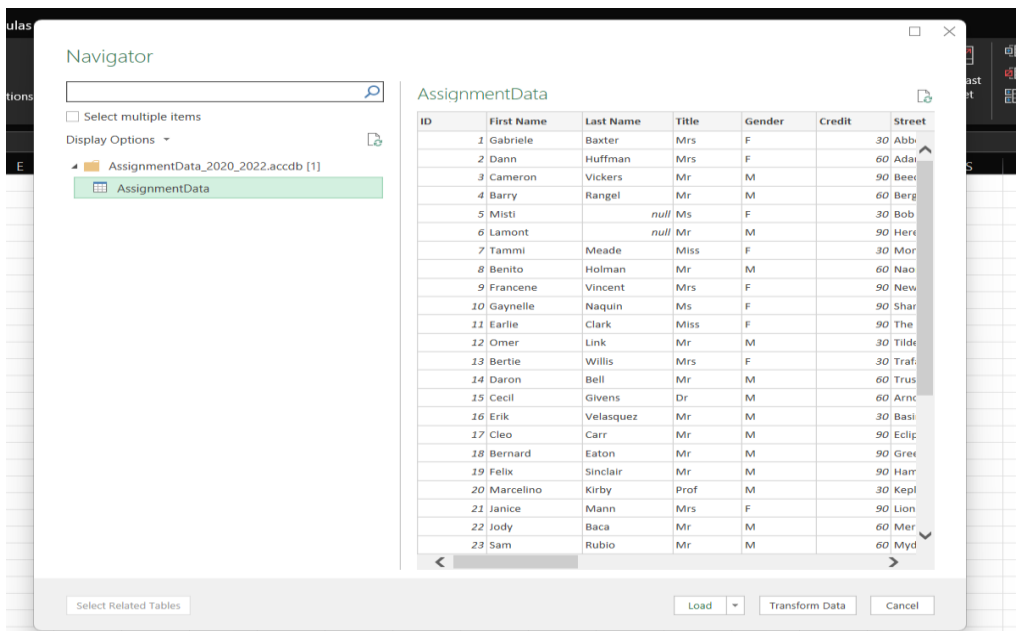
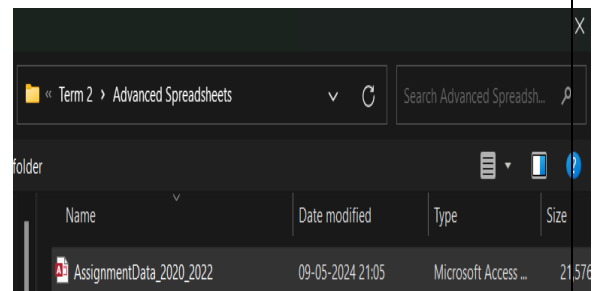
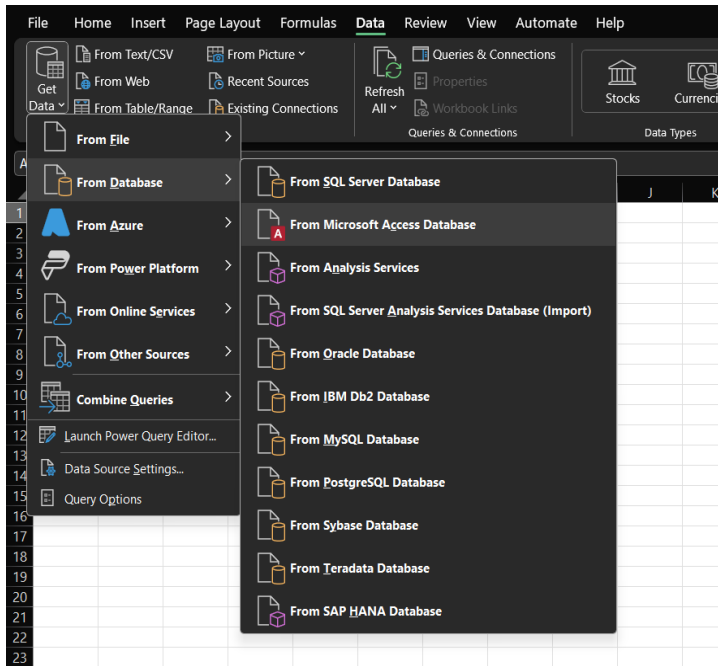


Financial Data Analysis Using Excel

Documentation

STEP 1: Import the Data from the Access File

Select Data from the tab → from database → from Microsoft Access Database → Select the file → Opens the query editor → Select the table given on the left pane → Load the data.



STEP 2: Clean the Data

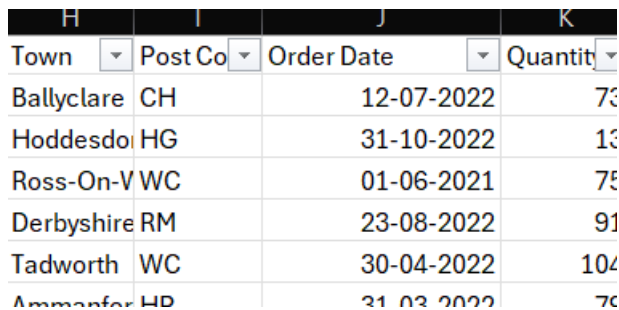
Delete unnecessary columns and transform:

Delete the Date column as it doesn't provide any necessary data.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Last Name	Title	Gender	Credit	Street	Town	Post Code Area	Order Date	Quantity	Product	Date				
Baxter	Mrs	F		30 Abbotsbury Mews	Ballyclare	CH	12-07-2022 00:00	73	B			18-03-2021 00:00		
Huffman	Mrs	F		60 Adams Close	Hoddesdon	HG	31-10-2022 00:00	13	B					
Vickers	Mr	M		90 Beechwood Close	Ross-On-Wye	WC	01-06-2021 00:00	75	A3					

Convert the Order Date into Date Format



H	I	J	K
Town	Post Co	Order Date	Quantity
Ballyclare	CH	12-07-2022	73
Hoddesdon	HG	31-10-2022	13
Ross-On-Wye	WC	01-06-2021	75
Derbyshire	RM	23-08-2022	91
Tadworth	WC	30-04-2022	104
Ammanford	HD	31-03-2022	70

Finding Missing Values

Use the CountIF Function to find the missing records in each value

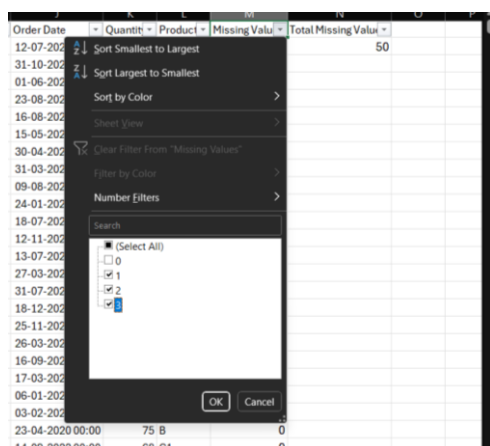
=COUNTIF(AssignmentData3[@[ID]:[Product]],"")

To calculate the Missing Values

=COUNTIF ([Missing Values], ">0")

There is a total of **50 missing** Values in the dataset.

