

Project: Data Visualization and Analysis Project

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Github Link:

Problem Statement: Choose the Best chart for any 30 scenario based questions from Superstore Dataset.

Imagine you are a data enthusiast aiming to excel in data visualisation and analysis. In this task, you have been given any 30 scenario-based questions derived from the Superstore dataset, and your objective is to provide insightful answers using appropriate charts. For each question, you need to select a chart that best represents the data, explain why you chose that specific chart, and then proceed to build the chosen chart using Tableau.

Your responses should be succinct, organised, and illustrative of your problem-solving capabilities.

Questions:

- 1. Which product categories have the highest total sales in the "Superstore" dataset?**

Ans:-

Chart Type: Bar Chart

A bar chart is suitable for comparing the total sales across different product categories.

Creating a Bar Chart in Tableau

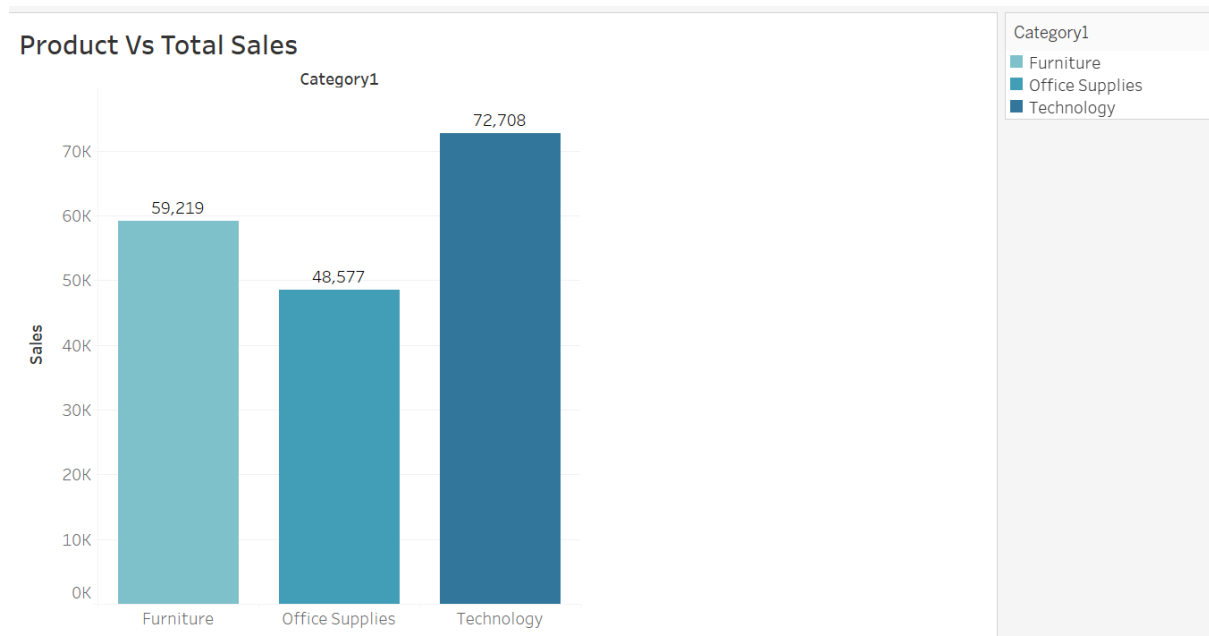
A Bar Chart is a powerful visualization tool in Tableau, perfect for comparing total sales across different product categories. Here are the steps to create this insightful chart:

Tableau Steps:

Drag "Product Category" to the Columns shelf.

Drag "SUM(Sales)" to the Rows shelf.

Sort the bars in descending order to identify the top-selling product categories easily.



This bar chart visualizes the distribution of sales across three distinct product categories: Furniture, Office Supplies, and Technology. The chart provides valuable insights into the sales performance of each category within the given sales range of 0k to 70k.

Furniture: The Furniture category, represented by one of the bars, shows its sales performance within the specified range. The length of the bar corresponds to the total sales revenue generated by Furniture products, with the longer bars indicating higher sales figures.

Office Supplies: Another bar represents the Office Supplies category, displaying its sales within the range of 0k to 70k. The relative length of this bar reflects the total sales value of Office Supplies.

Technology: The Technology category is the third and final segment of the chart. Its bar visually represents its sales contribution, providing a clear comparison of how Technology products perform in terms of revenue.

2. How do the monthly sales amounts change over the course of a year?

Ans:-

Chart Type: Line Chart

A line chart helps visualize the trend in monthly sales over time.

Creating a Line Chart in Tableau

A Line Chart is a powerful visualisation tool for understanding trends in monthly sales over time. Here's an extended guide with detailed steps:

Step 1: Define a Calculated Field for Date Components Begin by creating a calculated field to extract the month and year from your date data. This step is crucial for breaking down the time series data into meaningful segments. In Tableau, you can use functions like MONTH() and YEAR() to achieve this. The calculated field should look something like this:
`MONTH([Date]) + "-" + STR(YEAR([Date]))`

This calculated field combines the month and year into a single string, making it easier to plot monthly trends over time.

Step 2: Arrange the Data for Columns Drag the calculated field you created in Step 1 and place it onto the Columns shelf. This action organizes your data along the horizontal axis, with each point on the line representing a specific month-year combination.

Step 3: Define the Y-Axis with "SUM(Sales)" For the vertical axis, take the measure "SUM(Sales)" and drop it onto the Rows shelf. This action positions your data vertically, allowing you to represent sales values for each month-year combination.

Step 4: Enhance Visualization with Color To better differentiate each year's trend lines and identify trends by year, add "Year(Date)" to the Color shelf.

Tableau Steps:(Simple)

Create a calculated field to extract the month and year from the date.

Drag the calculated field to the Columns shelf.

Drag "SUM(Sales)" to the Rows shelf.

Add "Year(Date)" to the Color shelf to differentiate each year's trend lines.

Monthly sales over a year



This Line Chart showcases the trends in monthly sales, ranging from 0k to 30k, across the calendar year from January to December. It serves as an invaluable tool for tracking and analyzing the sales performance over time.

Sales Variation: The vertical axis of the chart represents the total sales revenue, with values ranging from 0k to 30k. Each point on the chart's lines corresponds to the total sales for a specific month, allowing viewers to quickly discern the sales variations throughout the year.

Monthly Progression: Along the horizontal axis, the months of the year are chronologically arranged from January to December. This arrangement provides a clear chronological view of how sales evolve month by month.

Identifying Patterns: By examining the lines on the chart, viewers can identify various sales patterns and trends. For instance, upward-sloping lines indicate months of sales growth, while downward slopes may represent declining sales periods.

Seasonal Insights: Seasonal fluctuations in sales can also be identified, with peaks and troughs corresponding to specific months. This information is critical for understanding the impact of seasonal factors on sales.

Yearly Comparison: Comparing the lines across the chart, viewers can observe how each month's sales performance relates to the same month in previous years. This can provide valuable insights into annual growth or contraction trends.

Data-Driven Decision-Making: With this Line Chart, businesses can make data-driven decisions, such as adjusting inventory levels, marketing strategies, or sales promotions to align with the observed trends and optimize their sales performance.

3. How is the total sales amount distributed among different product categories?

Ans:-

Chart Type: Pie Chart

A pie chart effectively shows the composition of total sales by product category.

Creating a Pie Chart in Tableau

A Pie Chart is a visually compelling way to represent the composition of total sales by product category. Here are extended steps to create and enhance your Pie Chart in Tableau:

Step 1: Define the Chart's Purpose Before creating the Pie Chart, it's essential to have a clear understanding of the chart's purpose. Identify what specific insights or comparisons you aim to convey with this visualization.

Step 2: Prepare Your Data Ensure that your dataset contains the necessary information, including "Product Category" and "SUM(Sales)" data fields. Having clean and well-organized data is crucial for creating an effective Pie Chart.

Step 3: Create the Pie Chart Now, follow these detailed steps in Tableau:

3.1. Drag "Product Category" to the Color Shelf: By dragging the "Product Category" dimension to the Color Shelf, you instruct Tableau to assign distinct colors to each product category. This color coding will make it easier to distinguish between categories within the Pie Chart.

3.2. Drag "SUM(Sales)" to the Angle Shelf: To represent the total sales by each product category proportionally, drag the "SUM(Sales)" measure to the Angle Shelf. Tableau will automatically calculate the angles of each pie slice based on the sales values.

Step 4: Enhance the Visualization

To make your Pie Chart more informative and visually appealing, consider the following enhancements:

4.1. Explode the Slices for Better Visibility: Exploding slices slightly outward from the center of the Pie Chart can help draw attention to individual categories. To do this, click on the "Size" button in the Marks card and adjust the "Size" slider.

4.2. Show Labels with Percentages: Adding labels to each pie slice, displaying the percentage of sales it represents, can provide viewers with precise information. To do this, click on the "Label" button in the Marks card and choose to show percentages.

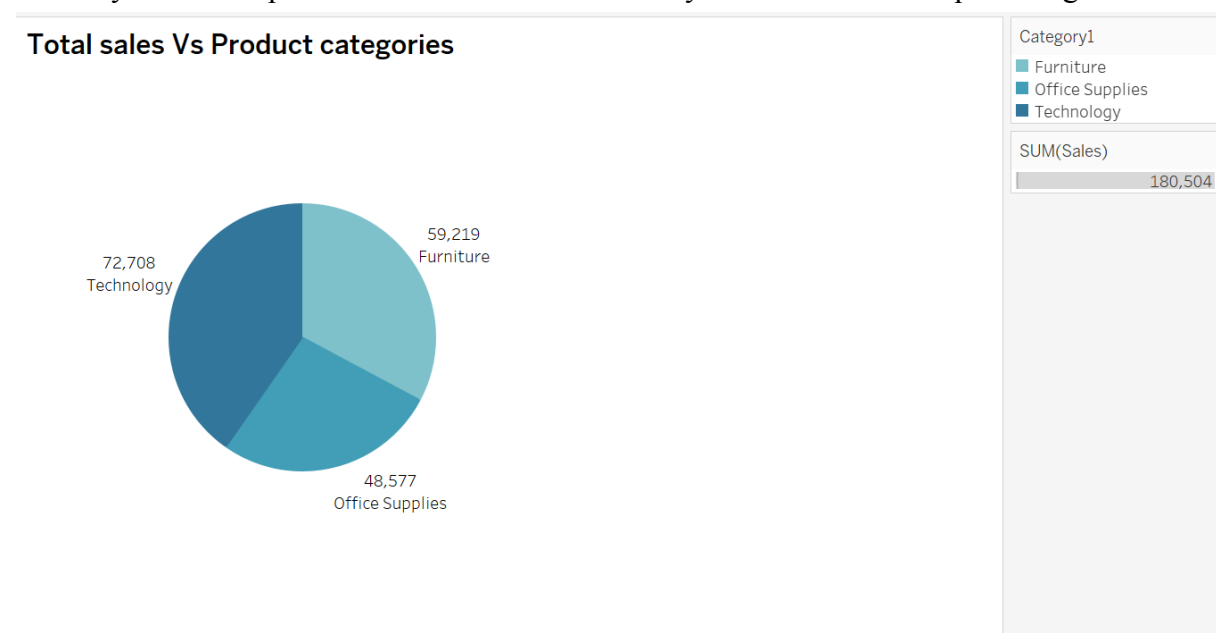
4.3. Customize Colors and Legends: Make use of Tableau's customization options to choose colors that are visually appealing and meaningful for your audience. You can also customize legends and tooltips to provide additional context.

