CATEGORY CONTRIBUTION TO REVENUE
REVENUE BY STORE
YEAR MONTH SLICER
TOTAL REVENUE TIMELINE
REVENUE BY STORE V/S AVERAGE INVENTORY
SUM OF TOTAL PROFIT
2M
TOTAL PROFIT
SUM OF TOTAL REVENUE
8M
TOTAL REVENUE
SUM OF TOTAL CUSTOMER
800
TOTAL CUSTOMER
PERCENTAGE OF AVERAGE PROFIT MARGIN
100%
AVG PROFIT MARGIN
Page 1
Page 1 of 1
Filters
Quick measure
Visualizations
Data


CUSTOMER CATEGORY CONTRIBUTION TO REVENUE
StoreID 1 2 3 4 5 6 7 8 9 10
Sum of Total_Spend
0.4M
0.2M
0.0M
Bronze
Silver
Customer Category
REVENUE BY STORE
6 129K
1 104K
8 76K
4 75K
3 74K
10 50K
StoreID
0K 20K 40K 60K 80K 100K 120K
Total Revenue Measure
YEAR MONTH SLICER
YearMonth
2024-02
2024-01
2024-02
2024-03
2024-04
2024-05
2024-06
2024-07
REVENUE BY STORE V/S AVERAGE INVENTORY
StoreID 1 2 3 4 5 6 7 8 9 10
Revenue by Store
100K
50K
40 50 60
Avg Inventory
TOTAL REVENUE TIMELINE
0.8M
0.6M
Total Revenue Measure
0.66M
2024-02
YearMonth
SUM OF TOTAL PROFIT
177K
TOTAL PROFIT
SUM OF TOTAL REVENUE
658K
TOTAL REVENUE
SUM OF TOTAL CUSTOMER
75
TOTAL CUSTOMER
PERCENTAGE OF AVERAGE PROFIT MARGIN
100%
AVG PROFIT MARGIN


SalesData
Avg Profit Margin
Category
Cost
Customer Category
CustomerID
Date
InventoryLevel
Product
Revenue
Collapse
DateTable
Date
YearMonth
Collapse
1
Manage relationships
New relationship
Autodetect
Edit
Delete
Filter
From: table (column)
Relationship
To: table (column)
Status
SalesData (Date)
DateTable (Date)
Active
Close
Model
All tables
Search
ENG
IN
09:46
20-11-2025


BI_Mini_Project_500125879 • Last saved: Today at 9:03 am
Sign in
File
Home
Help
Table tools
Measure tools
Share
Name
MoM Growth %
Home table
SalesData
Format
General
Auto
Data category
Uncategorized
New measure
Quick measure
Structure
Formatting
Properties
Calculations
MoM Growth % = VAR CM=[Total Revenue Measure] VAR PM=CALCULATE([Total Revenue Measure],DATEADD(DateTable[Date],-1,MONTH)) RETURN
IF(ISBLANK(PM),BLANK(),DIVIDE(CM-PM,PM))
Data
Search
DateTable
Date
YearMonth
ost
InventoryLevel
Total_Spend
Customer Category
Total_Cost
Total_Revenue
Total_Profit
Avg Profit Margin
Total_Revenue_column
2224.11 85 4479.61 Bronze 2224 2763 539 0.195038002171553 2763
1549.43 58 3330.07 Bronze 1549 2304 755 0.327504340277778 2304
5993.76 14 45579.99 Silver 15994 26060 10066 0.386271680736761 26060
BI_Mini_Project_500125879 • Last saved: Today at 9:03 am
Sign in
File
Home
Help
Table tools
Measure tools
Share
Name
Avg Inventory
Home table
SalesData
Format
Auto
Data category
Uncategorized
New measure
Quick measure
Structure
Formatting
Properties
Calculations
Table view
Data
Search
SalesData
Average Monthly Revenue
Avg Inventory
Avg Profit Margin
Category
Cost
Customer Category
CustomerID
Date
InventoryLevel
MoM Growth %
Product
Revenue
Revenue by Store
StoreID
Total Customers
Total Revenue Measure
toryLevel
Total_Spend
Customer Category
Total_Cost
Total_Revenue
Total_Profit
Avg Profit Margin
Total_Revenue_column
85 4479.61 Bronze 2224 2763 539 0.195038002171553 2763
1549.43 58 3330.07 Bronze 1549 2304 755 0.327504340277778 2304
5993.76 14 45579.99 Silver 15994 26060 10066 0.386271680736761 26060
7616.64 29 18811.23 Bronze 7617 11347 3730 0.328752974354455 11347
980.49 48 1701.65 Bronze 980 1200 220 0.182925 1200
12712.9 5 18926.61 Bronze 12713 16704 3991 0.238930795019157 16704
1077.41 58 2497.89 Bronze 1077 1528 451 0.294888743455497 1528
3390.79 6 9829.43 Bronze 8391 9720 1329 0.13675 9720
623.59 99 1413.81 Bronze 624 717 93 0.130278940027894 717
7610.18 39 21212.99 Silver 7610 11236 3626 0.322696689213243 11236
3650.87 29 7351.86 Bronze 3651 5246 1595 0.304065955013344 5246
2905.95 61 3940.13 Bronze 2906 3432 526 0.153277972027972 3432
4243.33 49 30528.48 Silver 14243 23232 8989 0.386909004820937 23232
3280.52 14 16888.15 Bronze 8281 11389 3108 0.272937044516639 11389
5147.17 30 23912.51 Silver 15147 17180 2033 0.118325378346915 17180
1375.94 58 18710.92 Bronze 11376 14600 3224 0.220826027397260 14600
673 25 1227.99 Bronze 673 861 188 0.218350754936121 861
3109.98 33 5013.09 Bronze 3110 4776 1666 0.348831658291457 4776
1254.35 29 2901.11 Bronze 1254 2070 816 0.394033816425121 2070
Table: SalesData (850 rows) Column: Avg Inventory (0 distinct values)
Search
ENG
IN
09:46
20-11-2025