Use the tab Data > Select Filter > Select the missing values which contain records more than 0. For example (1,2 and 3) as follows.



Order Date	Quantity	Product	Missing Value	Total Missing Value
12-07-2022				50
31-10-2022				
01-06-2022				
23-08-2022				
16-08-2022				
15-05-2022				
30-04-2022				
31-03-2022				
09-08-2022				
24-01-2022				
18-07-2022				
12-11-2022				
13-07-2022				
27-03-2022				
31-07-2022				
18-12-2022				
25-11-2022				
26-03-2022				
16-09-2022				
17-03-2022				
06-01-2022				
03-02-2022				
23-04-2022 00:00	75	B	0	
14-09-2022 00:00	68	C1	0	

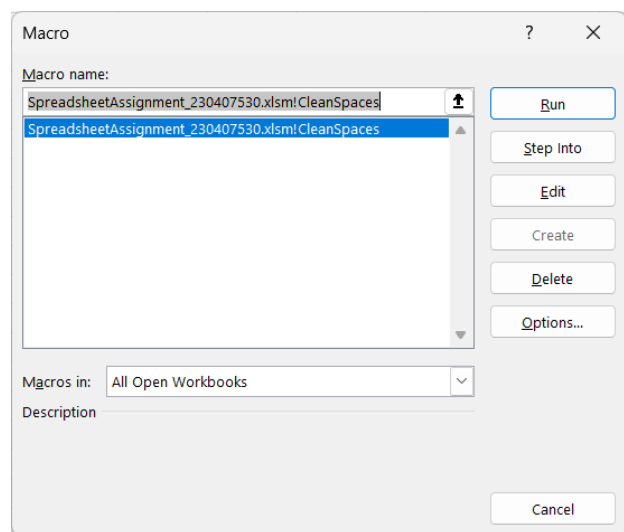
Select all and **delete** the 50 missing values from the dataset

Remove double, leading & trailing spaces from all data using macro and VBA

Open VBA using ALT + F11 → On Insert Tab → Select Module → Use the below VBA code and create a custom function **CleanDataSpaces** for cleaning spaces.

```
Sub CleanDataSpaces()  
    Dim datacell As Range  
    Dim ws As Worksheet  
    Dim Content As String  
  
    ' Loop through each worksheet of the dataset  
    For Each ws In ActiveWorkbook.Worksheets  
        ' Loop through each datacell of the worksheet  
        For Each datacell In ws.UsedRange  
            ' Check if the datacell contains text or string  
            If VarType(datacell.Value) = vbString Then  
                ' Cleaning spaces  
                Content = Trim(datacell.Value)  
                ' Remove double spaces  
                Do While InStr(Content, " ") > 0  
                    Content = Replace(Content, " ", " ")  
                Loop  
                ' Update the datacell value with cleaned content  
                datacell.Value = Content  
            End If  
        Next datacell  
    Next ws  
End Sub
```

Save and Close the VBA editor → Open the macro using ALT + F8 → Select **CleanDataSpaces** → And Run the macro for the worksheet



Replace Abbreviations in Street using the below VBA code where “St” becomes “Street” for data cleaning.

```
Function ReplaceAbbreviations(text As String) As String
    Dim regex As Object
    Set regex = CreateObject("VBScript.RegExp")
    Dim replacements As Object
    Set replacements = CreateObject("Scripting.Dictionary")

    ' Add abbreviations and their full forms to the dictionary
    replacements.Add "\bRd\b", "Road"
    replacements.Add "\bRD\b", "Road"
    replacements.Add "\brd\b", "Road"
    replacements.Add "\bSt\b", "Street"
    replacements.Add "\bST\b", "Street"
    replacements.Add "\bst\b", "Street"
    replacements.Add "\bAve\b", "Avenue"
    replacements.Add "\bAVE\b", "Avenue"
    replacements.Add "\bave\b", "Avenue"
    replacements.Add "\bBlvd\b", "Boulevard"
    replacements.Add "\bBLVD\b", "Boulevard"
    replacements.Add "\bblvd\b", "Boulevard"
    replacements.Add "\bLn\b", "Lane"
    replacements.Add "\bLN\b", "Lane"
    replacements.Add "\bln\b", "Lane"
    replacements.Add "\bDr\b", "Drive"
    replacements.Add "\bDR\b", "Drive"
    replacements.Add "\bdr\b", "Drive"
    replacements.Add "\bCt\b", "Court"
    replacements.Add "\bCT\b", "Court"
    replacements.Add "\bct\b", "Court"

    ' Remove leading and trailing spaces
    Dim CleanData As String
    CleanData = Trim(text)

    ' Replace abbreviations with full forms using regular expressions
    Dim key As Variant
    For Each key In replacements.Keys
        regex.Pattern = key
        regex.IgnoreCase = True
        regex.Global = True
        CleanData = regex.Replace(CleanData, replacements(key))
    Next key
```

Converting all the incorrect records for Gender column as F for "Female" and M for "Male" using IF Function

=IF(LEFT(E2, 1) = "F", "F", IF(LEFT(E2, 1) = "M", "M", "Unknown"))

Add a new column Lastname updated to trim the lastname and also to convert it to proper case

=PROPER(TRIM([@[Last Name]]))

Add a new column First Initial with initial of First Names using left function.

=LEFT(PROPER(TRIM([@[First Name]])),1)

Add a new column as Full Name and combine the the title, First initial of firstname and lastname.

=CONCAT([@Title], " ", [@[First Initial]], " . ", [@[Last Name Updated]])

Add a new Worksheet → Copy the clean data with required columns for further analysis

STEP 3: Organize the Data

Add new columns Item Name, Total Items and Total Value in the dataset.