Tableau Steps:

Drag "Product Category" to the Color shelf.

Drag "SUM(Sales)" to the Angle shelf.

You may want to explode the slice for better visibility and labels to show percentages.



This Pie Chart provides a concise yet insightful representation of how total sales revenue is distributed among various product categories. This visualization serves as a valuable tool for gaining a quick understanding of the relative importance of each product category in the context of overall sales.

Product Category Breakdown: In the Pie Chart, each segment of the pie corresponds to a specific product category. Categories, such as Furniture, Office Supplies, and Technology, are represented individually, with the size of each segment proportional to its respective sales revenue contribution.

Clear Sales Proportions: The chart offers a straightforward way to compare the sales performance of different product categories. Larger segments indicate categories that generate a substantial share of the total sales, while smaller segments represent less influential categories.

Instant Insights: Unlike more complex charts, the Pie Chart provides immediate insights into the distribution of sales without requiring extensive analysis. Decision-makers can promptly

identify which product categories are the primary revenue drivers and which have a smaller impact.

4. How do sales vary based on different days of the week and product categories?

Ans:-

Chart Type: Area Map

An area map can represent sales variations by days of the week and product categories.

To create an Area Map in Tableau that visualizes sales variations by days of the week and product categories, follow these steps: Place "Product Category" on the Columns shelf to organize data horizontally by product categories. Put "DAY(Order Date)" on the Rows shelf, arranging data vertically by days of the week. Color code cells with "SUM(Sales)" in the Marks card to represent variations in sales figures. Enhance the visualization by adjusting the color scheme to effectively convey sales variations and consider adding labels or tooltips to provide precise information.

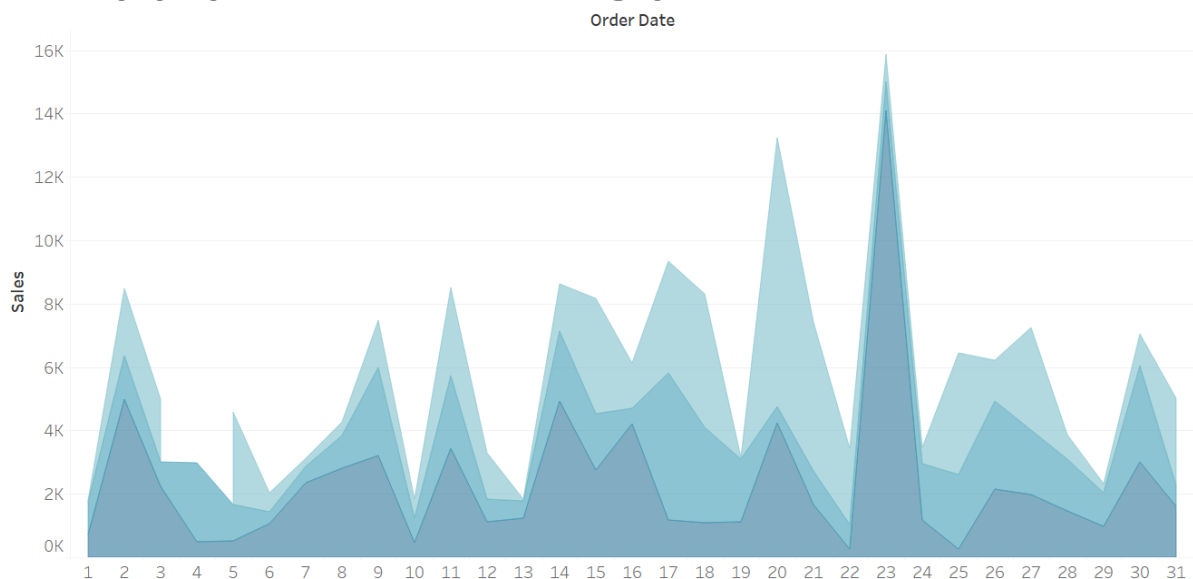
Tableau Steps:

Place "Product Category" on the Columns shelf.

Put "DAY(Order Date)" on the Rows shelf.

Color code cells with "SUM(Sales)" to visualize variations.

Sales vary by day of the week and Product category



This Area Map offers a compelling visual representation of sales variations, showcasing the dynamic relationship between daily sales and dates of the month. The map effectively

communicates insights within the sales range of 0k to 16k across the entire month, from the 1st to the 31st.

Sales Dynamics: The vertical axis of the map represents sales figures, ranging from 0k (indicating minimal or no sales) to 16k (representing higher sales figures). Each cell within the map denotes the sales for a specific day of the month.

Date Range: Along the horizontal axis, the dates of the month, from the 1st to the 31st, are chronologically arranged. This chronological arrangement offers viewers a clear understanding of how sales evolve day by day.

Variations at a Glance: By examining the map, viewers can quickly identify sales trends and variations. Areas with deeper colors signify higher sales, while lighter areas indicate comparatively lower sales on specific dates.

Key Insights: The map provides a snapshot of how sales fluctuate throughout the month, making it an essential tool for spotting trends, peak sales days, and potential areas for improvement.

5. How does the sales distribution vary across different regions in the "Superstore" dataset?

Ans:-

Chart Type: Treemap

A tree map provides a hierarchical view of sales distribution across different regions and sub-regions.

A Treemap is a powerful visualization for displaying hierarchical data, making it ideal for representing sales distribution across different regions and sub-regions. Here are the steps to create an effective Treemap in Tableau:

Connect to Data: Begin by opening Tableau and connecting to your dataset, ensuring it contains the necessary fields, including "Region," "Sub-Region," and "SUM(Sales)."

Place "Region" on Columns Shelf: Drag and drop the "Region" dimension onto the Columns shelf. This action organizes your data horizontally, differentiating regions.

Drag "Sub-Region" to Rows Shelf: Similarly, drag and drop the "Sub-Region" dimension onto the Rows shelf. This step structures your data hierarchically, with sub-regions nested under their respective regions.

Color Code Cells with "SUM(Sales)": In the Marks card, select "Color" and place the "SUM(Sales)" measure onto it. This color-codes the treemap cells based on sales figures, providing clear differentiation.

Adjust Color Palette: Customize the color palette to effectively represent sales variations. Choose a range of colors that intuitively conveys differences in sales values, such as cooler colors for lower sales and warmer colors for higher sales.

Customize Tooltip: Enhance user engagement by customizing the tooltip to display relevant information. Include details like sales values, region names, and sub-region names to provide context when users interact with the treemap.

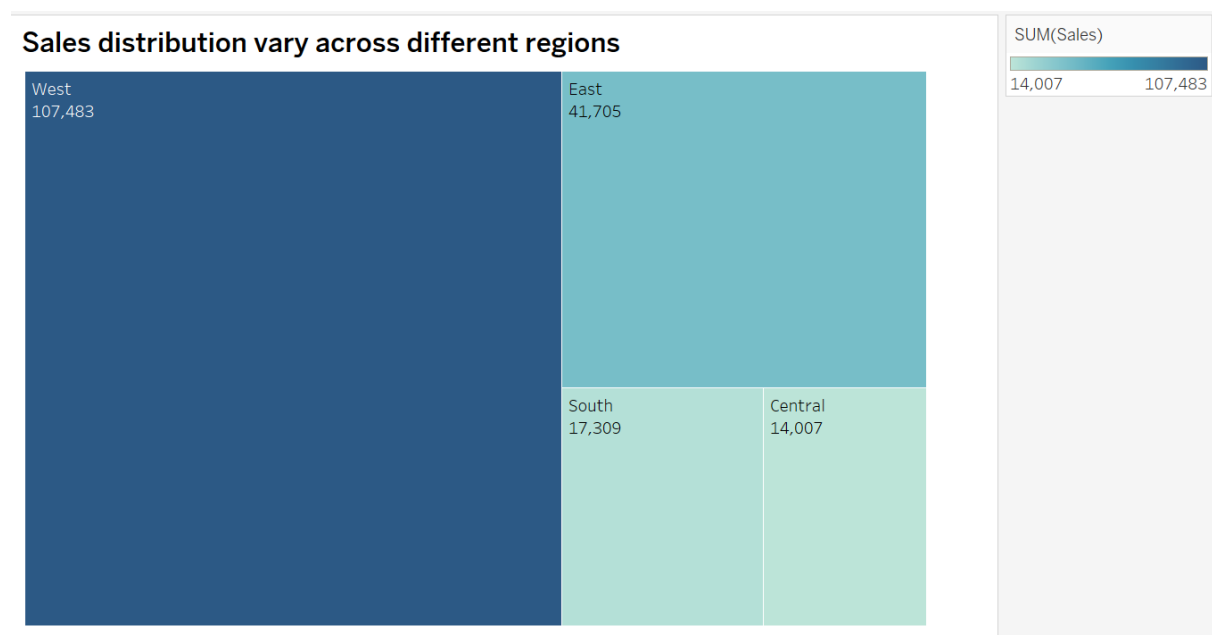
Add Labels for Clarity: To improve clarity, consider adding labels to the treemap cells, displaying the actual sales values. This makes it easier for viewers to interpret the data at a glance.

Tableau Steps:(Simple)

Drag "Region" to the Columns shelf.

Drag "Sub-Region" to the Rows shelf.

Color code the treemap cells with "SUM(Sales)" for clear differentiation.



This Treemap graph offers an insightful hierarchical view of sales distribution across different regions, including West, East, South, and Central. It effectively communicates how sales revenue is apportioned among these regions, allowing viewers to quickly grasp regional sales trends and patterns.

Hierarchical Structure: The Treemap utilizes a hierarchical structure, with each region represented as a parent node. Within each region, subregions are nested, providing a clear breakdown of sales data from the highest level (regions) to the lowest (subregions).

Sales Representation: The size of each rectangular cell within the Treemap corresponds to the sales revenue generated in a specific region or subregion. Larger cells indicate higher sales, while smaller cells represent comparatively lower sales figures.

Regional Comparison: The Treemap's layout facilitates easy comparison between regions and subregions. It's effortless to identify which regions contribute the most to the overall sales and which subregions perform well within their respective regions.

Color Coding for Clarity: Cells in the Treemap are color-coded based on sales values. This color differentiation makes it visually clear which regions or subregions have strong sales performance and which require closer examination.

Data-Driven Insights: By examining the Treemap, decision-makers can gain valuable insights into regional sales dynamics. This includes identifying potential growth opportunities, recognizing top-performing regions, and understanding the distribution of sales resources effectively.

