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*STRATEGIC PRODUCT  
PLACEMENT ANALYSIS:  
UNVEILING SALES IMPACT  
WITH TABLEAU VISUALIZATION*

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## INTRODUCTION

### Strategic Product Placement Analysis: Unveiling Sales Impact with Tableau Visualization

This project aims to investigate the relationship between product positioning, sales performance, and consumer behavior. Using Tableau, we will analyze data to uncover insights into how different positioning strategies impact sales and consumer preferences. By visualizing the data, we aim to provide actionable recommendations to optimize product positioning strategies and drive revenue growth.

A retail company wants to understand the impact of product positioning on its sales and consumer behavior. They have collected data on sales figures, product placement, and consumer demographics. They seek insights into which product positioning strategies are most effective in driving sales and how they can tailor their marketing efforts accordingly. Through data visualization with Tableau, the company hopes to gain actionable insights to improve its product positioning strategies and increase revenue.

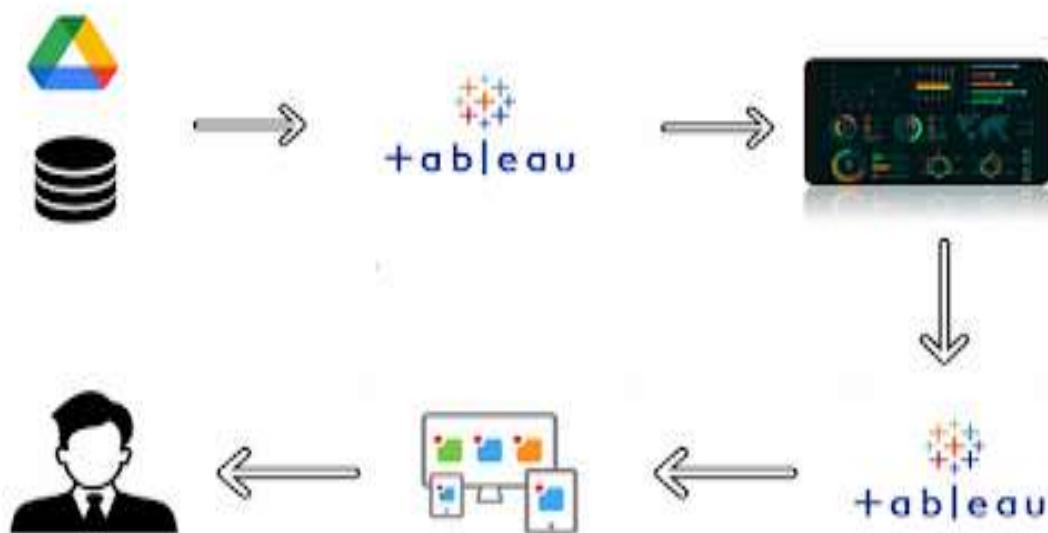
**Scenario 1.** Film and Television Production Companies: Production companies can utilize strategic product placement analysis to optimize revenue generation through partnerships with brands. By employing Tableau visualization, they can analyze the effectiveness of product placements in different scenes or episodes. This analysis can help them negotiate better deals with brands, understand audience engagement with specific products, and make data-driven decisions on future placement opportunities.

**Scenario 2.** Retail and Consumer Goods Companies: Retailers and consumer goods companies can leverage strategic product placement analysis to enhance their marketing strategies and boost sales. By using Tableau visualization, they can track the performance of products placed in various locations within their stores or on their websites. They can identify high-traffic areas, understand customer preferences, and optimize product placement to increase visibility and drive conversions.

**Scenario 3.** Advertising Agencies: Advertising agencies can benefit from strategic product placement analysis to provide valuable insights to their clients and optimize advertising campaigns. By utilizing Tableau visualization, they can analyze the impact of product placements in different media channels such as movies, TV shows, or online videos. This analysis can help them demonstrate the ROI of product placement initiatives, refine targeting strategies, and improve campaign effectiveness for their clients.

## TECHNICAL ARCHITECTURE

### Technical Architecture:



## Project Flow

To accomplish this, we have to complete all the activities listed below,

- Data Collection & Extraction from Database
- Collect the dataset
- Connect data with Tableau
  - Data Preparation
- Prepare the Data for Visualization
  - ? Data Visualizations
- No of Unique Visualizations
  - Dashboard
- Responsive and Design of Dashboard
  - Story
- No of Scenes of Story
  - Performance Testing
- Utilization of Data Filters
- No of Calculation Fields
- No of Visualizations/ Graphs
  - Web Integration
- Dashboard and Story embed with UI With Flask
  - Project Demonstration & Documentation
- Record explanation Video for project end-to-end solution

- o Project Documentation-Step step-by-step project development procedure

## **Milestone1:Data Collection and Extraction of Data**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes, and generate insights from the data.

### **Activity 1: Collect the dataset**

Please use the link to download the dataset:

<https://www.kaggle.com/datasets/amitykulkarni/impact-of-product-positioning-on-sales>

### **Activity 2:Understanding the Data**

The dataset includes information on sales data, product positioning, and consumer behavior metrics. It contains variables such as product placement (endcap, aisle, shelf), sales revenue, customer demographics, product attributes, and promotional activities. The dataset covers a range of products and periods, allowing for a comprehensive analysis of the impact of product positioning on sales and consumer behavior.

1. Product ID: A unique identifier assigned to each product in the dataset.
2. Product Position: The relative placement or ranking of the product within its category(endcap, aisle, shelf)of the market.
3. Price: The selling price of the product.
4. Competitor's Price: The price at which competitors are selling a similar product.
5. Promotion: Any special offers, discounts, or promotions associated with the product.
6. Foot Traffic: The volume of people passing by or visiting the location where the product is sold.
7. Consumer Demographics: Characteristics and traits of the target audience (Families, Seniors, Young adults, and College students) or consumers purchasing the product.
8. Product Category: The broad category or type of product to which it belongs.
9. Seasonal: Indicates whether the product is seasonal or not seasonal.
10. Sales Volume: The quantity of units sold for the product over a specific period.

### **Activity 3: Connecting the dataset with Tableau**

To visualize the dataset in Tableau, import the dataset file into Tableau Desktop. Then, link the relevant columns to Tableau's data fields to create visualizations and analyze the data effectively.

ReferenceVideo:

[https://drive.google.com/file/d/1cS7Ork8XG7c\\_RjdmMW\\_EwZqQj6cwgn9x/view?usp=sharing](https://drive.google.com/file/d/1cS7Ork8XG7c_RjdmMW_EwZqQj6cwgn9x/view?usp=sharing)

## **Milestone 2:Data Preparation**

Preparing data for visualization is a crucial step in the data analysis pipeline, involving various tasks to ensure the quality and usability of the dataset. Initially, cleaning the data is essential, which entails identifying and removing irrelevant or missing data points that could skew the analysis. Transforming the data into a format conducive to visualization involves organizing it in a structured manner, standardizing units of measurement, and converting categorical variables into numerical ones where necessary.

## **MILESTONE 3: Prepare the Data for Visualization**

Exploring the data is another vital aspect of preparation, where analysts delve into the dataset to uncover underlying patterns, trends, and relationships among variables. This exploration aids in determining which aspects of the data are most relevant for visualization and analysis. Filtering the data allows analysts to focus on specific subsets or segments of the dataset, refining the scope of analysis and visualization to address particular questions or objectives.

Once the data is cleaned, transformed, explored, and filtered, it is prepared for integration into visualization software such as Tableau. This involves formatting the data according to the requirements of the software and ensuring compatibility with the chosen visualization techniques. Additionally, ensuring the accuracy and completeness of the data is paramount throughout the preparation

process, as any inaccuracies or omissions could lead to erroneous conclusions during analysis.

## **MILESTONE 4: Data Visualization**

- Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

### **No of Unique Visualizations**

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of Product Placement include bar charts, Stacked Bar charts, heat maps, Donut charts, Bubble charts, pie charts, etc. These visualizations can be used to compare performance, track changes over time, and show distribution, and relationships between variables, such as revenue and customer demographics, Competitors' price, Product Category, Product Position, Season, and Promotion.

#### **Activity 1.1: Avg Sales Volume vs Product Category**

Explanation Video Link:

[https://drive.google.com/file/d/1U7VKPbMDP1aTYd1KLdk284DZGPgJXkQF/view?usp=drive\\_link](https://drive.google.com/file/d/1U7VKPbMDP1aTYd1KLdk284DZGPgJXkQF/view?usp=drive_link)

#### **Activity 1.2: Competitor Price Vs Price**

Explanation Video Link:

[https://drive.google.com/file/d/1mzcXYYd1Sv3WXWnt8fzqkpCC5c9M3MPM/view?usp=drive\\_link](https://drive.google.com/file/d/1mzcXYYd1Sv3WXWnt8fzqkpCC5c9M3MPM/view?usp=drive_link)

Activity 1.3: Avg Sales Volume by Product Category by Product Position

Explanation Video Link:

[https://drive.google.com/file/d/1HBeHTh\\_XHriqfFR7dsJTP-jTPuEyS9fV/view?usp=drive\\_link](https://drive.google.com/file/d/1HBeHTh_XHriqfFR7dsJTP-jTPuEyS9fV/view?usp=drive_link)

Activity 1.4: Consumer Demographics vs Sales Volume

Explanation Video Link:

[https://drive.google.com/file/d/1laY\\_qirn7JN1kTGs3bVKEpl1085pYHmr/view?usp=drive\\_link](https://drive.google.com/file/d/1laY_qirn7JN1kTGs3bVKEpl1085pYHmr/view?usp=drive_link)

Activity 1.5: Product Category vs Price

Explanation Video Link:

[https://drive.google.com/file/d/1-BUwN1kuJguZ6eQV6vvT6g9ysZxYx4cY/view?usp=drive\\_link](https://drive.google.com/file/d/1-BUwN1kuJguZ6eQV6vvT6g9ysZxYx4cY/view?usp=drive_link)

Activity 1.6: Avg Sales Volume by Product Category by Season

Explanation Video Link:

[https://drive.google.com/file/d/12E\\_h12OOvQuHBoknh19e8MIBvLks8ySq/view?usp=drive\\_link](https://drive.google.com/file/d/12E_h12OOvQuHBoknh19e8MIBvLks8ySq/view?usp=drive_link)

## Activity 1.7: Foot Traffic by Avg Sales Volume

Explanation Video Link:

[https://drive.google.com/file/d/17PbnYEKHEfuzOFLhp9pTz9UkhYoZd1S/view?usp=drive\\_link](https://drive.google.com/file/d/17PbnYEKHEfuzOFLhp9pTz9UkhYoZd1S/view?usp=drive_link)

## Activity 1.8: Promotion of Product Category on Price and Sales Volume

Explanation Video Link:

[https://drive.google.com/file/d/1N-BwMnpkj87BrH86GpBwn5W\\_z8MxWEaV/view?usp=drive\\_link](https://drive.google.com/file/d/1N-BwMnpkj87BrH86GpBwn5W_z8MxWEaV/view?usp=drive_link)

## **MILESTONE 5: Dashboard**

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in charts, graphs, and tables.