	P	Q	R	
	Item Name	Total items	Total value	

Now, we will calculate each column using below Product table

Product table

Code	Item	Cost	Case Size	Retail price	Profit Margin
A1	Megawidget S	0.69	24	16.56	4.14
A2	Megawidget M	1.29	24	30.96	7.74
A3	Megawidget L	1.79	24	42.96	10.74
B	Hyperwotsit	2.01	20	40.2	10.05
C1	Ultrathing V1	1.79	17	30.43	7.6075
C2	Ultrathing V2	2.95	20	59	14.75
C3	Ultrathing V3	3.39	24	81.36	20.34
C4	Ultrathing V4	3.99	24	95.76	23.94
D	Gigastuff	1.89	18	34.02	8.505
E	Superwosname	3.49	20	69.8	17.45

For extracting Item Name we will use VLOOKUP as given below

=VLOOKUP(O2,'Product Table'!\$A\$2:\$D\$11,2,0)

	P
	Item Name
	Hyperwotsit
	Hyperwotsit
	Megawidget L
	Ultrathing V1
	Megawidget S
	Gigastuff
	Ultrathing V4
	Megawidget M
	Megawidget S

For extracting Total items we will use VLOOKUP as given below

=VLOOKUP(O2,'Product Table'!\$A\$2:\$D\$11,4,0)*'Step2- Organizing_Data'!N2

	P	Q
	Item Name	Total items
	Hyperwotsit	1460
	Hyperwotsit	260
	Megawidget L	1800
	Ultrathing V1	1547
	Megawidget S	2496
	Gigastuff	1422
	Ultrathing V4	2064
	Megawidget M	1584
	Megawidget S	432

For extracting Total value we will use VLOOKUP as given below and multiple each value with total items

=VLOOKUP(O2,'Product Table'!\$A\$2:\$D\$11,3,0)*Q2

	P	Q	R
	Item Name	Total items	Total value
	Hyperwotsit	1460	2935
	Hyperwotsit	260	523
	Megawidget L	1800	3222
	Ultrathing V1	1547	2769
	Megawidget S	2496	1722
	Gigastuff	1422	2688
	Ultrathing V4	2064	8235
	Megawidget M	1584	2043
	Megawidget S	432	298

Add new columns as Month and Year and extract Month and Year for each order date.

Month

=TEXT(K2,"mmm")

Month
Jul
Oct
Jun
Aug
Apr
Mar

Year

=TEXT(K2,"yyyy")

Month	Year
Jul	2022
Oct	2022
Jun	2021
Aug	2022
Apr	2022
Mar	2022

In the Product Table add new column Retail Price and Profit Margin

Retail price	Profit Margin
--------------	---------------

Calculate Retail Price by multiplying Cost with each Case price.

=C2*D2

Retail price
16.56
30.96
42.96
40.2
30.43
59
81.36
95.76
34.02
69.8

Calculate the Profit Margin by multiplying it to 25% of Retail price

=E2*25%

Retail price	Profit Margin
16.56	4.14
30.96	7.74
42.96	10.74
40.2	10.05
30.43	7.6075
59	14.75
81.36	20.34
95.76	23.94
34.02	8.505
69.8	17.45

Now, Insert a new worksheet named as Total_Sales_Data and create pivot tables for showing summarized data.

First, we will use the pivot table to summarize Total Sales by each value for given products B,D and E.

Click on Insert →Pivot table→Drag Month in column and also Product and Item name in rows→ In filter drag the Year→ In values drag the Total values field.

Total Sales by Value														
Year	(All)													
		1	2	3	4	5	6	7	8	9	10	11	12	13
Sum of Total Value		Month												
Product	Item Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
B	Hyperwotsit	£ 90,691	£ 68,702	£ 51,496	£ 1,07,575	£ 67,938	£ 73,888	£ 91,214	£ 73,003	£ 76,702	£ 90,932	£ 75,375	£ 71,315	
D	Gigastuff	£ 75,729	£ 65,523	£ 75,286	£ 73,721	£ 58,242	£ 66,475	£ 74,368	£ 75,592	£ 76,273	£ 62,155	£ 53,513	£ 50,894	
E	Superwosname	£ 1,29,060	£ 1,40,438	£ 1,34,993	£ 1,55,445	£ 1,63,402	£ 1,09,586	£ 1,41,136	£ 1,78,479	£ 1,31,922	£ 1,69,125	£ 1,27,176	£ 1,62,774	
Grand Total		£2,95,480	£ 2,74,662	£ 2,61,776	£ 3,36,741	£ 2,89,582	£ 2,49,949	£ 3,06,717	£ 3,27,074	£ 2,84,896	£3,22,212	£ 2,56,064	£ 2,84,982	

Next, we will use the pivot table to summarize Total Sales by each volume for given products B,D and E.

Click on Insert →Pivot table→Drag Month in column and also Product and Item name in rows→ In filter drag the Year→ In values drag the Total items field.

Total Sales by Volume													
Year		(All)											
		1	2	3	4	5	6	7	8	9	10	11	12
Sum of Total Items		Month											
Product	Item Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
B	Hyperwotsit	45,120	34,180	25,620	53,520	33,800	36,760	45,380	36,320	38,160	45,240	37,500	35,480
D	Gigastuff	40,068	34,668	39,834	39,006	30,816	35,172	39,348	39,996	40,356	32,886	28,314	26,928
E	Superwosname	36,980	40,240	38,680	44,540	46,820	31,400	40,440	51,140	37,800	48,460	36,440	46,640
Grand Total		1,22,168	1,09,088	1,04,134	1,37,066	1,11,436	1,03,332	1,25,168	1,27,456	1,16,316	1,26,586	1,02,254	1,09,048

Now, insert pivot table to summarize Total Sales for each region

Click on Insert →Pivot table→Drag Year in column and Month in rows→ In filter drag the Post Code Area and Item Name→ In values drag the Total values field.