Strategic Decision-Making: Organisations can use the insights from this Treemap to make informed decisions about resource allocation, sales strategies, and market expansion efforts tailored to specific regions or subregions.

In summary, this Treemap provides a comprehensive visual representation of sales distribution by region, offering viewers a hierarchical perspective of sales data. It serves as a valuable tool for decision-makers seeking to understand regional sales trends and make strategic choices to enhance overall sales performance.

6. Can we visualise the composition of profits across various subcategories within different customer segments?

Ans:-

Chart Type: Stacked Bar Chart

A stacked bar chart effectively represents the composition of profits across subcategories within customer segments.

Open your data source in Tableau.

Place "Customer Segment" on the Columns shelf. This will categorize your data by customer segments, arranging them horizontally.

Put "Sub-Category" on the Rows shelf. This step organizes your data vertically, with subcategories nested within customer segments.

For the Marks shelf, select "SUM(Profit)" to create a stacked bar chart. Each bar will represent a customer segment, and its segments will be stacked to display profit composition across subcategories.

Customize the color scheme, labels, and tooltips as needed to enhance the chart's clarity and visual appeal.

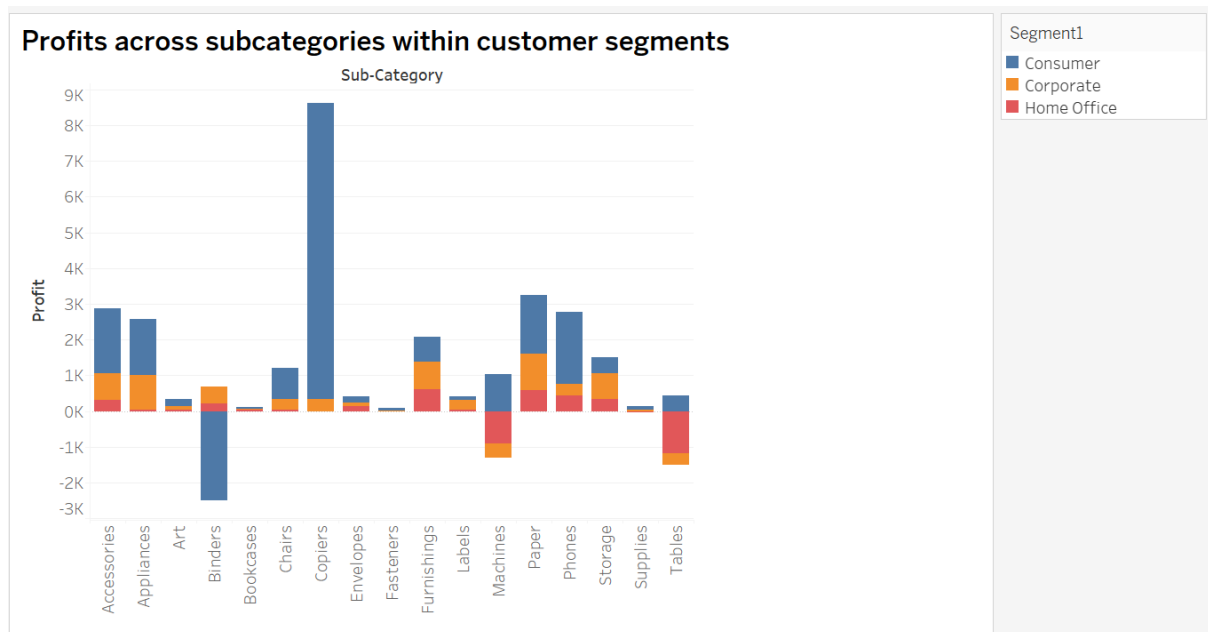
Interpret and share the stacked bar chart with your audience, highlighting profit composition patterns and trends within customer segments and subcategories.

Tableau Steps:(Simple)

Place "Customer Segment" on the Columns shelf.

Put "Sub-Category" on the Rows shelf.

Use "SUM(Profit)" for the Marks shelf, creating a stacked bar chart.



This Stacked Bar Chart offers a concise visual representation of how profits are distributed across various subcategories within distinct customer segments. Each bar in the chart represents a customer segment, and the segments within each bar are stacked to depict the contribution of different subcategories to the total profit within that segment. This visualization allows for a quick understanding of profit composition patterns and trends, helping decision-makers identify the most profitable subcategories within each customer segment.

7. Can we visualise the sales growth of different product categories over time?

Ans:-

Chart Type: Area Chart

An area chart effectively shows the cumulative sales growth of different product categories over time.

An Area Chart is a useful tool for illustrating cumulative sales growth of various product categories over time. Here are the succinct steps to create this chart in Tableau:

Open Tableau and connect to your dataset.

Drag "Date (Year)" to the Columns shelf to represent time.

Place "Product Category" on the Rows shelf to categorize sales data by product categories.

For the Marks shelf, select "SUM(Sales)" and choose the area chart type.

Customize the chart's appearance and labels as needed for clarity.

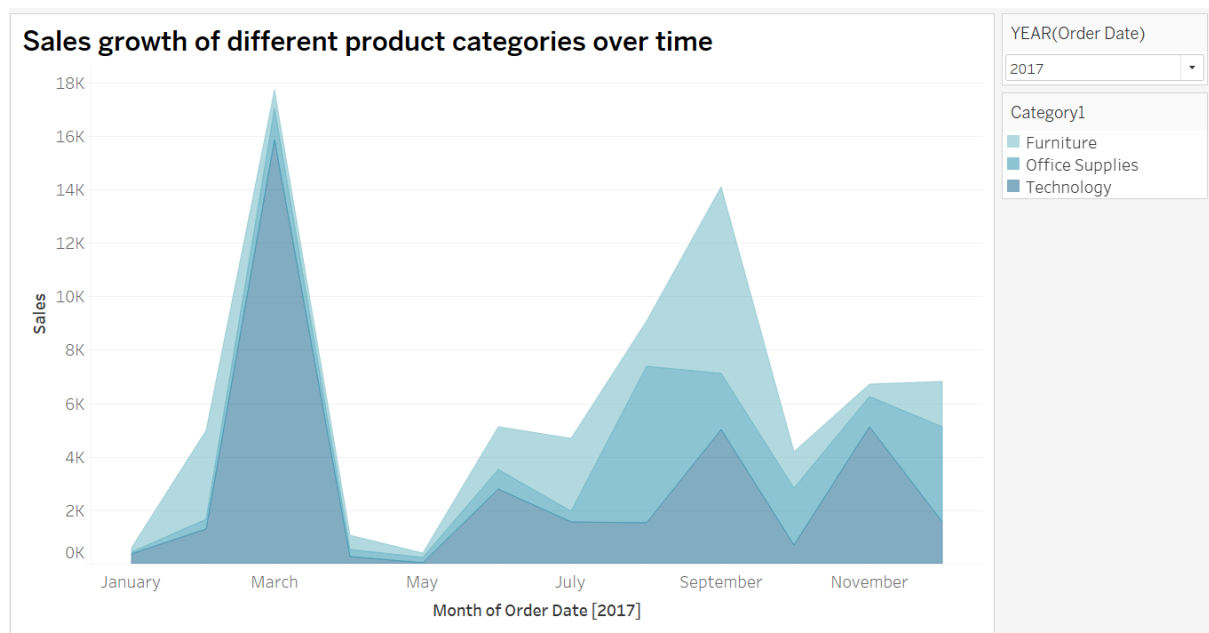
Interpret and share the area chart to showcase cumulative sales growth trends across different product categories over time.

Tableau Steps:(Simple)

Drag "Date (Year)" to the Columns shelf.

Drag "Product Category" to the Rows shelf.

Use "SUM(Sales)" for the Marks shelf, choosing the area chart type.



This Area Chart offers a succinct visual representation of cumulative sales growth for various product categories over the course of a year, with each month displayed on the horizontal axis from January to December. Stacked areas depict each category's contribution to total sales, facilitating the observation of trends and variations in monthly sales performance. Decision-makers can swiftly identify which product categories consistently contribute to growth and glean valuable insights for strategic decision-making, such as resource allocation and marketing strategies, to drive sustained sales growth over time.

8. What is the percentage contribution of each region to the overall sales?

Ans:-

Chart Type: Pie Chart

A pie chart helps visualize the percentage contribution of each region to the total sales.

To create a Pie Chart in Tableau that effectively visualizes the percentage contribution of each region to total sales, follow these concise steps:

Connect Data: Open Tableau and connect to your dataset.

Color Coding: Drag the "Region" dimension to the Color shelf to assign distinct colors to each region.

Angle Assignment: In the Marks card, drag and place "SUM(Sales)" onto the Angle shelf to calculate and display the angle of each pie slice based on sales values.

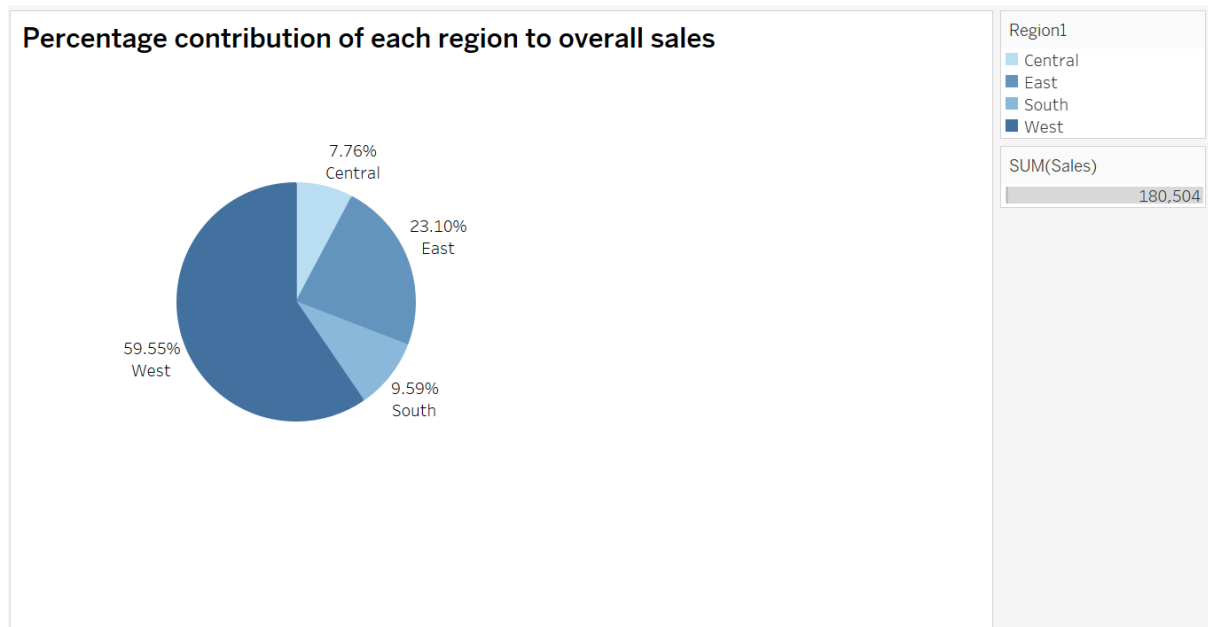
Label with Percentages: Customize the chart by labeling each pie slice with the corresponding percentage to provide viewers with clear insights into the contribution of each region to total sales.