### **Responsive and Design of Dashboard**

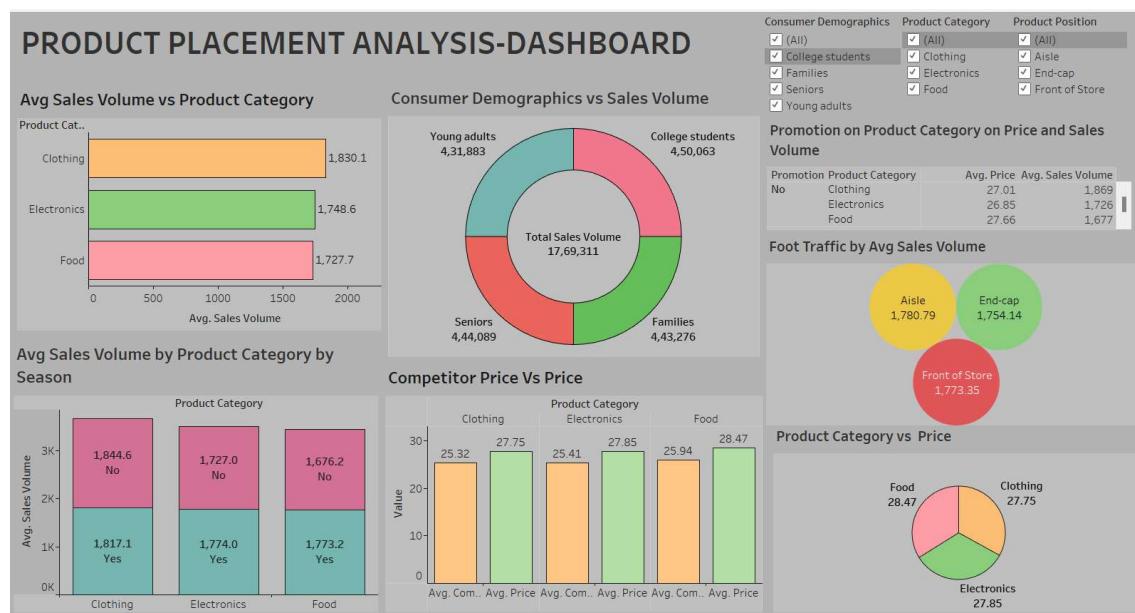
The responsiveness and design of a dashboard for analyzing the performance and efficiency of Product Placement is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information,

interactivity, data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights to improve the performance and efficiency of Product Placement Analysis.

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

Explanation Video Link:

[https://drive.google.com/file/d/1u67ecEyQz7XswgekZnpdHAE5sEhy79rS/view?usp=drive\\_link](https://drive.google.com/file/d/1u67ecEyQz7XswgekZnpdHAE5sEhy79rS/view?usp=drive_link)



## MILESTONE 6: Story

A data story is a way of presenting data and analysis in a narrative format, intending to make the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis logically and systematically, and a conclusion that summarizes the key findings and highlights their

implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

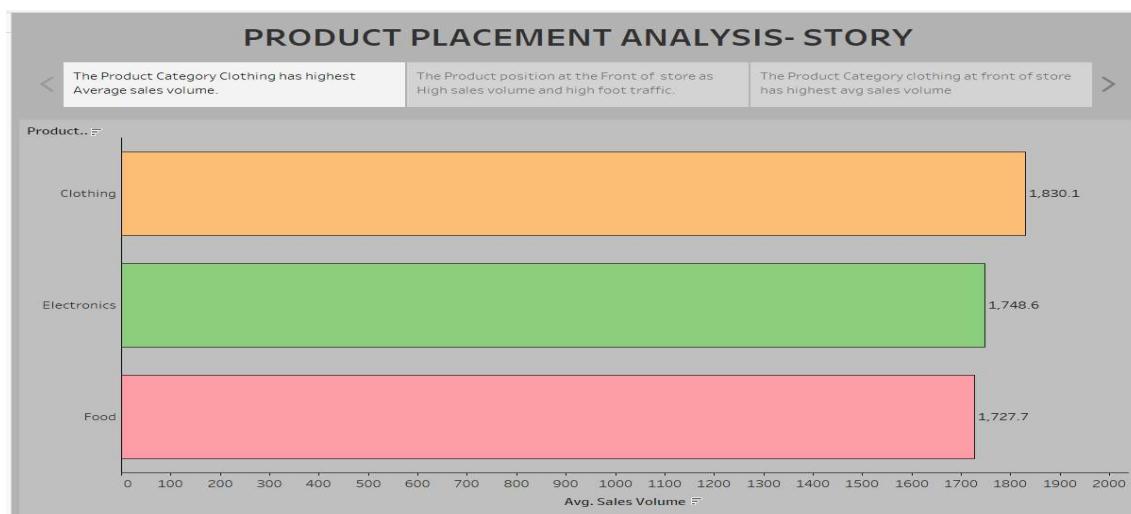
## No of Scenes of Story

The number of scenes in a storyboard for a data visualization analysis of the performance and efficiency of Product Placement will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.

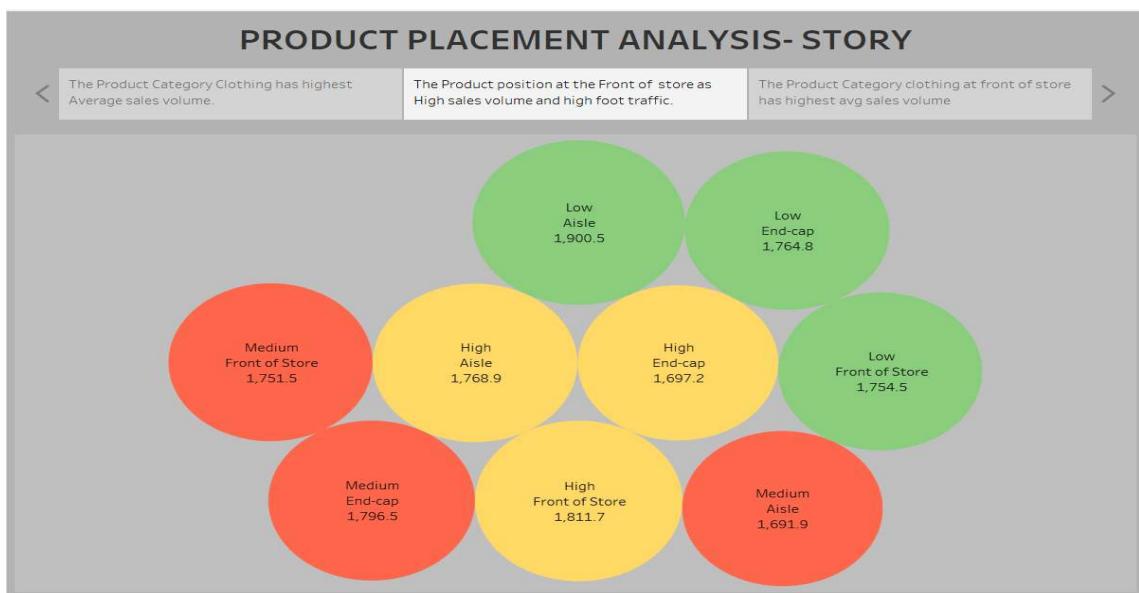
Explanation Video Link:

[https://drive.google.com/file/d/15Q105EwhPRdJiEuYI6q9I7lxqZk8HYWo/view?usp=drive\\_link](https://drive.google.com/file/d/15Q105EwhPRdJiEuYI6q9I7lxqZk8HYWo/view?usp=drive_link)