Total Sales by Region					
Post Code Area		(Multiple Items)			
Item Name		(Multiple Items)			
Sum of Total Value		Year			
Month		2020	2021	2022	Grand Total
Jan	£	32,397	£ 66,837	£ 71,033	£ 1,70,267
Feb	£	41,173	£ 61,477	£ 85,893	£ 1,88,543
Mar	£	57,687	£ 62,213	£ 83,342	£ 2,03,242
Apr	£	68,013	£ 86,365	£ 87,777	£ 2,42,156
May	£	43,355	£ 75,303	£ 76,063	£ 1,94,721
Jun	£	38,207	£ 56,674	£ 52,357	£ 1,47,238
Jul	£	65,953	£ 71,456	£ 77,448	£ 2,14,857
Aug	£	65,663	£ 78,569	£ 81,140	£ 2,25,372
Sep	£	60,436	£ 91,610	£ 72,067	£ 2,24,112
Oct	£	60,252	£ 70,187	£ 86,650	£ 2,17,088
Nov	£	51,073	£ 54,116	£ 77,296	£ 1,82,486
Dec	£	65,775	£ 61,790	£ 56,142	£ 1,83,707
Grand Total		£ 6,49,984	£ 8,36,597	£ 9,07,209	£ 23,93,789

To Summarize the Number of Cases

Click on Insert → Pivot table → Drag Month in column and Product and Items Name in rows → In filter drag the Year → In values drag the Quantity field.

Total Number of Cases													
Year		(All)											
Sum of Quantity		Month											
Product	Item Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
B	Hyperwotsit	2,256	1,709	1,281	2,676	1,690	1,838	2,269	1,816	1,908	2,262	1,875	1,774
D	Gigastuff	2,226	1,926	2,213	2,167	1,712	1,954	2,186	2,222	2,242	1,827	1,573	1,496
E	Superwosname	1,849	2,012	1,934	2,227	2,341	1,570	2,022	2,557	1,890	2,423	1,822	2,332
Grand Total		6,331	5,647	5,428	7,070	5,743	5,362	6,477	6,595	6,040	6,512	5,270	5,602
Number of orders		328.91667	55.6	90.138889	102.311111	77.43333333	83.32777778	86.93333333	93.83888889	86.07777778	109.06667	83.06666667	84.87777778

Calculate the number of orders using the pivot tables.

=GETPIVOTDATA("Quantity",\$A\$44,"Month","Jan","Product","B","Item Name","Hyperwotsit")/'Product Table'!D5+GETPIVOTDATA("Quantity",Total_Sales_Data!\$A\$44,"Month","Jan","Product","D","Item Name","Gigastuff")/'Product Table'!D10+GETPIVOTDATA("Quantity",Total_Sales_Data!\$A\$44,"Month","Jan","Product","E","Item Name","Superwosname")/'Product Table'!D11

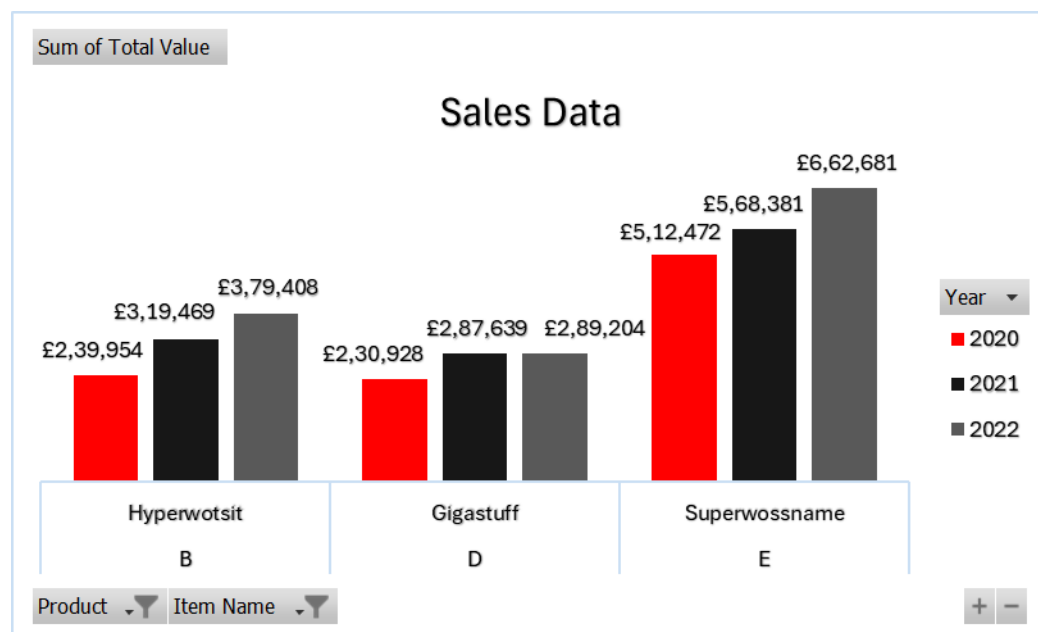
To Summarize the Total sales by Year

Click on Insert → Pivot table → Drag Year in column and Product and Items Name in rows → In values drag the Total Values field.

Total Sales by Year				
Sum of Total Value		Year		
Product	Item Name	2020	2021	2022
B	Hyperwotsit	£ 2,39,954	£ 3,19,469	£ 3,79,408
D	Gigastuff	£ 2,30,928	£ 2,87,639	£ 2,89,204
E	Superwosname	£ 5,12,472	£ 5,68,381	£ 6,62,681
Grand Total		£ 9,83,353	£ 11,75,490	£ 13,31,293

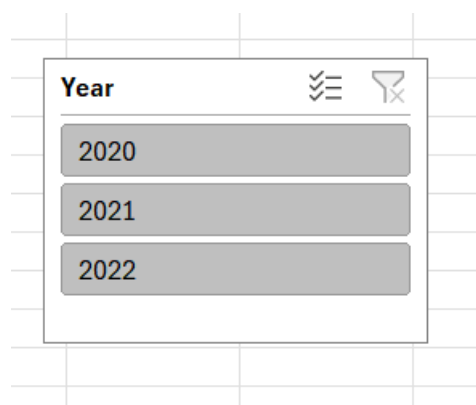
Create a Chart for Total Sales

Select pivot table data of total sales by year → Click on Insert tab → Select Pivot Chart and adjust the properties accordingly.



Add a slicer for each year

Select the Chart → Click on PivotChart Analyze tab → Select Insert Slicer → Select the field Year to create the slicer.



