

Data Visualization

What is tableau?

Tableau is a visual analytics platform transforming the way we use data to solve problems—empowering people and organizations to make the most of their data.

- Tableau public (free), but must share to public
- Tableau desktop (pay), can store in local storage



Top In-demand skills - Tableau

Business Intelligence Analyst

↗ ...

PT Bank Digital BCA (BCA Digital) · Jakarta Metropolitan Area (Hybrid) 1 week ago · Over 200 applicants

Full-time · Mid-Senior level

51-200 employees · Banking

10 school alumni

Easy Apply

Save

Role Description:

As a **Business Intelligence Analyst**, you'll take a key part in integrating BCA Digital's business strategy to optimize business achievements.

Key Responsibilities:

- Work with Data Warehouse team, to generate routine and ad-hoc reporting and/or analysis for Lending department (lending performance report, lending monitoring report, etc.)
- Collect, analyze, evaluate and report data in order to increase Lending portfolio & maintain risk at the targeted level
- Collect sales records, trends, cost and evaluate performance measured against Budget
- Develop models and reporting structure that identify costs (by product type, partners, etc.) and identify a baseline for action
- Recommending business process improvements identified from data analysis

What you need to have:

- 2-3 years experience as a Data Analyst/Business Intelligence Analyst
- Experience working with Big Data
- Proficiency in SQL and visualization tool such as Tableau
- Have technical knowledge of message queuing and stream processing
- Deep understanding of Data Governance concept and management
- Able to work independently and effectively in a team



Performance Analysis & Data Visualization

↗ ...

PT. XL Axiata Tbk · Jakarta, Indonesia (On-site) 3 days ago · Over 200 applicants

Contract · Mid-Senior level

1,001-5,000 employees · Telecommunications

95 school alumni

Apply ↗

Save

Job Description

- Leading ongoing reviews of business performance KPI's and recommending ways to uncover areas for improvement and implementing solutions
- Effectively communicating insights and plans to cross-functional team members and management in order to improve the performance
- To execute business intelligence activities in order to provide business insights that could support internal strategic and tactical decision making
- Support in preparation of business reports needed for each segment and for leadership
- Translate changes in business dynamics to ensure existing reports continue reflecting business performance

Requirements

- Bachelor's Degree in computer science, statistics, business studies, or related field
- Strong background with Tableau and data visualization
- Advanced knowledge of SQL
- 3 years experienced in Business Intelligence tools and technologies Exceptional analytical skills and attention to detail
- Advanced Excel skills; proficiency with PowerPoint and other presentation software
- Strong written and verbal communication skills

Tableau - data Visualization

- Dashboard

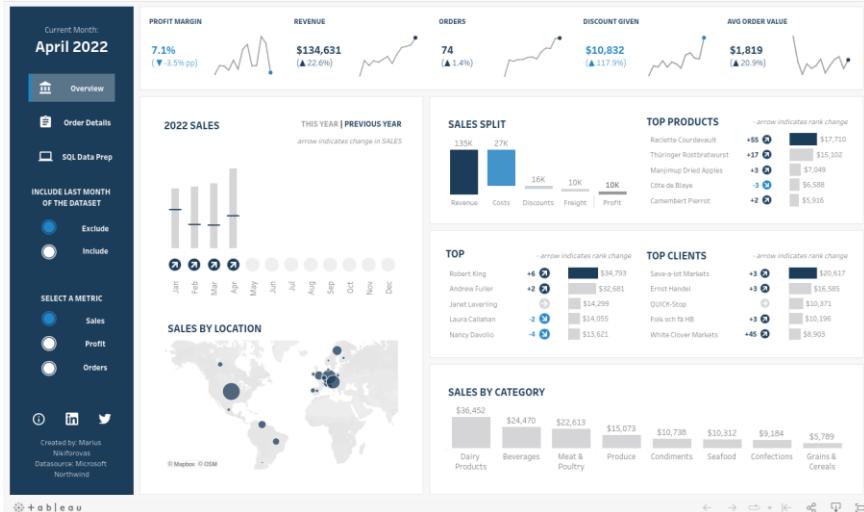
Business dashboards **provide insight, inspire interactivity, drive long-term business decisions** that can be incredibly important.

- Infographic

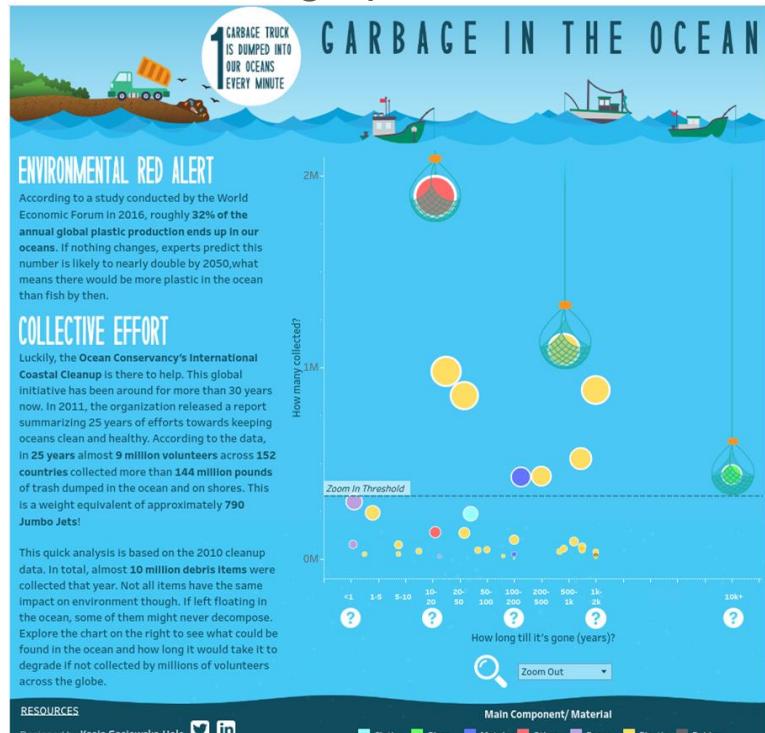
Infographics are **beautiful pictures of bite-sized chunks of insight** that helps the audience know our **specific message**

Tableau - data Visualization

● Dashboard



● Infographics



1. Connecting the data

- The Dataset:

https://docs.google.com/spreadsheets/d/1DVJev6mhWhJj9DZ5VJnAS9Lvju3-XepO/edit?usp=share_link&ouid=104317312804212958038&rtpof=true&sd=true

Superstore dataset

The Super Store dataset contains data on order details of customers for orders of a superstore in the US. This includes the state, region, order date, shipping date, product ordered etc

No	Columns	Description
1	Row ID	The number of each row
2	Order ID	The id for each transaction
3	Order Date	The date when order made
4	Ship Date	The date when order is shipped
5	Ship Mode	The choice of shpping method
6	Customer ID	The id for each customer
7	Customer Name	The name for each customer
8	Segment	The segmentation for each product
9	Country	The country where order made
10	City	The city where order made
11	State	The state where order made
12	Postal Code	The postal code where order made
13	Region	The sales operation where order made
14	Product ID	The id for each product
15	Category	The category for each product
16	Sub-Category	The sub-category for each product
17	Product Name	The name for each product
18	Sales	The amount of sales
19	Quantity	The quantity of ordered product
20	Discount	The discount for each order
21	Profit	The profit for each order
22	Sales Target	The sales target made by management

1. Connecting the data

The image shows the Tableau Public interface. On the left, a 'Connect to Data' dialog box is open, prompting the user to 'Drag and drop a file' or 'Upload from computer'. On the right, the main workspace shows a single sheet named 'Sheet 1'. A large blue arrow points from the 'Upload from computer' button in the dialog to the progress bar in the bottom right corner of the workspace, indicating the process of uploading a file.

New Workbook (Tableau Public)

File Data Worksheet Dashboard Analytics Map Format Help

Publish As... M Agent Atlanta

Show Me

Data Analytics Pages Columns Rows

Filters Marks

Automatic Color Size Detail Tooltip

Connect to Data

Connect to the data you need to visualize. [Learn more](#)

Files Connectors

Drag and drop a file
or
Upload from computer

New Workbook (Tableau Public)

File Data Worksheet Dashboard Analytics Map Format Help

Publish As... M Agent Atlanta

Show Me

Save changes

Data Analytics Pages Columns Rows

Filters Marks

Automatic Color Size Detail Tooltip

Sheet 1

Uploading File

Sample - Superstore.xls

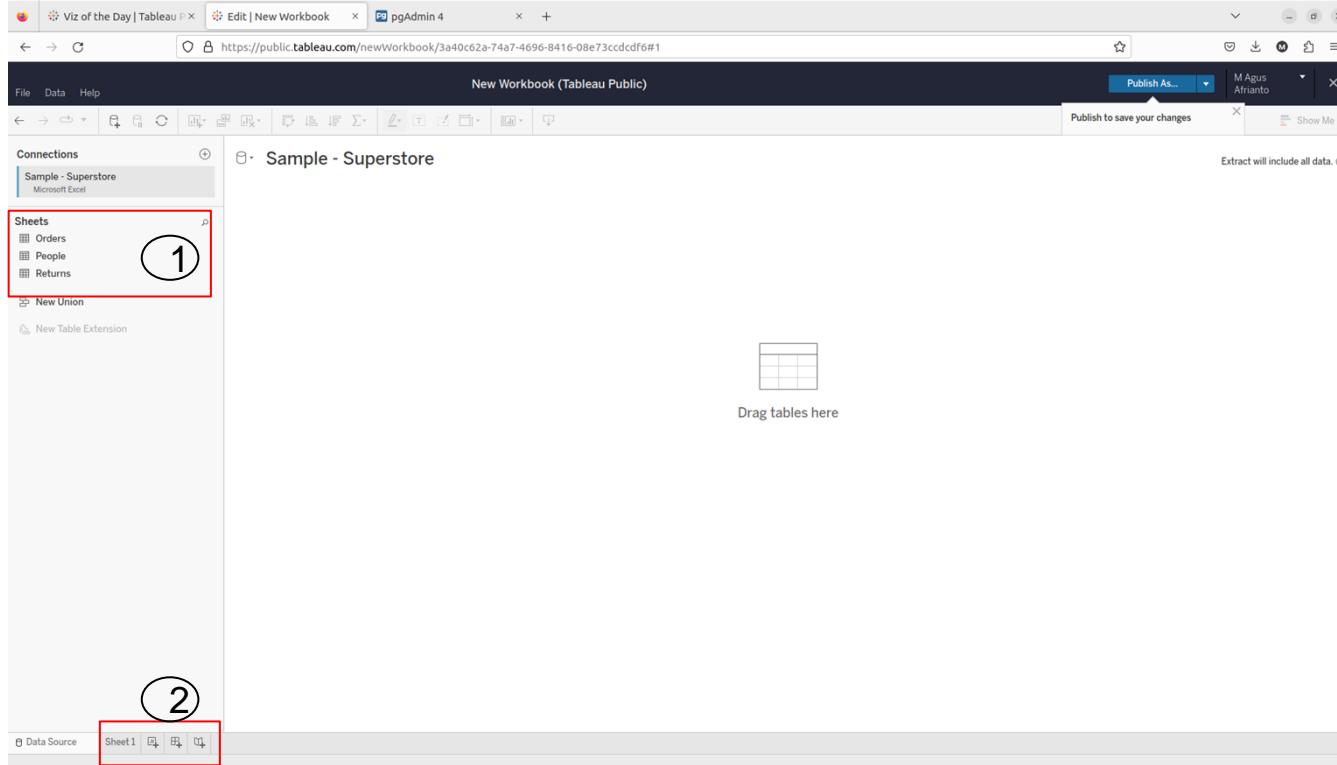
Excel

2.0 MB of 3.2 MB uploaded

Cancel

Data Source Sheet 1

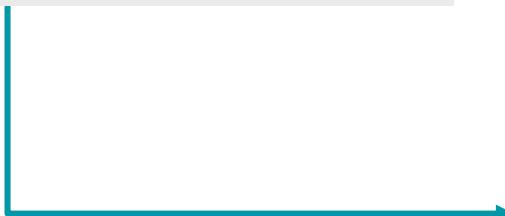
1. Connecting the data



- The list of sheet data
- Worksheet to make
 - Chart
 - Dashboard
 - Story

1. Connecting the data

This screenshot shows the Tableau Data Source interface. At the top, there are tabs for 'Viz of the Day | Tableau', 'Edit | New Workbook', and 'pgAdmin 4'. The main title is 'New Workbook (Tableau Public)'. A 'Connections' section lists 'Sample - Superstore (Microsoft Excel)'. Below it, a 'Sheets' section shows 'Orders', 'People', and 'Returns'. A 'New Union' option is also present. On the right, a message says 'Extract will include all data.' A large text area says 'Drag tables here'. At the bottom, there are tabs for 'Data Source' and 'Sheet 1'.

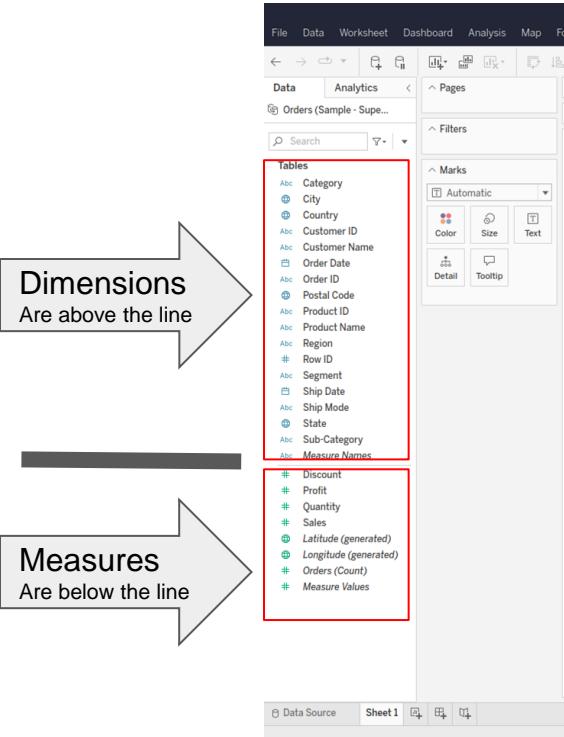


2

This screenshot shows the Tableau Data Source interface with the 'Orders' sheet selected. At the top, there are tabs for 'Viz of the Day | Tableau', 'Edit | New Workbook', and 'pgAdmin 4'. The main title is 'New Workbook (Tableau Public)'. A 'Connections' section lists 'Sample - Superstore (Microsoft Excel)' and 'pgAdmin 4'. Below it, a 'Sheets' section shows 'Orders'. A message says 'Need more data? Drag tables here to relate them. Learn more'. On the right, a table titled 'Orders' shows fields: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Order Status, Customer ID, Order Details, and Order Items. At the bottom, there are buttons for 'Update Now' and 'Update Automatically'. A red arrow points to the 'Update Now' button.