Tableau Steps:(Simple)

Drag "Region" to the Color shelf.

Drag "SUM(Sales)" to the Angle shelf.

Label slices with percentages for clarity.



This Pie Chart succinctly illustrates the percentage contribution of each region to the overall sales. By color-coding and labeling each pie slice, viewers gain a quick and clear understanding of how different regions collectively contribute to the total sales figure. It's an effective visual tool for identifying which regions have the most significant impact on overall sales, aiding in strategic decision-making and resource allocation.

9. Can we visualise the profit margins associated with different shipping modes and customer segments?

Ans:-

Chart Type: Grouped Bar Chart

A grouped bar chart can effectively compare profit margins associated with different shipping modes within each customer segment.

To create a Grouped Bar Chart in Tableau for comparing profit margins associated with different shipping modes within each customer segment, follow these clear and concise steps:

Open Tableau and load your dataset.

Place "Shipping Mode" on the Columns shelf to categorize shipping modes.

Put "Customer Segment" on the Rows shelf to group data by customer segments.

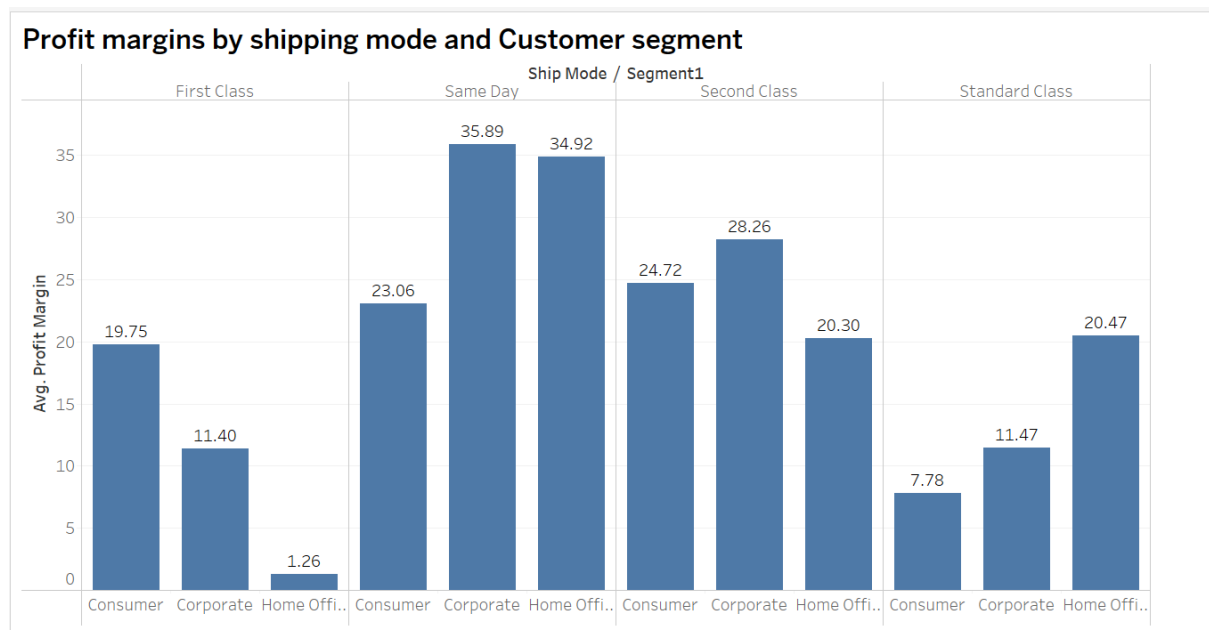
For the Marks shelf, select "AVG(Profit Margin)" to create grouped bars displaying average profit margins for each shipping mode within customer segments.

Tableau Steps:(Simple)

Place "Shipping Mode" on the Columns shelf.

Put "Customer Segment" on the Rows shelf.

Use "AVG(Profit Margin)" for the Marks shelf to create grouped bars.



This Grouped Bar Chart serves as a concise visual representation of profit margins, effectively comparing how profit margins vary across different shipping modes within distinct customer segments. The chart employs grouped bars to distinctly display the average profit margins associated with each shipping mode, facilitating a clear comparison between segments.

10. How long does it take to process orders for different product categories?

Ans:-

Chart Type: Box Plot

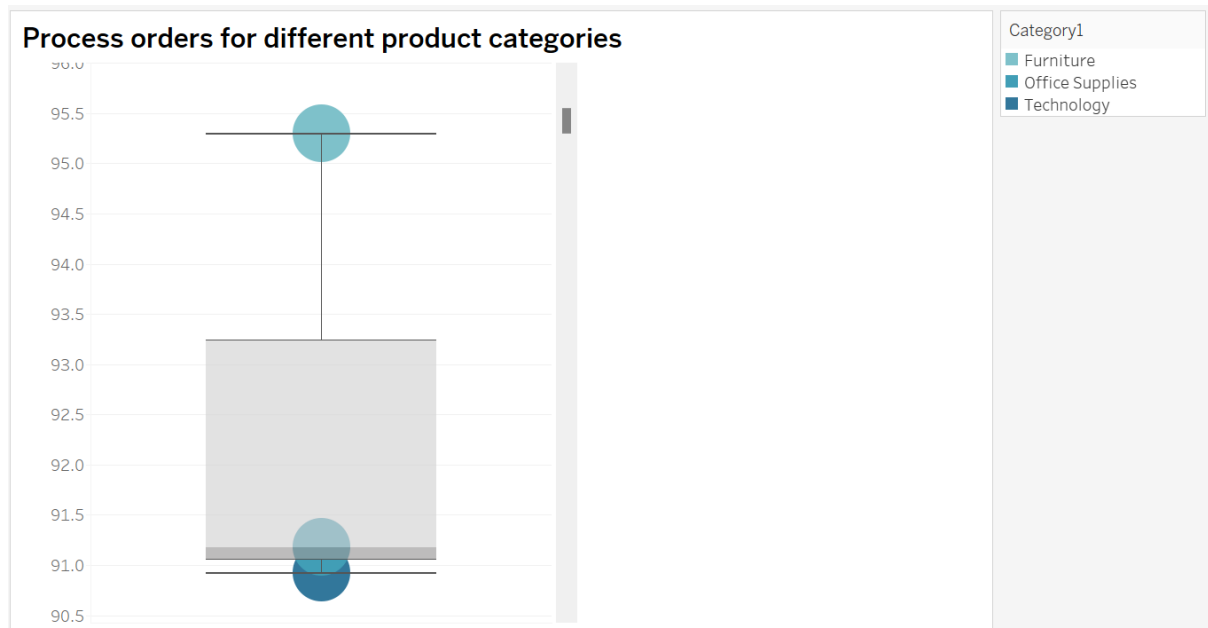
A box plot effectively shows the distribution of order processing times for different product categories.

To create a Box Plot in Tableau that effectively displays the distribution of order processing times for different product categories, follow these clear and concise steps:
Open Tableau and load your dataset.

Tableau Steps:

Drag "Product Category" to the Columns shelf.

Drag "Order Processing Time" to the Rows shelf.
Create box plots for each product category.



This Box Plot offers a clear visual representation of the distribution of order processing times across various product categories. Each box within the plot corresponds to a specific product category and provides valuable insights into the range, median, and potential outliers of order processing times.

11. How does the performance of different salespeople compare in terms of sales targets, actual sales, and profitability?

Ans:-

Chart Type: Grouped Bar Chart

A grouped bar chart allows you to compare salespeople's performance in terms of sales targets, actual sales, and profitability.

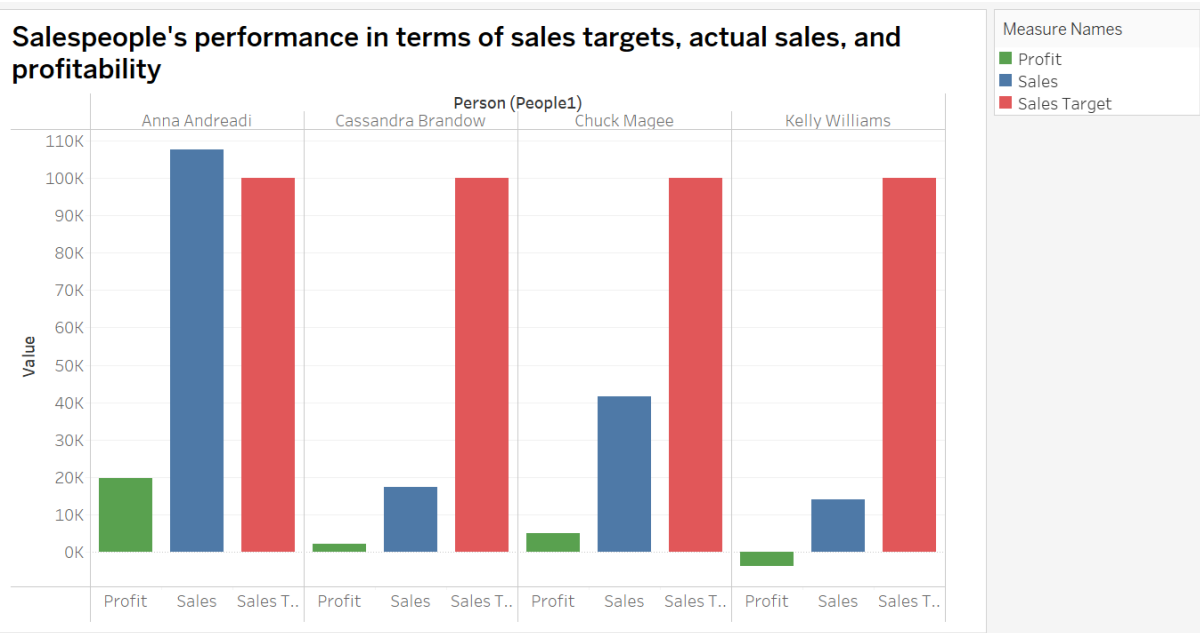
To efficiently create a Grouped Bar Chart in Tableau for comparing salespeople's performance in terms of sales targets, actual sales, and profitability, follow these concise steps:

Tableau Steps:

Place "Salesperson" on the Columns shelf.

Put "Sales Target," "Actual Sales," and "Profit" on the Rows shelf.

Create grouped bars for each salesperson.



This Grouped Bar Chart serves as a clear visual tool for comparing the performance of salespeople across three crucial metrics: sales targets, actual sales, and profitability. Each grouped bar represents a salesperson, and the bars are divided into segments to showcase how they fare against their sales targets, actual sales achieved, and associated profitability. The chart allows for quick assessments of individual and overall performance, aiding in the evaluation of sales team effectiveness and guiding strategic decisions to optimise sales outcomes.