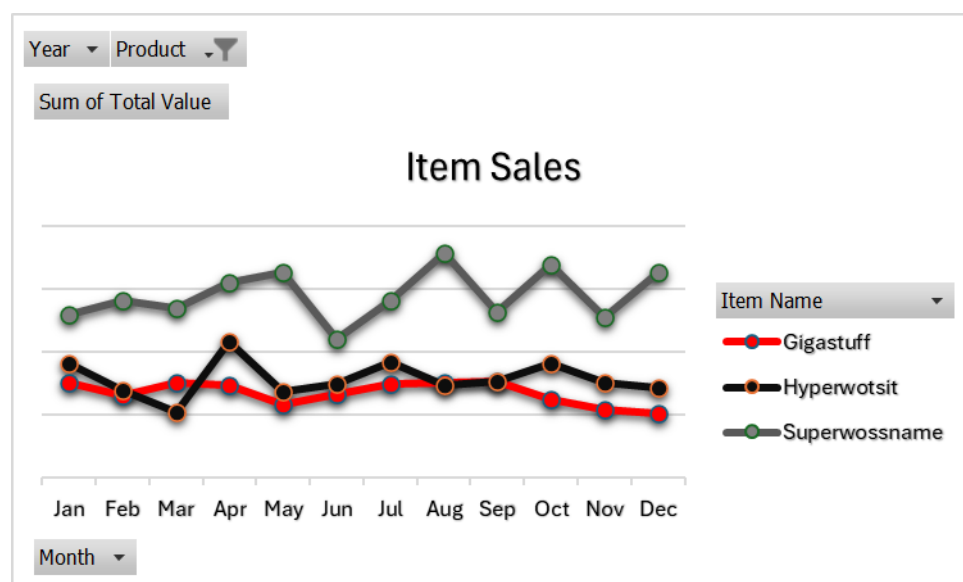
To Summarize the Item Sales.

Click on Insert → Pivot table → Drag Month in column and also Item Name in rows → In filter drag the Year and Month → In values drag the Total Values.

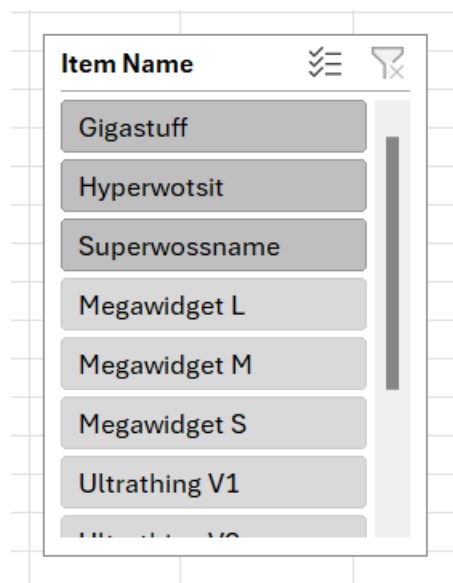
Year	(All)			
Product	(Multiple Items)			
		1	2	3
Sum of Total Value	Item Name			
Month	Gigastuff	Hyperwotsit	Superwosname	
Jan	£ 75,729	£ 90,691	£ 1,29,060	
Feb	£ 65,523	£ 68,702	£ 1,40,438	
Mar	£ 75,286	£ 51,496	£ 1,34,993	
Apr	£ 73,721	£ 1,07,575	£ 1,55,445	
May	£ 58,242	£ 67,938	£ 1,63,402	
Jun	£ 66,475	£ 73,888	£ 1,09,586	
Jul	£ 74,368	£ 91,214	£ 1,41,136	
Aug	£ 75,592	£ 73,003	£ 1,78,479	
Sep	£ 76,273	£ 76,702	£ 1,31,922	
Oct	£ 62,155	£ 90,932	£ 1,69,125	
Nov	£ 53,513	£ 75,375	£ 1,27,176	
Dec	£ 50,894	£ 71,315	£ 1,62,774	
Grand Total	£ 8,07,771	£ 9,38,831	£ 17,43,534	

Create a Chart for Items Sales

Select pivot table data of items sales → Click on Insert tab → Select Pivot Chart and adjust the properties accordingly.



Select the Chart → Click on PivotChart Analyze tab → Select Insert Slicer → Select the field Items Name to create the slicer.



STEP 4: Create a Cash Flow Statement

Create a Cash flow statement using the assumptions given below.

Assumption	Value
Loan Amount (£)	£ 6,50,000
Interest Rate (%)	4.30%
Loan Term (Years)	10
Monthly Advertising (£)	£ 30,000
Profit Margin (%)	25
Delivery Cost per Case (£)	£ 0.50
Initial Government Grant (£)	£ 45,000
Monthly Government Grant (£)	£ 4,000

As per the given Cashflow Layout for INCOME will calculate the Subtotal for each month for every item.

=SUM(B6:B9)

Cash Flow Layout	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
INCOME												
Sales												
Hyperwotsit	£ 90,691	£ 68,702	£ 51,496	£ 1,07,575	£ 67,938	£ 73,888	£ 91,214	£ 73,003	£ 76,702	£ 90,932	£ 75,375	£ 71,315
Gigastuff	£ 75,729	£ 65,523	£ 75,286	£ 73,721	£ 58,242	£ 66,475	£ 74,368	£ 75,592	£ 76,273	£ 62,155	£ 53,513	£ 50,894
Superwosname	£ 1,29,060	£ 1,40,438	£ 1,34,993	£ 1,55,445	£ 1,63,402	£ 1,09,586	£ 1,41,136	£ 1,78,479	£ 1,31,922	£ 1,69,125	£ 1,27,176	£ 1,62,774
Government grant	£ 45,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000
Subtotal	£ 3,40,480	£ 2,78,662	£ 2,65,776	£ 3,40,741	£ 2,93,582	£ 2,53,949	£ 3,10,717	£ 3,31,074	£ 2,88,896	£ 3,26,212	£ 2,60,064	£ 2,88,982

As per the given Cashflow Layout for EXPENSES will calculate the Subtotal for each month for every item.