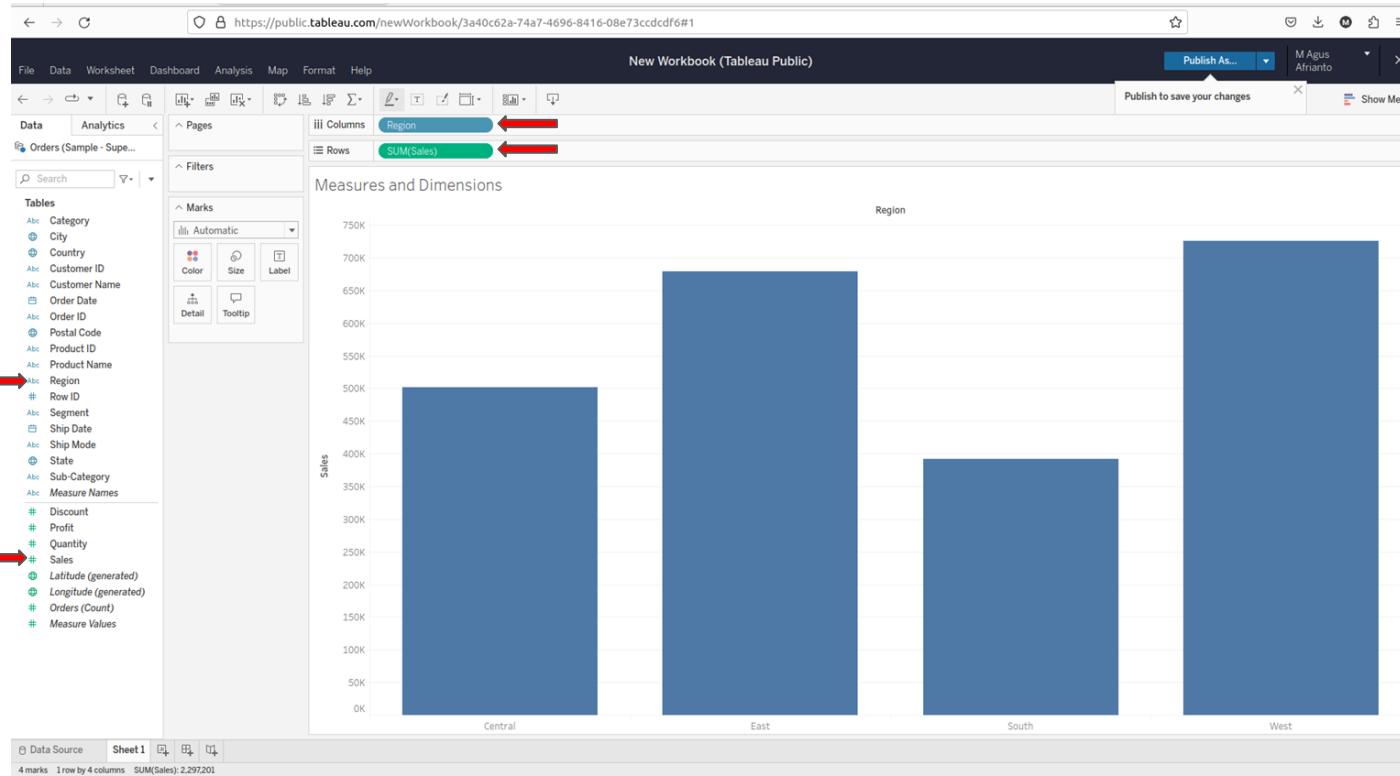
1

2. Measures and dimensions



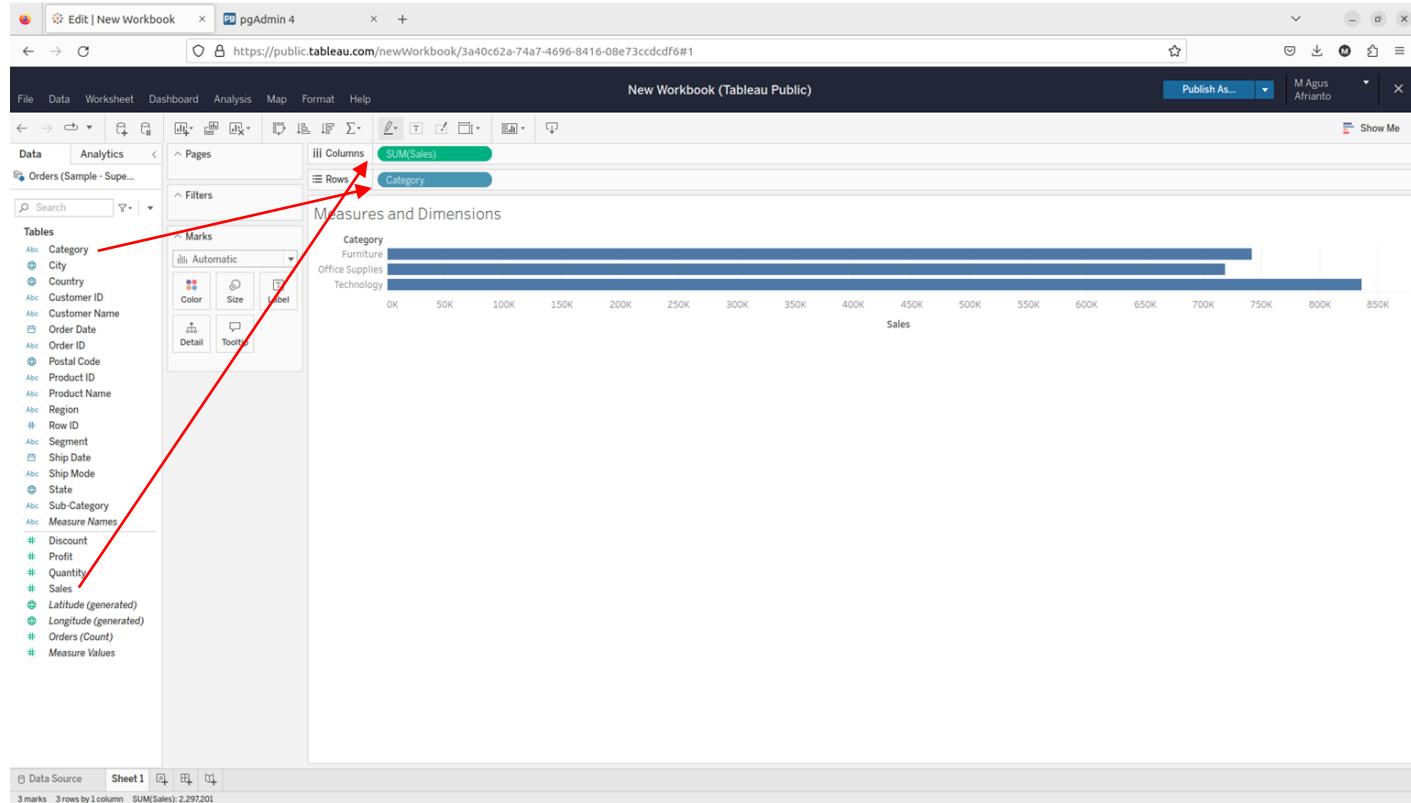
- **Measures** are values that are aggregated. For example, they are summed, averaged, counted, or the result is the minimum or maximum value.
- **Dimensions** are values that determine the level of detail at which measures are aggregated. You can think of them as slicing the measures or creating groups into which the measures fit. The combination of dimensions used in the view defines the view's basic level of detail.

2. Measures and dimensions



3. Comparing values: Bar Chart

Drag the selected variable into columns or rows

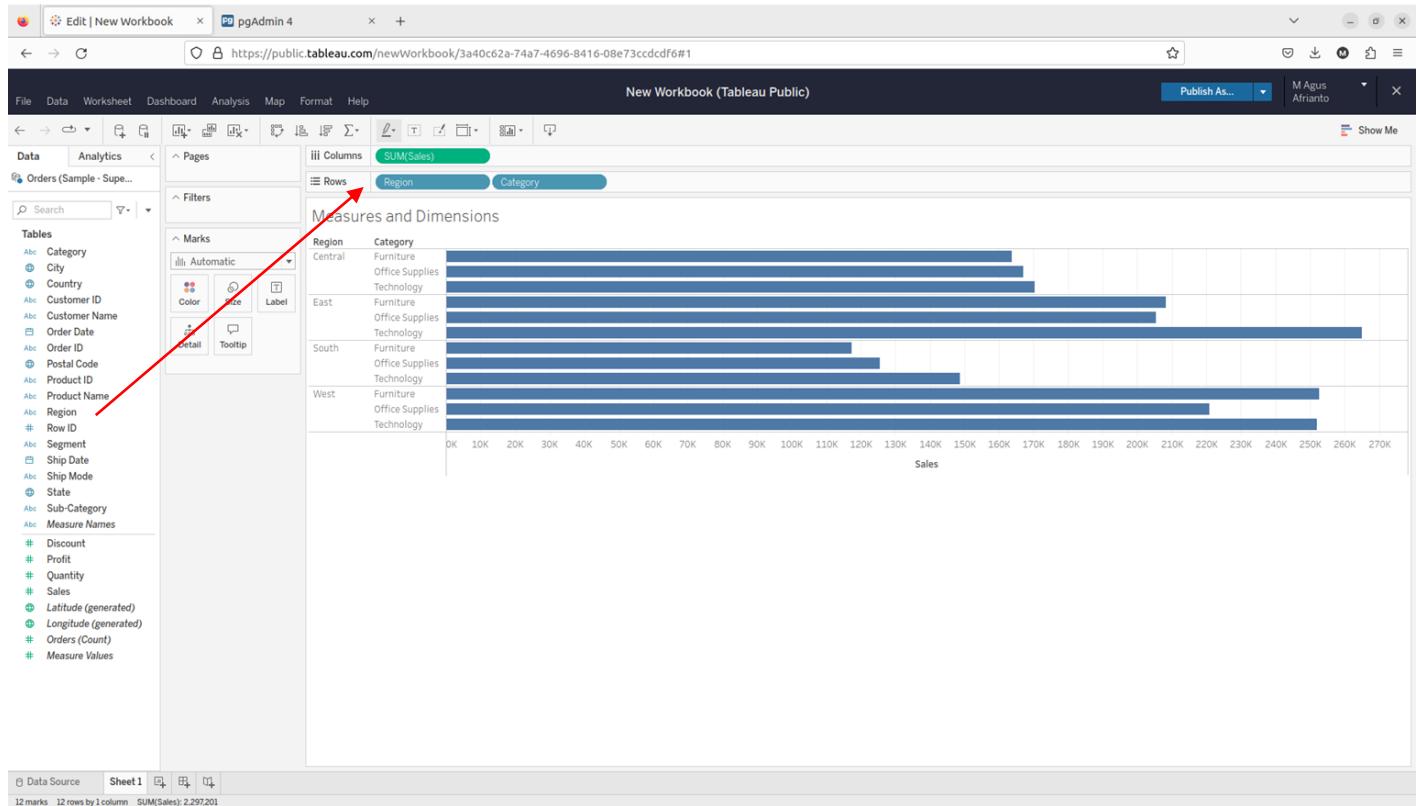


3. Comparing values: Bar Chart

- Bar chart is good to compare values across different categories
- Bar chart helps you to answer the following questions:
 - How many customers did each region serve?
 - How much sales did each category generate?

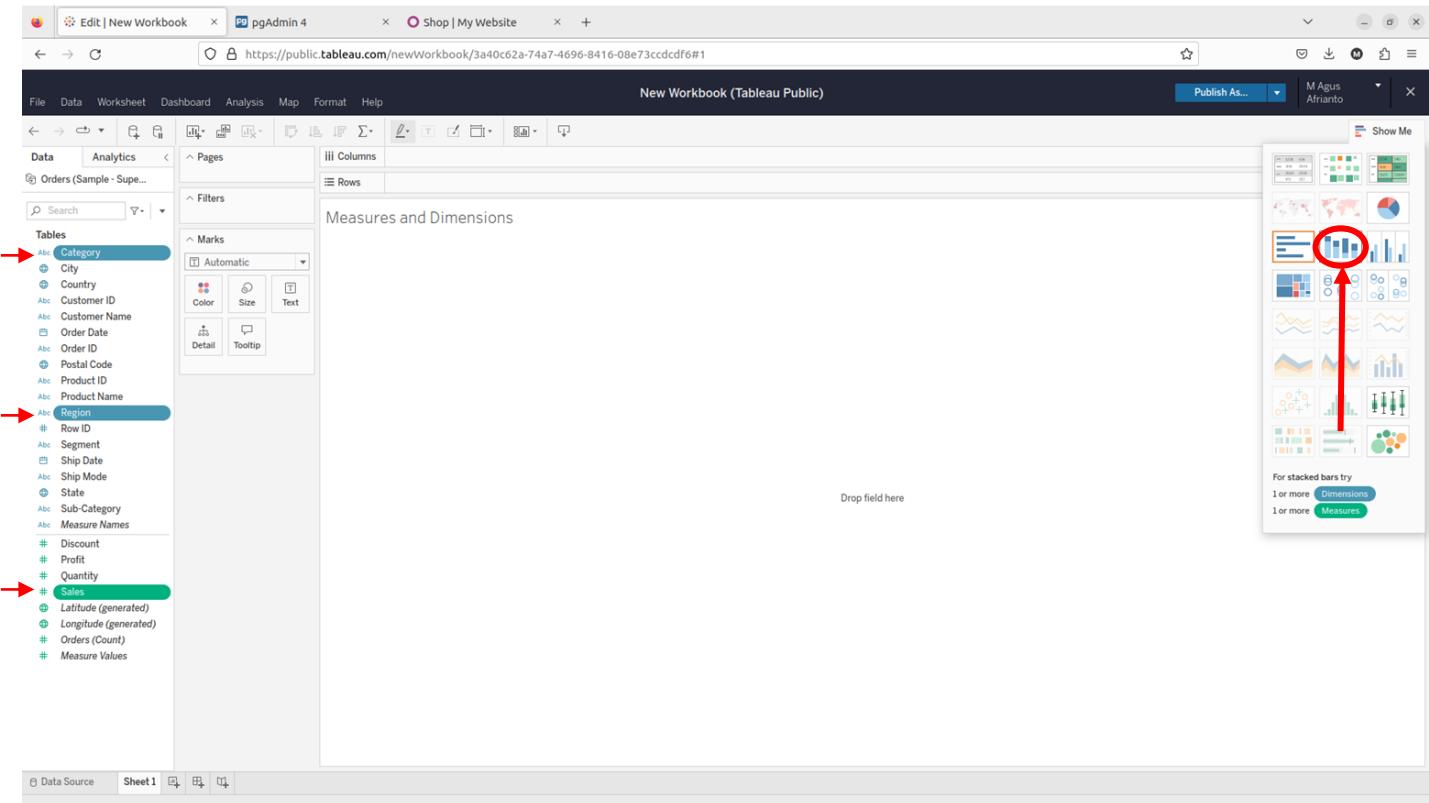
3. Comparing values: Bar Chart

Deeper
Barchart
Analysis.
Sales in
category
within each
region



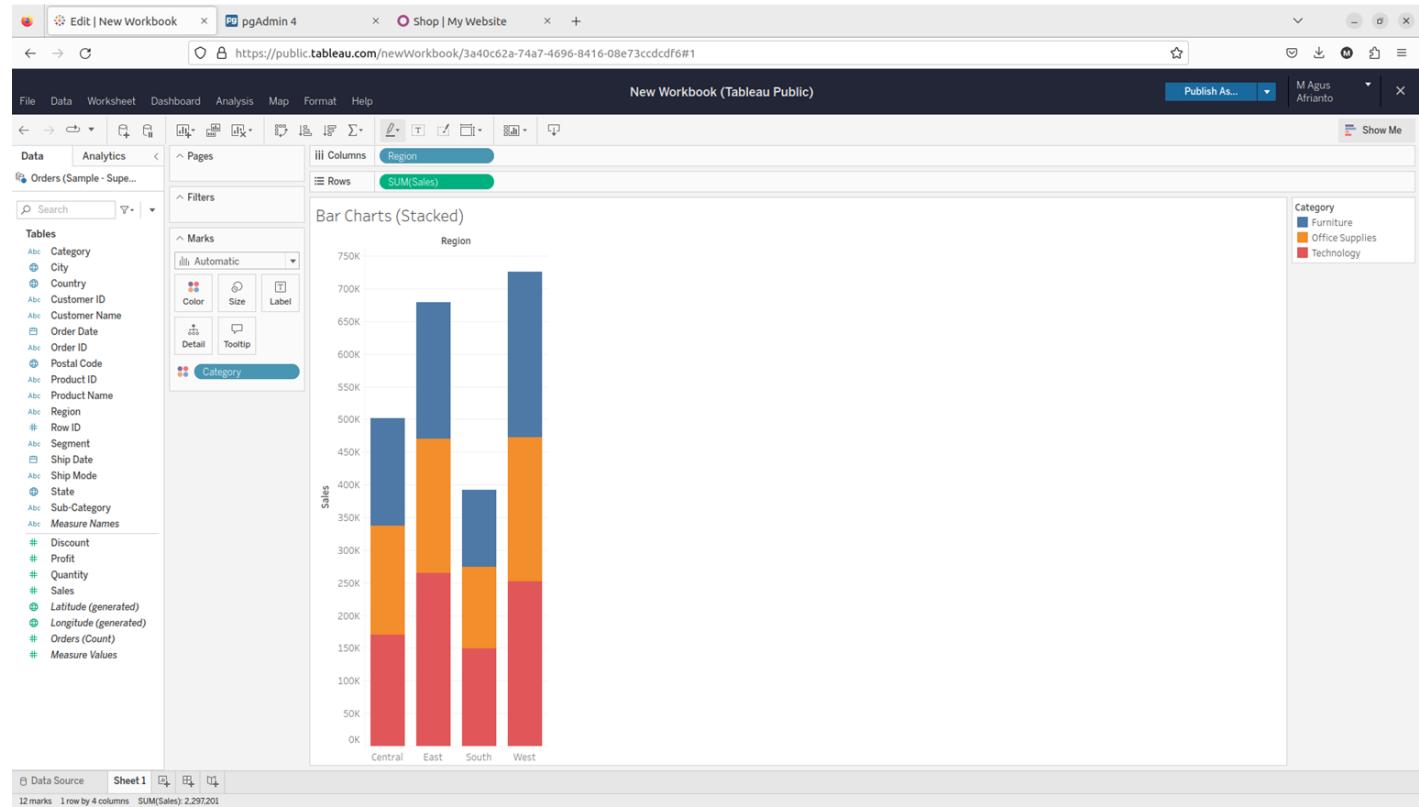
4. Comparing values: Bar Chart (Stacked)

Stacked bars can be useful when you want to understand part-to whole relationships. It is now easier to see what portion of the total sales of each department is made in each region.



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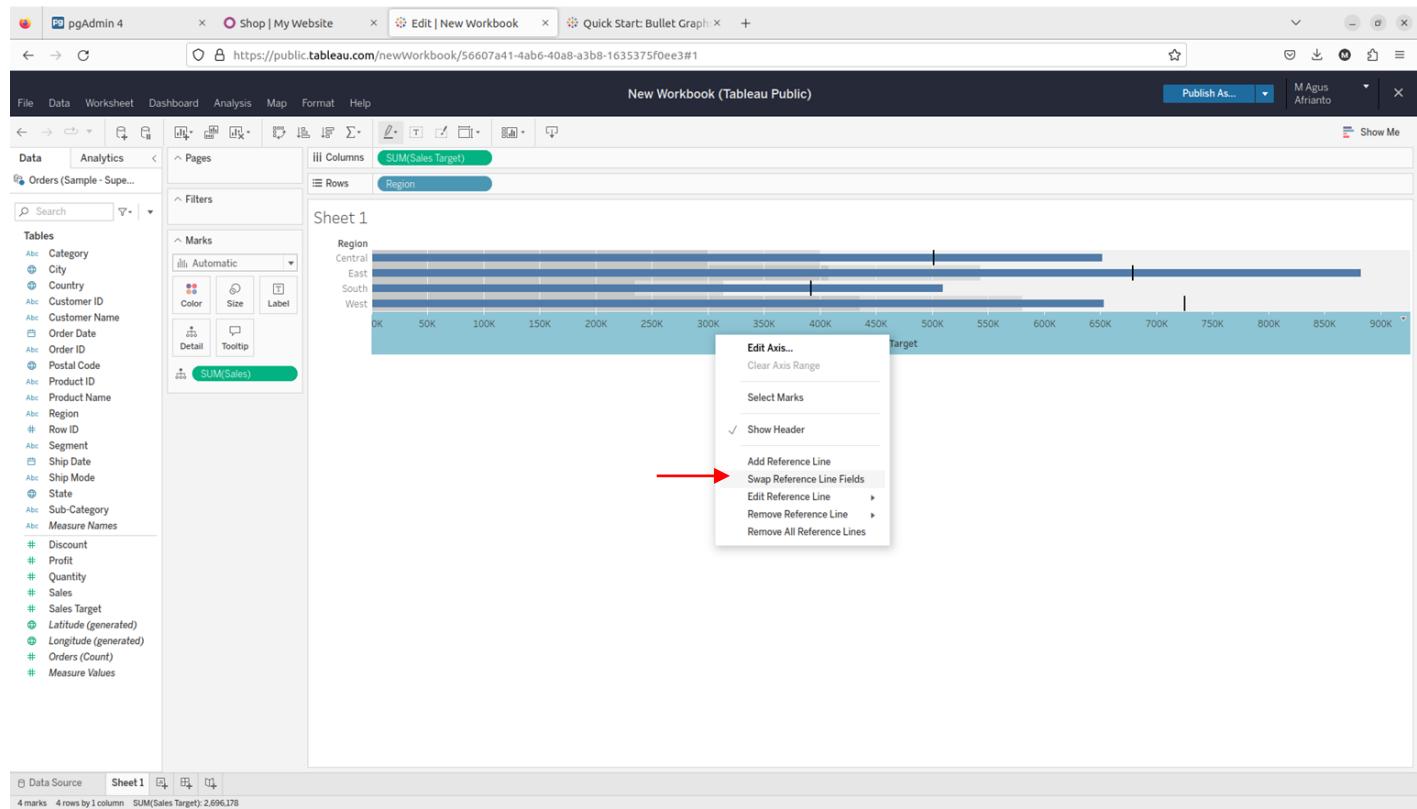
5. Comparing values: Bullet Graph

A bullet graph (sometimes also called a bullet chart) is a great way to visually compare a measure with a goal, target, or threshold.