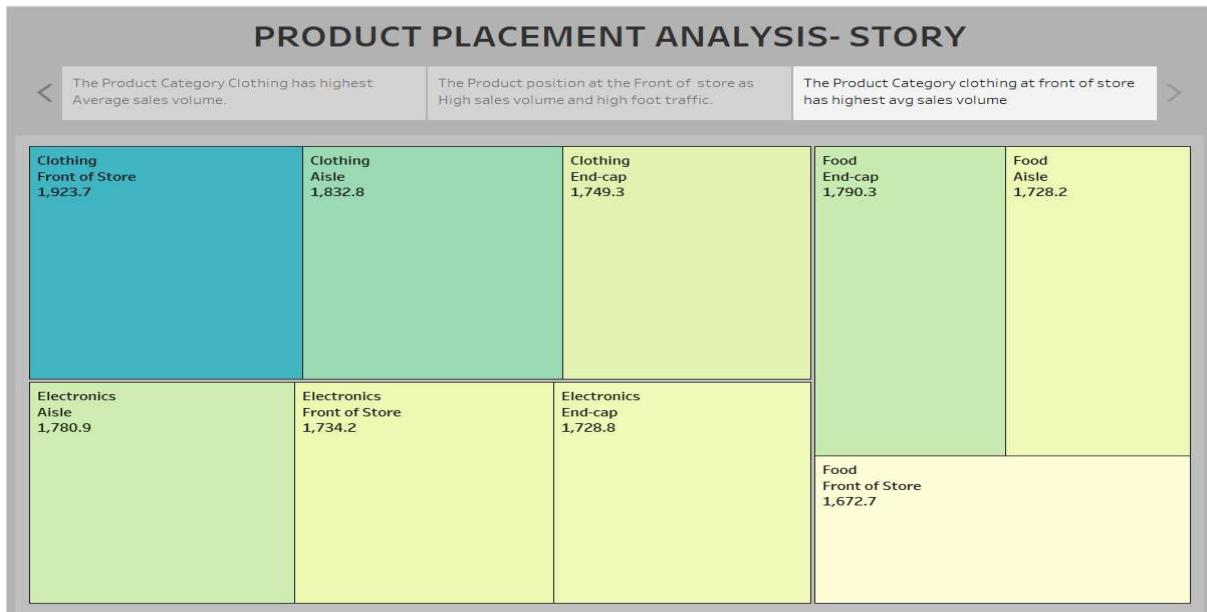
## STORY SCENE-1



## STORY SCENE-2



## STORY SCENE-3

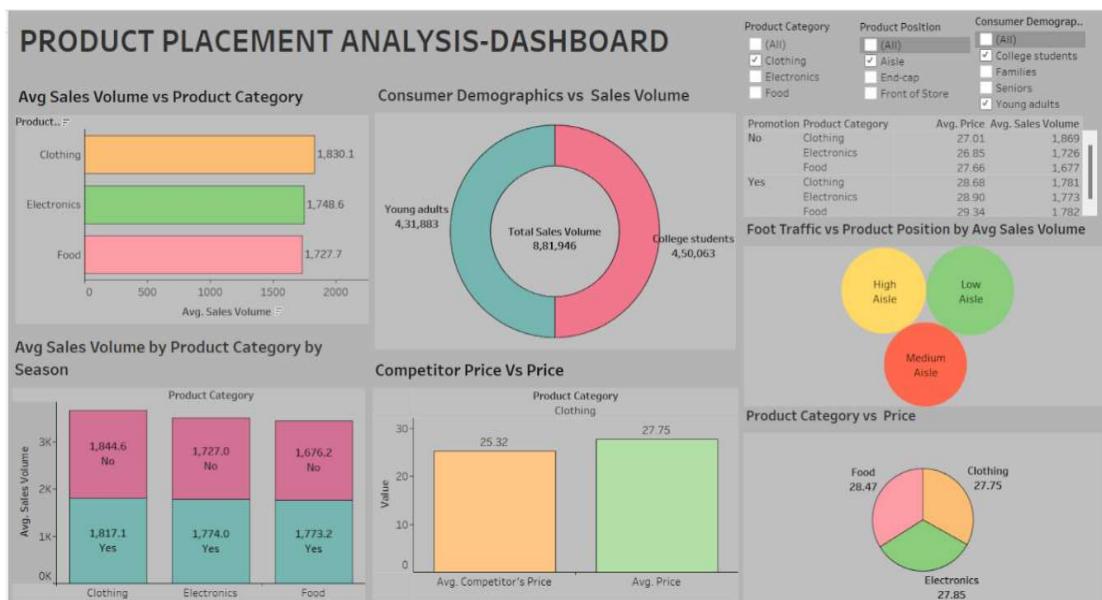


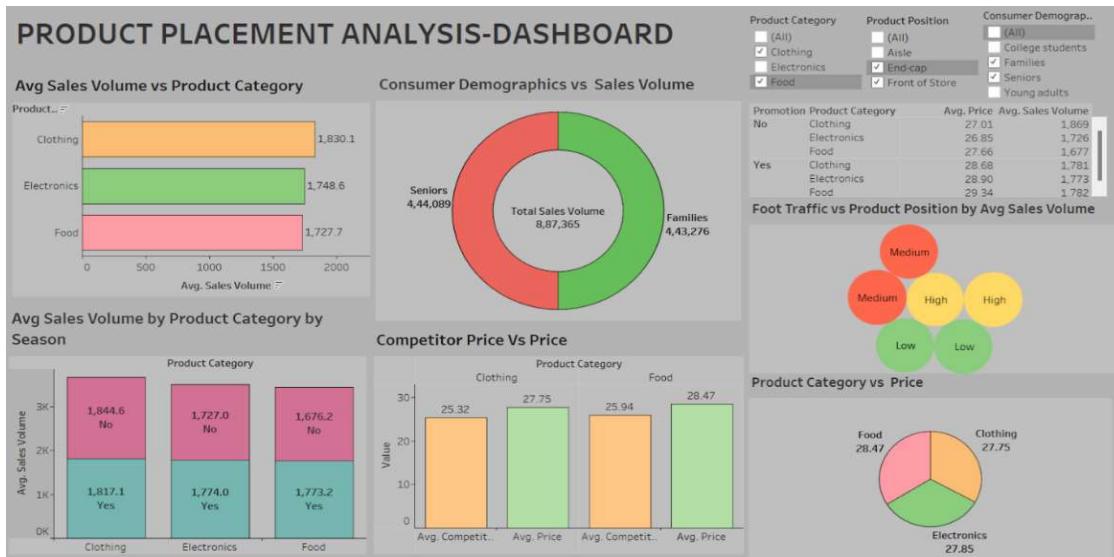
## MILESTONE 7: Performance Testing

Performance testing is a crucial aspect of software development aimed at evaluating the speed, responsiveness, stability, and scalability of an application under various workload conditions. It involves simulating real-world usage scenarios to assess how the system behaves and performs under stress, peak loads, or normal conditions.

## Utilization of Filters

Filters are an indispensable tool in data analysis and visualization, allowing users to refine and focus on specific subsets of data that are relevant to their analysis objectives.





## No of Calculation Fields

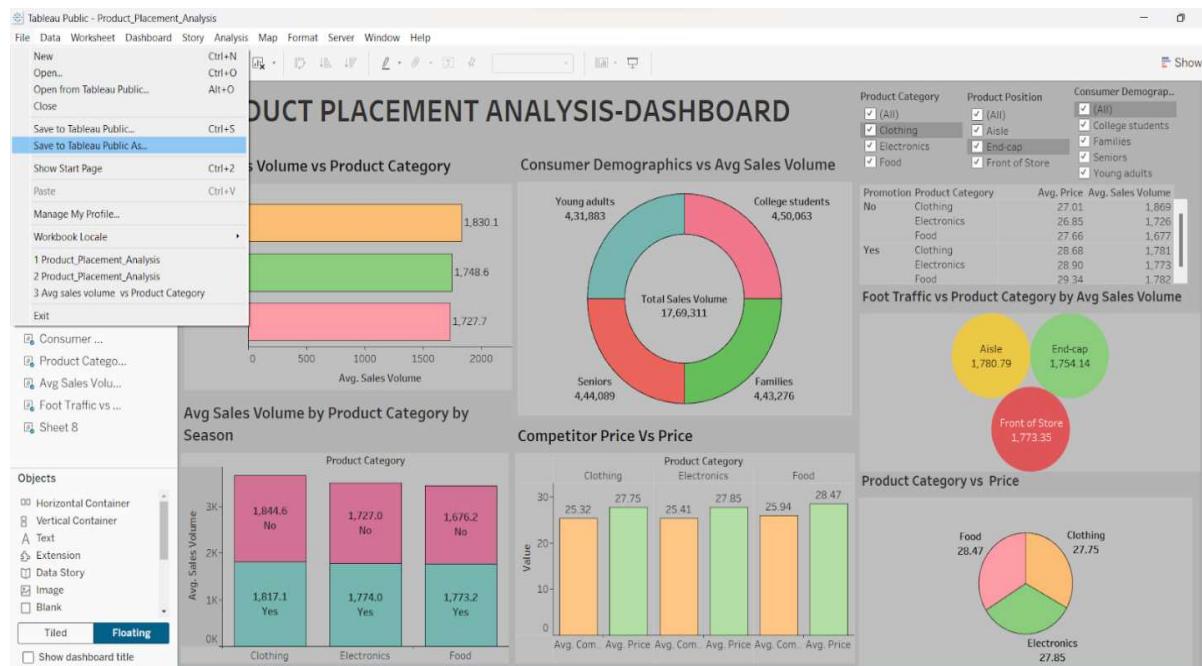
- Price
- Competitors Price
- Sales Volume

## No of Visualizations/ Graphs

- ? Avg Sales Volume by Product Category
- ? Avg Sales Volume by Product Category on Sales
- ? Consumer Demographics vs Product Category
- ? Foot traffic vs Sales Volume
- ? Competitors Price vs Price.
- ? Promotion of Product Category on Price and Sales Volume.
- ? Product Category vs Price
- ? Avg Sales Volume by Product Category by Product Position.