=SUM(B13:B16)

2	EXPENSES												
3	Advertising	£	30,000	£	30,000	£	30,000	£	30,000	£	30,000	£	30,000
4	Manufacturing costs	£	2,21,610	£	2,05,996	£	1,96,332	£	2,52,556	£	2,17,187	£	1,87,462
5	Delivery cost	£	3,166	£	2,824	£	2,714	£	3,535	£	2,872	£	2,681
6	Loan Repayment	£	6,674	£	6,674	£	6,674	£	6,674	£	6,674	£	6,674
7	Subtotal	£	2,61,449	£	2,45,494	£	2,35,720	£	2,92,765	£	2,56,732	£	2,26,817
8													
9	BALANCE	£	79,030	£	33,168	£	30,056	£	47,976	£	36,850	£	27,132

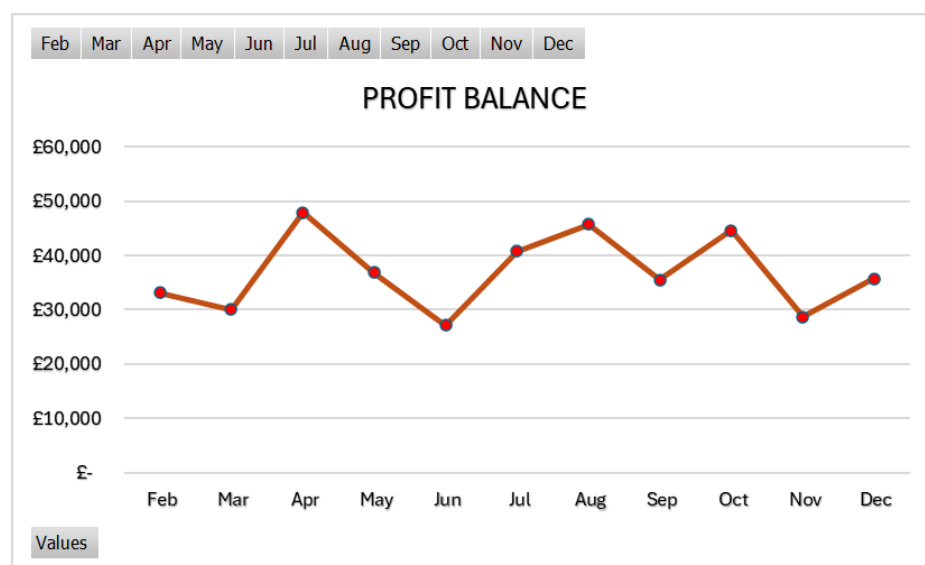
Calculated the balance by subtracting INCOME – EXPENSES for each month subtotal

=B10-B17

Create a pivot table to summarize the Cashflow for each month

Column Labels		
Values	BALANCE	
Feb	£	33,168
Mar	£	30,056
Apr	£	47,976
May	£	36,850
Jun	£	27,132
Jul	£	40,767
Aug	£	45,797
Sep	£	35,530
Oct	£	44,623
Nov	£	28,707
Dec	£	35,771

Insert a chart for each month cashflow which shows the profit balance



STEP 5: Interrogate the Data

Interrogated the data to answer following questions

- The company has been offered a flat-rate delivery charge from the courier firm used to deliver products. The company proposes a single charge of £14.95 per order, regardless of the size of the order. Will the company be better off introducing this change?
- The company is thinking about introducing a discount scheme for orders above a certain level. The firm plans to offer a 3% discount for orders above 20 cases, 5% for orders above 50 cases and 7% for orders above 100 cases. How will this affect the company's profits?
- The company plans to increase sales by 5% each month. Using December 2022 figures as a starting point, work out how this might affect the company's profits and its monthly cash flow.

Cash Flow Layout	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
INCOME												
Sales												
Hyperwotsit	£ 90,691	£ 68,702	£ 51,496	£ 1,07,575	£ 67,938	£ 73,888	£ 91,214	£ 73,003	£ 76,702	£ 90,932	£ 75,375	£ 71,315
Gigastuff	£ 75,729	£ 65,523	£ 75,286	£ 73,721	£ 58,242	£ 66,475	£ 74,368	£ 75,592	£ 76,273	£ 62,155	£ 53,513	£ 50,894
Superwosname	£ 1,29,060	£ 1,40,438	£ 1,34,993	£ 1,55,445	£ 1,63,402	£ 1,09,586	£ 1,41,136	£ 1,78,479	£ 1,31,922	£ 1,69,125	£ 1,27,176	£ 1,62,774
Government grant	£ 45,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000
Subtotal	£ 3,40,480	£ 2,78,662	£ 2,65,776	£ 3,40,741	£ 2,93,582	£ 2,53,949	£ 3,10,717	£ 3,31,074	£ 2,88,896	£ 3,26,212	£ 2,60,064	£ 2,88,982
EXPENSES												
Advertising	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000
Manufacturing costs	£ 2,21,610	£ 2,05,996	£ 1,96,332	£ 2,52,556	£ 2,17,187	£ 1,87,462	£ 2,30,038	£ 2,45,306	£ 2,13,672	£ 2,41,659	£ 1,92,048	£ 2,13,737
Delivery cost	£ 3,166	£ 2,824	£ 2,714	£ 3,535	£ 2,872	£ 2,681	£ 3,239	£ 3,298	£ 3,020	£ 3,256	£ 2,635	£ 2,801
Loan Repayment	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026
Subtotal	£ 2,68,801	£ 2,52,846	£ 2,43,071	£ 3,00,117	£ 2,64,084	£ 2,34,168	£ 2,77,302	£ 2,92,629	£ 2,60,718	£ 2,88,941	£ 2,38,709	£ 2,60,563
BALANCE	£ 71,679	£ 25,816	£ 22,704	£ 40,625	£ 29,498	£ 19,780	£ 33,415	£ 38,445	£ 28,178	£ 37,271	£ 21,355	£ 28,419

Calculated the following values to understand the fluctuations.

[illegible]

Below is the Discounted Sales value for the given products

Discounted Sales													
Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hyperwotsit	£ 84,343	£ 63,893	£ 47,891	£ 1,00,045	£ 63,182	£ 68,715	£ 84,829	£ 67,893	£ 71,332	£ 84,567	£ 70,099	£ 66,323	
Gigastuff	£ 70,428	£ 60,936	£ 70,016	£ 68,561	£ 54,165	£ 61,822	£ 69,162	£ 70,301	£ 70,934	£ 57,804	£ 49,768	£ 47,331	
Superwosname	£ 1,20,026	£ 1,30,607	£ 1,25,544	£ 1,44,563	£ 1,51,964	£ 1,01,915	£ 1,31,256	£ 1,65,985	£ 1,22,687	£ 1,57,287	£ 1,18,273	£ 1,51,379	
Grand Total	£2,74,796	£2,55,436	£2,43,451	£3,13,169	£2,69,311	£2,32,452	£2,85,247	£3,04,179	£2,64,954	£ 2,99,657	£ 2,38,140	£ 2,65,034	