The screenshot shows a Tableau Public workspace titled "New Workbook (Tableau Public)". The left sidebar displays a list of tables and measures, with "Region", "Sales", and "Sales Target" highlighted. The main canvas area is labeled "Sheet 1" and contains a placeholder text "Drop field here". To the right, a "Marks" shelf is visible, and a large palette of visualization icons is open, with a bullet graph icon circled in red. A tooltip provides instructions: "For bullet graph: 0 or more Dimensions, 2 Measures. Right-click the continuous axis to swap reference lines".

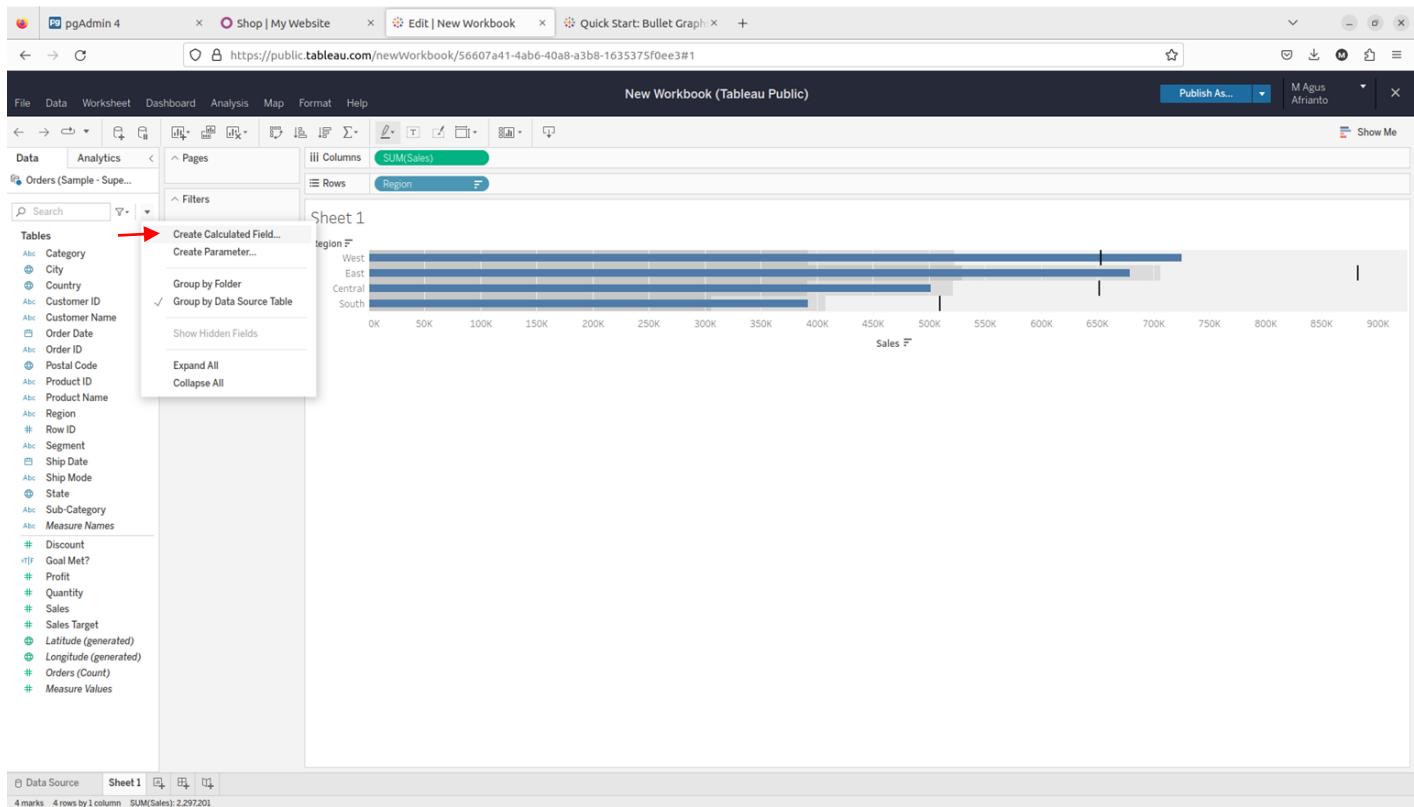
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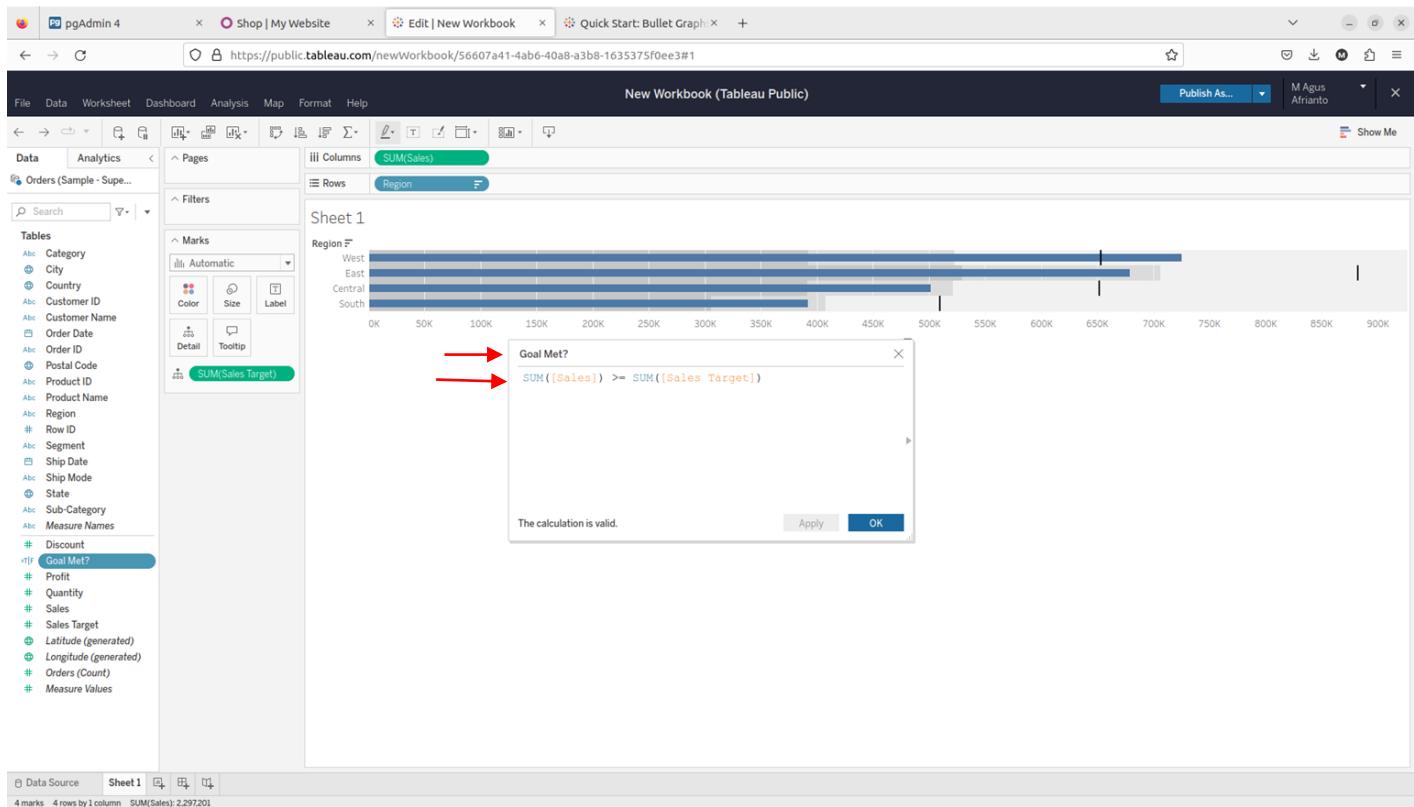
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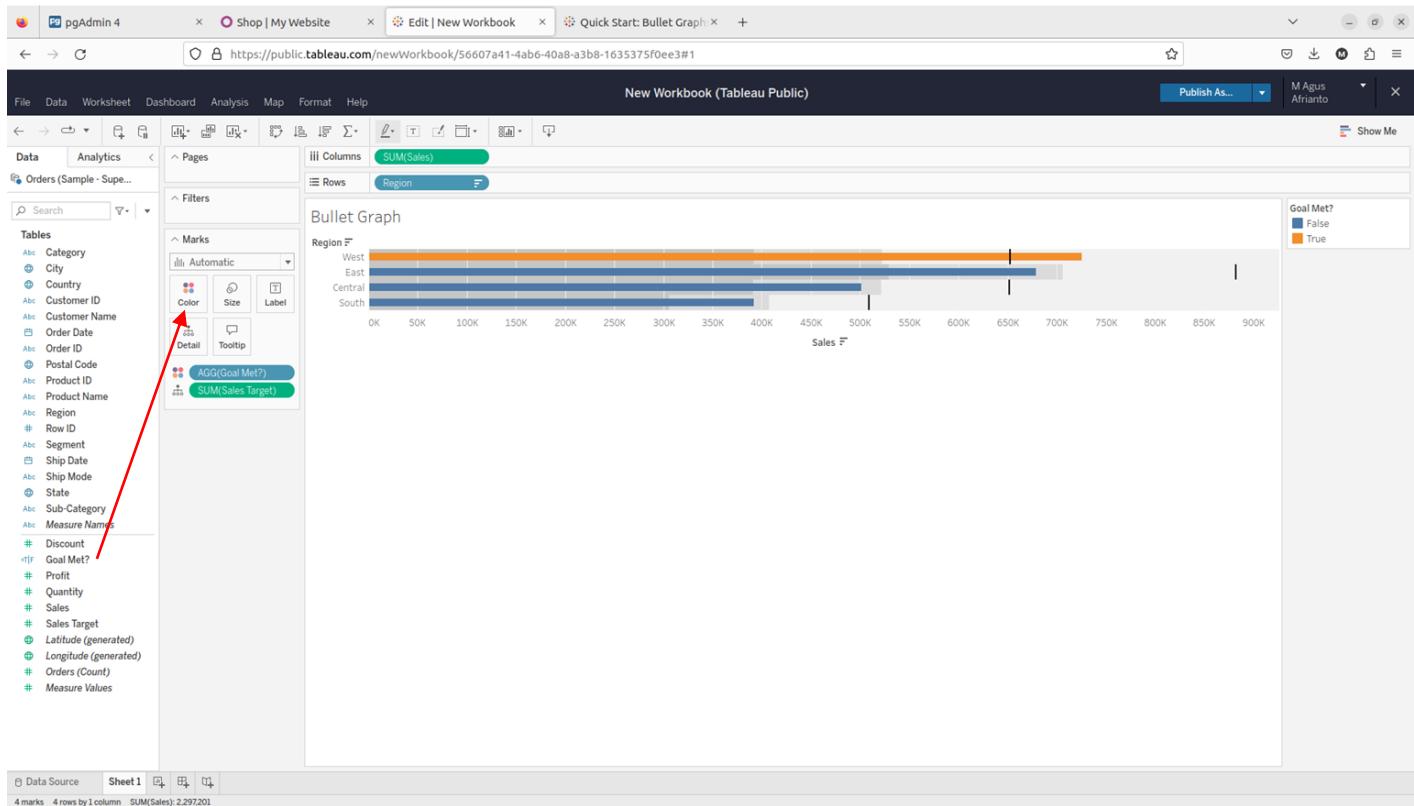
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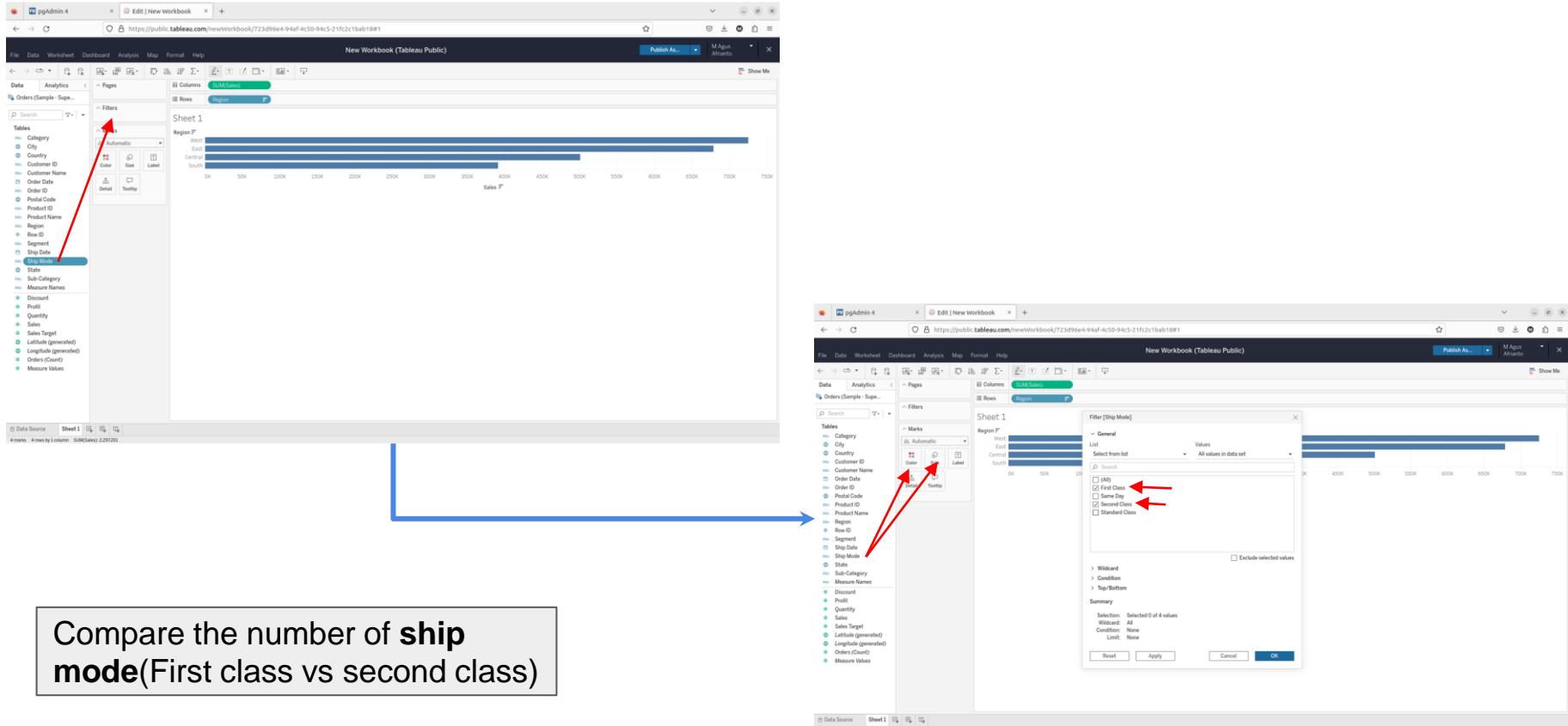
6. Comparing values: Bar-in-bar chart

Another possibility for showing relationships between two values for each category is a **bar-in-bar chart**. Like the bullet chart, the bar-in-bar chart can show progress toward a goal. It can also be used to compare any two values.

The screenshot shows the Tableau Public interface with the following steps highlighted:

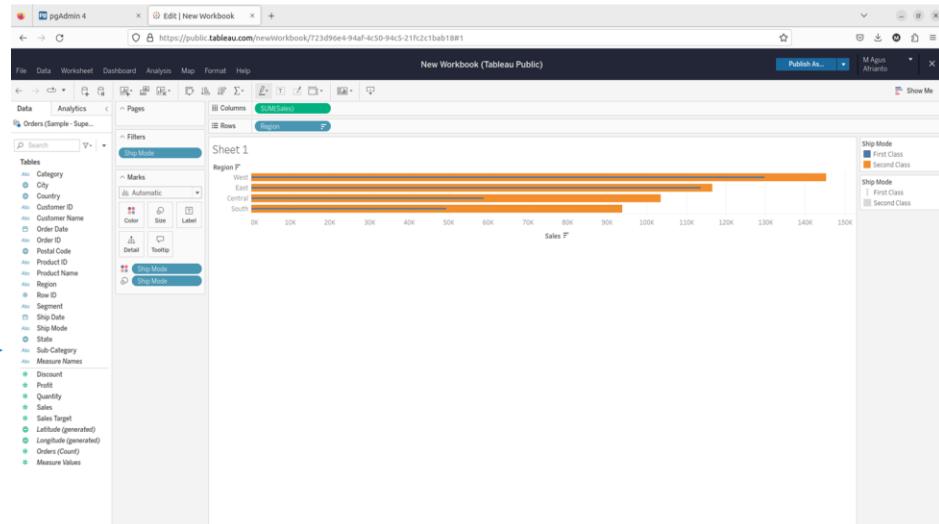
- Step 1:** In the Data pane, the "Region" field is selected (circled 1) and the "Sales" field is selected (circled 1). A red arrow points from the "Region" selection to the "Region" field in the Rows shelf.
- Step 2:** In the Marks card, the "Bar" mark type is selected (circled 2).
- Step 3:** In the bottom right corner, the "For horizontal bars try" section is visible, showing "O or more Dimensions" and "1 or more Measures". A red arrow points from the "Measures" section to the "Sales" field in the Data pane.