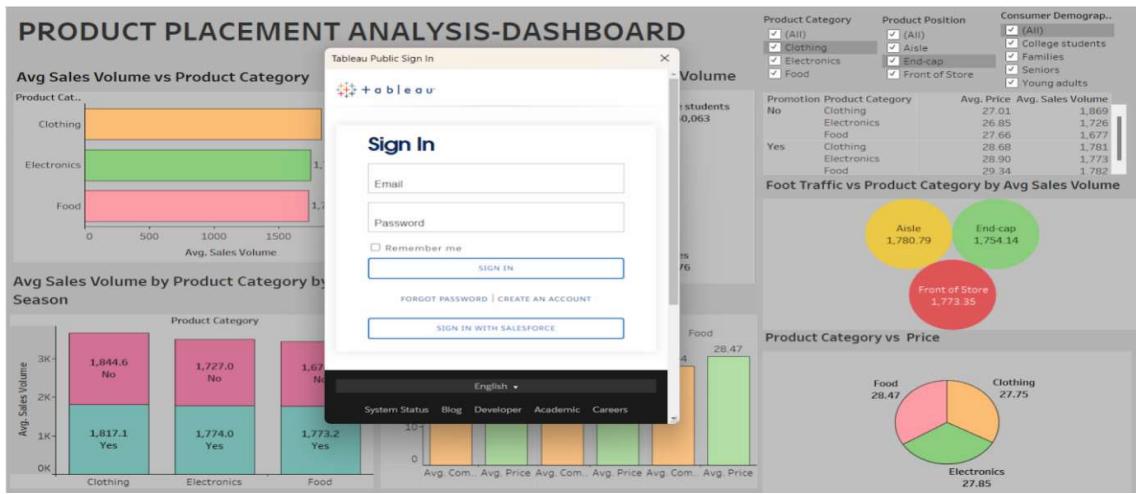
## MILESTONE 8: Web integration

Publishing helps us to track and monitor key performance metrics, to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

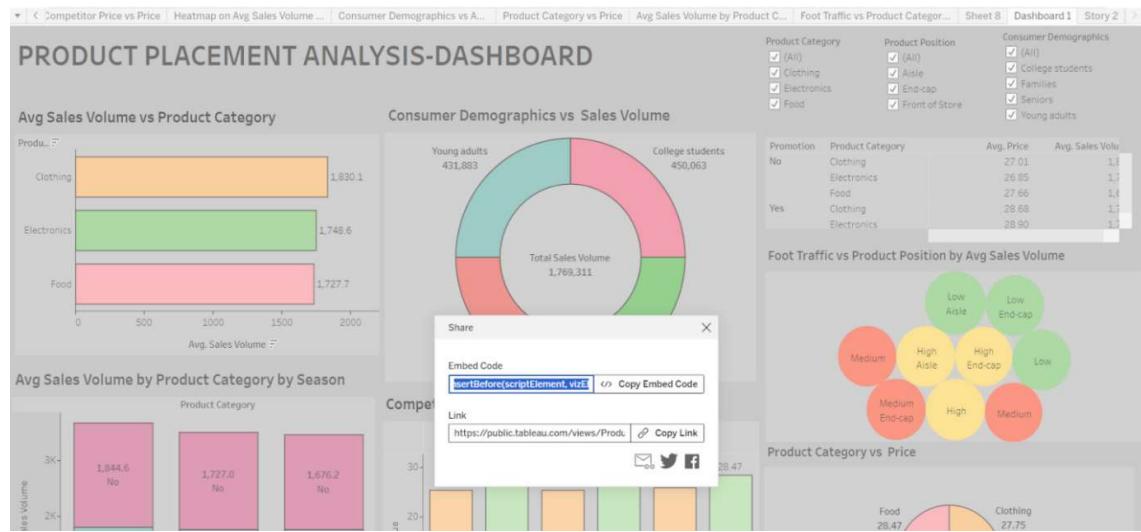


The above gives information on how to save and publish the dashboard to the tableau public.

- Click on “File” which is displayed on the left top corner of the dashboard sheet.
- Now click on the Save as Tableau Public As option and that will redirect to your sign-in account as shown below.

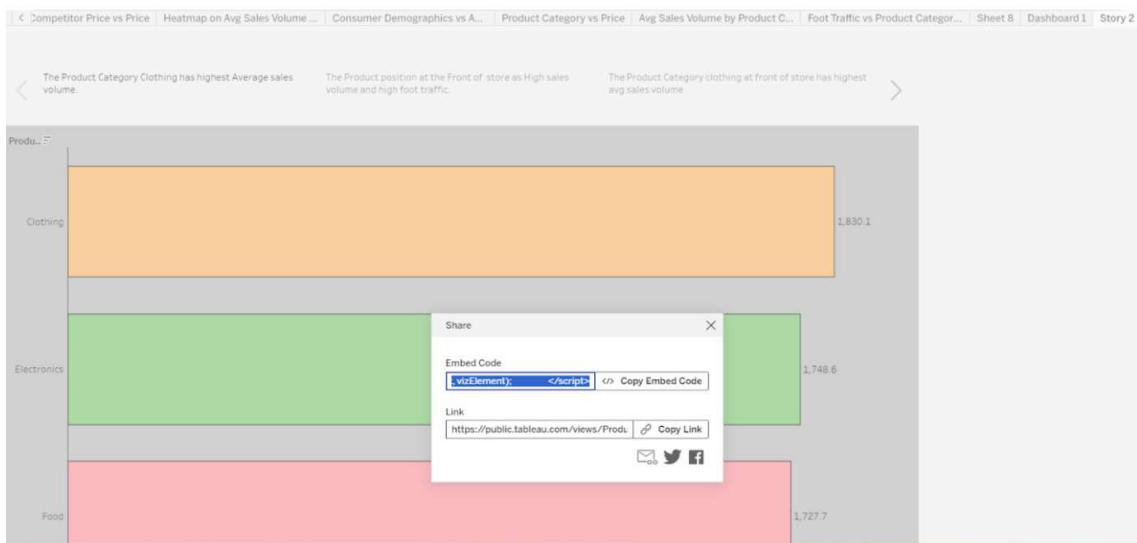


Now sign in to your Tableau public account and there your visualization, dashboard, and story are published. In this way, we can publish your dashboard and story into your tableau public.



After signing into your public account the workbook is displayed. Now click on “settings” and then it will display to show sheets are disabled so enable it so, that all your sheets are visible.

Now click on the dashboard sheet in the top right corner we have an option called share click on it then it will show like the above screenshot. Then, copy the embedded code and place the copied embedded code into your bootstrap template as shown in the reference video below.



After copying the embedded code of the dashboard from Tableau Public and pasting it in the Bootstrap template then use the same procedure for the story also to copy the embedded code from the Tableau Public and paste it into the Bootstrap template.

Dashboard and Story embed with UI With Flask

Explanation Video Link:

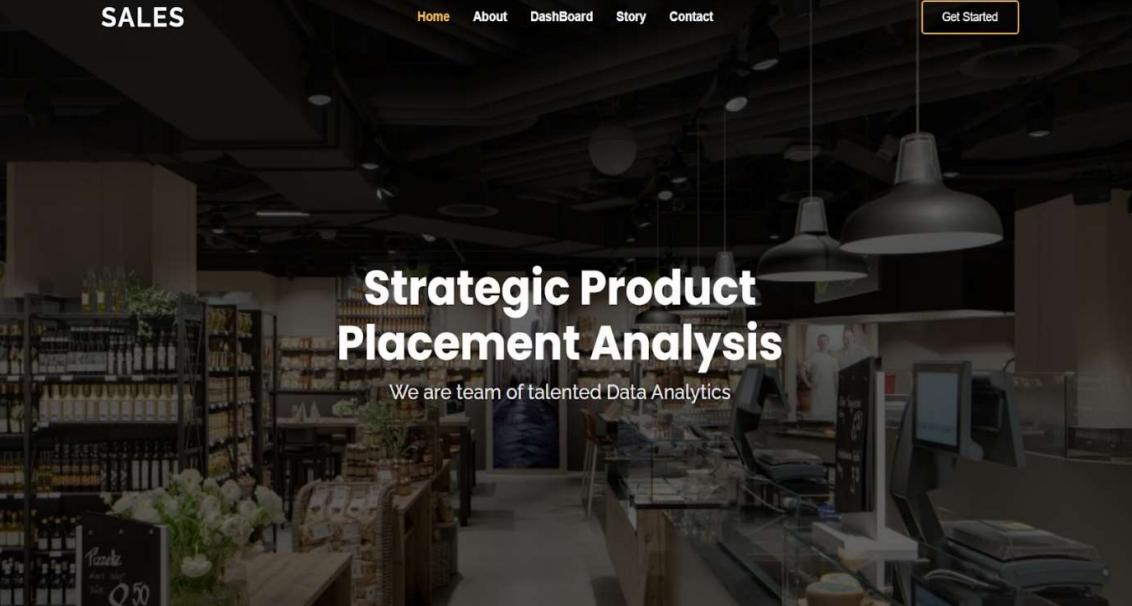
[https://drive.google.com/file/d/1-  
ImErECS0qUz3dOHx901QKa5HXGTGkdl/view?usp=drive\\_link](https://drive.google.com/file/d/1-ImErECS0qUz3dOHx901QKa5HXGTGkdl/view?usp=drive_link)

**SALES**

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# Strategic Product Placement Analysis