12. Can we visualise the relationship between product sales and profitability for different product categories?

Ans:-

Chart Type: Scatter Plot

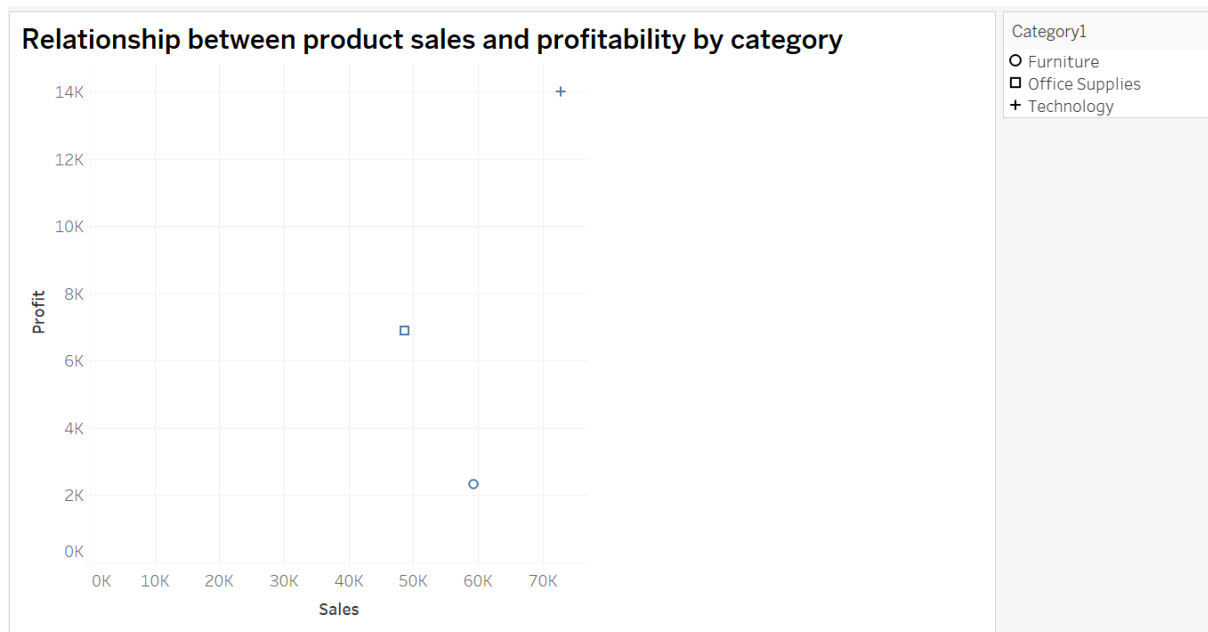
A scatter plot effectively visualizes the relationship between product sales and profitability for different product categories.

Tableau Steps:

Drag "Product Category" to the Columns shelf.

Place "SUM(Sales)" on the X-axis and "SUM(Profit)" on the Y-axis.

Add labels for product categories to identify data points.



This Scatter Plot effectively visualizes the relationship between product sales and profitability across different product categories. Each data point represents a specific product category, with sales figures on the X-axis and profitability on the Y-axis. The plot allows for a quick assessment of how sales and profitability align or diverge for each category, aiding in the identification of categories that excel in both aspects and those that may require further analysis or strategic adjustments

13. What is the distribution of order quantities for products in the dataset?

Ans:-

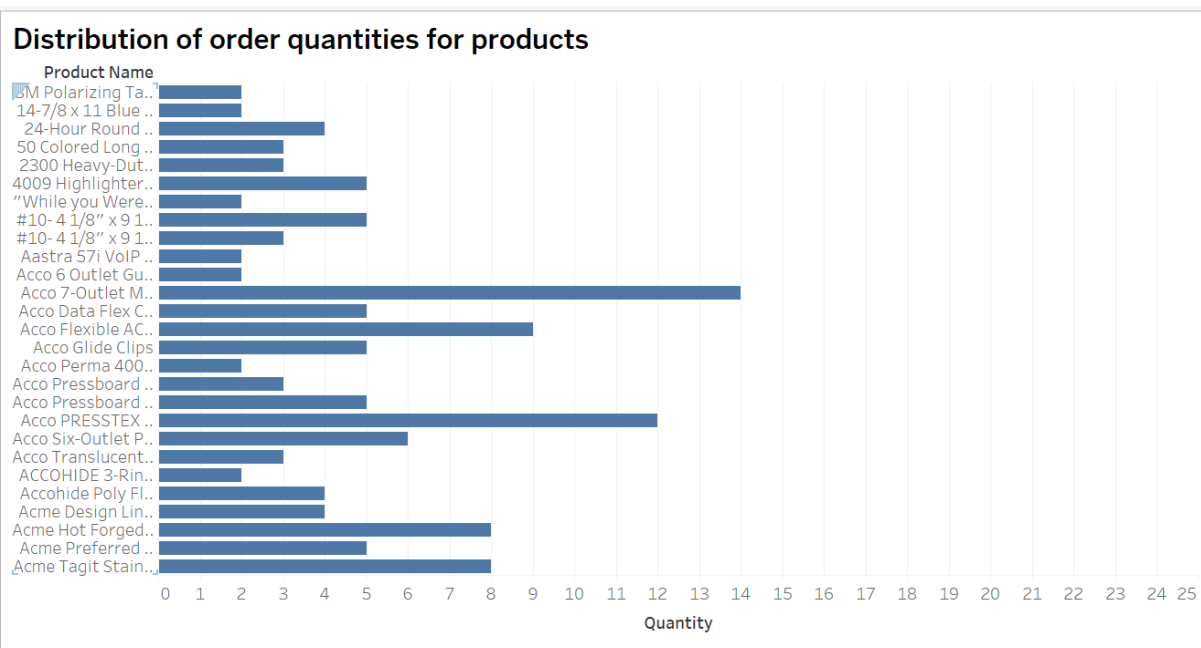
Chart Type: Horizontal Bar chart

A horizontal bar chart provides a clear distribution of order quantities for products.

Tableau Steps:

Place "Order Quantity" on the Columns shelf.

Use "Count" on the Rows shelf to create the histogram.



This horizontal bar chart effectively presents the distribution of order quantities for products. It provides a clear visual representation of how order quantities are distributed, with the horizontal axis depicting various order quantity ranges and the vertical axis representing the frequency or count of products falling within each range.

14. How do the profit distributions vary across different product categories?

Ans:-

Chart Type: Box Plot

A box plot effectively illustrates profit distributions across different product categories.

To efficiently create an insightful Box Plot in Tableau, effectively illustrating profit distributions across different product categories, follow these clear and slightly expanded steps:

Open Tableau and Load Data: Begin by launching Tableau and connecting to your dataset, ensuring it contains the necessary fields, including "Product Category" and "Profit."

Columns Shelf Placement: Drag and drop "Product Category" to the Columns shelf. This action categorizes your data, grouping it by product categories for easy comparison.

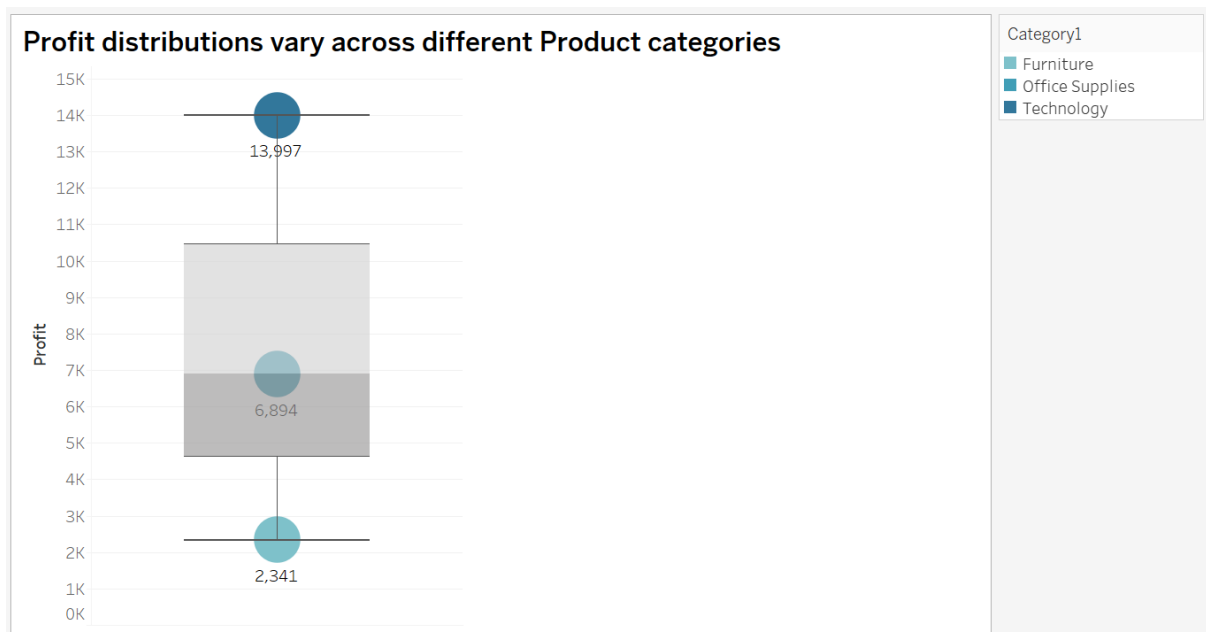
Rows Shelf Configuration: On the Rows shelf, place "Profit" to represent the profit data. This step sets up the vertical axis, showcasing the profit distribution.

Create Box Plots: Utilize Tableau's built-in features to create box plots for each product category, displaying key statistics such as median, quartiles, and potential outliers. This visual representation offers valuable insights into the profit distributions within different product categories.

Tableau Steps:(Simple)

Drag "Product Category" to the Columns shelf.

Put "Profit" on the Rows shelf.
Create box plots for each product category.



This Box Plot serves as a powerful visual tool for effectively illustrating profit distributions across various product categories. Each box within the plot represents a distinct product category, showcasing key statistics such as median profit, quartiles, and potential outliers. It provides valuable insights into the variation and spread of profits within different categories, aiding in the identification of high-performing categories and those that may require further analysis or strategic adjustments.