6. Comparing values: Bar-in-bar chart



6. Comparing values: Bar-in-bar chart

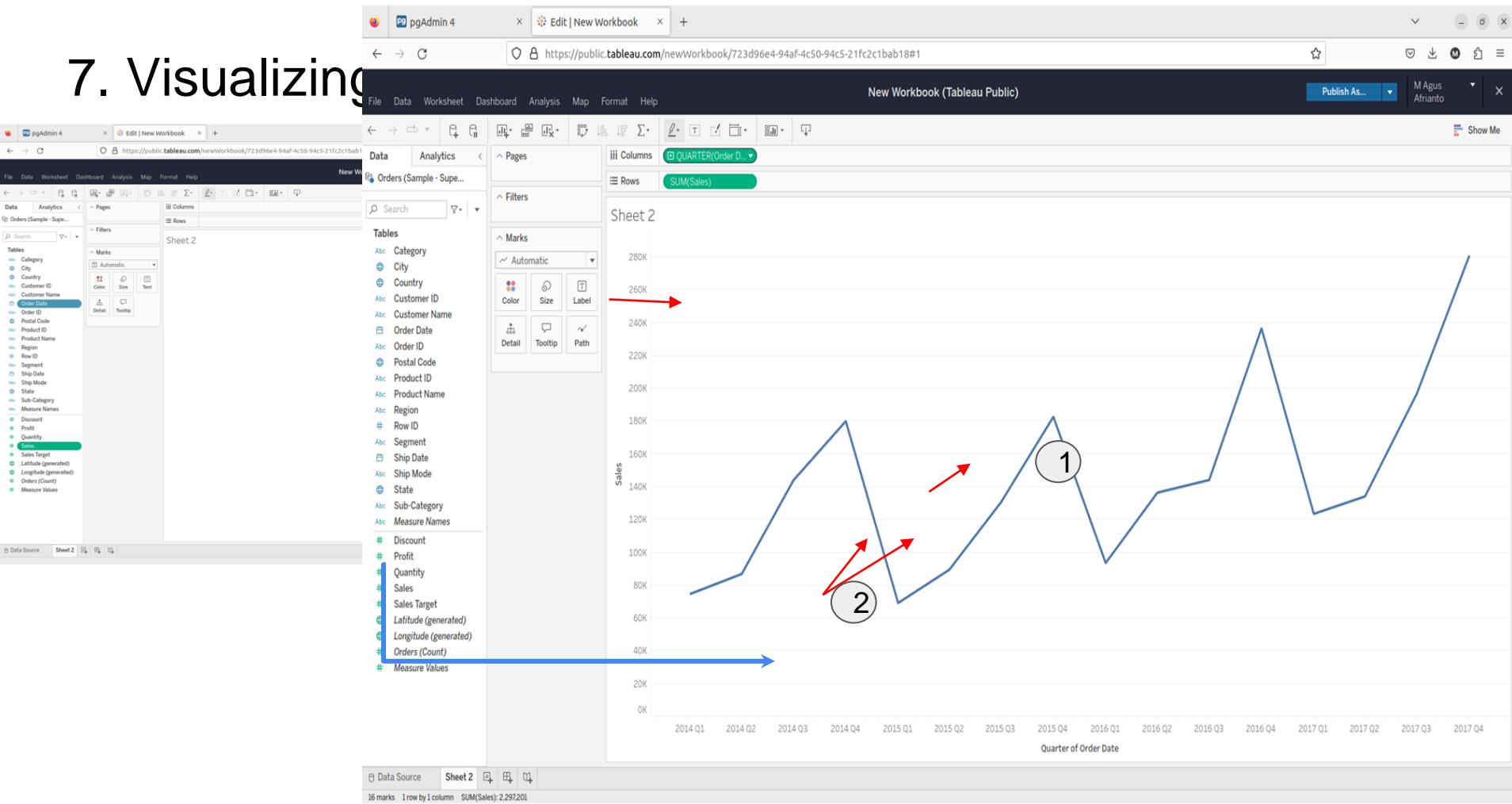
A screenshot of the Tableau interface. On the left, the 'Ship Mode' column is selected in the 'Marks' shelf. A context menu is open over this selection, with the 'Totals' option highlighted. An arrow points from the text 'Bar-in-bar chart' to the 'Totals' option in the menu.



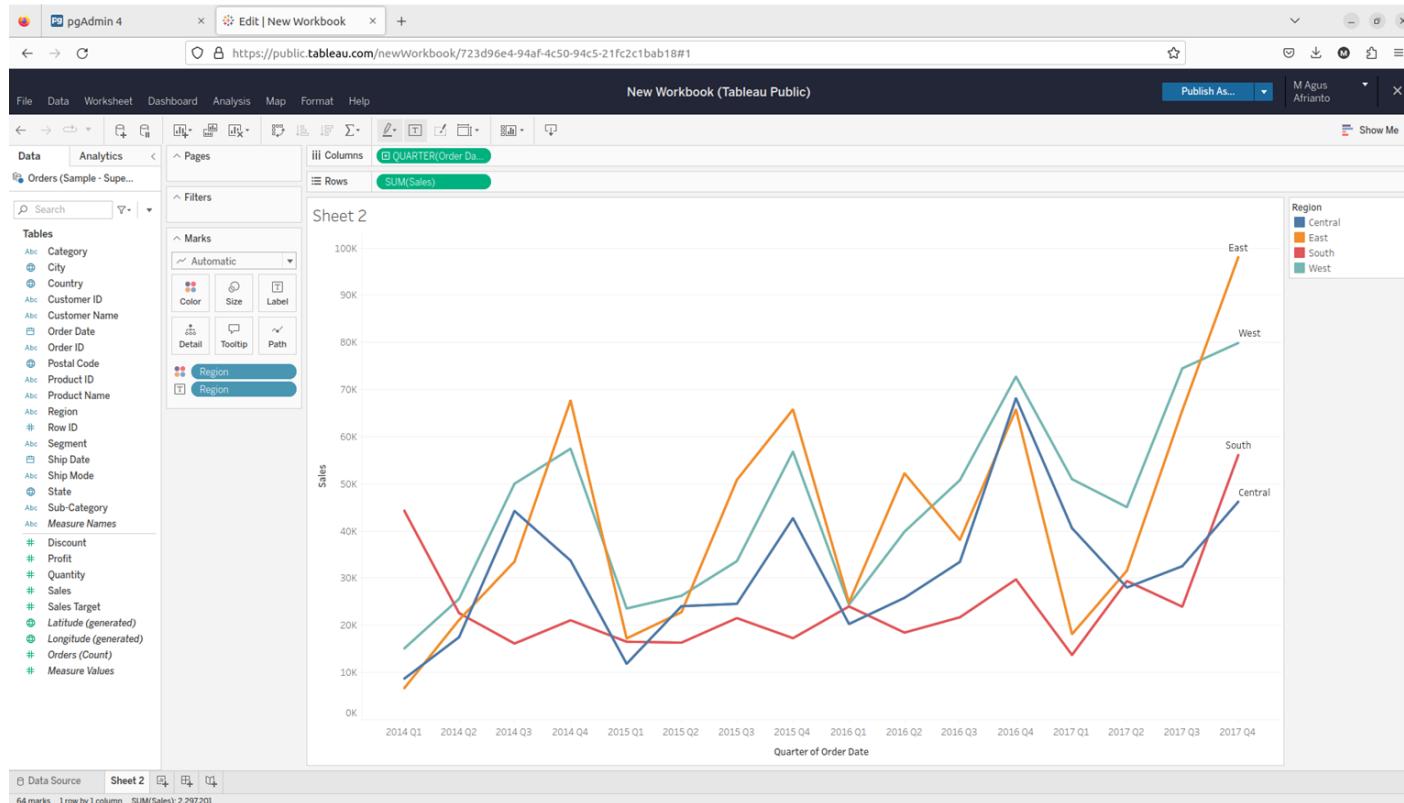
7. Visualizing dates and times: Lines chart

- In your analysis, you will often want to understand when something happened.
- Lines chart helps you to answer the following questions:
 - When did we gain the most new customers?
 - Is profit trending up or down?
 - What times of day have the highest call volume?
 - What kinds of seasonal trends do we see in sales?

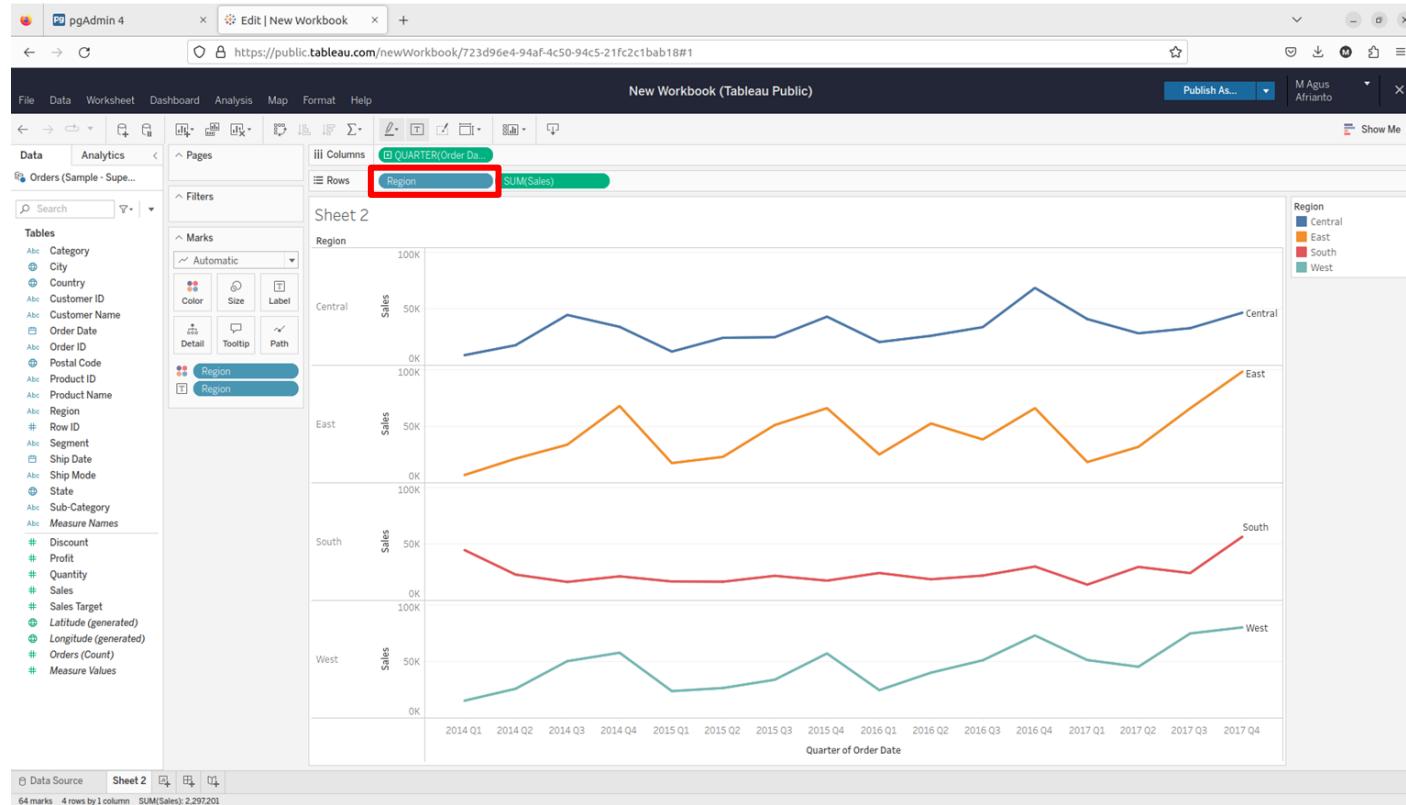
7. Visualizing



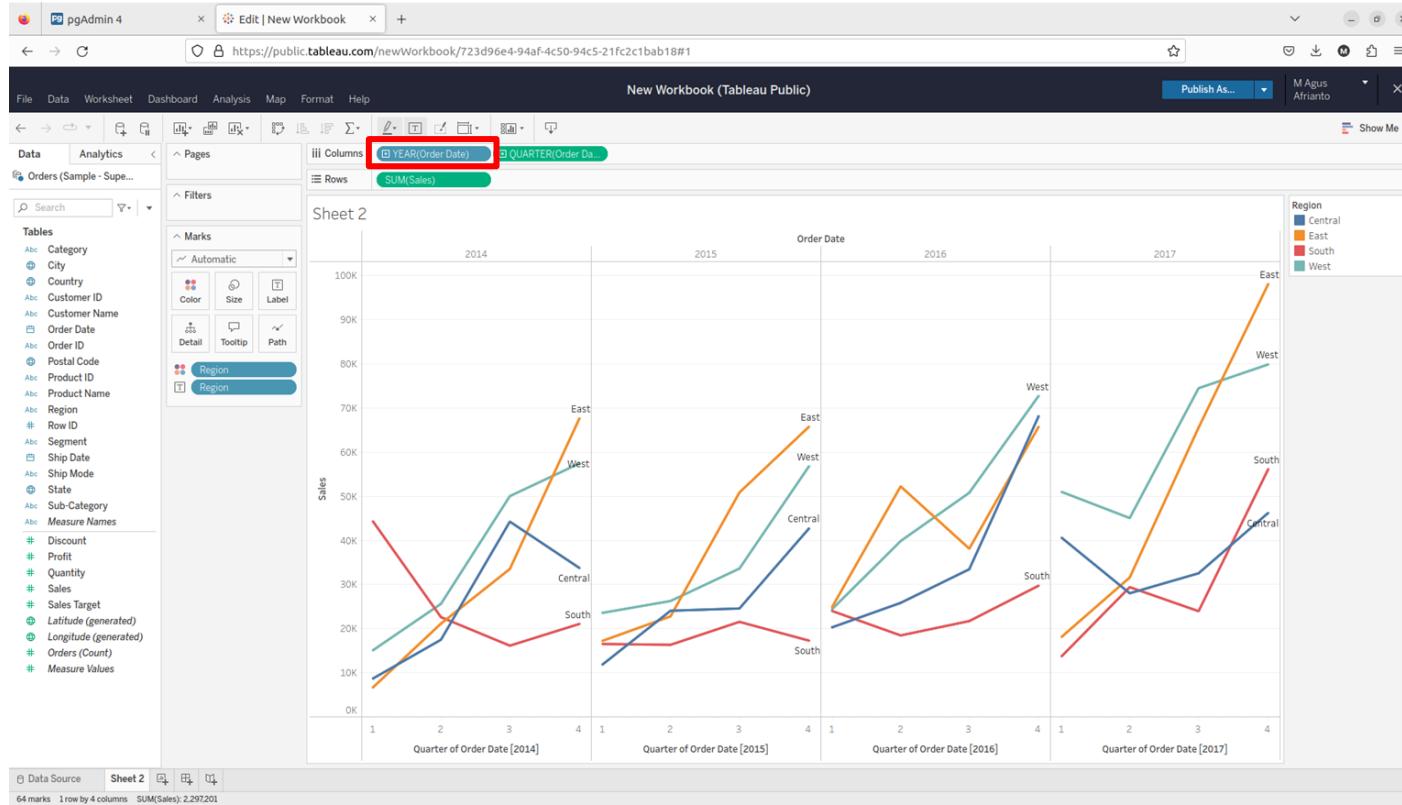
7. Visualizing dates and times: Lines chart