We are team of talented Data Analytics



**SALES**

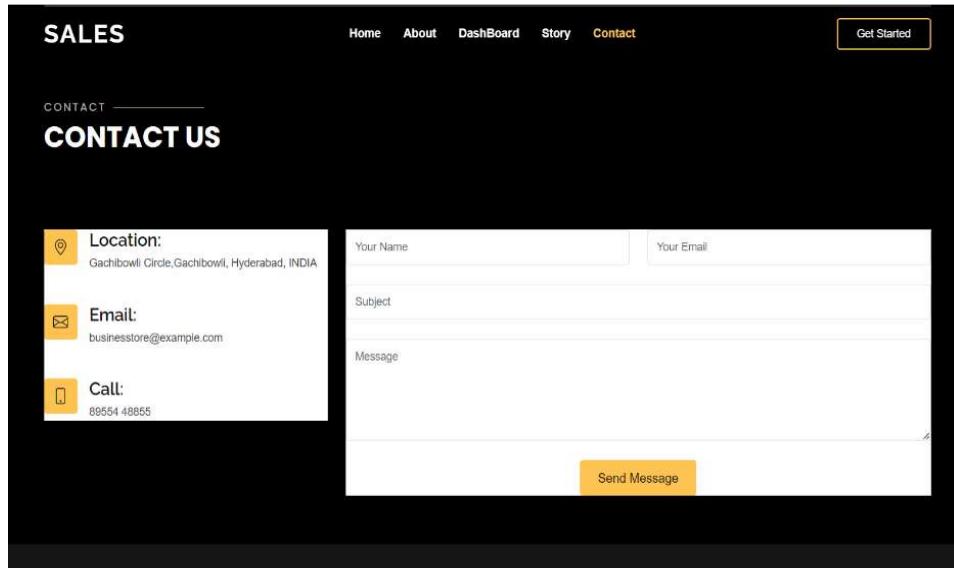
Home   About   DashBoard   Story   Contact   Get Started

**ABOUT**

**The Project Involves**

- ▽ Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypothesis, and evaluate outcomes and generate insights from the data.
- ▽ Data preparation is the process of cleaning, transforming, and organizing data in order to make it suitable for analysis. It is an important step in the data analysis process, as the quality of the data used can have a significant impact on the accuracy and reliability of the results.
- ▽ Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.





## **Milestone 9:Project Demonstration & Documentation**

The mentioned deliverables are to be submitted along with other deliverables

## **Milestone 10:Record an explanation Video for the project end to end solution**

Creating a record explanation video for a project's end-to-end solution is crucial for ensuring clarity and transparency in its implementation.

## **Milestone 11:Project Documentation-Step by step project development procedure**

Create a document as per the template provided

# Clean Data from Excel, CSV, PDF, and Google Sheets with Data Interpreter

*Applies to: Tableau Cloud, Tableau Desktop, Tableau Server*

When you track data in Excel spreadsheets, you create them with the human interface in mind. To make your spreadsheets easy to read, you might include things like titles, stacked headers, notes, maybe empty rows and columns to add white space, and you probably have multiple tabs of data too.

When you want to analyze this data in Tableau, these aesthetically pleasing attributes make it very difficult for Tableau to interpret your data. That's where Data Interpreter can help.

**Tip:** Though Tableau's Excel add-in is no longer supported, Data Interpreter can help you reshape your data for analysis in Tableau.

## What does Data Interpreter do?

Data Interpreter can give you a head start when cleaning your data. It can detect things like titles, notes, footers, empty cells, and so on and bypass them to identify the actual fields and values in your data set.

It can even detect additional tables and sub-tables so that you can work with a subset of your data independently of the other data.

After Data Interpreter has done its magic, you can check its work to make sure it captured the data that you wanted and identified it correctly. Then, you can make any necessary adjustments.

After you select the data that you want to work with, you might also need to do some additional cleaning steps like pivoting your data, splitting fields, or adding filters to get the data in the shape you want before starting your analysis.

**Note:** If your data needs more cleaning than what Data Interpreter can help you with, try [Tableau Prep](#)(Link opens in a new window).

## Turn on Data Interpreter and review results

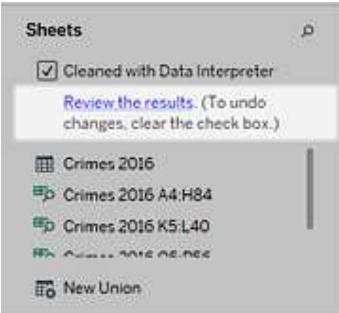
1. From the **Connect** pane, connect to an Excel spreadsheet or other connector that supports Data Interpreter such as Text (.csv) files, PDF files or Google sheets.

1. Drag a table to the canvas (if needed), then on the **Data Source** page, in the left pane, select the **Use Data Interpreter** check box to see if Data Interpreter can help clean up your data.



**Note:** When you clean your data with Data Interpreter, Data Interpreter cleans all the data associated with a connection in the data source. Data Interpreter does not change the underlying data.

1. In the Data pane, click the **Review the results** link to review the results of the Data Interpreter.



A copy of your data source opens in Excel on the **Key for the Data Interpreter** tab. Review the key to find out how to read the results.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2		<b>Key for Understanding the Data Interpreter Results</b>												
3														
4														
5		Use the key to understand how your data source has been interpreted.												
6		To view the results, click a worksheet tab.												
7		Note: Tableau never makes changes to your underlying data source.												
8														
9														
10														
11		<b>Key:</b> <span style="background-color: #e6f2ff; border: 1px solid black; padding: 2px;">■</span> Data is interpreted as column headers (field names). <span style="background-color: #c6e2ff; border: 1px solid black; padding: 2px;">■</span> Data is interpreted as values in your data source. <span style="background-color: #d9ead3; border: 1px solid black; padding: 2px;">■</span> Data derived from an Excel merged cell is interpreted as value in your data source. <span style="background-color: #f2f2f2; border: 1px solid black; padding: 2px;">■</span> Data is ignored and not included as part of your data source. <span style="background-color: #ffcccb; border: 1px solid black; padding: 2px;">■</span> Data has been excluded from your data source. Note: To search for all excluded data, use CTRL +F on Windows or Command F on the Mac, and then type "****DATA REMOVED****".												
12														
13														
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20														
21		If the Data Interpreter has interpreted the Tableau data source incorrectly, close the spreadsheet, and then clear the Cleaned with Data Interpreter check box from the Data Source page.												
22														
23		If the Tableau data source continues to be interpreted incorrectly or for general information about why some data was removed by the Data Interpreter, refer to <a href="#">Resolving Common Issues with Data Interpreter Results</a> .												
24														
25														
26		Help Tableau improve the Data Interpreter by emailing your file to <a href="mailto:support@tableau.com">support@tableau.com</a> or filing a support request with an attached file at:												
27														
28														
29		<a href="http://tableau.com/support/request">http://tableau.com/support/request</a>												
30														
31														
		Key for the Data Interpreter <a href="#">Crimes 2016</a> <a href="#">Crimes 2016_subtables</a> <a href="#">A04_H84</a> <a href="#">K05_L40</a> <a href="#">Q05_P56</a> <a href="#">+</a>												

1. Click each tab to review how Data Interpreter interpreted the data source.

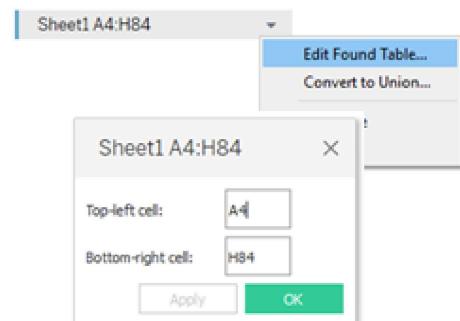
If Data Interpreter found additional tables, also called found tables or sub-tables, they are identified in the <sheet name>\_subtables tab by outlining their cell ranges. A separate tab is also included for each sub-table, color coded to identify the header and data rows.

If Data Interpreter does not provide the expected results, clear the **Cleaned with Data Interpreter** check box to use the original data source.



1. To replace the current table with any of the found tables, drag the current table off the canvas and then drag the found table that you want to use to the canvas.

If Data interpreter has misidentified the range of the found table, after you drag the found table to the canvas, click the drop-down arrow on that table, and then select **Edit Found Table** to adjust the corners of the found table (the top-left cell and bottom-right cell of the table).



1. After you have the data that you want to work with, you can apply any additional cleaning operations to your data so that you can analyze it.

## Data Interpreter Example

In this example we are connecting to an Excel spreadsheet with violent crime data by city and state for the year 2016. This spreadsheet includes multiple tables on one sheet and some extra formatting.

### A. Title

#### A. Merged header cells

#### A. Extra white space

### A. Sub-tables

The extra formatting in this spreadsheet makes it difficult for Tableau to determine what the field headers and values are.

Instead, it reads the data vertically and assigns each column the default value F1, F2, F3 (Field 1, Field 2, Field 3) and so on. Blank cells are read as null values.

Connections: B-Live Extract

Crimes 2016 (crimes\_2016)

Sheets: Crimes 2016

Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Crimes 2016

New Union Sort Fields Data source order + Show aliases Show hidden fields

Incident Date	Adm. Date	Adm. Month	Adm. Year	Incident Month	Incident Year	Report Date	Report Month	Report Year	Primary Type	Secondary Type	Arrest	Victim Age Group	Victim Sex
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14
Violent Crimes in 2016	null	null	null	null	null	null	null	null	null	null	null	null	null
Location	null	Marina	null	null	null	null	null	null	null	null	null	null	null
City	state	Apr	Jun	Jul	Aug	Sep	Oct	Nov	Total Crimes 2016	State	Population 2016		
Albuquerque	New Mexico	null	null	null	null	46	null	null	Alabama	12	Alabama	4860545	
Anaheim	California	null	4	null	null	null	null	null	Alaska	26	Alaska	741522	
Anchorage	Alaska	1	null	null	null	26	null	null	Arizona	102	Arizona	6906542	
Arlington	Texas	null	null	null	17	null	null	null	California	825	Arkansas	2980231	
Atlanta	Georgia	null	null	null	null	85	null	null	Colorado	64	California	34256475	

To see if Data Interpreter can help clean this data set, we select **Use Data Interpreter**.

Data Interpreter detected the proper headings for the fields, removed the extra formatting and found several sub-tables. The sub-tables are listed in the **Sheets** section in the Data pane and are named using the original sheet name and the cell ranges for each sub-table.