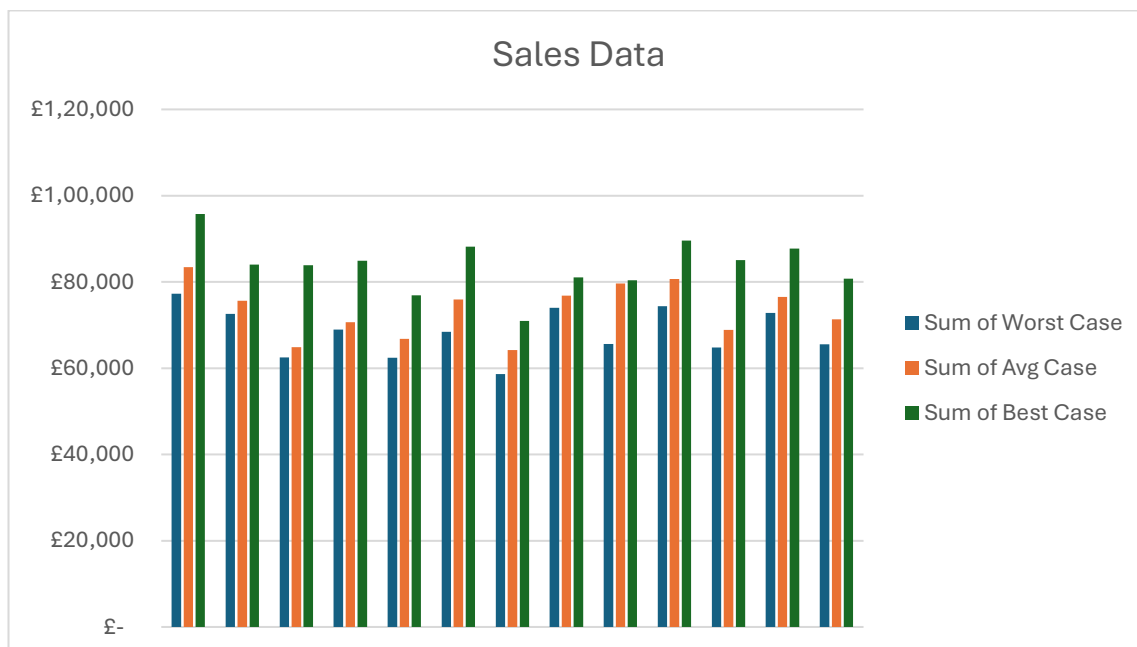
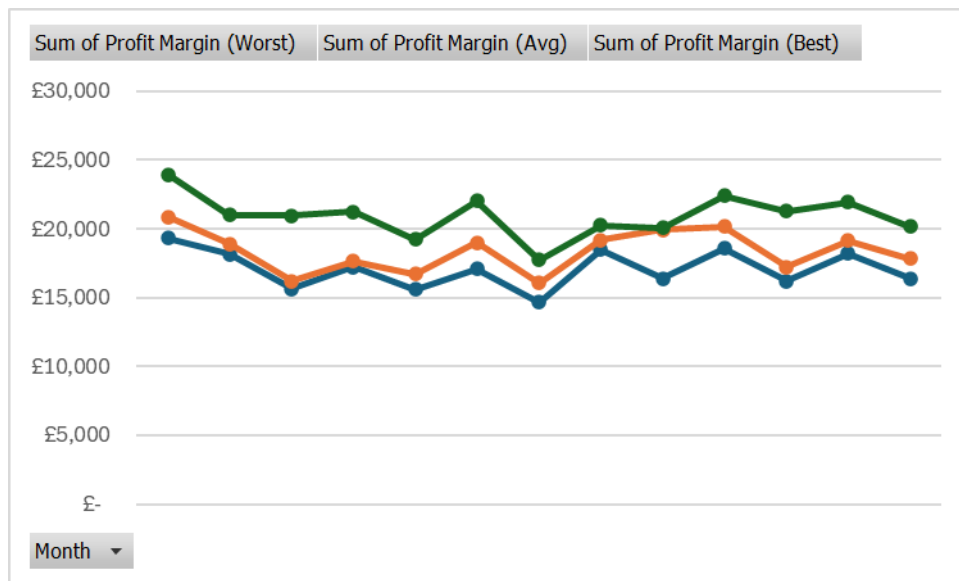
Summary for Discounted Price

Cash Flow Layout	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
INCOME													
Sales													
Hyperwotsit	£ 84,343	£ 63,893	£ 47,891	£ 1,00,045	£ 63,182	£ 68,715	£ 84,829	£ 67,893	£ 71,332	£ 84,567	£ 70,099	£ 66,323	
Gigastuff	£ 70,428	£ 60,936	£ 70,016	£ 68,561	£ 54,165	£ 61,822	£ 69,162	£ 70,301	£ 70,934	£ 57,804	£ 49,768	£ 47,331	
Superwosname	£ 1,20,026	£ 1,30,607	£ 1,25,544	£ 1,44,563	£ 1,51,964	£ 1,01,915	£ 1,31,256	£ 1,65,985	£ 1,22,687	£ 1,57,287	£ 1,18,273	£ 1,51,379	
Government grant	£ 45,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	£ 4,000	
Subtotal	£ 3,19,796	£ 2,59,436	£ 2,47,451	£ 3,17,169	£ 2,73,311	£ 2,36,452	£ 2,89,247	£ 3,08,179	£ 2,68,954	£ 3,03,657	£ 2,42,140	£ 2,69,034	
Advertising	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 30,000	
Manufacturing costs	£ 2,06,097	£ 1,91,577	£ 1,82,589	£ 2,34,877	£ 2,01,983	£ 1,74,339	£ 2,13,935	£ 2,28,134	£ 1,98,715	£ 2,24,743	£ 1,78,605	£ 1,98,775	
Delivery cost	£ 3,166	£ 2,824	£ 2,714	£ 3,535	£ 2,872	£ 2,681	£ 3,239	£ 3,298	£ 3,020	£ 3,256	£ 2,635	£ 2,801	
Loan Repayment	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	£ 14,026	
Subtotal	£ 2,53,288	£ 2,38,426	£ 2,29,328	£ 2,82,438	£ 2,48,881	£ 2,21,046	£ 2,61,199	£ 2,75,457	£ 2,45,761	£ 2,72,025	£ 2,25,265	£ 2,45,602	
BALANCE	£ 66,508	£ 21,010	£ 18,123	£ 34,732	£ 24,431	£ 15,406	£ 28,048	£ 32,722	£ 23,193	£ 31,633	£ 16,874	£ 23,432	

Calculated Sales Fluctuations using Monte Carlo.