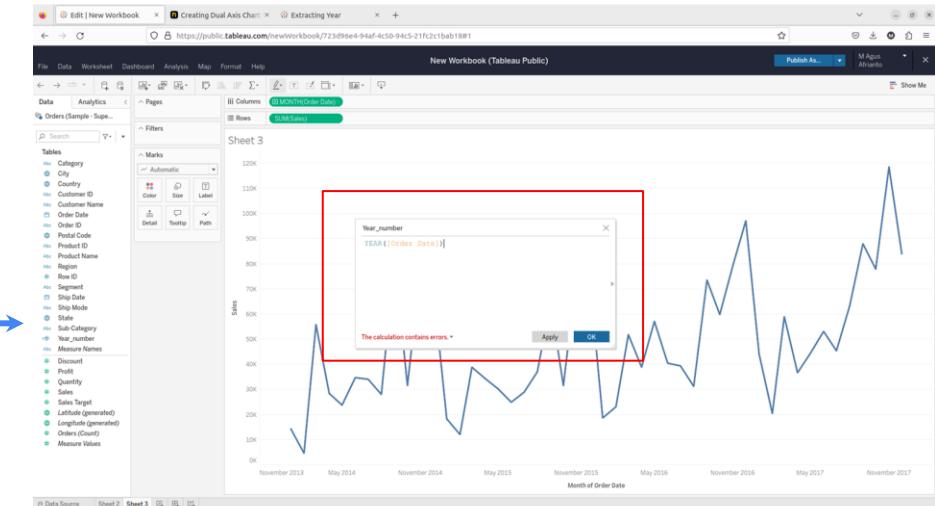
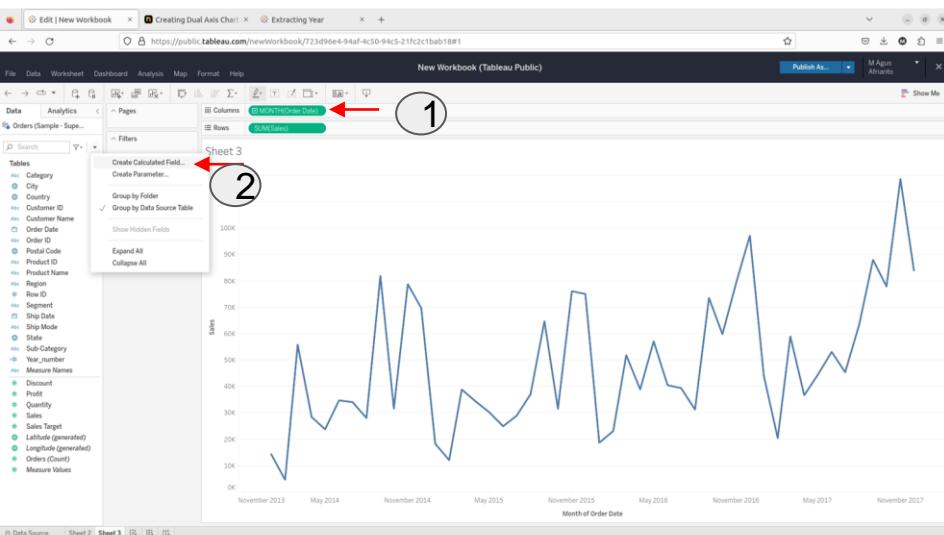
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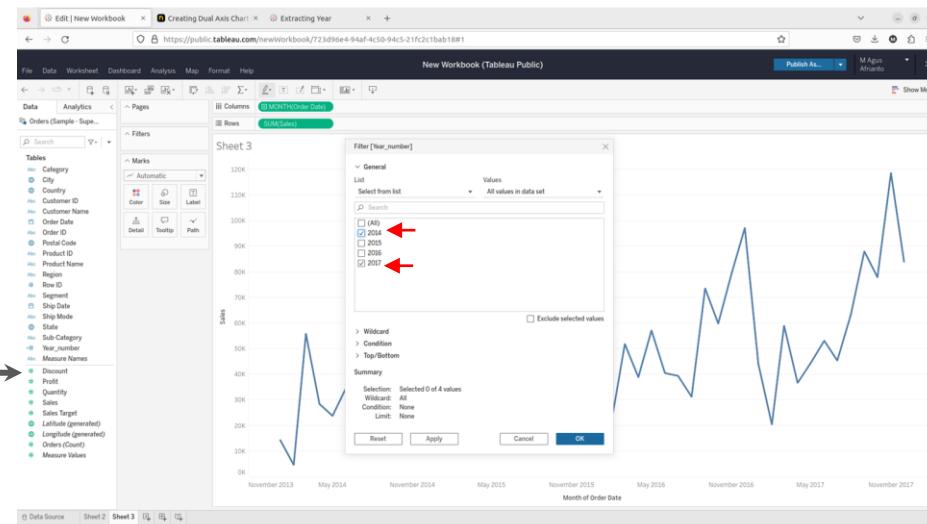
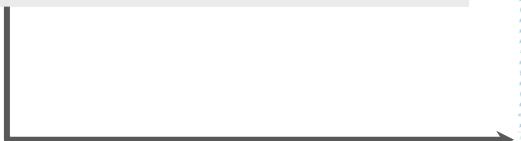
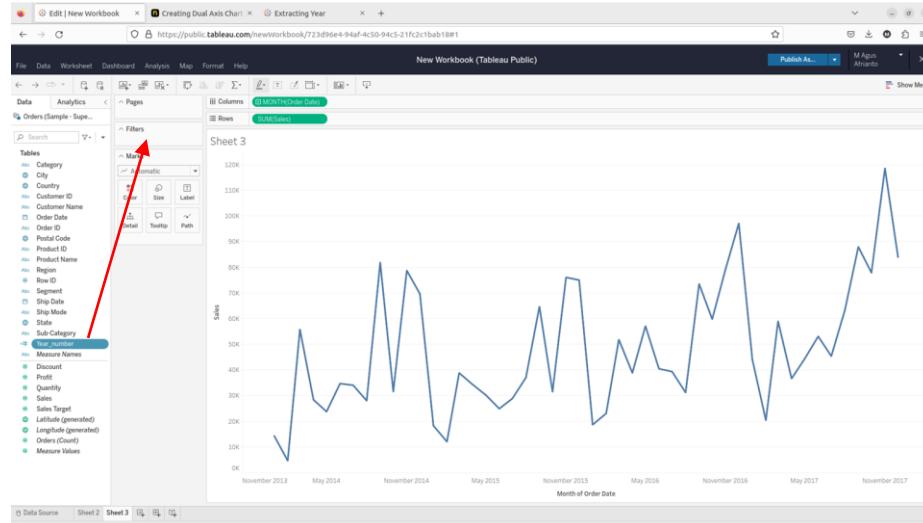
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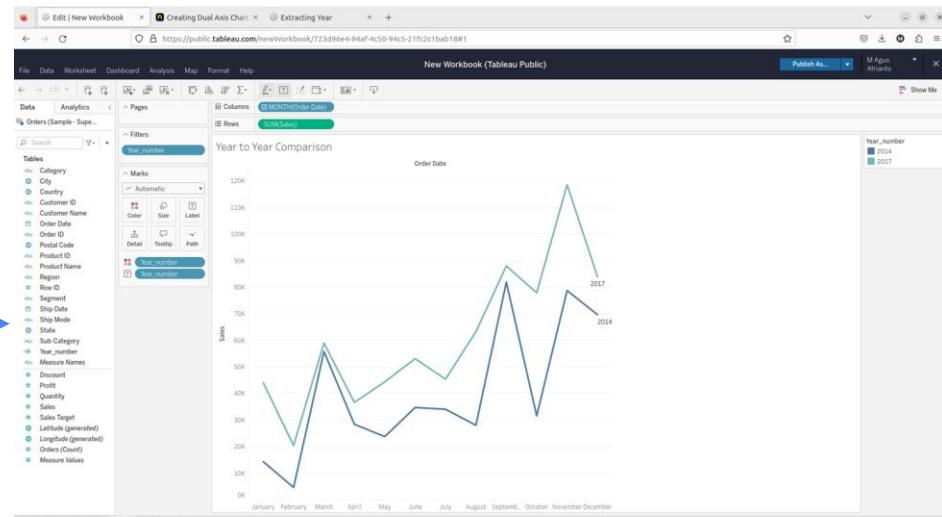
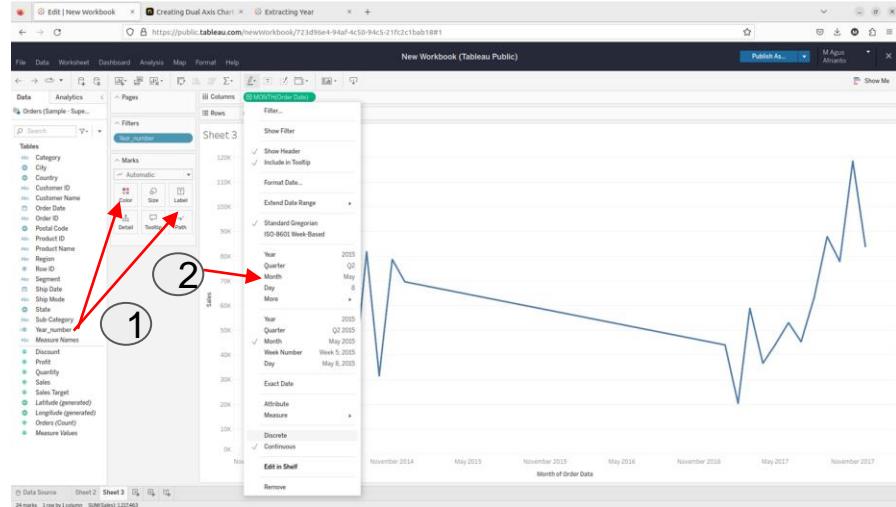
7. Visualizing dates and times: Lines chart



7. Visualizing dates and times: Lines chart



7. Visualizing dates and times: Lines chart



8. Visualizing dates and times: Heatmap

- Heatmap can be quite useful when looking at patterns across different parts of time, such as hours in a day, or weeks in a month.

8. Visualizing dates and times: Heatmap

The screenshot shows the Tableau Data Source pane on the left. A red arrow points from the top of the pane to a circled '1' on the 'Year' dropdown. Another red arrow points from the bottom of the pane to a circled '2' on the 'Day' dropdown. A large blue arrow points from the Data Source pane to the right-hand visualization area.

1. Year dropdown menu open, showing options: 2014, 2015, Quarter, Month, Day, More.

2. Day dropdown menu open, showing options: 2015, Q2 2015, May 2015, Week 5, 2015, May 8, 2015.

Tables listed in the Data Source:

- Category
- City
- Country
- Customer ID
- Customer Name
- Order Date
- Order ID
- Postal Code
- Product ID
- Product Name
- Region
- Row ID
- Segment
- Ship Date
- Ship Mode
- State
- Sub-Category
- Measure Names
- Discount
- Profit
- Quantity
- Sales
- Sales Target
- Latitude (generated)
- Longitude (generated)
- Orders (Count)
- Measure Values

4 marks, 1 row by 4 columns.

The screenshot shows the Tableau visualization area. A red arrow points from the 'Month' dropdown in the context menu to the 'Month' dropdown in the visualization's filter panel. The visualization displays a grid of data with columns labeled 5 through 22 and rows labeled 1 through 22. The data values are represented by letters (A, B, C) and numbers (e.g., 2015, Q2 2015, May 2015, Week 5, 2015, May 8, 2015).

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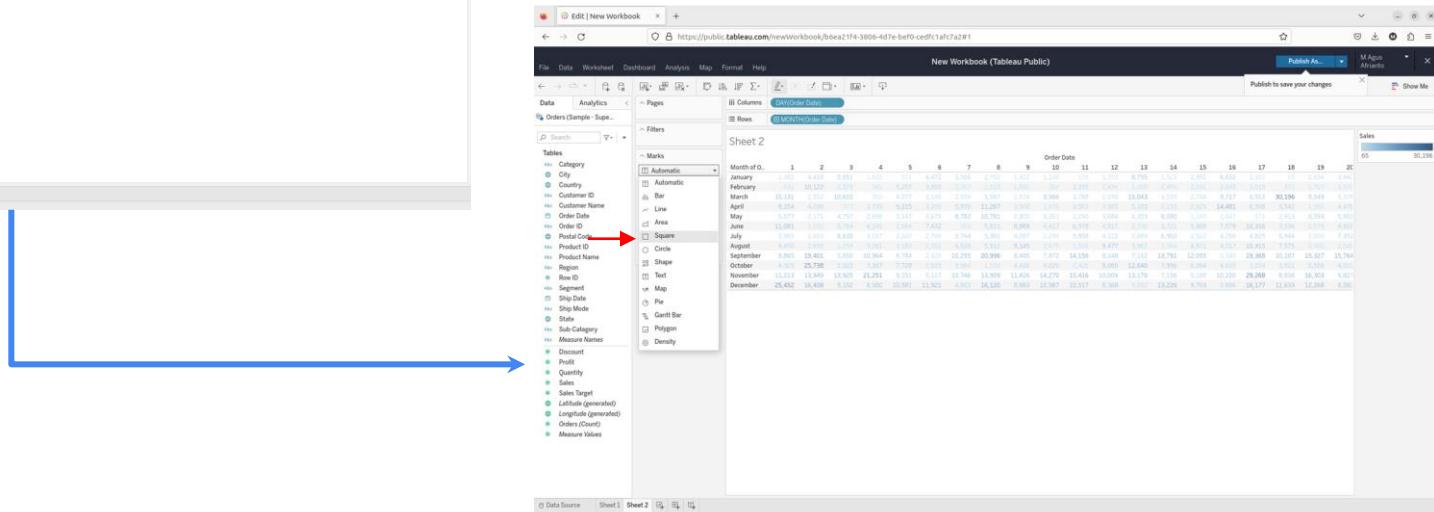
4 marks, 1 row by 22 columns.

8. Visualizing dates and times: Heatmap

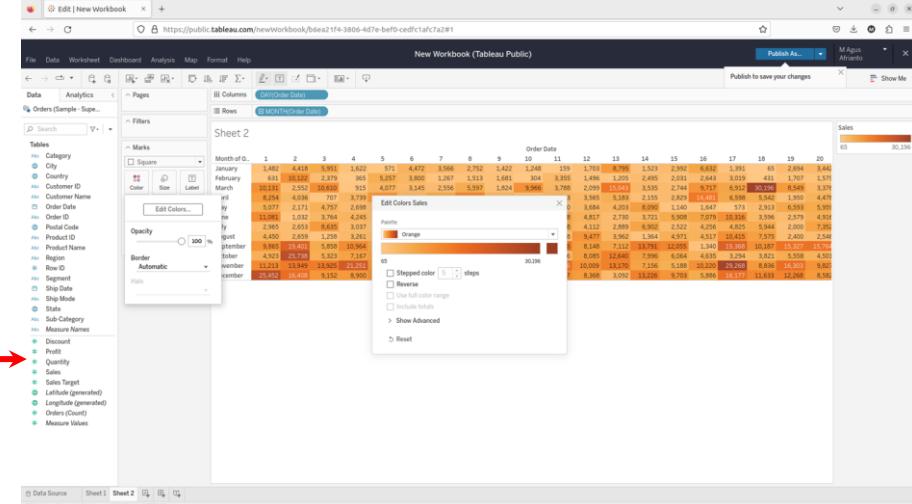
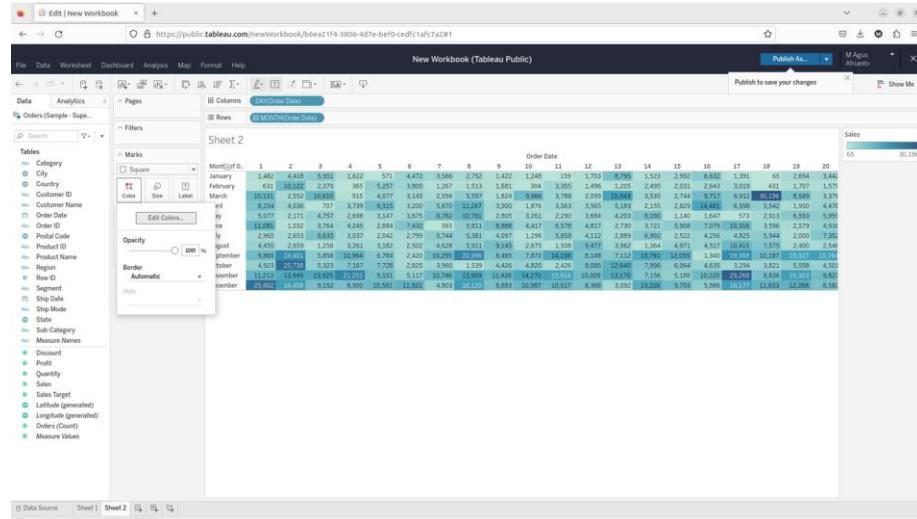
The screenshot shows the Tableau Data Source view for the 'Orders (Sample - Superstore)' data source. The 'Sales' dimension is selected, highlighted with a green border. A red arrow points from the top of the 'Sales' dimension to the 'Marks' shelf on the right, which contains various mark types like Automatic, Bar, Circle, etc. Another red arrow points from the bottom of the 'Sales' dimension to the 'Order Date' column header on the data grid, indicating the time dimension.

Sheet 2

Month of O.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
January	Abc	A																				
February	Abc	A																				
March	Abc	A																				
April	Abc	A																				
May	Abc	A																				
June	Abc	A																				
July	Abc	A																				
August	Abc	A																				
September	Abc	A																				
October	Abc	A																				
November	Abc	A																				
December	Abc	A																				



8. Visualizing dates and times: Heatmap



9. Visualizing dates and times: Geographic Visualization

- Geographic visualizations is incredibly valuable when you need to understand where things happen and whether there are any spatial relationships within the data. Tableau offers several types of geographic visualization:
 - Filled maps
 - Symbol maps
 - Density maps

9. Visualizing dates and times: Geographic Visualization Filled Maps

The image shows two screenshots of the Tableau software interface, illustrating the process of creating a geographic visualization (Filled Maps).

Left Screenshot (Data Source View):

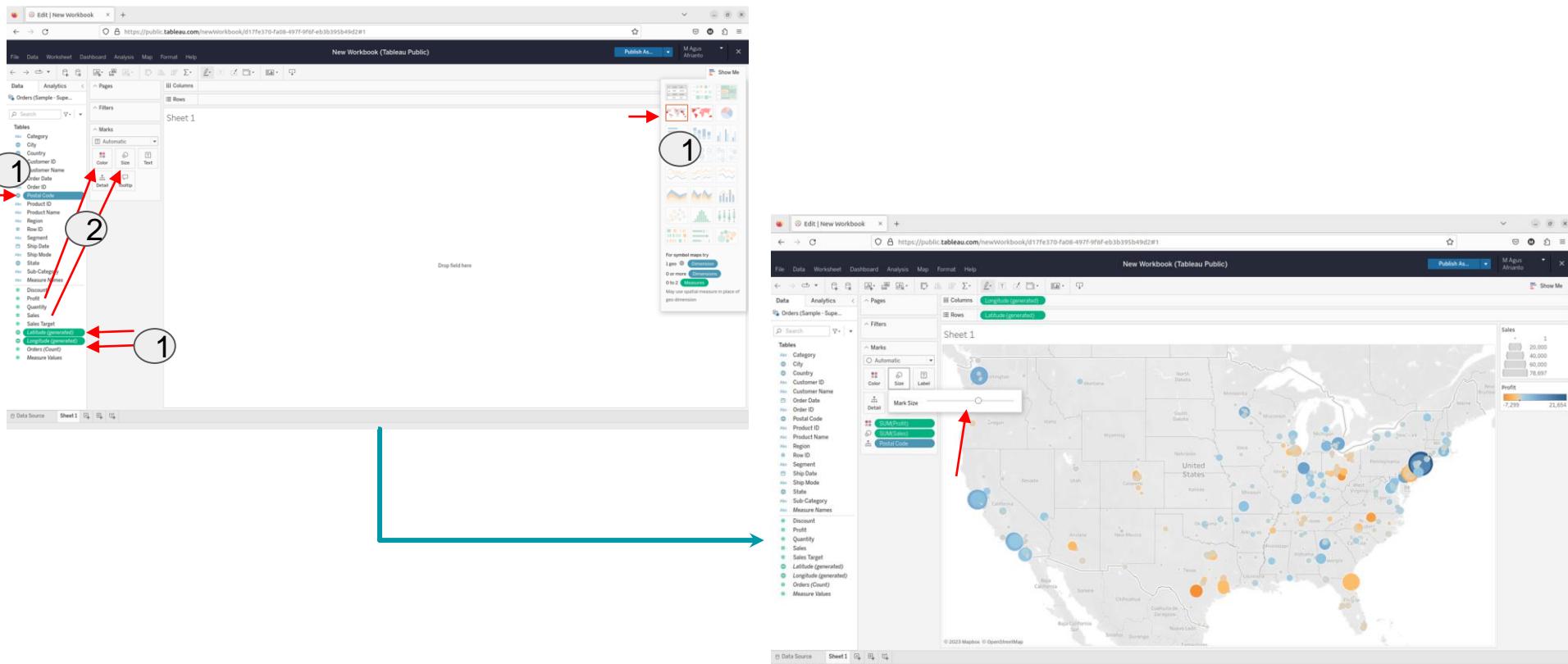
- The title bar says "Edit | New Workbook" and "New Workbook (Tableau Public)".
- The menu bar includes File, Data, Worksheet, Dashboard, Analysis, Map, Format, Help.
- The Data pane lists various dimensions and measures:
 - Dimensions: Category, City, Country, Customer ID, Customer Name, Order Date, Order ID, Product Code, Product ID, Product Name, Region, Row ID, Segment, Ship Date, Ship Mode, State, Sub-Category, Measure Names.
 - Measures: Profit, Quantity, Sales, Sales Target, Latitude (generated), Longitude (generated), Orders (Count), Measure Values.
- A red arrow points from the "Sales" measure in the Measures list to the "Color" shelf in the Marks card.
- Two circles labeled "1" point to the "City" dimension in the Dimensions list and the "Latitude (generated)" measure in the Measures list.
- Two circles labeled "2" point to the "Color" and "Size" shelves in the Marks card.
- A red arrow points from the "City" dimension to the "Color" shelf.
- A red arrow points from the "Latitude (generated)" measure to the "Size" shelf.
- A large blue arrow points from the bottom of the left screenshot to the top of the right screenshot.