In this example there are three sub-tables: **Crimes 2016 A4:H84**, **Crimes 2016 K5:L40**, and **Crimes 2016 O5:P56**.



To examine the results of the Data Interpreter more closely, we click the **Review the results** link in the Data pane to view an annotated copy of the spreadsheet.

Here we see a copy of the original data, color coded to identify which data was identified as header data and which data was identified as field values.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Violent Crimes in 2016 in the United States by City and State															
2																
3																
4																
5	Location	Location	Months	Months	Months	Months	Months	Months	Header	state	Total Crimes 2016	State	Populatio	Header	Header	Header
6	city	state	Apr	Jun	Jul	Aug	Sep	Oct		Alabama	12	Alabama	4860545	Data		
7	Anaheim	California			4					Alaska	26	Alaska	741522	Data		
8	Anchorag	Alaska		1						Arizona	132	Arizona	6908642	Data		
9	Arlington	Texas				17				California	515	Arkansas	2988231	Data		
10	Atlanta	Georgia					85			Colorado	64	California	39296476	Data		
11	Aurora	Colorado						16		D.C.	105	Colorado	5530105	Data		
12	Austin	Texas				28				Florida	210	Connectic	3587685	Data		
13	Bakersfield	California		22						Georgia	85	Delaware	952698	Data		
14	Baltimore	Maryland						230		Hawaii	9	District of	684336	Data		
15	Boston	Massachusetts					28			Illinois	536	Florida	20656589	Data		
16	Buffalo	New York					38			Indiana	151	Georgia	10313620	Data		
17	Chandler	Arizona						3		Kansas	10	Hawaii	1428683	Data		

The next tab shows us the sub-tables that Data Interpreter found, outlined by the cell ranges.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1 Violent Crimes in 2016 in the United States by City and State																
2																
3																
4 Location																
5 city	Location state	Months Apr	Months Jun	Months Jul	Months Aug	Months Sep	Months Oct									
6 Albuquerque	New Mexico						46									
7 Anaheim	California			4												
8 Anchorage	Alaska	1					26									
9 Arlington	Texas				17											
10 Atlanta	Georgia						85									
11 Aurora	Colorado						16									
12 Austin	Texas				28											
13 Bakersfield	California		22					230								
14 Baltimore	Maryland															
15 Boston	Massachusetts						28									
16 Buffalo	New York						38									
17 Chandler	Arizona						3									
18 Charlotte	- North Carolina		25						536							
19 Chicago	Illinois															
20 Chula Vista	California	2			1											
21 Cincinnati	Ohio						50									
22 Cleveland	Ohio						89									
23 Colorado	Colorado						15									
24 Columbus	Ohio						70									
25 Corpus Christi	Texas		9													
26 Dallas	Texas				118											
27 Denver	Colorado				33											
28 Detroit	Michigan	5					221									
29 Durham	North Carolina							30								
30 El Paso	Texas						14									
31 Fort Wayne	Indiana						34									

Key for the Data Interpreter      Crimes 2016      Crimes 2016\_subtables      A04\_H84      K05\_L40      O05\_P56

In this example the first sub-table, **Crimes 2016 A4:H84**, has the main data that we want to work with. To use this table as our data table, we can simply drag the original table off the canvas and then drag the new table to the canvas.

Crime 2016 A4:H84 (crimes\_2016)

Connections: crimes\_2016

Sheets:

- Crimes 2016
- Crimes 2016 A4:H84
- Crimes 2016 K5:L40
- Crimes 2016 L5:M40
- New Union

Sort fields: Data source order: Show aliases: Show hidden fields: 79 rows

Location city	Location state	Months Apr	Months Jun	Months Jul	Months Aug	Months Sep	Months Oct
Albuquerque	New Mexico	null	null	null	null	46	null
Anaheim	California	null	4	null	null	null	null
Anchorage	Alaska	1	null	null	null	26	null
Arlington	Texas	null	null	null	17	null	null
Atlanta	Georgia	null	null	null	null	85	null
Aurora	Colorado	null	null	null	null	16	null
Austin	Texas	null	null	null	28	null	null
Bakersfield	California	null	22	null	null	null	null
Baltimore	Maryland	null	null	null	null	null	230
Boston	Massachusetts	null	null	null	null	28	null
Buffalo	New York	null	null	null	null	38	null
Chandler	Arizona	null	null	null	null	3	null

Once we have the data that we want to work with in the canvas, we can do some additional clean up on the data. For example we can:

- Change the field names so that they represent city, state, and month names.
- Pivot the months fields.
- Drag in the third sub-table **Crimes 2016 05:P56** and join it to our first sub-table on the **State** field to include state populations for our analysis.
- Hide any duplicate fields that were added as a result of the join.

The results might look something like this:

City	State	Population 2016	Month	Crimes
Phoenix	Arizona	6,908,642	August	111
Pittsburgh	Pennsylvania	12,787,085	August	null
Plano	Texas	27,904,862	August	5
Portland	Oregon	4,085,989	August	null
Raleigh	North Carolina	10,156,689	August	null
Riverside	California	39,296,476	August	7
Sacramento	California	39,296,476	August	null
San Antonio	Texas	27,904,862	August	null
San Diego	California	39,296,476	August	30
San Francisco	California	39,296,476	August	null
San Jose	California	39,296,476	August	35
Santa Ana	California	39,296,476	August	null
Seattle	Washington	7,280,934	August	14
St. Louis	Missouri	6,091,176	August	133
St. Petersburg	Florida	20,656,589	August	14

Now we are ready to start analyzing our data in Tableau.

## When Data Interpreter is not available

The Data Interpreter option might not be available for the following reasons:

- **The data source is already in a format that Tableau can interpret:** If Tableau Desktop doesn't need extra help from Data Interpreter to handle unique formatting or extraneous information, the Data Interpreter option is not available.
- **Many rows or many columns:** The Data Interpreter option is not be available when your data has the following attributes:
  - Data contains more than 2000 columns.
  - Data contains more than 3000 rows and more than 150 columns.

- **The data source is not supported:** Data Interpreter is only available for Microsoft Excel, Text (.csv) files, PDF files and Google Sheets. For Excel, your data must be in the .xls or .xlsx fox

## RESULT:

The screenshot shows a Microsoft Excel spreadsheet titled "Marked.Notes.pdf.2126376082696070 - Microsoft Excel". The spreadsheet contains a key for interpreting Data Interpreter results. The key includes the following entries:

Color	Description
Red	Data is interpreted as column headers (field names).
Green	Data is interpreted as values in your data source.
Yellow	Data derived from an Excel merged cell is interpreted as value in your data source.
Grey	Data is ignored and not included as part of your data source.
Red with a red box around it	Data has been excluded from your data source.

Below the key, there are several notes and instructions:

- Use the key to understand how your data source has been interpreted.
- To view the results, click a worksheet tab.
- Note: Tableau never makes changes to your underlying data source.
- Key:**
- Data is interpreted as column headers (field names).
- Data is interpreted as values in your data source.
- Data derived from an Excel merged cell is interpreted as value in your data source.
- Data is ignored and not included as part of your data source.
- Data has been excluded from your data source.**
- Note: To search for all excluded data, use CTRL +F on Windows or Command F on the Mac, and then type "\*\*\*\*DATA REMOVED\*\*\*".
- If the Data Interpreter has interpreted the Tableau data source incorrectly, close the spreadsheet, and then clear the Cleaned with Data Interpreter check box from the Data Source page.
- If the Tableau data source continues to be interpreted incorrectly or for general information about why some data was removed by the Data Interpreter, refer to

Marked.Notes.pdf.2126376082696070 - Microsoft Excel

A1

Key:

11 Data is interpreted as column headers (field names).  
12 Data is interpreted as values in your data source.  
13 Data derived from an Excel merged cell is interpreted as value in your data source.  
14 Data is ignored and not included as part of your data source.  
15 Data has been excluded from your data source.  
16 Note: To search for all excluded data, use CRTL+F on Windows or Command F on the Mac, and then type \*\*\*\*DATA REMOVED\*\*\*.

If the Data Interpreter has interpreted the Tableau data source incorrectly, close the spreadsheet, and then clear the Cleaned with Data Interpreter check box from the Data Source page. If the Tableau data source continues to be interpreted incorrectly or for general information about why some data was removed by the Data Interpreter, refer to Resolving Common Issues with Data Interpreter Results. Help Tableau improve the Data Interpreter by emailing your file to support@tableau.com or filing a support request with an attached file at: <http://tableau.com/support/request>