15. Can we compare the shipping time distributions for different shipping modes?

Ans:-

Chart Type: Box Plot

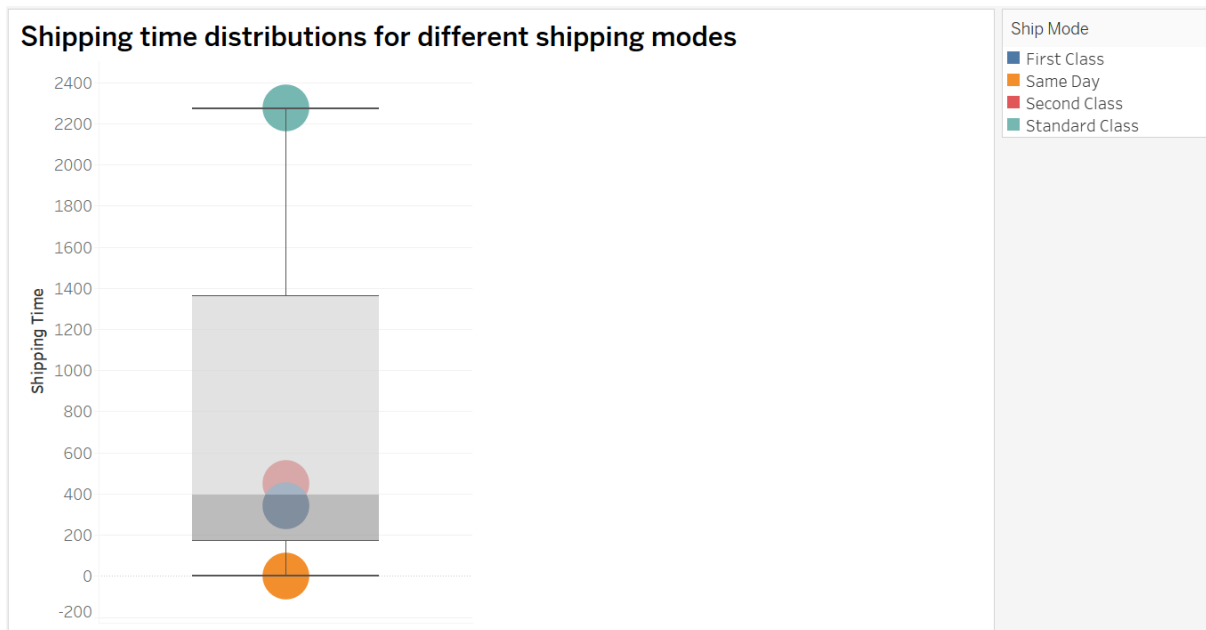
A box plot helps compare shipping time distributions for different shipping modes.

Tableau Steps:

Place "Shipping Mode" on the Columns shelf.

Place "Shipping Time" on the Rows shelf.

Create box plots for each shipping mode.



This Box Plot serves as a valuable visual tool for comparing and contrasting shipping time distributions across various shipping modes. Each box within the plot represents a distinct shipping mode, offering key statistical insights such as median shipping time, quartiles, and the presence of potential outliers. This visualisation enables straightforward comparisons, making it easy to identify variations in shipping times among different modes

16. How do different customer segments perform in terms of sales and discount rates?

Ans:-

Chart Type: Grouped Bar Chart

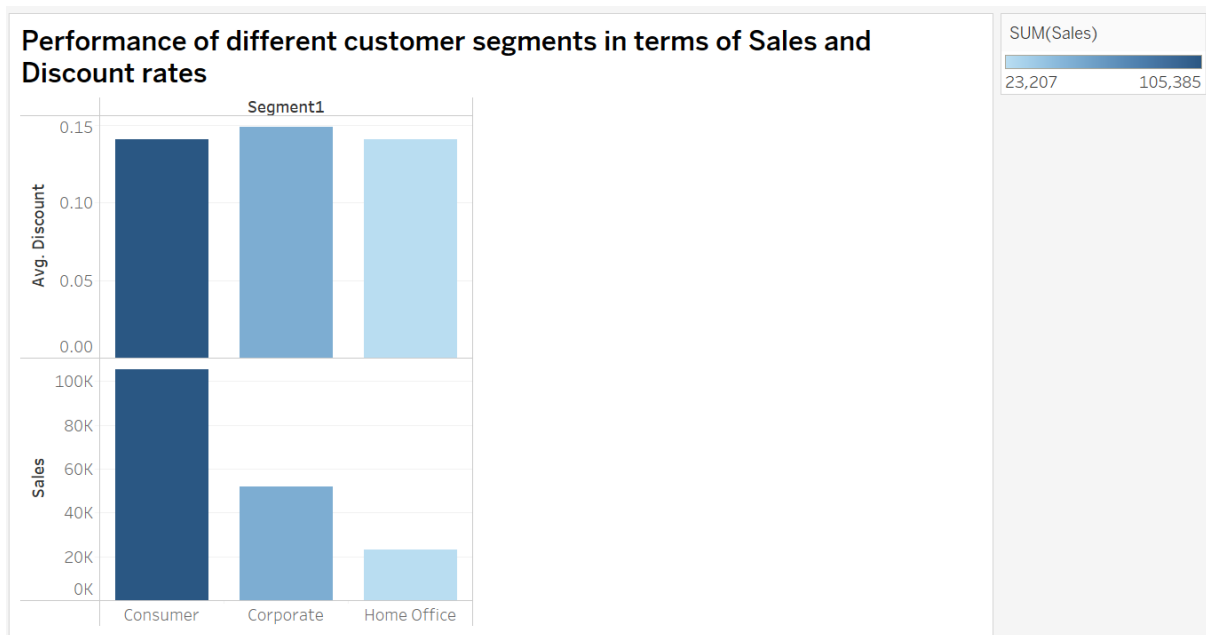
A grouped bar chart allows you to compare different customer segments' performance in terms of sales and average discount rates.

Tableau Steps:

Place "Customer Segment" on the Columns shelf.

Put "SUM(Sales)" and "AVG(Discount Rate)" on the Rows shelf.

Create grouped bars for each customer segment.



This Grouped Bar Chart serves as a powerful visual tool for comparing the performance of different customer segments in terms of both sales and average discount rates. Each grouped bar represents a unique customer segment, with bars divided to display the respective sales and average discount rate metrics. This chart enables quick assessments of how each segment contributes to overall sales and how their average discount rates vary. It provides valuable insights into which segments are excelling or require adjustments in sales and pricing strategies.

17. How efficiently are different product subcategories being fulfilled in terms of order processing time and on-time delivery?

Ans:-

Chart Type: Grouped Bar Chart

A grouped bar chart can compare order processing times and on-time delivery rates for different product subcategories.

Tableau Steps:

Drag "Product Subcategory" to the Columns shelf.

Put "AVG(Order Processing Time)" and "On-Time Delivery Rate" on the Rows shelf.

Create grouped bars for each product subcategory.



This Grouped Bar Chart serves as a valuable visual tool for comparing and contrasting order processing times and on-time delivery rates across various product subcategories. Each grouped bar represents a distinct product subcategory, with bars divided to display both order processing times and on-time delivery rates. This chart allows for quick assessments of how different subcategories perform in these critical areas, making it easy to identify trends, disparities, and opportunities for optimization.

18. What is the average delivery duration for different regions and ship modes?

Ans:-

Chart Type: Heat Map

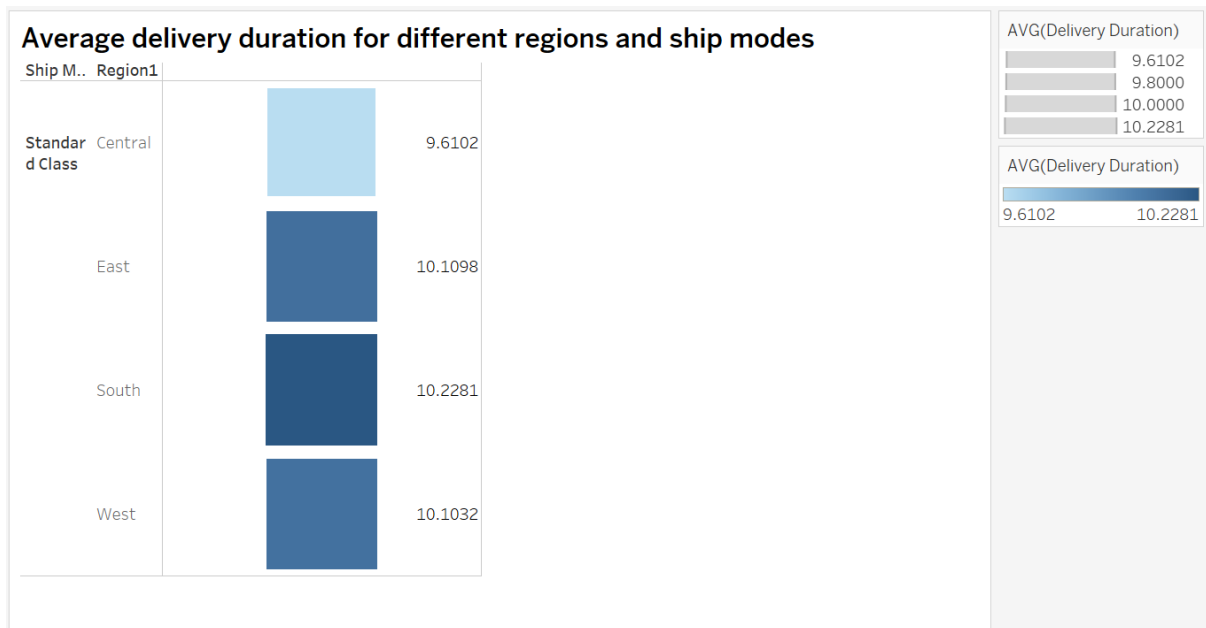
A heat map can effectively represent average delivery durations for different regions and ship modes.

Tableau Steps:

Place "Region" on the Columns shelf.

Put "Shipping Mode" on the Rows shelf.

Color code cells with "AVG(Delivery Duration)" to visualize variations.



This Heat Map serves as an effective visual representation of average delivery durations across various regions and shipping modes. Each cell within the map corresponds to a specific region and shipping mode, with color-coding indicating the average delivery duration. Darker shades represent longer delivery times, while lighter shades indicate quicker deliveries. This visualization allows for immediate insights into how delivery durations vary across different combinations of regions and shipping modes.