Right Screenshot (Worksheet View):

- The title bar says "Edit | New Workbook" and "New Workbook (Tableau Public)".
- The menu bar includes File, Data, Worksheet, Dashboard, Analysis, Map, Format, Help.
- The Data pane shows "Lang/Sales (generated)" and "Lat/Lng (generated)" in the Columns and Rows sections respectively.
- The Marks card shows "Map" selected, with "Color" and "Size" shelves present.
- The visualization is a map of the United States where states are colored based on Sales values. California is dark blue (highest sales), while most other states are light blue (lower sales).
- The bottom status bar shows "49 marks. 1 row by 1 column. SUM(Sales) 2,297,201".

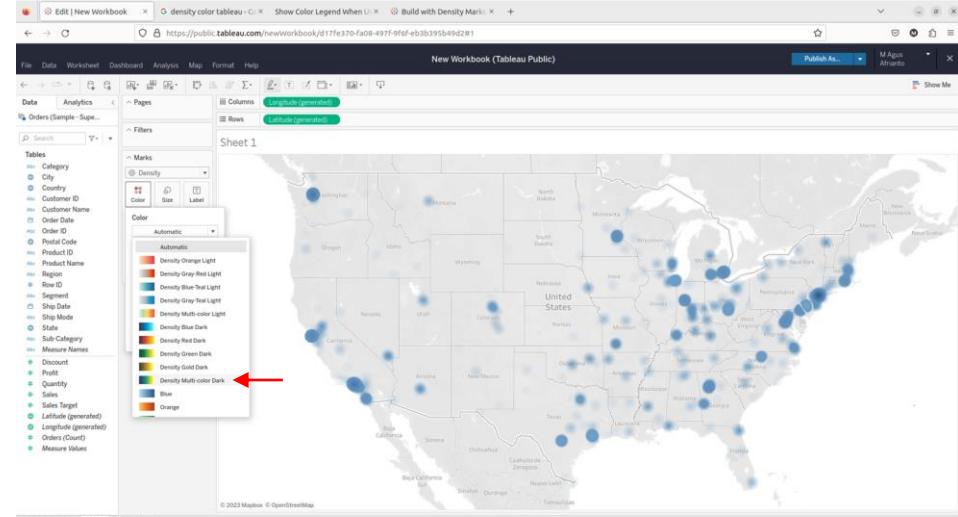
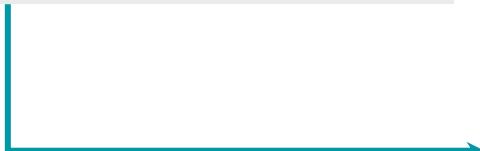
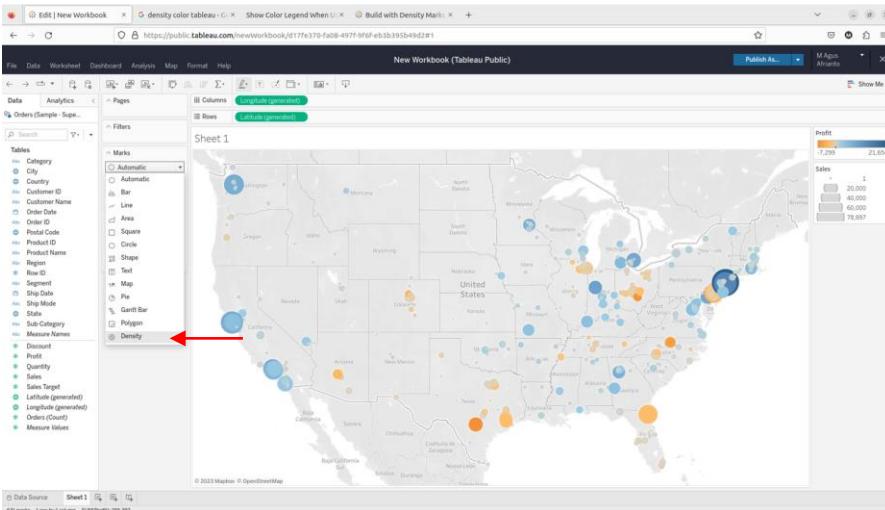
9. Visualizing dates and times: Geographic Visualization

Symbol Maps

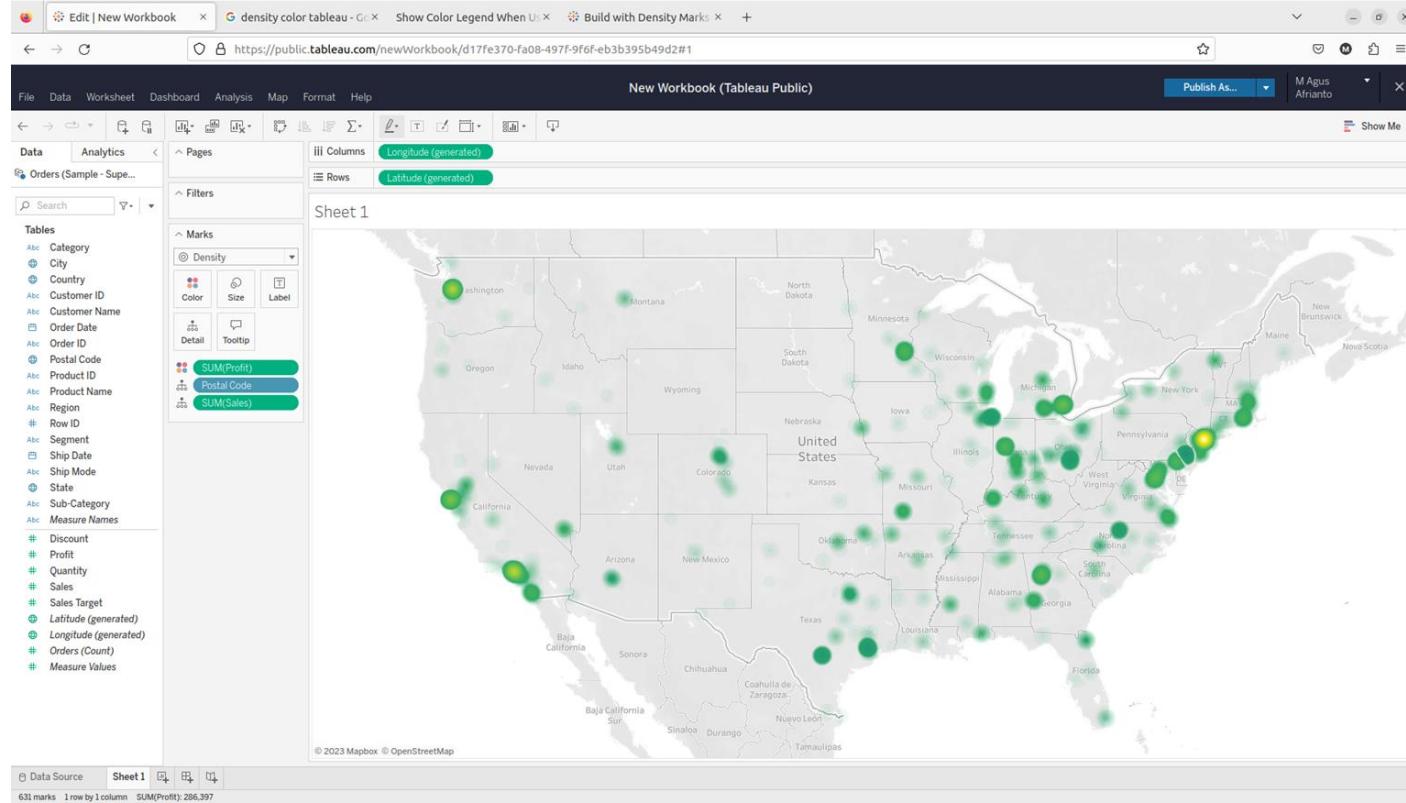


9. Visualizing dates and times: Geographic Visualization

Density Maps



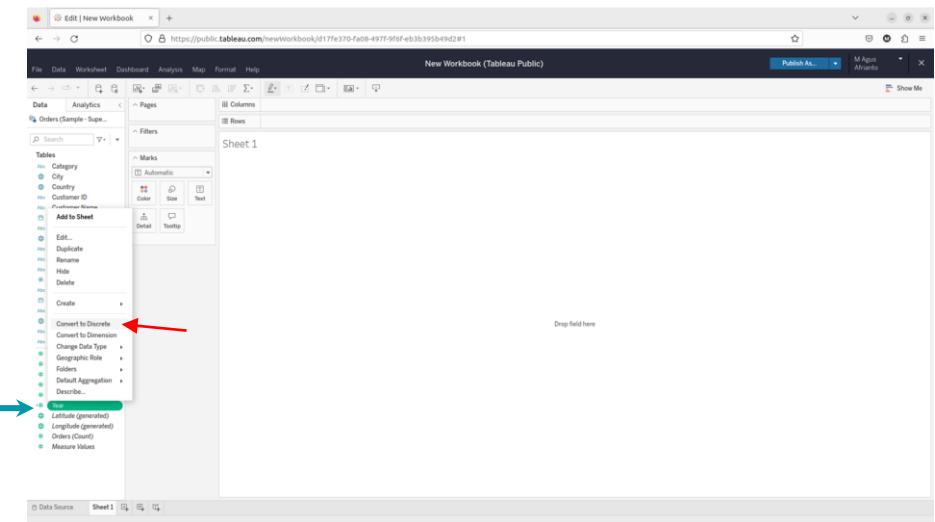
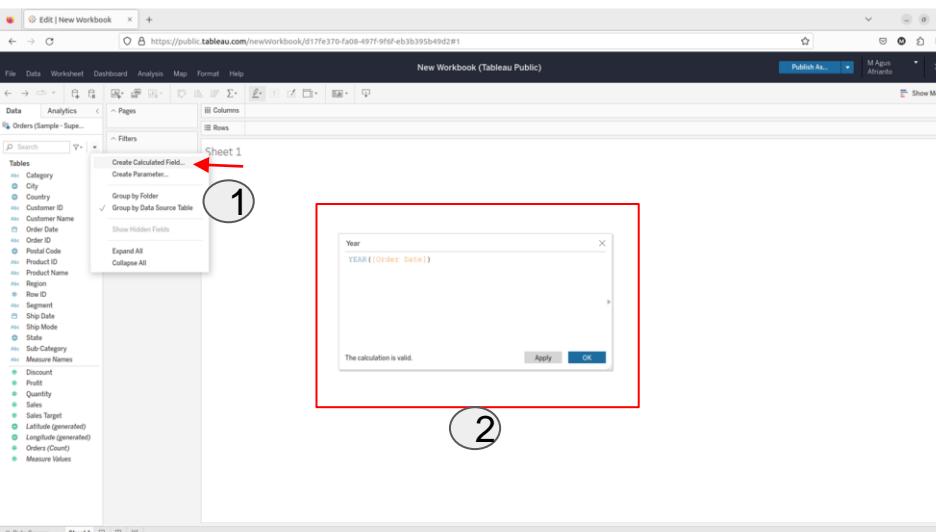
9. Visualizing dates and times: Geographic Visualization Density Maps



10. Visualizing dates and times: Treemaps

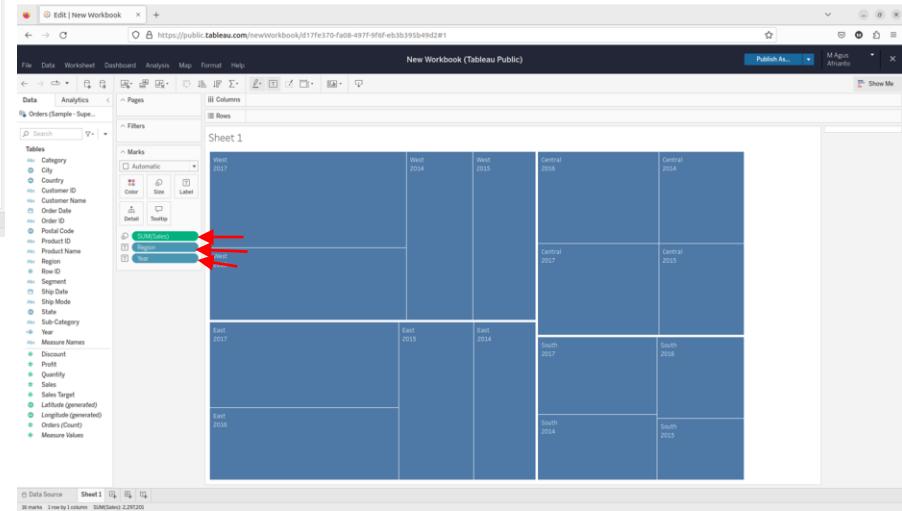
- Treemaps use a series of nested rectangles to display parts of the whole, especially within hierarchical relationships. Treemaps are particularly useful when you have hierarchies and dimensions with high cardinality (a high number of distinct values).

10. Visualizing dates and times: Treemaps



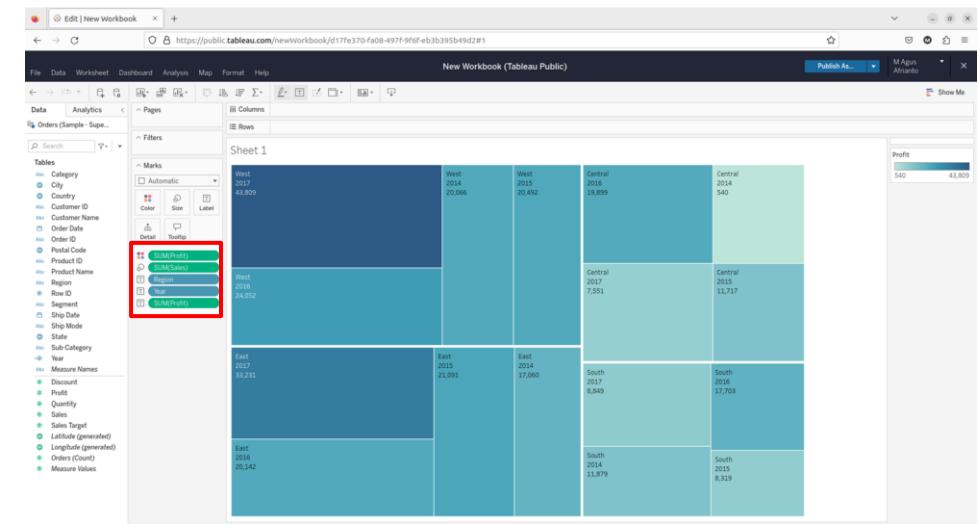
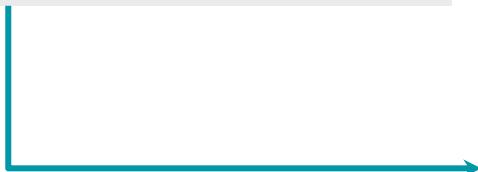
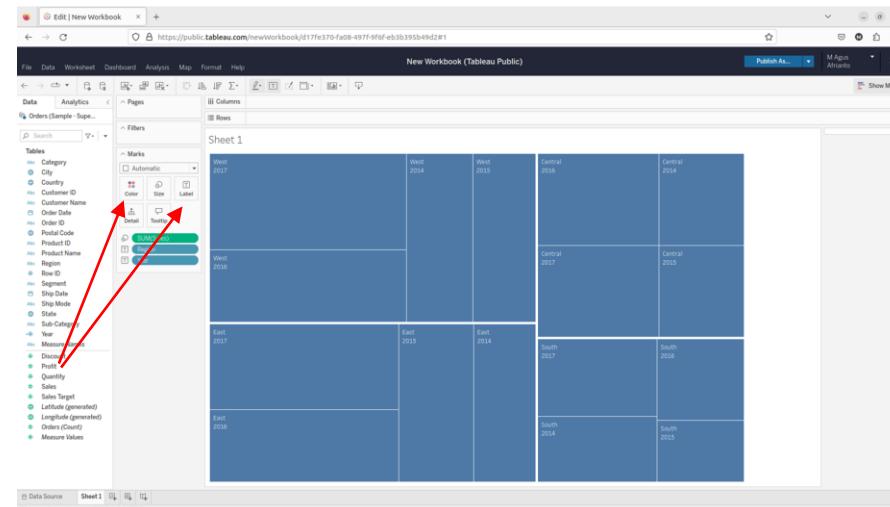
10. Visualizing dates and times: Treemaps