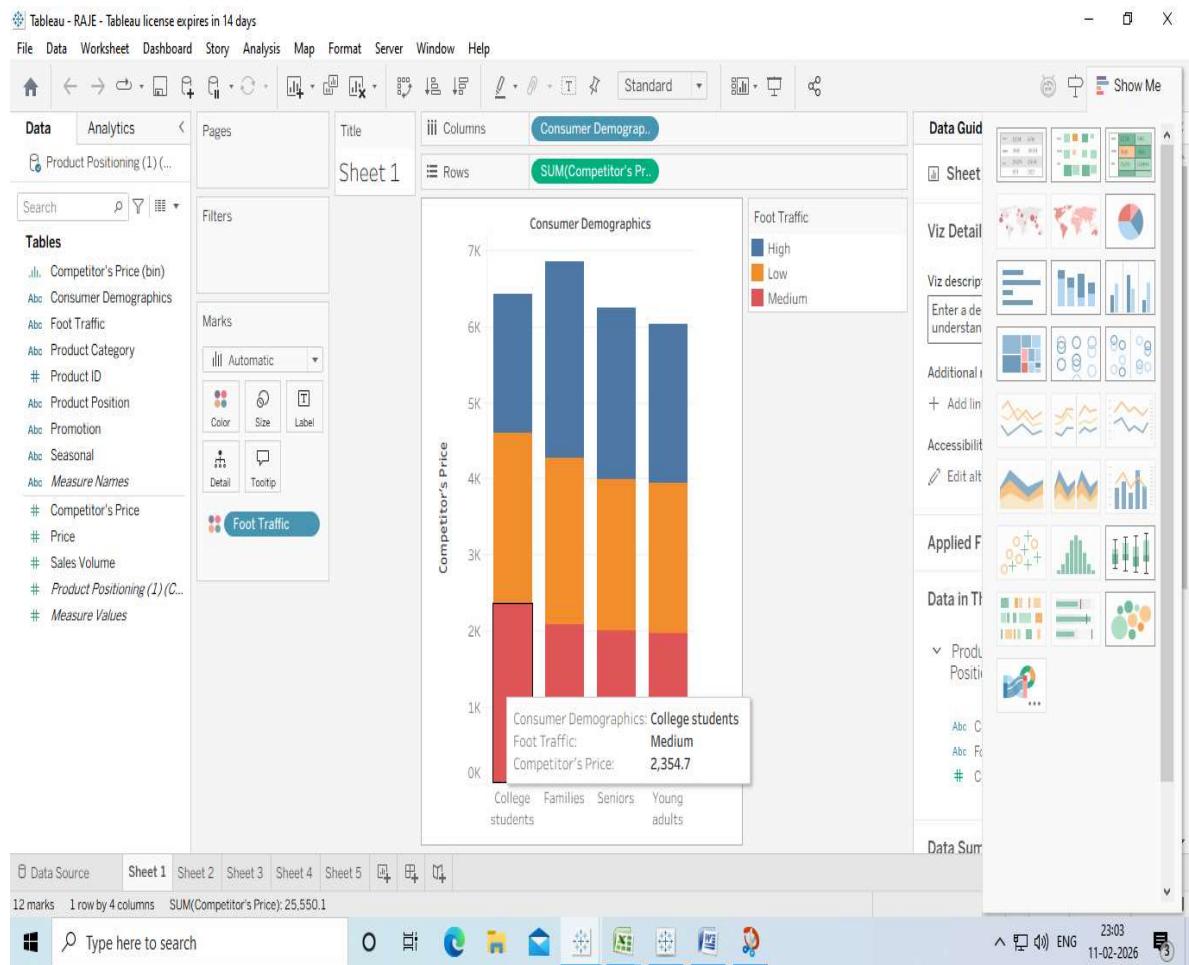
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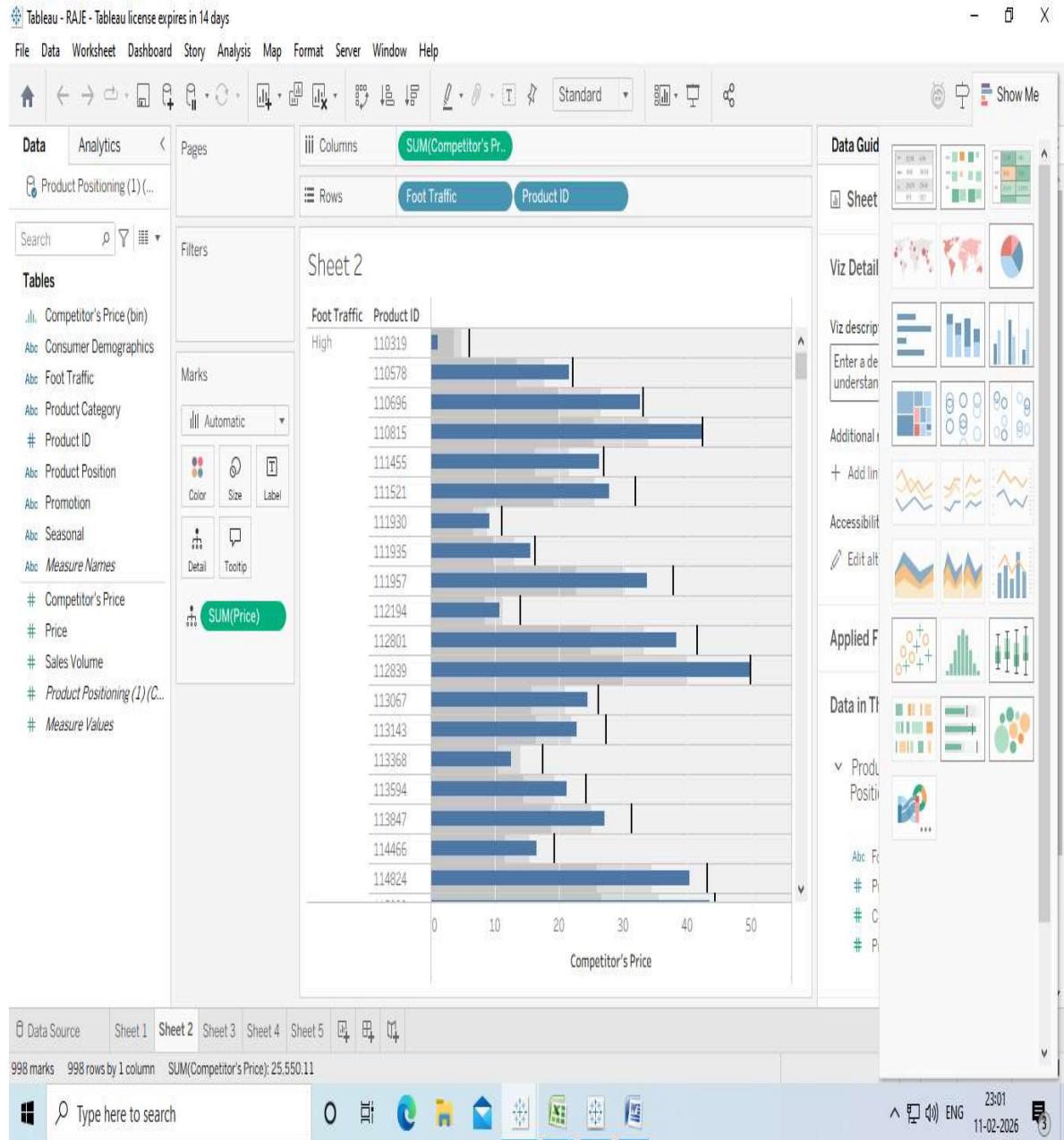
Key for the Data Interpreter Page 2 Table 1 / Page 3 Table 1 / Page 3 Table 2 / Page 3 Table 3 / Page 4 / 4

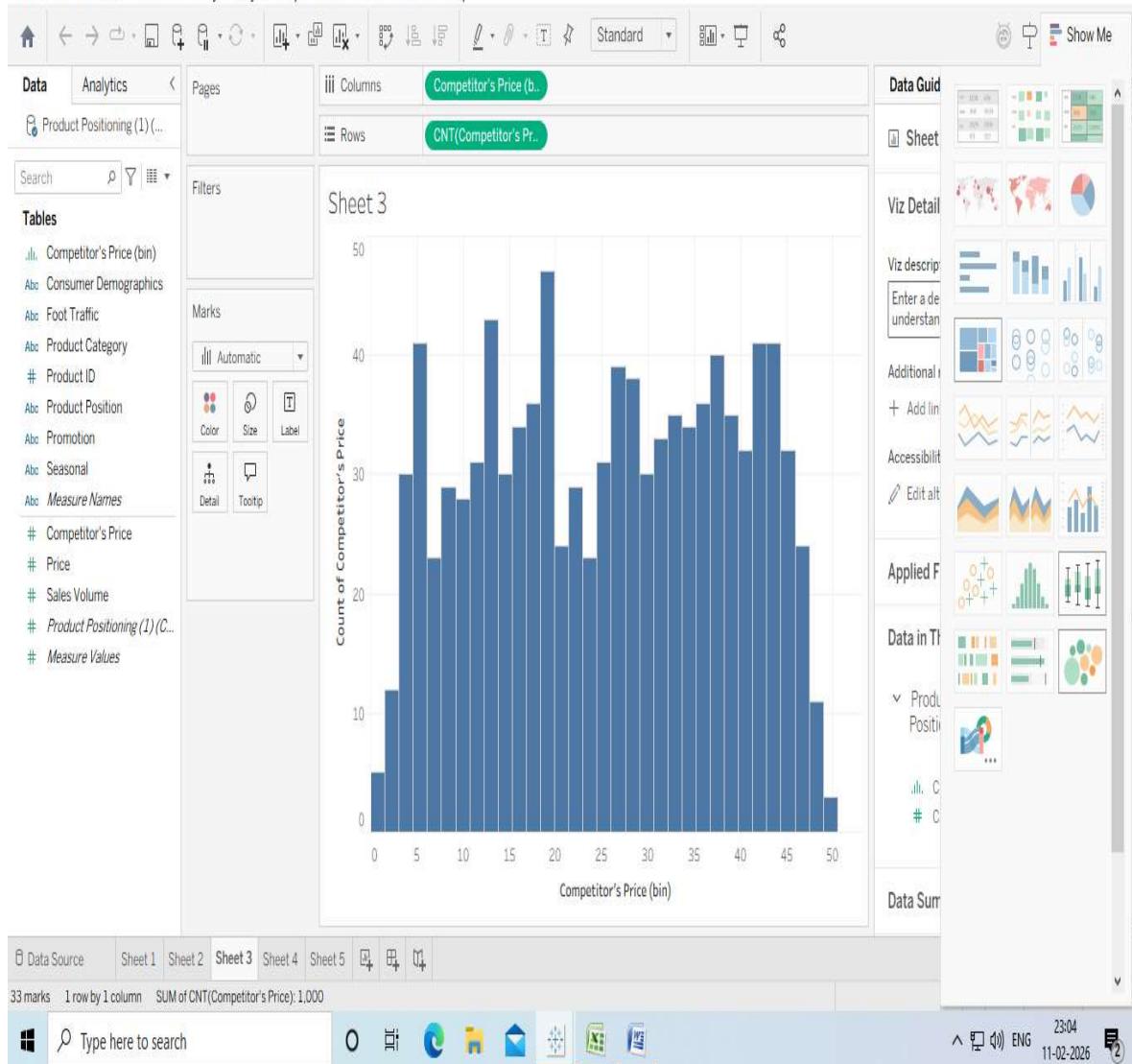
Ready Type here to search 100% 23:18 ENG 11-02-2026

