

SALES DATASET ANALYSIS

Advanced Excel Project

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Course : Data Analytics and Data Science

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Project Objective

The main goal of this project is to examine sales data to find patterns, assess sales performance, and provide insights that help make better business decisions. I have created an interactive dashboard using Excel tools like Pivot Tables, Charts, and Slicers. This dashboard presents insights clearly and in a user-friendly manner.

Key Goal

- Analyze sales trends over time to understand growth and seasonal performance.
- Identify top-performing products and sales channels that bring in the most revenue.
- Evaluate how discounts and returns affect overall profitability.
- Build a dynamic dashboard that shows key performance indicators and allows for easy filtering and exploration of data.

Data Description and Preparation

Dataset Overview

- Total 9,995 rows of sales transactions
- Order Details: Row ID, Order ID, Order Date, Month, Year, Weekday, Ship Date, Ship Mode
- Customer Information: Customer ID, Customer Name, Segment, Country, City, State, Postal Code, Region
- Product Information: Product ID, Category, Sub-Category, Product Name
- Sales and Financials: Sales, Quantity, Discount, Profit, Adjusted Sales, Adjusted Revenue, Discount Value

Dataset Overview

- Removed duplicates based on Order ID and Product ID.
- Checked for missing values in fields like Profit, Discount, and Ship Mode.
- Standardized dates by creating new columns for Month, Year, Weekday, and End of Month.
- Validated calculations using check columns, such as Sales Check vs. Sales and Discount Check.
- Derived metrics like Adjusted Sales and Adjusted Revenue for deeper insights.

Before Clean Dataset

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer
1	CA-2016-1	8/11/2016	11/11/2016	Second Class	CG-12520
2	CA-2016-1	8/11/2016	11/11/2016	Second Class	CG-12520
3	CA-2016-1	12/6/2016	16-06-2016	Second Class	DV-13045
4	US-2015-1	11/10/2015	18-10-2015	Standard Class	SO-20335
5	US-2015-1	11/10/2015	18-10-2015	Standard Class	SO-20335

After Clean Dataset

Row ID	Order ID	Order Date	Month	Year	Weekday	Eomonth	Ship Date
5457	US-2015-151435	30/12/2017	December	2017	6	12/31/2017	03/01/2018
5458	CA-2017-163566	30/12/2017	December	2017	6	12/31/2017	03/01/2018
7633	US-2016-157728	30/12/2017	December	2017	6	12/31/2017	03/01/2018
7634	US-2016-157728	30/12/2017	December	2017	6	12/31/2017	03/01/2018
7635	CA-2015-100251	30/12/2017	December	2017	6	12/31/2017	03/01/2018
7637	CA-2016-125794	30/12/2017	December	2017	6	12/31/2017	03/01/2018
1298	CA-2017-121258	30/12/2017	December	2017	6	12/31/2017	05/01/2018