19. How has the average order quantity changed over the years for various product categories?

Ans:-

Chart Type: Line Chart

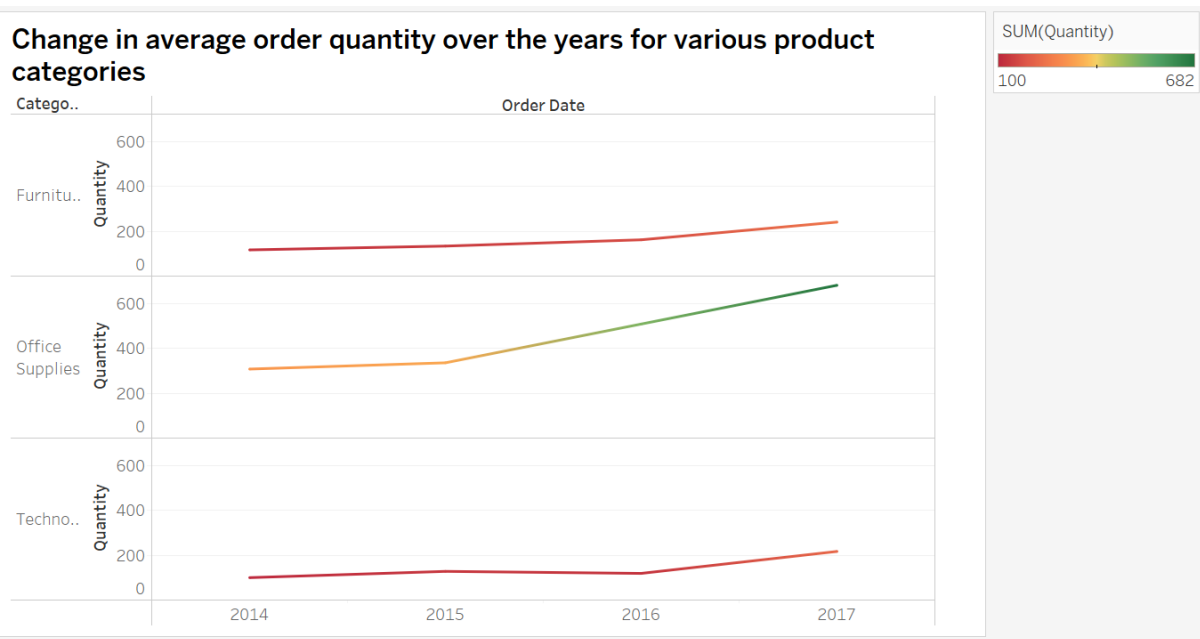
A line chart effectively shows the trend in average order quantity over the years for different product categories.

Tableau Steps:

Drag "Date (Year)" to the Columns shelf.

Place "Product Category" on the Rows shelf.

Use "AVG(Order Quantity)" for the Marks shelf, selecting the line chart type.



This Line Chart effectively portrays the trends in average order quantity over the years for different product categories. Each line on the chart represents a distinct product category, and the horizontal axis depicts the passage of time, spanning several years. By connecting data points with lines, this visualisation showcases how average order quantities for each category evolve over time.

20. Can we visualise the correlation between discount rates and order quantities for different customer segments?

Ans:-

Chart Type: Scatter Plot

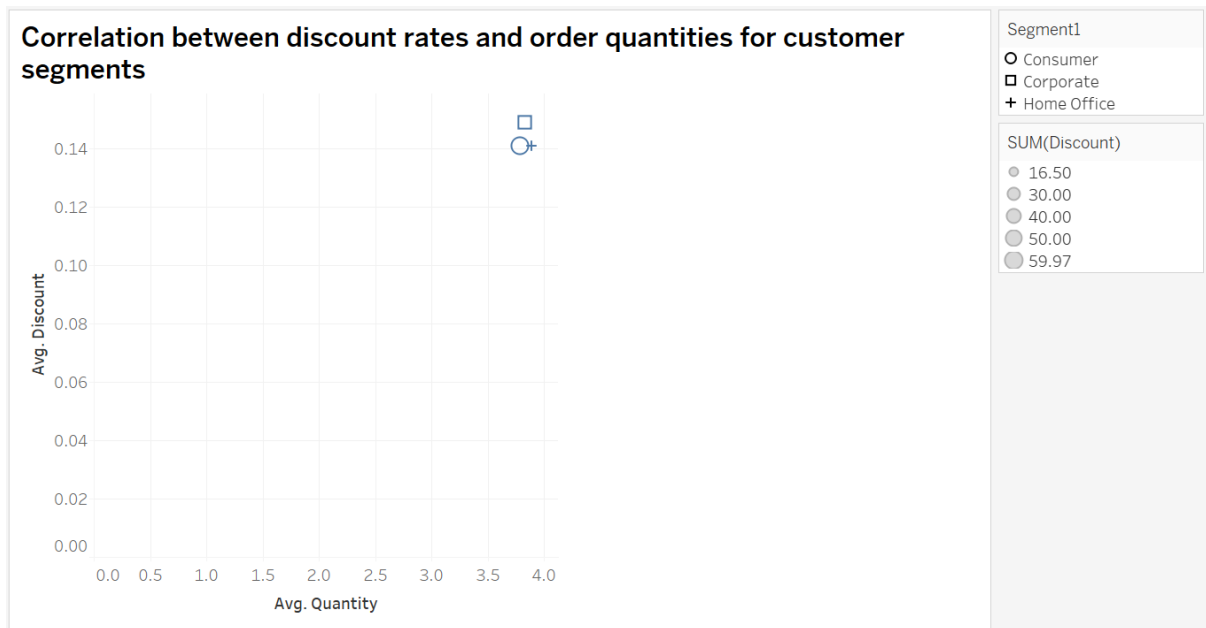
A scatter plot helps visualize the correlation between discount rates and order quantities for different customer segments.

Tableau Steps:

Place "Customer Segment" on the Columns shelf.

Put "AVG(Discount Rate)" on the X-axis and "AVG(Order Quantity)" on the Y-axis.

Add labels for customer segments to identify data points.



In this Scatter Plot, we explore the dynamic relationship between discount rates (X-axis) and order quantities (Y-axis) across diverse customer segments. Each data point represents a specific customer segment, thoughtfully labeled for quick recognition.

The arrangement of data points reveals valuable insights into how variations in discount rates influence order quantities for distinct customer groups. Clusters and trends in the plot highlight correlations, offering a deeper understanding of customer behaviors and preferences.

21. What is the trend of returns and refunds across different regions and product categories?

Ans:-

Chart Type: Stacked Area Chart

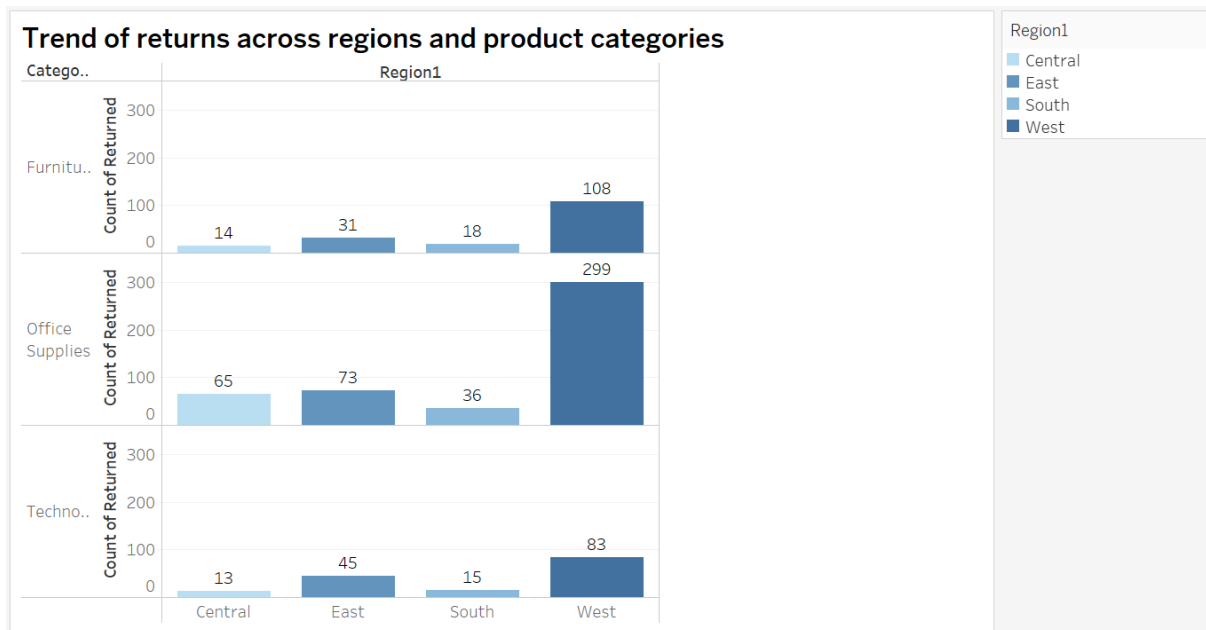
A stacked area chart can effectively show the trend of returns and refunds across different regions and product categories over time.

Tableau Steps:

Drag "Date (Year)" to the Columns shelf.

Place "Region" on the Rows shelf.

Use "SUM(Returns)" and "SUM(Refunds)" for the Marks shelf, selecting the stacked area chart type.



This Stacked Area Chart serves as a powerful visual tool for tracking and understanding the trend of returns and refunds across diverse regions and product categories over time.

Each colored area within the chart represents a specific region, with returns and refunds stacked on top of each other. The horizontal axis represents time, spanning several years. By observing the areas and their changes over time, viewers can gain insights into how returns and refunds evolve.

The chart enables easy identification of trends, patterns, and variations across regions and product categories. It aids in pinpointing areas that may require attention, such as regions with increasing returns or specific product categories with high refund rates.

25. How do the sales of high-profit products compare with low-profit products over time?

Ans:-

Chart Type: Dual-Axis Line Chart

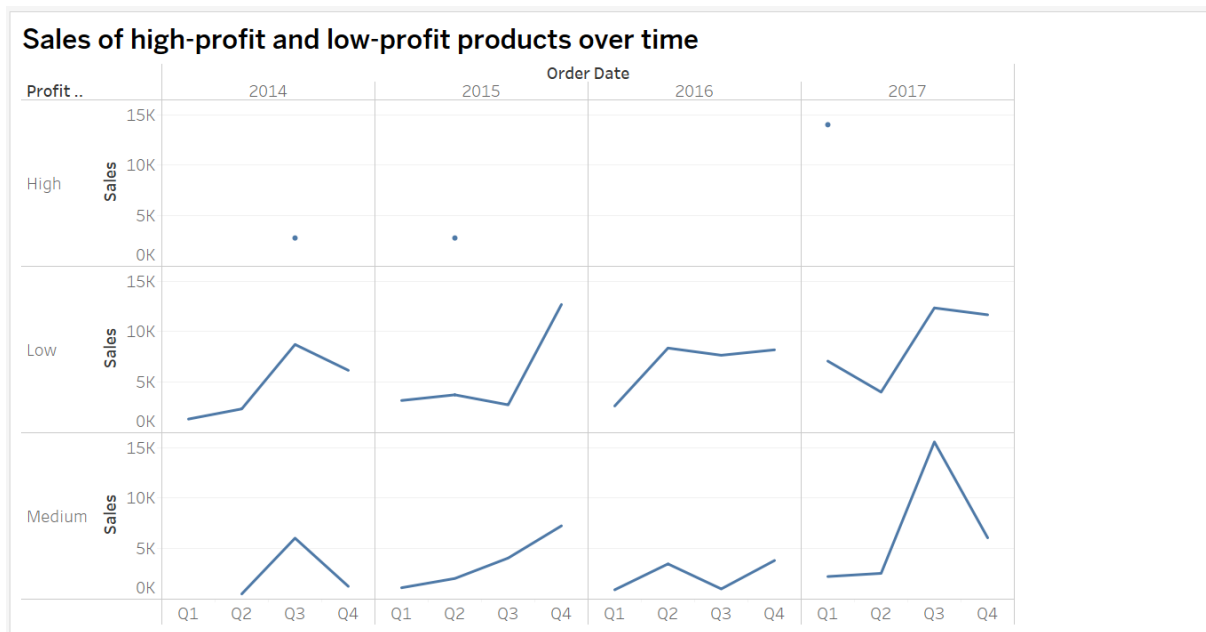
A dual-axis line chart allows you to compare the sales of high-profit and low-profit products over time.