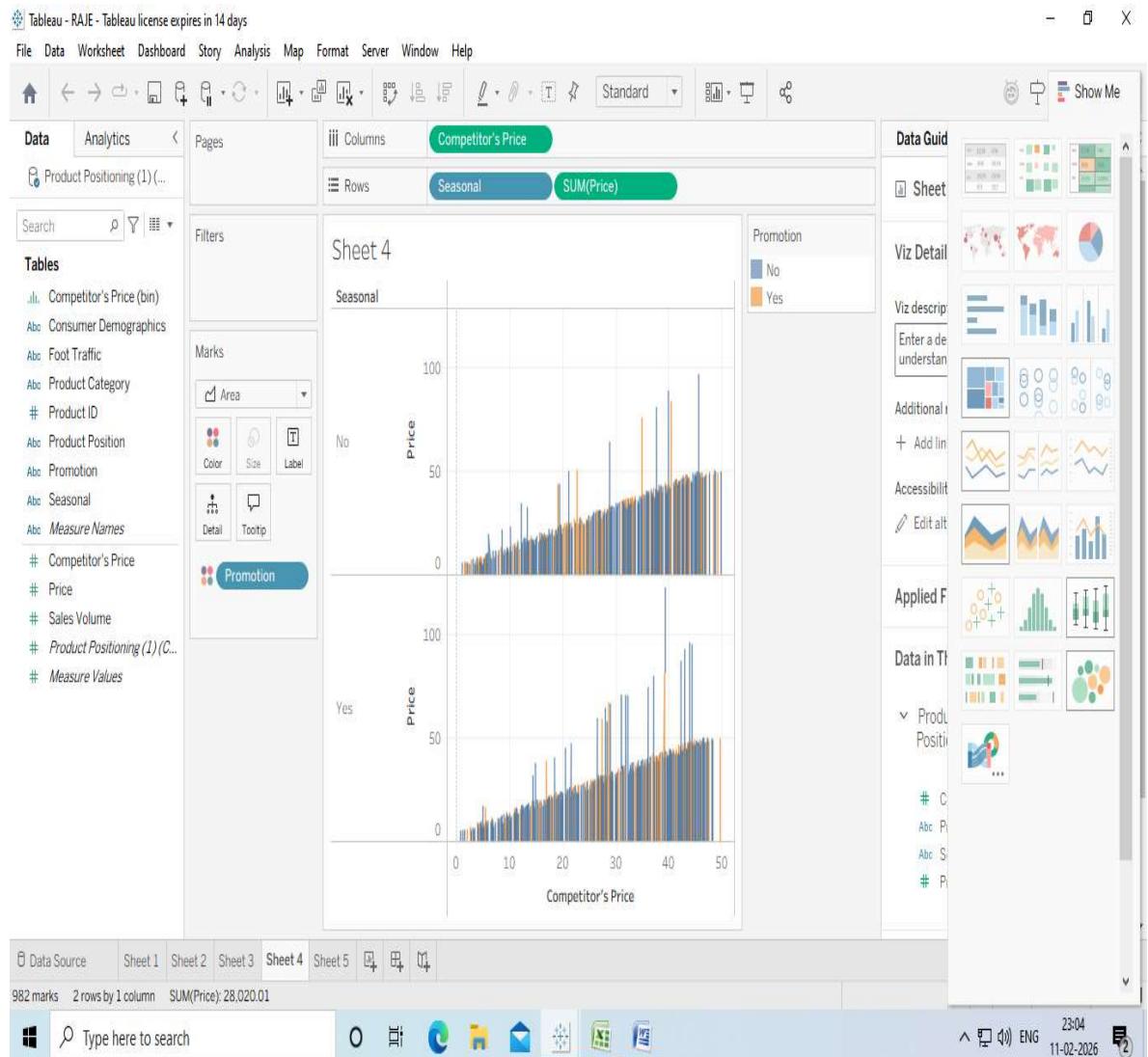
The screenshot shows a Microsoft Excel spreadsheet titled "Marked.Notes.pdf.2126376082696070 - Microsoft Excel". The spreadsheet contains a single row of text labeled "Key:" followed by several entries with colored backgrounds and borders. Row 11 has a red background for the first cell. Row 12 has a green background for the first cell. Row 13 has a green background for the first two cells. Row 14 has a green background for the first three cells. Row 15 has a red border around the first cell. Row 16 has a red border around the first cell. Row 17 has a green background for the first three cells. Row 18 has a green background for the first four cells. Row 21 contains a note about the Data Interpreter's interpretation of the Tableau data source. Row 25 links to "Resolving Common Issues with Data Interpreter Results". Row 26 links to "Help Tableau improve the Data Interpreter by emailing your file to support@tableau.com or filing a support request with an attached file at: http://tableau.com/support/request". The bottom of the screen shows the Windows taskbar with icons for Start, Search, Task View, File Explorer, Mail, Edge, and File Explorer. The system tray shows the date and time as 23:18 on 11-02-2026.

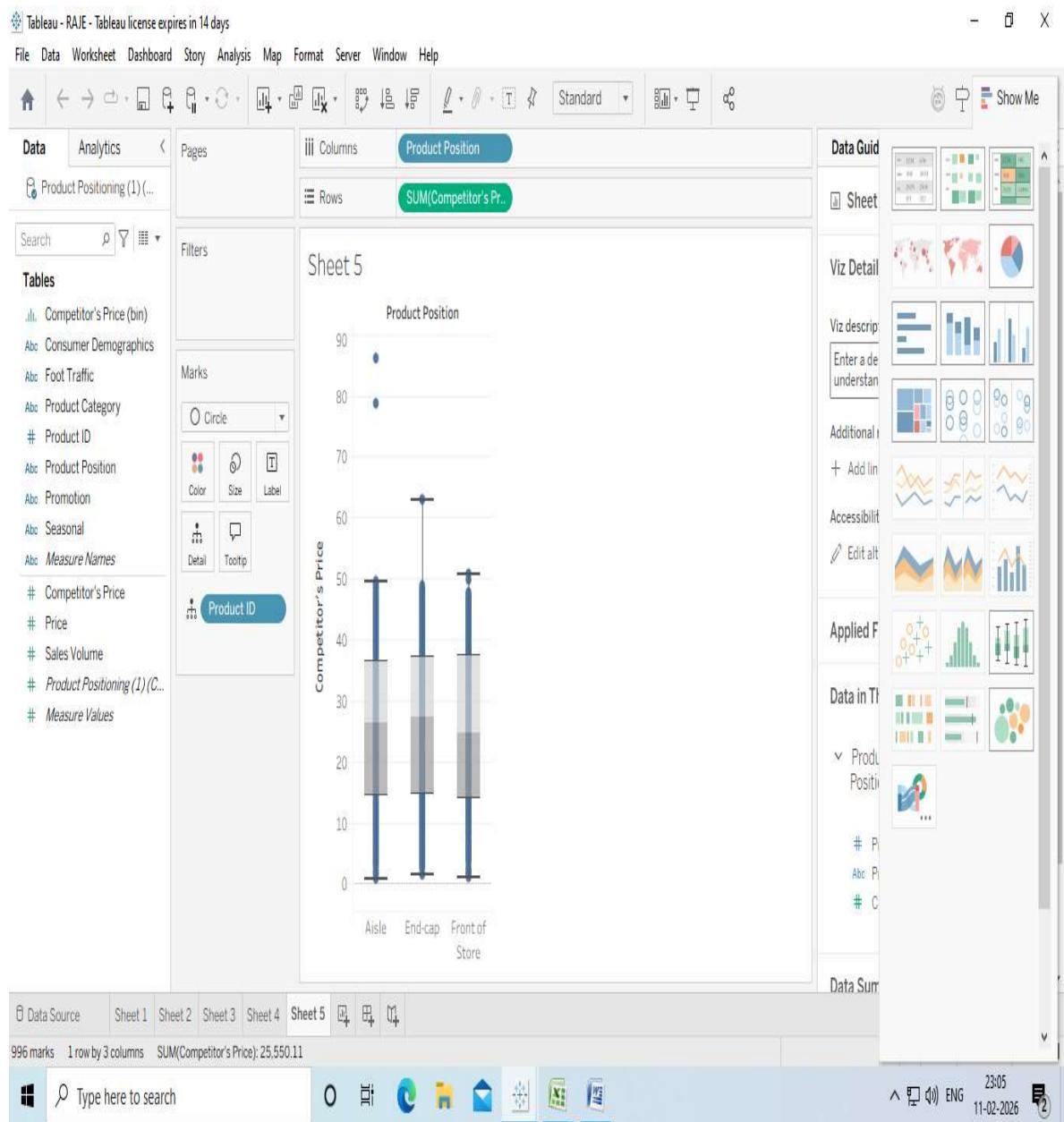
## OUTPUT :











# Group photo



#### DEMO LINK

<https://drive.google.com/file/d/1tzhv4t8S02On9HvRC50iL0IKR2Z55ZOI/view?usp=drivesdk>