Key Metrics Calculation and Data Analysis

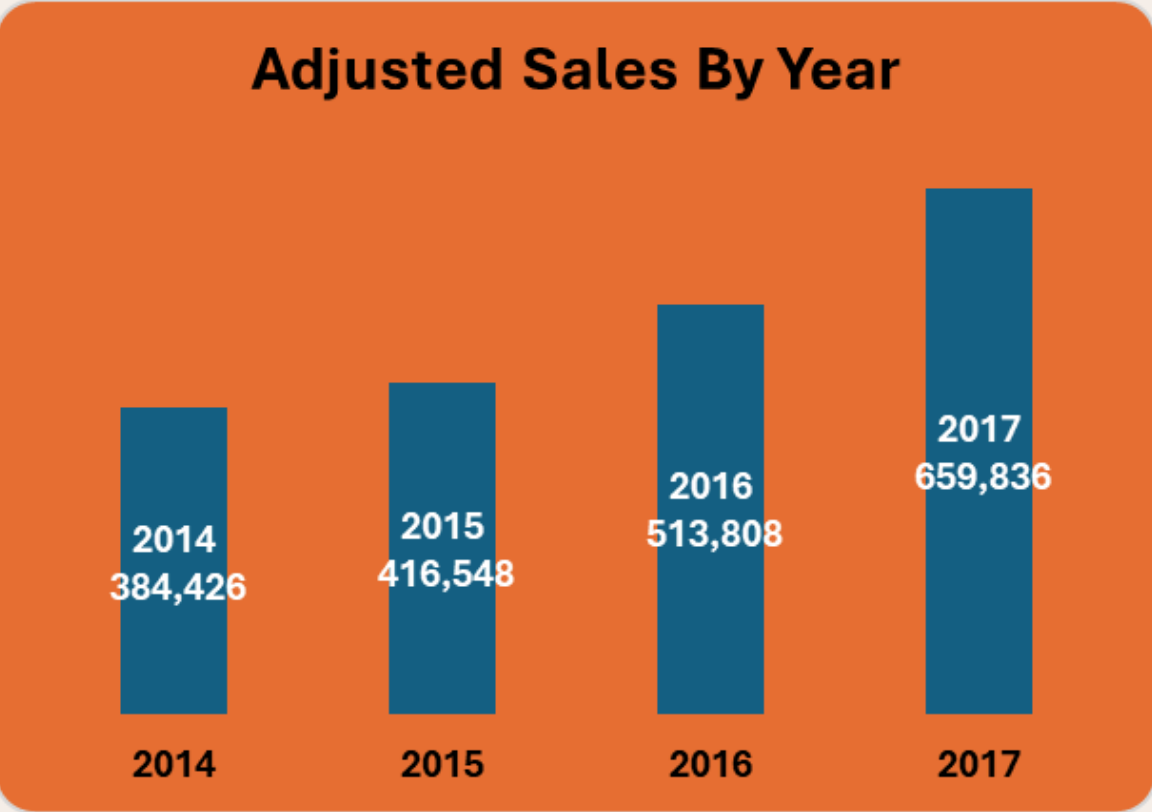
Important Calculations

Total Performance	Values	Formulas
Total Sales	₹ 2,297,201	(=SUM(Table1[Sales]))
Total Adjusted Sales	₹ 1,974,619	(=SUM(Sales_Dataset!AB2:AB9995))
Total Adjusted Revenue	₹ 1,974,619	(=SUM(Sales_Dataset!AC2:AC9995))
Total Order	9994	(=E2+E3+E4)
Average Sales Per Order	₹ 198	(=B3/B5)
Total Discount Value	₹ 198	(=SUM(Table1[Discount value]))
Total Discount Presentage	₹ 198	(=SUM(Table1[[#Data],[#Totals],[Discount]]))
Average Discount For Order	₹ 198	(=B7/B5)
Total Profit	₹ 198	(=SUM(Table1[Profit]))