1. Region
2. Color
3. Size



- Sales to size
- Region to label
- Year to label

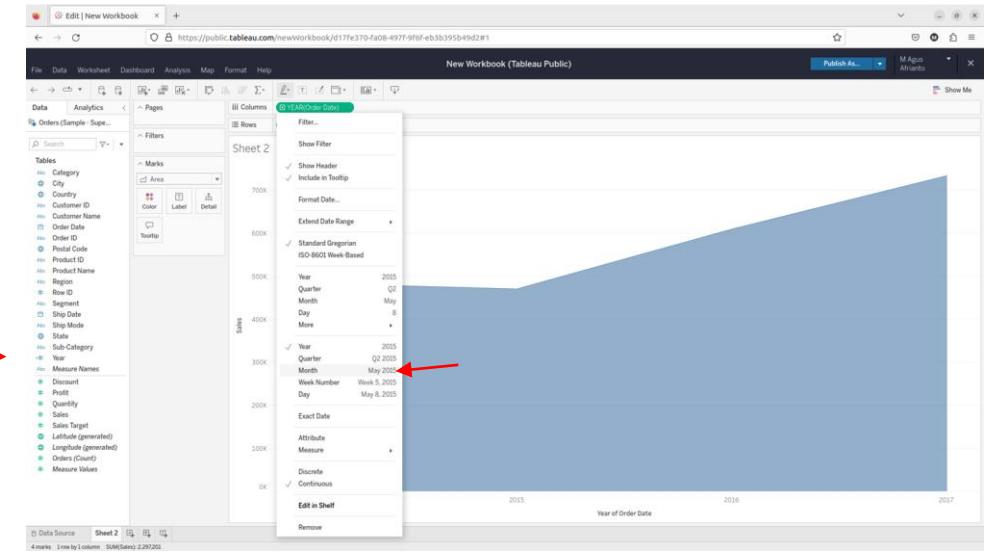
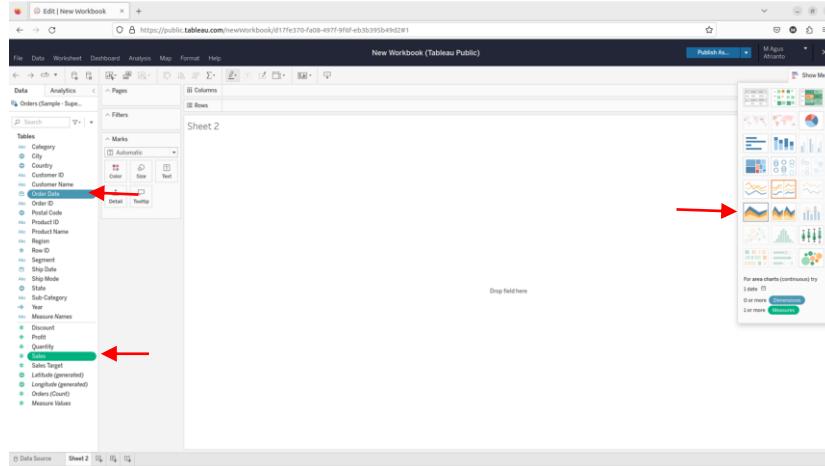
10. Visualizing dates and times: Treemaps



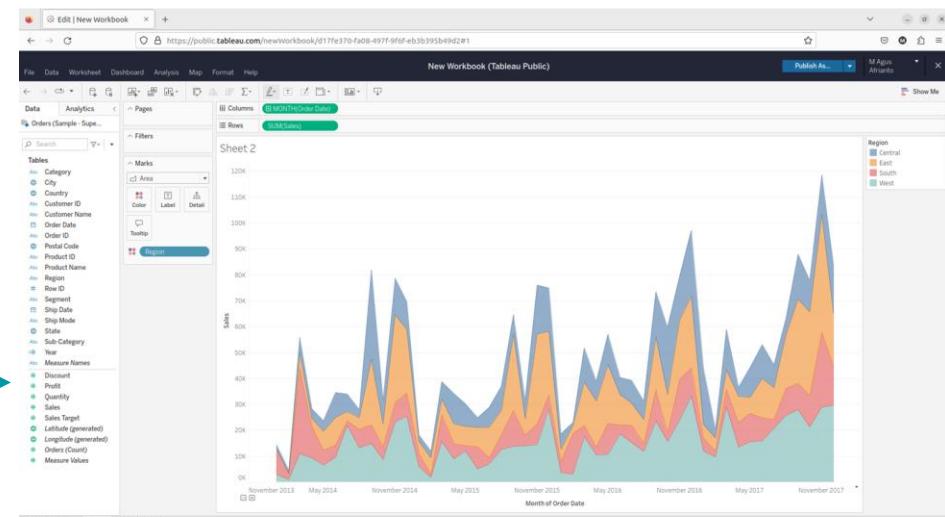
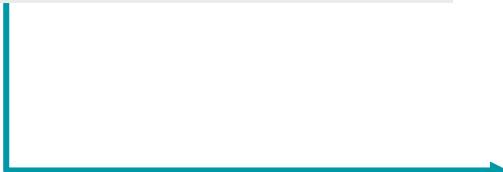
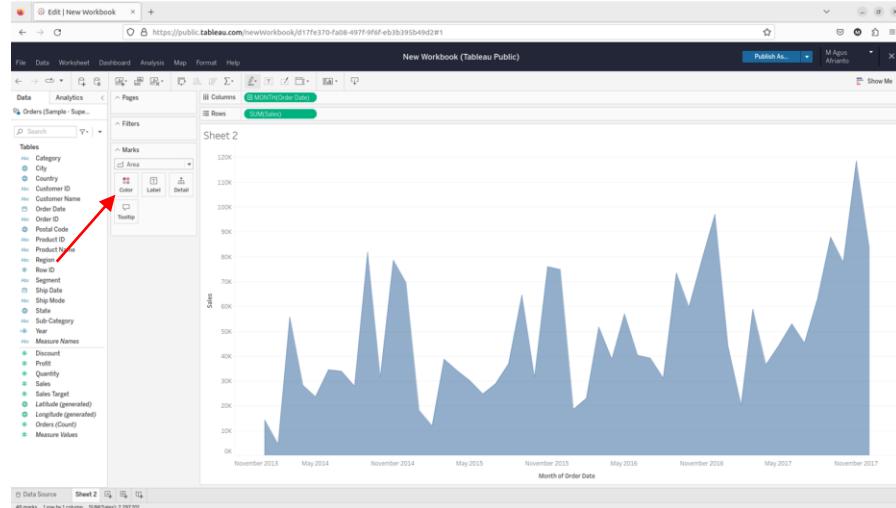
11. Visualizing dates and times: Area Charts

- Area chart help you to see pattern and proportion in the data.

11. Visualizing dates and times: Area Charts



11. Visualizing dates and times: Area Charts

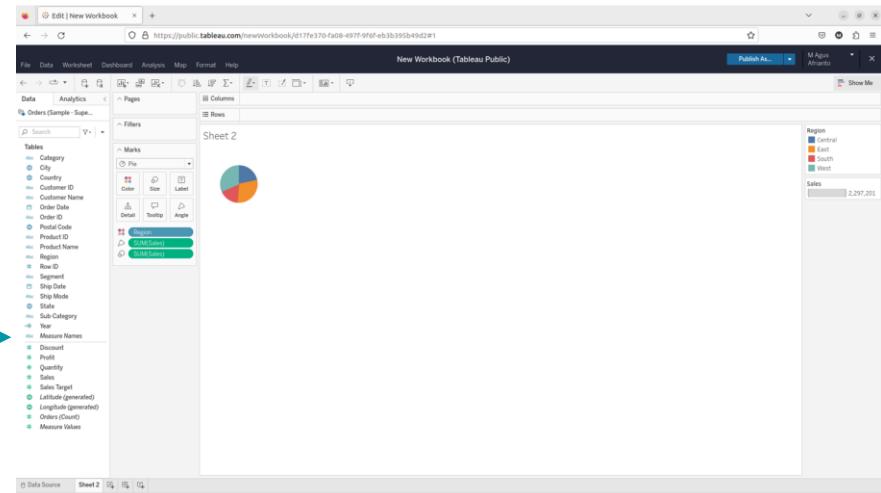


12. Visualizing dates and times: Pie Charts

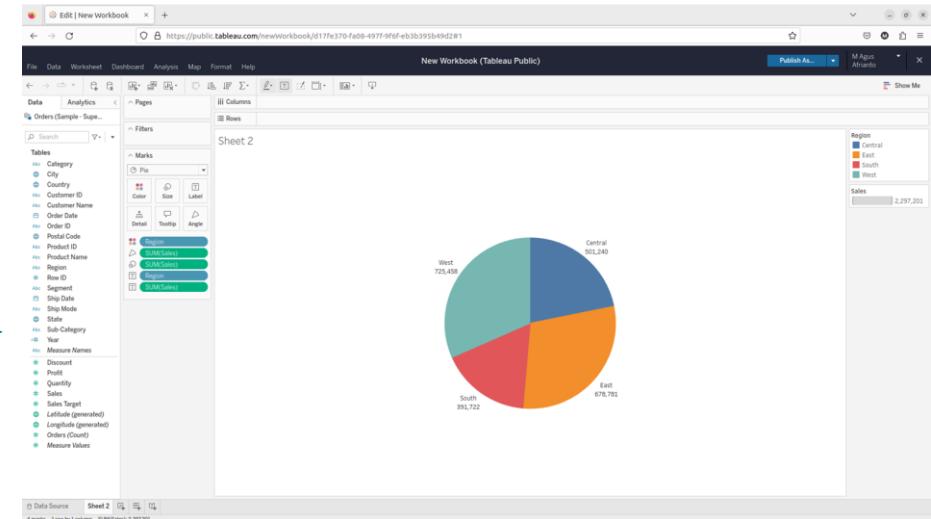
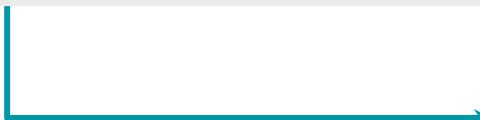
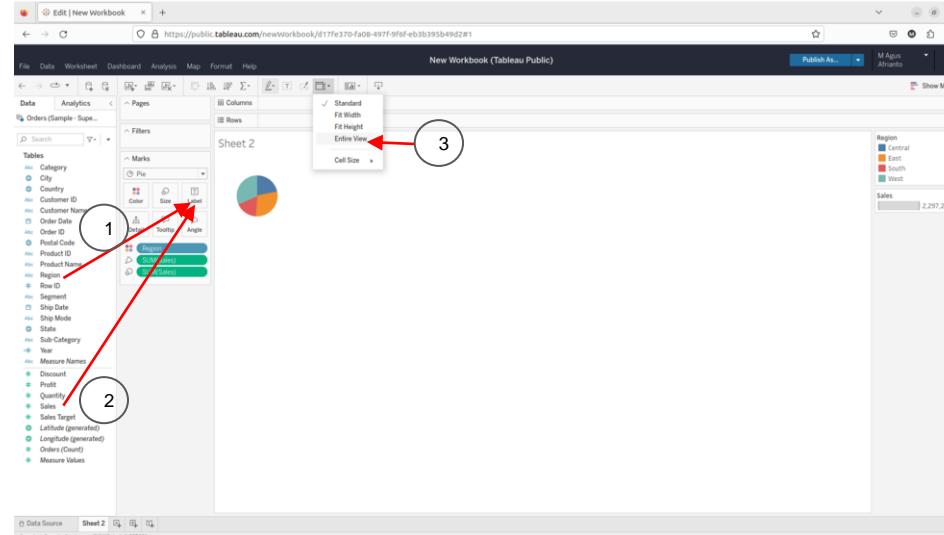
- Pie charts can also be used to show part-to-whole relationships.
- Pie charts can work well with a few slices. In most cases, more than two or three become very difficult to see and understand.

12. Visualizing dates and times: Pie Charts

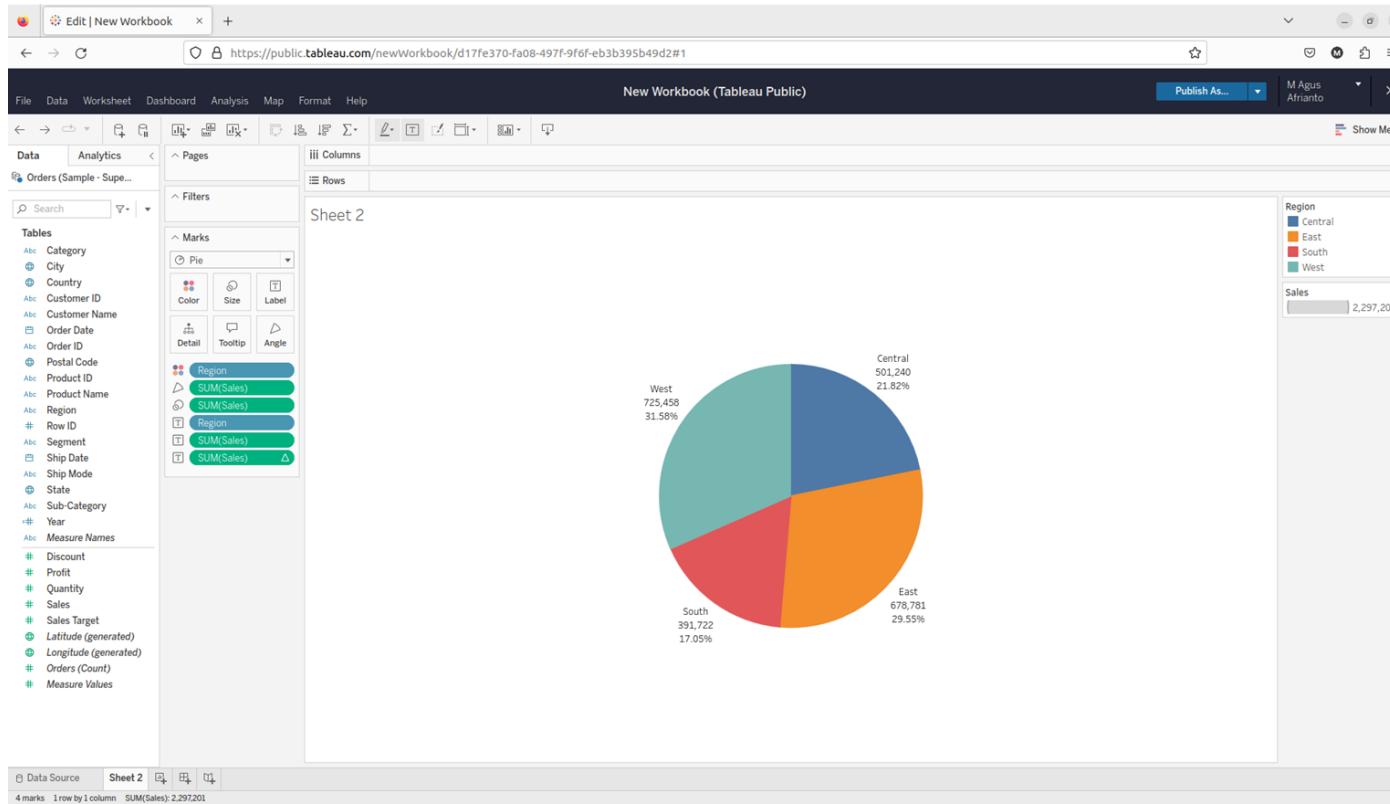
The screenshot shows the Tableau Data Source interface. On the left, the 'Tables' pane lists various dimensions and measures. Two specific fields are highlighted with red arrows: 'Region' and 'Sales'. The 'Region' field is under the 'Dimensions' category, and 'Sales' is under the 'Measures' category. The main workspace is labeled 'Sheet 2' and contains a 'Drop field here' placeholder. To the right, the 'Marks' shelf has a pie chart icon selected, and the 'For pie charts try' tooltip suggests using one dimension and two measures.