Month	Projected Sales	Std Dev (10%)	Random Sales1	Random Sales2	Random Sales3	Random Sales4	Random Sales5	Worst Case	Avg Case	Best Case	Profit Margin (Worst)	Profit Margin (Avg)	Profit Margin (Best)
Dec'22	£ 76,115	£ 7,612	£ 83,445	£ 72,502	£ 77,540	£ 67,112	£ 80,082	£ 68,190	£ 77,540	£ 82,773	£ 17,047.40	£ 19,385.02	£ 20,693.13
Jan'23	£ 79,921	£ 7,992	£ 76,862	£ 74,425	£ 61,837	£ 70,496	£ 68,668	£ 63,203	£ 70,496	£ 76,374	£ 15,800.87	£ 17,623.91	£ 19,093.59
Feb'23	£ 83,917	£ 8,392	£ 74,579	£ 76,014	£ 78,569	£ 82,417	£ 67,853	£ 69,198	£ 76,014	£ 81,647	£ 17,299.52	£ 19,003.51	£ 20,411.82
Mar'23	£ 88,113	£ 8,811	£ 85,889	£ 80,265	£ 76,015	£ 66,310	£ 85,357	£ 68,251	£ 80,265	£ 85,783	£ 17,062.82	£ 20,066.22	£ 21,445.67
Apr'23	£ 92,518	£ 9,252	£ 77,388	£ 68,082	£ 81,517	£ 90,708	£ 60,179	£ 61,760	£ 77,388	£ 88,870	£ 15,440.00	£ 19,347.05	£ 22,217.51
May'23	£ 97,144	£ 9,714	£ 67,451	£ 72,523	£ 64,767	£ 72,570	£ 87,632	£ 65,303	£ 72,523	£ 84,619	£ 16,325.84	£ 18,130.63	£ 21,154.86
Jun'23	£ 1,02,001	£ 10,200	£ 85,004	£ 80,822	£ 69,582	£ 75,279	£ 73,644	£ 70,394	£ 75,279	£ 84,167	£ 17,598.49	£ 18,819.68	£ 21,041.81
Jul'23	£ 1,07,101	£ 10,710	£ 76,438	£ 94,773	£ 71,121	£ 64,648	£ 80,916	£ 65,943	£ 76,438	£ 92,002	£ 16,485.72	£ 19,109.47	£ 23,000.47
Aug'23	£ 1,12,457	£ 11,246	£ 72,294	£ 63,697	£ 77,911	£ 72,288	£ 68,996	£ 64,757	£ 72,288	£ 76,788	£ 16,189.28	£ 18,071.95	£ 19,197.00
Sep'23	£ 1,18,079	£ 11,808	£ 72,636	£ 73,779	£ 77,128	£ 74,271	£ 78,215	£ 72,865	£ 74,271	£ 77,997	£ 18,216.26	£ 18,567.69	£ 19,499.33
Oct'23	£ 1,23,983	£ 12,398	£ 73,662	£ 69,054	£ 69,205	£ 88,115	£ 70,983	£ 69,084	£ 70,983	£ 85,224	£ 17,271.09	£ 17,745.80	£ 21,306.02
Nov'23	£ 1,30,182	£ 13,018	£ 75,313	£ 84,314	£ 75,175	£ 70,513	£ 64,882	£ 66,008	£ 75,175	£ 82,514	£ 16,502.05	£ 18,793.66	£ 20,628.49
Dec'23	£ 1,36,692	£ 13,669	£ 87,456	£ 73,258	£ 82,076	£ 83,718	£ 86,702	£ 75,021	£ 83,718	£ 87,305	£ 18,755.36	£ 20,929.43	£ 21,826.36
											Profit Margin	0.25	

Visualizing the Worst, Best and Avg case scenarios.



Testing Stimulation of Monte Carlo

Month	5th Percentile	Median	95th Percentile	Profit (25%)	Cash Flow
1	£63,132	£75,788	£88,331	£18,947	£75,788
2	£66,534	£79,411	£92,578	£19,853	£79,411
3	£69,513	£83,757	£97,680	£20,939	£83,757
4	£73,023	£87,987	£1,02,951	£21,997	£87,987
5	£77,263	£92,688	£1,07,300	£23,172	£92,688
6	£81,356	£96,957	£1,12,630	£24,239	£96,957
7	£84,476	£1,01,497	£1,19,023	£25,374	£1,01,497
8	£90,094	£1,07,146	£1,24,332	£26,787	£1,07,146
9	£93,544	£1,12,555	£1,30,521	£28,139	£1,12,555
10	£99,359	£1,17,960	£1,37,351	£29,490	£1,17,960
11	£1,04,837	£1,24,362	£1,44,550	£31,091	£1,24,362
12	£1,08,360	£1,30,140	£1,51,487	£32,535	£1,30,140

STEP 6: Create your Dashboard

Created Dashboard for Financial Summary Analysis



Test Plan(Blackbox Testing)

No	Description	Test Data	Expected Result	Actual Result	Pass/Fail	Notes/Action
1	Check if all rows have non-empty OrderDate	All rows in OrderDate column	No empty cells in OrderDate column	No empty cells in OrderDate column	Pass	
2	Check for duplicate entries	All Columns	No duplicate entries	No duplicate entries	Pass	
3	Check Gender column for 'F' Female and 'M' as Male	All data in Gender column	Gender Columns with either Gender as 'F','M' or 'Unknown'	Gender Columns with either Gender as 'F','M' or 'Unknown'	Pass	
4	Check Last Name column to be in proper case	All data in Last Name column	Last Name column is in proper case	Last Name column is in proper case	Pass	

5	Check if 'St' is converted as street and all other abbreviations	All data in Street Column	All abbreviations are replaced	All abbreviations are replaced	Pass	
6	Verify that Code contains only B, D, or E	All rows in Code column	Only B, D, or E values present	Only B, D, or E values present	Pass	
7	Verify total sales by volume	Grouped data by Code, Year, Month	Sum of Quantity per month and product matches the expected total	Sum of Quantity per month and product matches the expected total	Pass	

Conclusion:

This sales analysis gives us a clear picture of what customers love and how they shop. We've identified the top 10 most-selling products and categories that bring in the highest sales, highlighting clear customer preferences. Regional trends and sales breakdowns by gender, marital status, and occupation show us who's buying and where to focus marketing efforts. Seasonal patterns reveal when demand peaks, helping us plan better. The data tells us to keep top products in stock, target promotions more effectively, and improve distribution to high-demand areas. Ultimately, these insights aren't just numbers, they're a roadmap to creating a smarter, more customer-focused strategy.