Pivot Tables and Pivot Charts

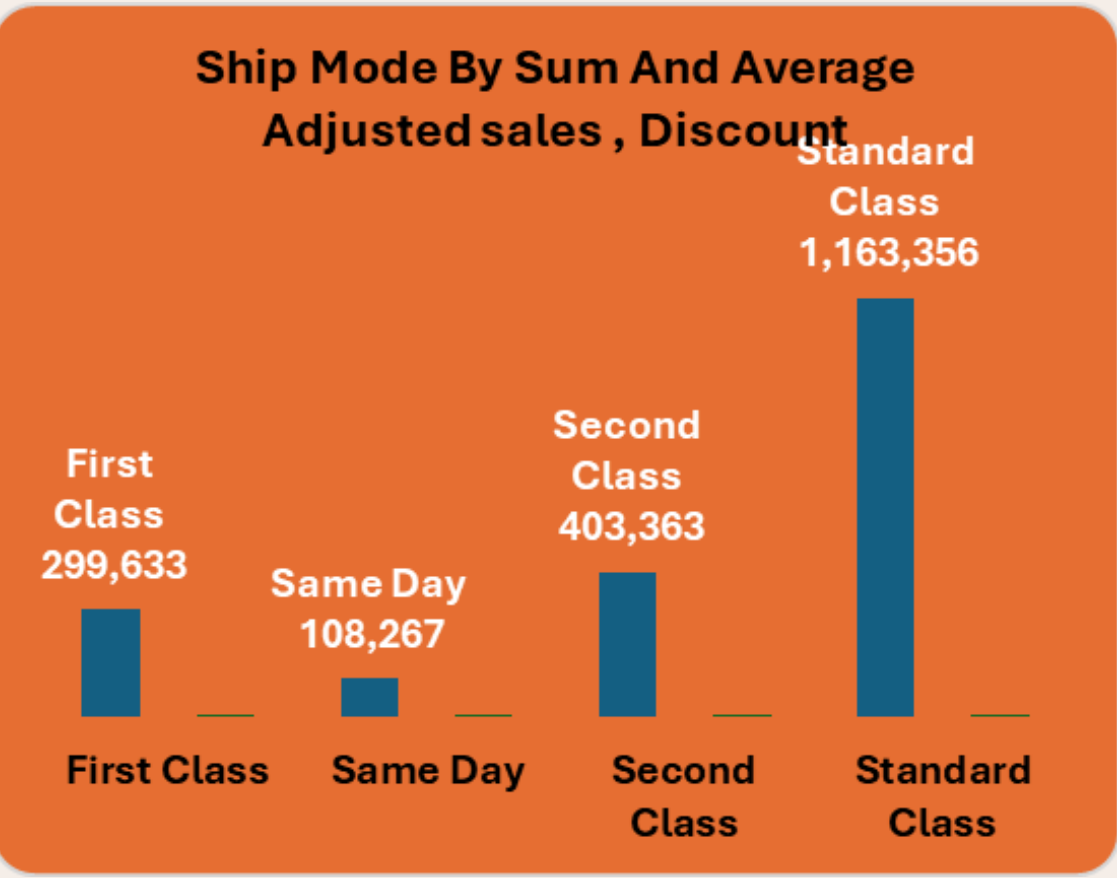
Adjusted sales Year

Years (Ship Date)	Sum of Adjusted Sales
2014	374,182
2015	419,359
2016	517,169
2017	659,663
2018	4,246
Grand Total	1,974,619



Year
2014
2015
2016
2017

Ship Mode	Sum of Adjusted Sales	Average of Adjusted Sales2	Sum of Discount
First Class	299,633	195	253
Same Day	108,267	195	83
Second Class	403,363	195	270
Standard Class	1,163,356	195	955
Grand Total	1,974,619	195	1,561