12. Visualizing dates and times: Pie Charts



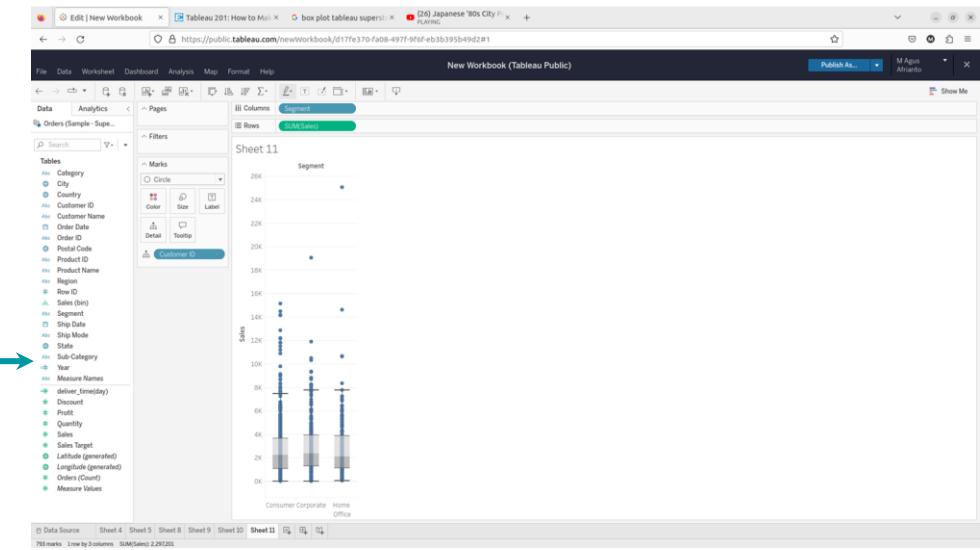
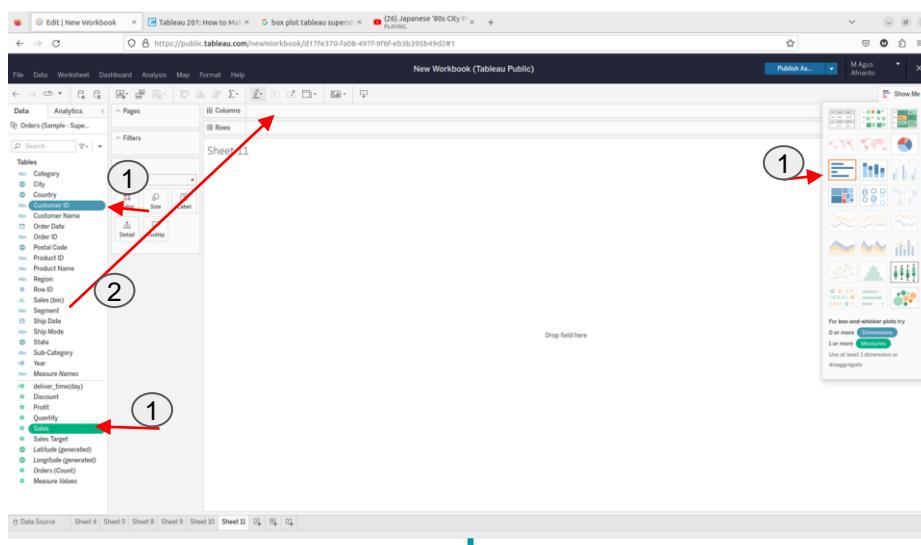
12. Visualizing dates and times: Pie Charts



13. Visualizing distributions

- Often, simply understanding totals, sums, and even the breakdown of part-to-whole only gives a piece of the overall picture. Most of the time, you'll want to understand where individual items fall within a distribution of all similar items.
- Visualizing distribution helps you to answer the following questions:
 - How much does each customer spend at our stores and how does that compare to all other customers?
- Visualizing distributions can use:
 - Box and whisker plots
 - Histograms

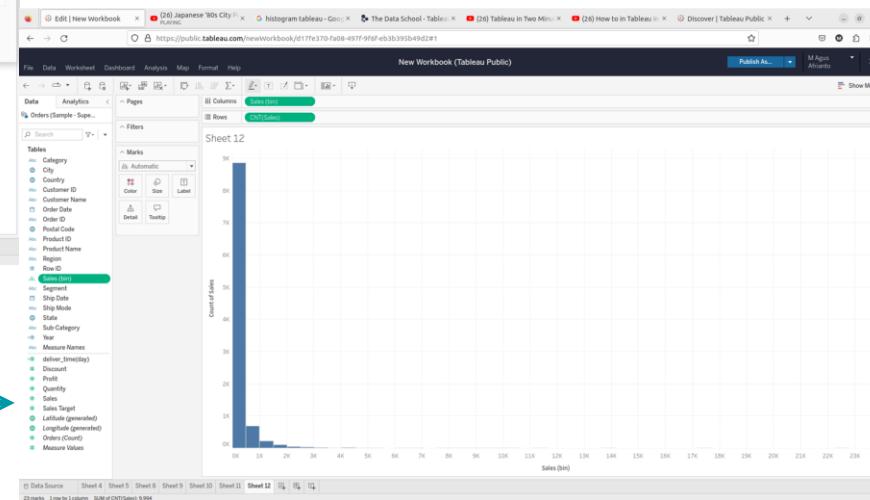
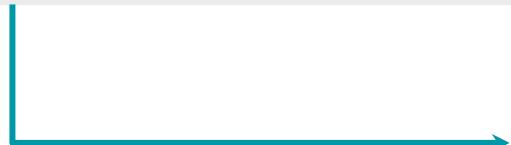
13. Visualizing distributions: Box and Whisker Plots



14. Visualizing distributions: Histograms

The screenshot shows the Tableau interface with the following details:

- Top Bar:** Edit | New Workbook, Tableau 201: How to Mail, box plot tableau super!, (26) Japanese '80s City, PLAYING.
- Header:** File, Data, Worksheet, Dashboard, Analytics, Map, Format, Help.
- Left Panel (Data View):** Shows the data source structure under "Tables" and "Measure Names". The "Sales" measure is highlighted with a red arrow and a green box.
- Middle Panel (Sheet 12):** A large empty canvas area labeled "Drop field here".
- Right Panel (Show Me):** A grid of visualization icons. An arrow points from the "Sales" field in the data view to the histogram icon in the Show Me panel, which is also circled in red.
- Bottom Navigation:** Data Source, Sheet 4, Sheet 5, Sheet 8, Sheet 9, Sheet 10, Sheet 11, Sheet 12, etc.

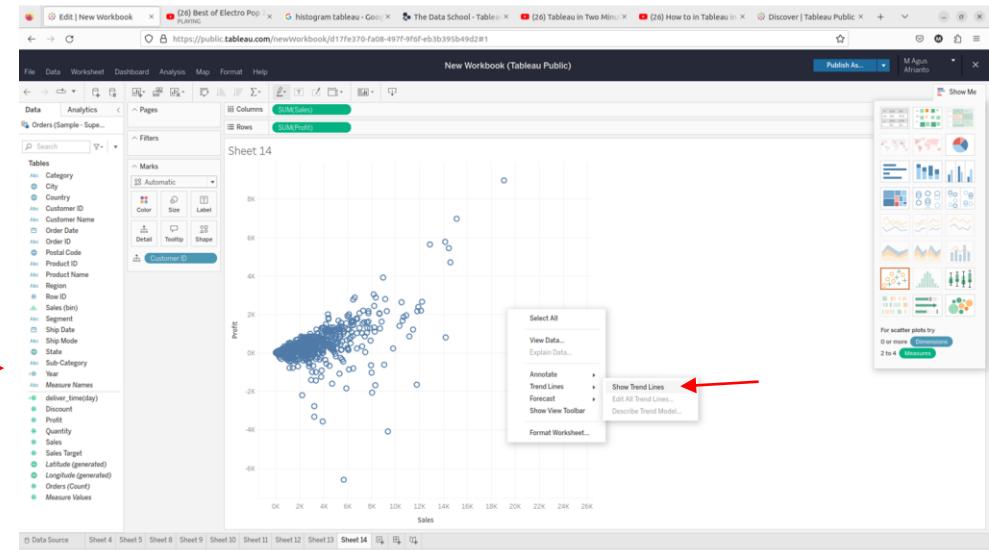


15. Visualizing multiple axes to compare different measures

- A scatterplot is an essential visualization type for understanding the relationship between two measures. Consider a scatterplot when you find yourself asking questions like the following:
 - Does how much I spend on marketing really make a difference on sales?
 - How much does power consumption go up with each degree of heating/cooling?
 - Is there any correlation between hours of study and test performance?
- Each of these questions seeks to understand the correlation (if any) between two measures. Scatterplots help you understand these relationships and see any outliers.

15. Visualizing multiple axes to compare different measures: Scatterplot

The screenshot shows the Tableau Data Source interface. On the left, the 'Tables' pane lists various dimensions and measures. The 'Sales' measure is highlighted with a green selection bar. Three red arrows point from circles labeled '1' to the 'Sales' field in the dimension list, the 'Sales' field in the measure list, and the 'Sales' field in the 'Measures Values' section. A red arrow also points from a circle labeled '2' to the 'Color' dropdown in the Marks card.



15. Visualizing multiple axes to compare different measures: Dual axis and combinations chart

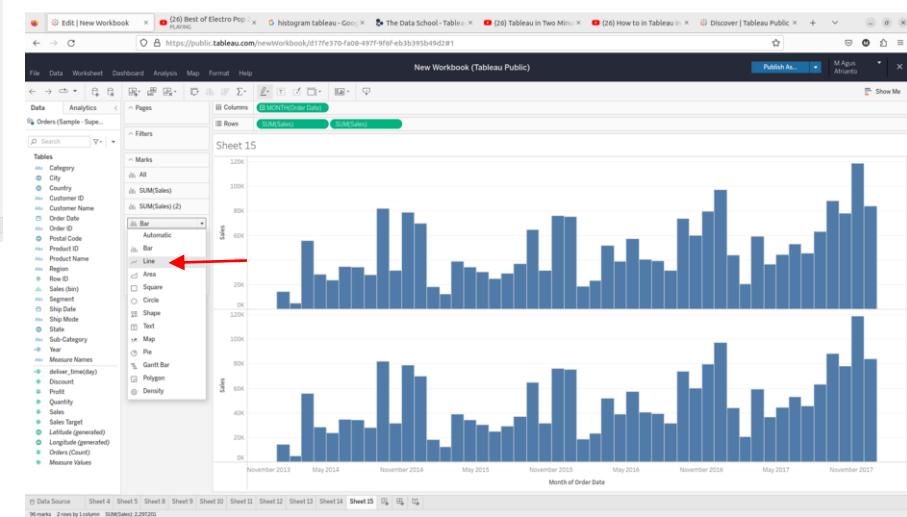
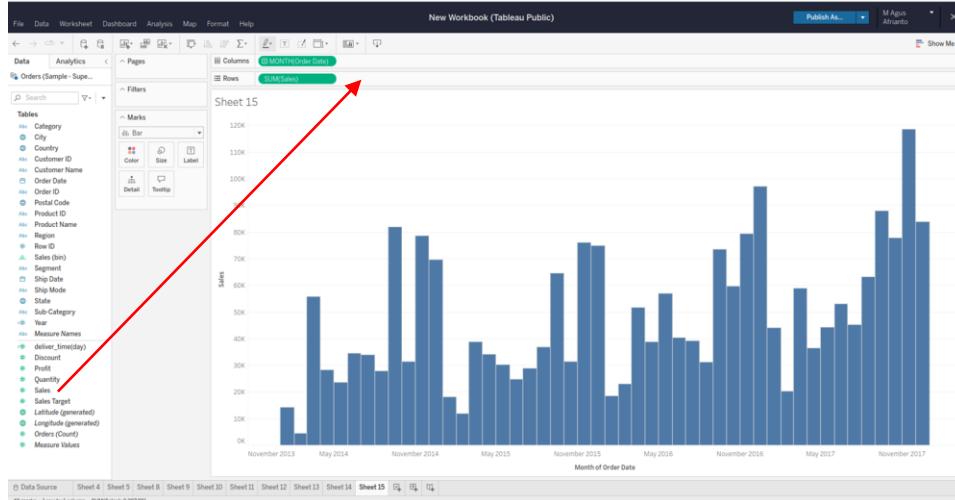
The screenshot illustrates the process of creating a dual-axis chart in Tableau to compare multiple measures. The interface shows two main panels: the Data pane on the left and the Marks shelf on the right.

Data pane: The Data pane lists various dimensions and measures from the "Orders (Sample - Superstore)" data source. Dimensions include Category, City, Country, Customer ID, Customer Name, Order Date, Order ID, Product Code, Product ID, Product Name, Region, Rep ID, Sales (bin), Segment, Ship Date, Ship Mode, State, Sub-Category, Year, and Measure Names. Measures include deliver_time(day), Discount, Profit, Quantity, Sales, Sales Target, Latitude (generated), Longitude (generated), Orders (Count), and Measure Value.

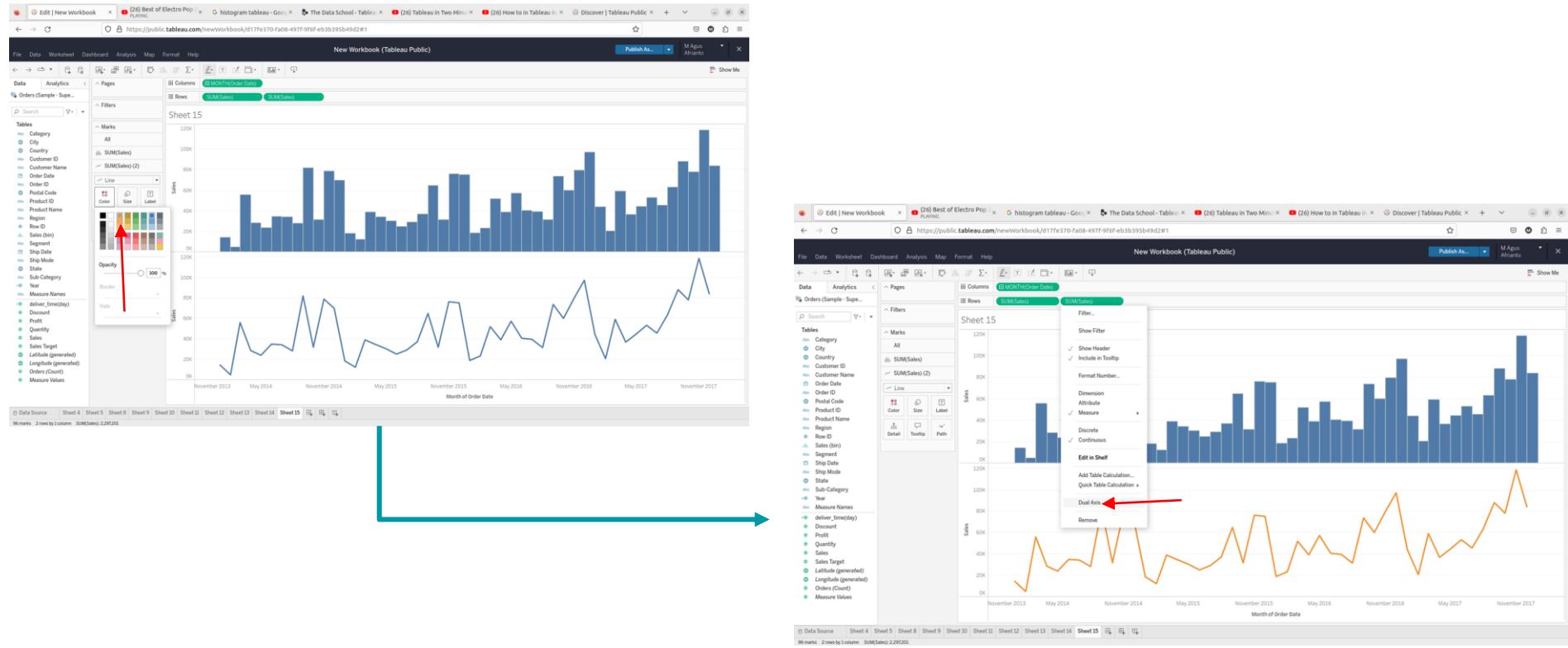
Marks shelf: The Marks shelf is where the chart type is selected and configured. A red arrow points to the "Bar" icon in the Marks shelf header. A red circle labeled "1" highlights the "Color" dropdown menu, which is open to show color mapping for the bars. Another red circle labeled "2" highlights the "Label" dropdown menu, which is also open.

Bottom navigation: The bottom of the screen shows the ribbon menu (File, Data, Worksheet, Dashboard, Analysis, Map, Format, Help) and the status bar indicating "4 rows by 1 column SUM(Sales) 2,297,202".

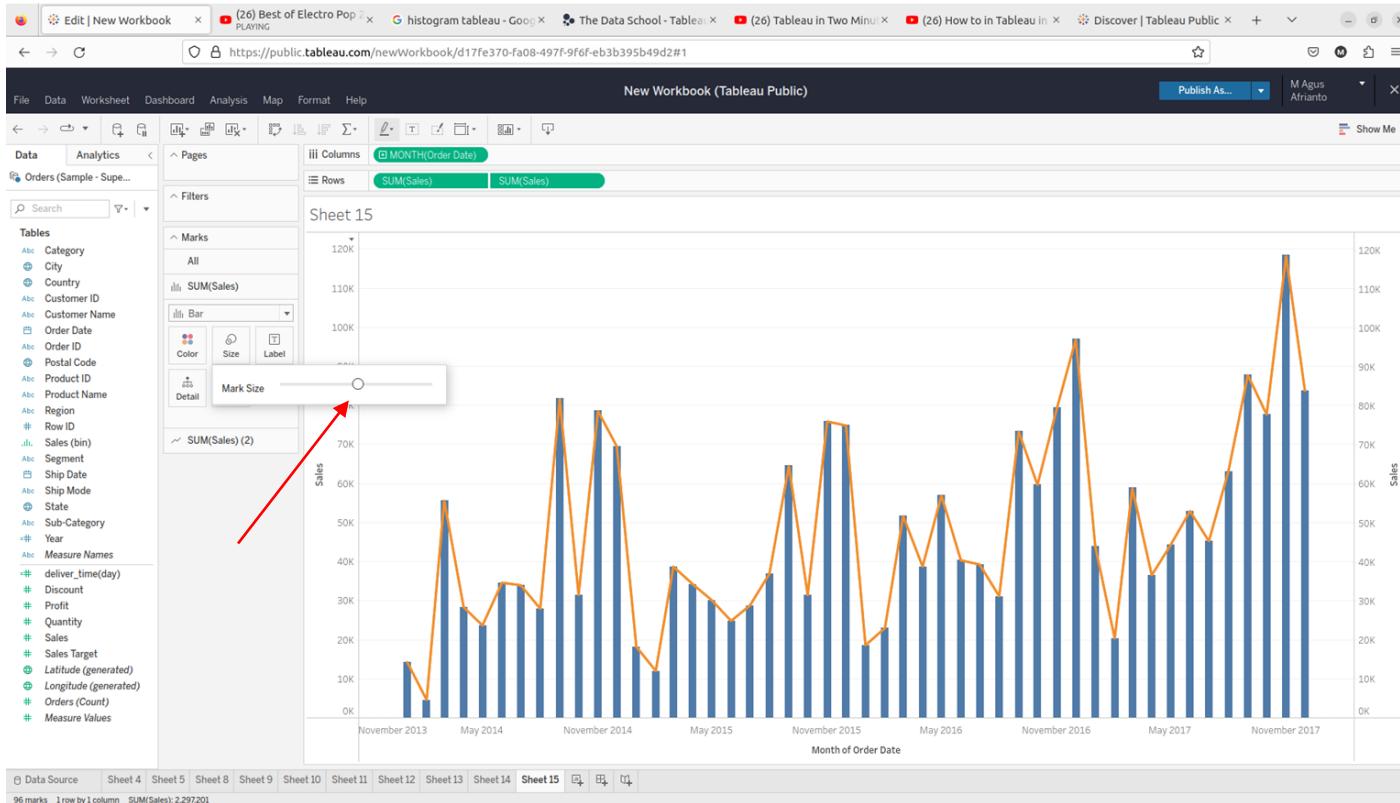
15. Visualizing multiple axes to compare different measures: Dual axis and combinations chart



15. Visualizing multiple axes to compare different measures: Dual axis and combinations chart



15. Visualizing multiple axes to compare different measures: Dual axis and combinations chart



**BE CREATIVE
BE UNIQUE
BE YOU!**