Tableau Steps:

Place "Date (Year)" on the Columns shelf.

Drag "Profit Category" to the Color shelf.

Use "SUM(Sales)" for one axis and "SUM(Profit)" for the other axis.



This Dual-Axis Line Chart serves as an insightful tool for comparing and contrasting the sales performance of high-profit and low-profit products over time. The chart is structured with two axes: one representing time, spanning several years, and the other representing sales values.

Two distinct line plots overlap within the chart, each color-coded to distinguish between high-profit and low-profit products. The lines' trajectories reveal how sales have evolved over the years for these two categories of products.

28. How does the sales performance of different regions evolve throughout the quarters of a year?

Ans:-

Chart Type: Line Chart

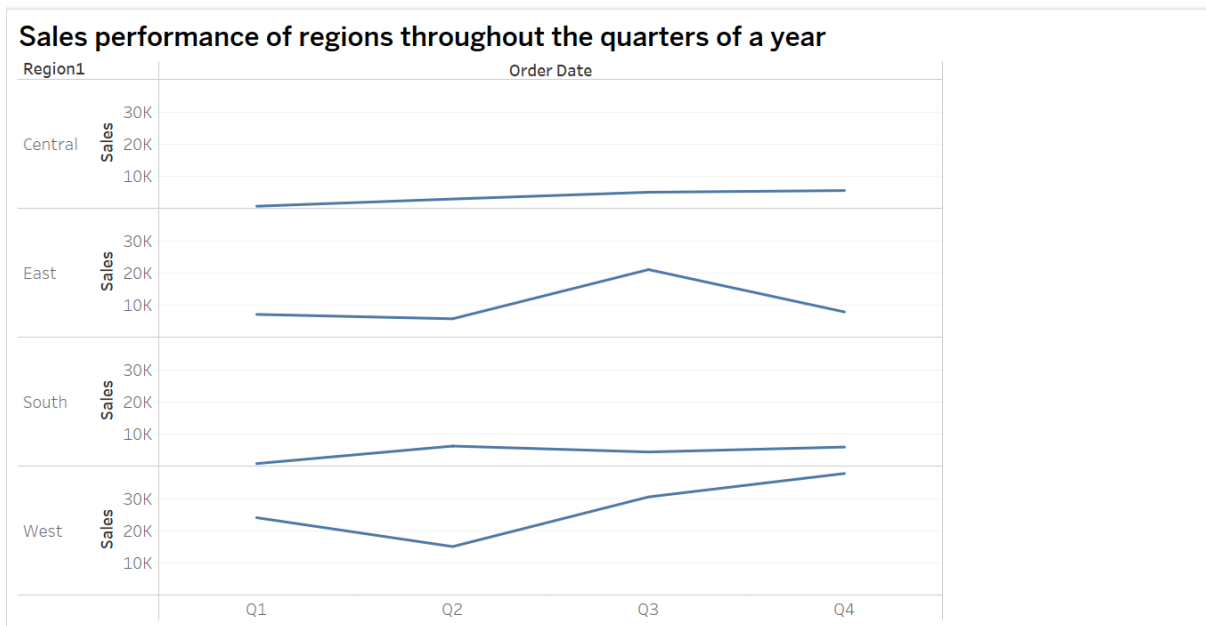
A line chart helps visualize the evolution of sales performance for different regions throughout the quarters of a year.

Tableau Steps:

Drag "Date (Quarter)" to the Columns shelf.

Place "Region" on the Rows shelf.

Use "SUM(Sales)" for the Marks shelf, selecting the line chart type.



This Line Chart serves as a powerful visual tool for presenting and understanding the sales performance of different regions throughout the quarters of a year. The chart showcases quarterly sales data for each region, with the horizontal axis representing time, divided into quarters.

Each line on the chart represents a distinct region, and its trajectory illustrates how sales evolve over the course of the year. By examining the lines' patterns, viewers can quickly discern seasonal fluctuations, identify regions with consistent growth, and spot areas where sales may require attention.

29. How does the average order value differ between repeat customers and new customers?

Ans:-

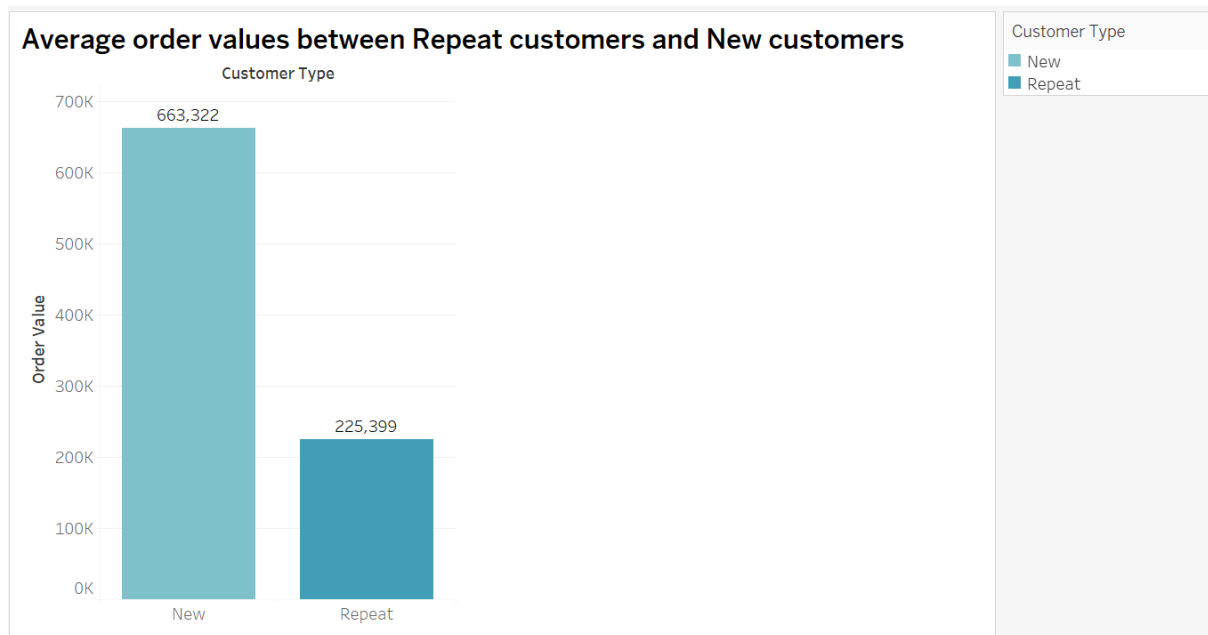
Chart Type: Bar Chart

A bar chart effectively compares the average order value between repeat customers and new customers.

Tableau Steps:

Drag "Customer Type" to the Columns shelf.

Place "AVG(Order Value)" on the Rows shelf.



This Bar Chart serves as a valuable visual tool for comparing and contrasting the average order values between two distinct customer types: "Repeat" and "New." The chart is structured with two bars, each representing one of these customer categories.

The horizontal axis categorizes customers into "Repeat" and "New," allowing for a straightforward differentiation. On the vertical axis, the bars rise to depict the average order values associated with each customer type.

The Bar Chart provides an immediate and clear comparison, highlighting any disparities or similarities in the average order values between repeat and new customers

30. What is the distribution of returns and its impact on overall profitability?

Ans:-

Chart Type: Bar Chart

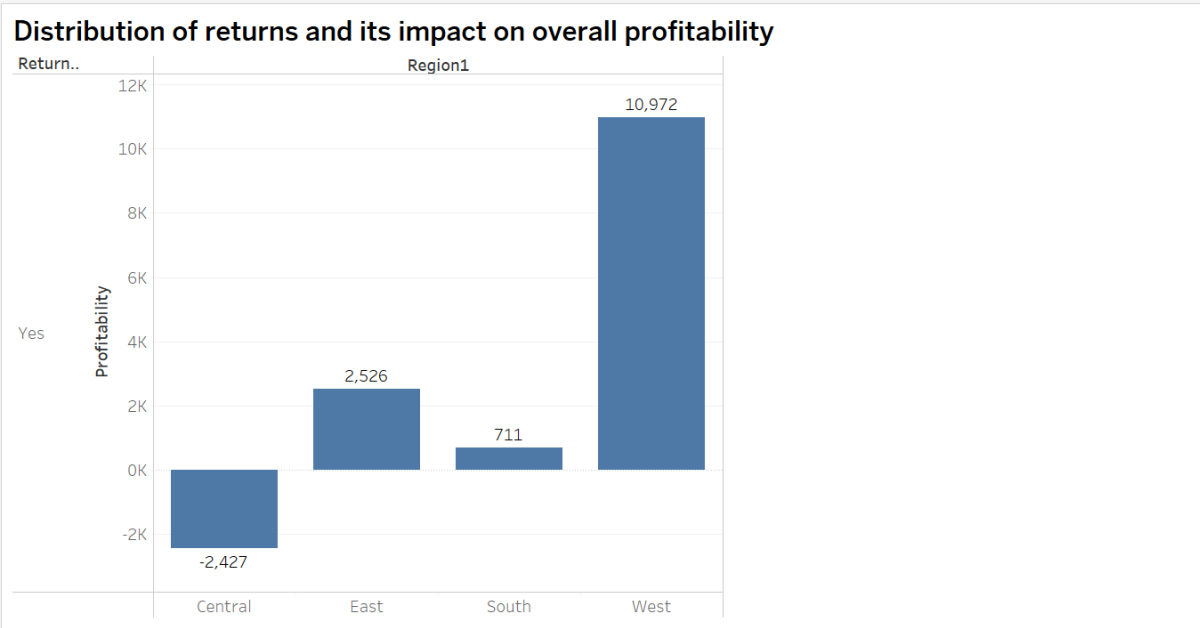
A bar chart provides a view of returns and its impact on overall profitability.

Tableau Steps:

Drag "Region" to the Rows shelf.

Put "Returns" on the Color shelf.

Use "SUM(Profit)" for the Size shelf to show the impact on profitability.



This Bar Chart serves as a compelling visual representation of returns and their profound impact on overall profitability. The chart is designed to provide a comprehensive view of how returns affect profitability across different regions.

The vertical axis categorizes regions, while the bars vary in size and color. The color differentiation indicates different return categories, making it easy to identify and distinguish various return types. The size of each bar corresponds to the impact of returns on profitability, with larger bars signifying a more substantial impact.

The Bar Chart offers a clear and immediate understanding of the relationship between returns and profitability, facilitating data-driven decisions related to returns management, customer satisfaction improvement, and strategic measures to optimize overall business profitability.