Ship Mode
First Class
Same Day
Second Class
Standard Class

Adjusted sales Mode

Dashboard Overview

SALES ANALYSIS



TOTAL ORDER
9,994



TOTAL ADJUSTED
SALES
₹ 1,974,619



AVERAGE
ADJUSTED SALES
₹ 198



TOTAL DISCOUNT
156109%



TOTAL REVENUE
₹ 1,974,619

Category

Furniture
Office Supplies
Technology

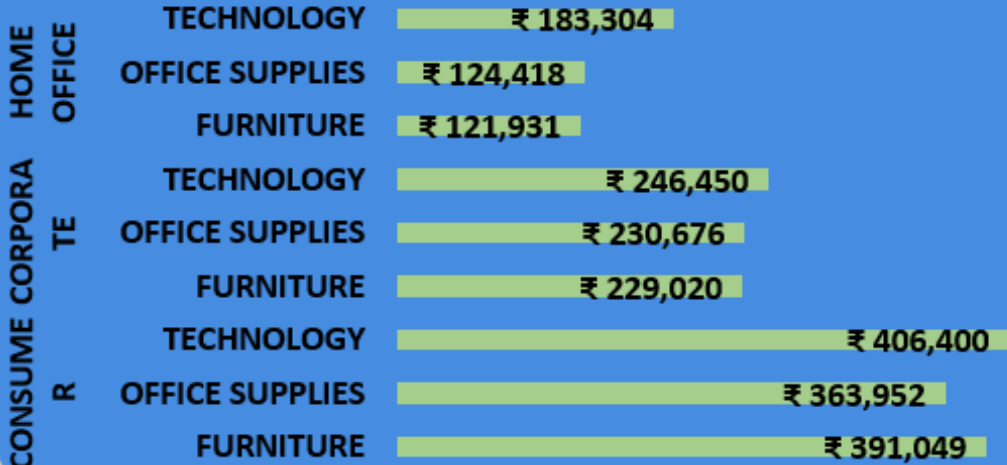
Ship Mode

First Class
Same Day
Second Class

Segment

Consumer
Corporate
Home Office

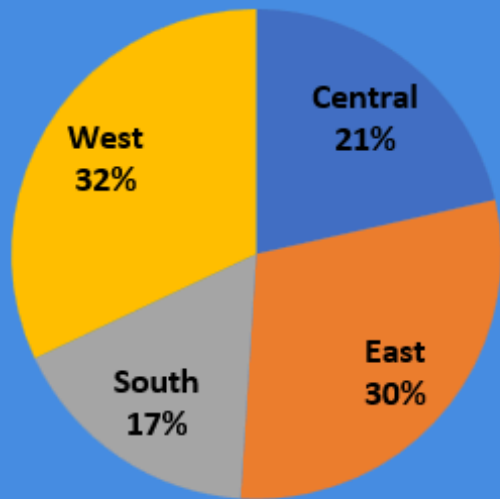
SEGMENT AND CATEGORY BY SALES



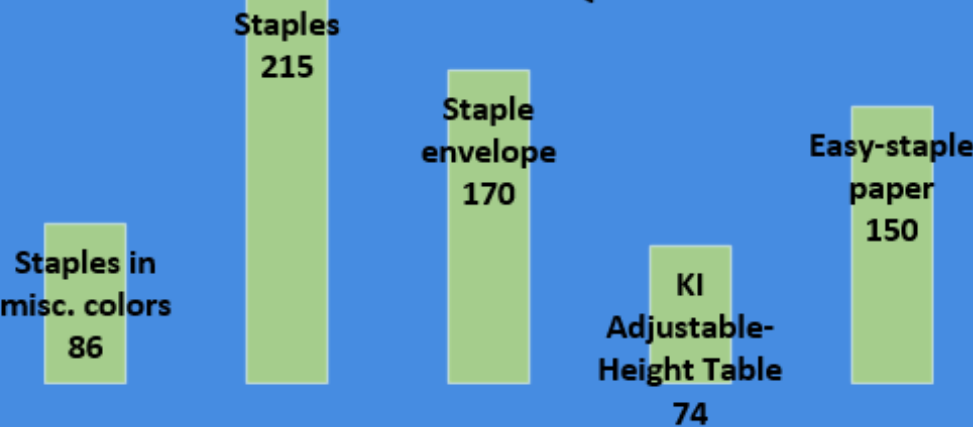
CATEGORY BY AVERAGE ADJUSTED SALES



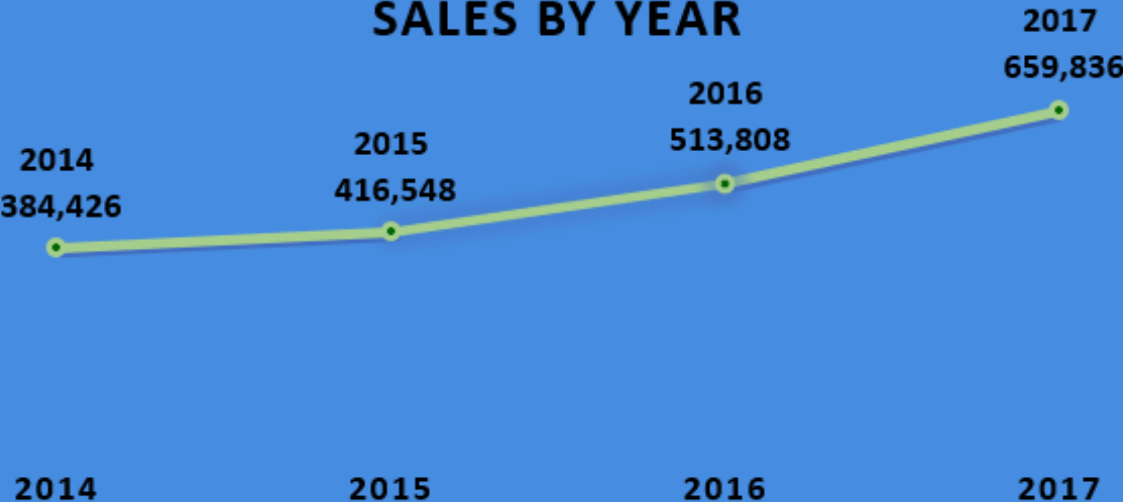
REGION BY ADJUSTED SALSE



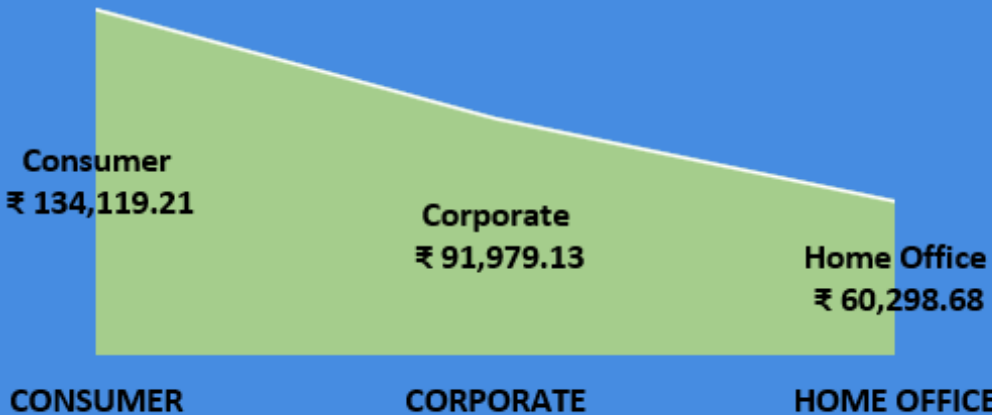
TOP 5 PRODUCT BY QUANTITY



PEAK SALES PERIOD ADJUSTED SALES BY YEAR

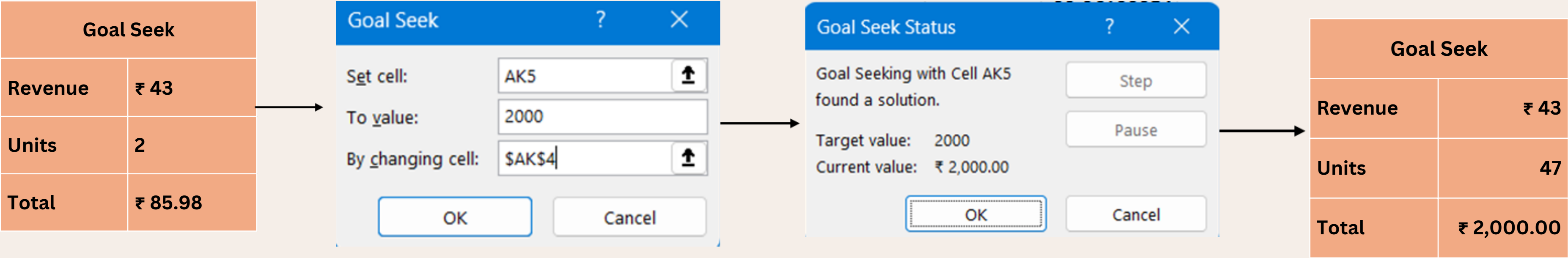


SEGMENT BY PROFIT



What-If Analysis & Goal Seek

Goal Seek



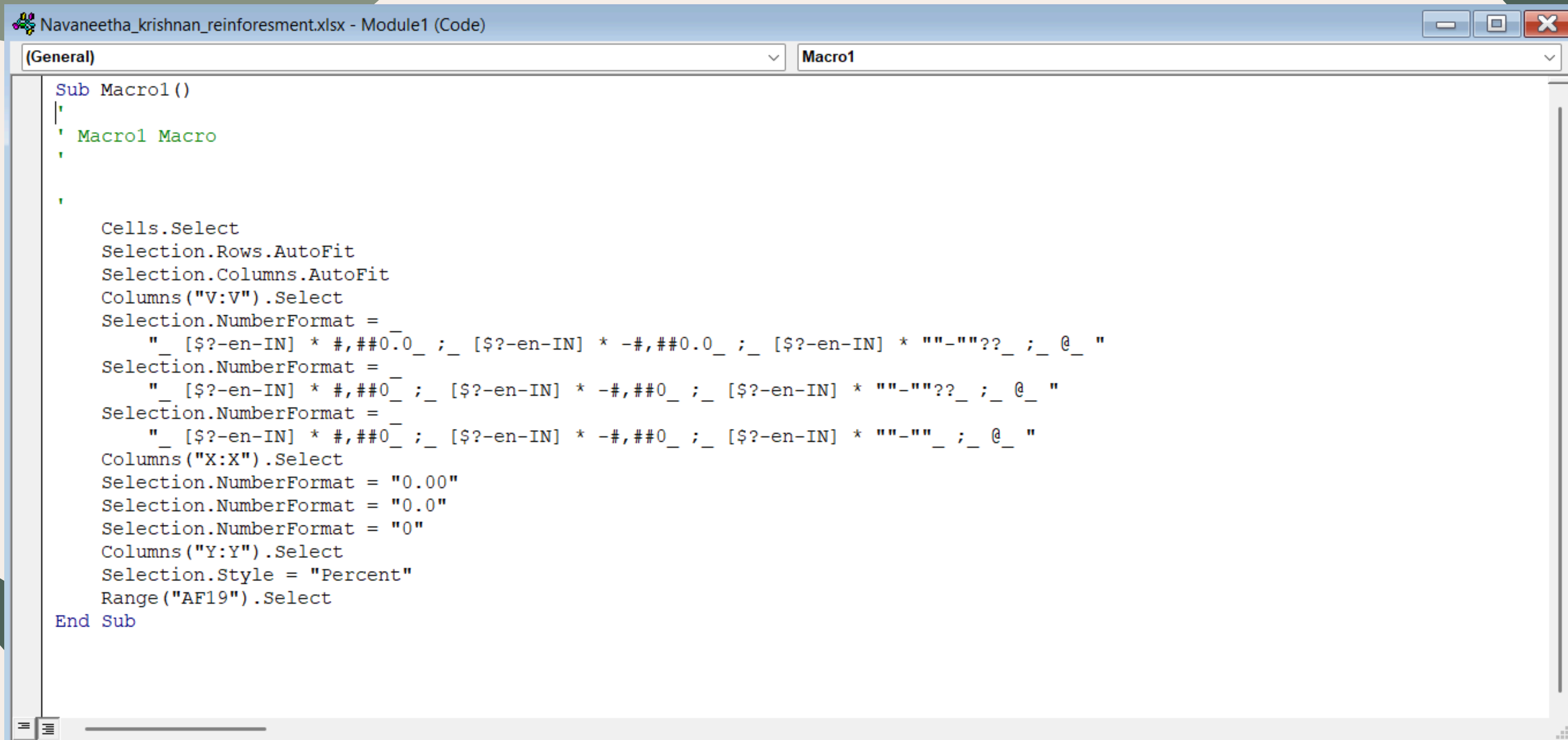
Scenario Manager

Scenario	
sales	1
disc	0
total	₹ 1,974,619

→

Scenario Summary					
		Current Values:	increse	decrece dec	both
Changing Cells:					
	Sales	1	11	1	11
	Discount	0	0	-5	-5
Result Cells:					
	Revenue	₹ 1,974,619	₹ 2,172,081	₹ 2,089,479	₹ 2,298,427

Macros and Automation



The screenshot shows a VBA code editor window titled "Navaneetha_krishnan_reinforesment.xlsx - Module1 (Code)". The editor has a tab labeled "Macro1". The code is as follows:

```
Sub Macro1()  
'  
' Macro1 Macro  
'  
'  
  
Cells.Select  
Selection.Rows.AutoFit  
Selection.Columns.AutoFit  
Columns("V:V").Select  
Selection.NumberFormat =  
    "_ [$?-en-IN] * #,##0.0_ ;_ [$?-en-IN] * -#,##0.0_ ;_ [$?-en-IN] * ""-""??_ ;_ @_ "  
Selection.NumberFormat =  
    "_ [$?-en-IN] * #,##0_ ;_ [$?-en-IN] * -#,##0_ ;_ [$?-en-IN] * ""-""??_ ;_ @_ "  
Selection.NumberFormat =  
    "_ [$?-en-IN] * #,##0_ ;_ [$?-en-IN] * -#,##0_ ;_ [$?-en-IN] * ""-""_ ;_ @_ "  
Columns("X:X").Select  
Selection.NumberFormat = "0.00"  
Selection.NumberFormat = "0.0"  
Selection.NumberFormat = "0"  
Columns("Y:Y").Select  
Selection.Style = "Percent"  
Range("AF19").Select  
End Sub
```

Insights

- **Best-Performing Segment By Categories** with the highest adjusted sales is Consumer in Sum Adjusted Sales at ₹ 1,161,401.
- **Top Products by Quantity:** Staples 215, Staple Envelopes 170, Easy-Staple Paper 150.
- **Technology** have higher average adjusted sales at ₹386 , Office Supplies have lower average adjusted sales at ₹107.
- **Regional Performance** West accounts for 32% of sales, while East represents 30%, making them the strongest regions. South, at 17%, lags behind, showing untapped potential.
- **Customer Segments** Consumers are the most profitable, generating ₹134,119, followed by Corporate at ₹91,979.
- **Home Office** contributes the least with ₹60,298, indicating weak engagement.
- **Discount Trends** The total discount percentage (156109%) appears unusually high. This may suggest data entry errors or excessive discounting practices.
- **Sales Over Time** Sales have grown steadily year over year: 2014: ₹384,426 , 2015: ₹416,548 , 2016: ₹513,808 , 2017: ₹659,836 There is a clear growth trend, with 2017 marking the peak year.



CONCLUSION

Through comprehensive data cleaning, analysis, and visualization, I uncovered critical insights that drive smarter business decisions:

- **Standard Class dominates order volume, but heavy discounts on faster shipping are eroding margins.**
- **Consumer segment drives revenue, while Corporate delivers consistent profitability.**
- **The South region is underperforming in both sales and profit — a key area for improvement.**
- **80% of losses occur when discounts exceed 40%, especially on high-value items like 3D printers.**



**THANK
YOU**