MODULE 2

COMMON CHARTS

Chart:

A chart is a graphical representation of data, often used to make complex data more understandable and easier to interpret. Charts are used in various fields such as business, economics, science, and engineering to visually represent data trends, relationships, and comparisons.

Tableau offers a wide range of charts to visualize data effectively. Some common charts used in Tableau include:

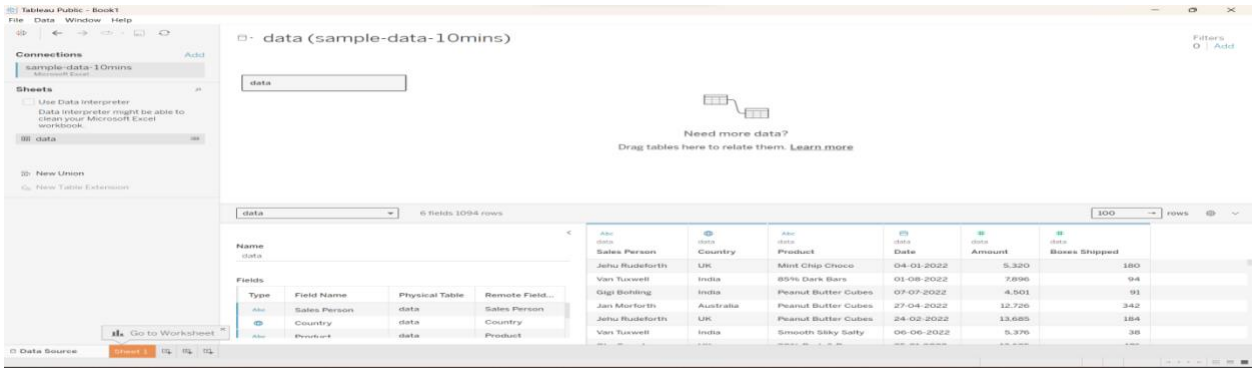
1. **Bar Chart**: Suitable for comparing categorical data.
2. **Line Chart**: Ideal for showing trends over time or continuous data.
3. **Pie Chart**: Useful for displaying parts of a whole, though it's often recommended to use other chart types instead due to potential readability issues.
4. **Scatter Plot**: Great for showing the relationship between two numerical variables.
5. **Map**: Ideal for displaying geographical data.
6. **Histogram**: Useful for displaying the distribution of numerical data.
7. **Heat Map**: Useful for visualizing data density on a map or in a table.
8. **Box Plot**: Ideal for displaying the distribution of data and identifying outliers.
9. **Bullet Graph**: Useful for comparing actual and target values.
10. **Gantt chart**: Ideal for visualizing project schedules and timelines.

These are just a few examples, and Tableau offers many more types of charts to suit various data visualization needs.

CREATING COMMON CHARTS IN TABLEAU:

Before creating charts connect your data to tableau desktop.

Connecting data to tableau:



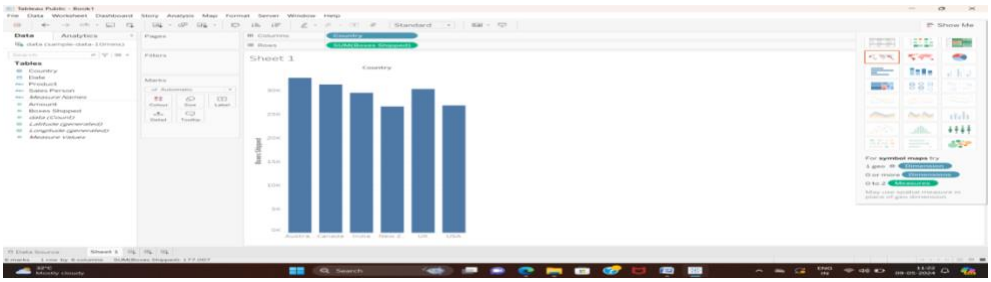
BAR CHART:

- Bar chart represents data in rectangular bar.
- It is used to compare data across categories, highlight trends, differences and outliers.
- More effective when data can be split into multiple categories.

EXAMPLE: Country by sales.

For creating Bar Chart we require one or more measure and one or more dimensions.

From the "**Data Source pane**", drag and drop the country field to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a bar chart. You can customize it by adding *labels, titles, and formatting*.



LINE CHART:

- Line chart connects individual numeric data points.
- It is used to compare data over different periods.
- A straight forward way to visualize change in one value relative to another

EXAMPLE: sales in different months.

For creating line chart we require one date and zero or more dimensions or one or more measures.

From the "**Data Source pane**", drag and drop the date field to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a line chart. You can customize it by adding *labels, titles, and formatting.*

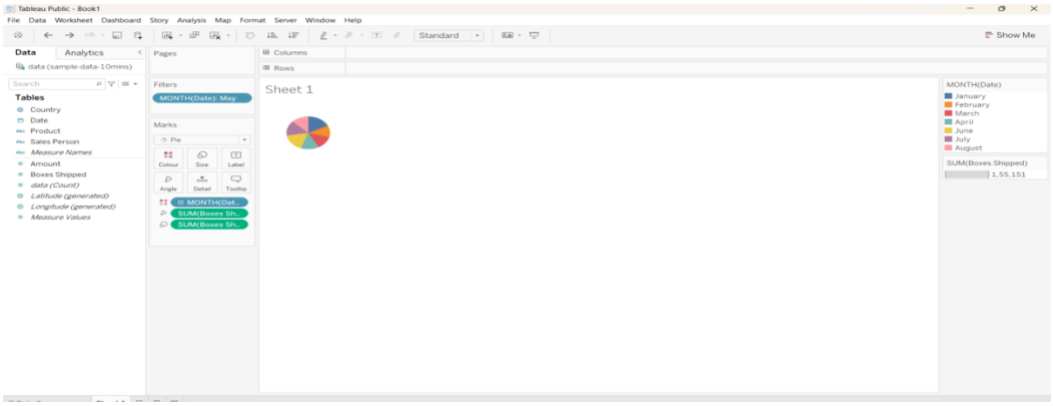
PIE CHART:

- Pie chart represents segment wise data.
- It is used to show relative portion/ percentage of information.
- Powerful for adding detail to other visualizations.
- Distinct colors are used to describe different portions of features.

EXAMPLE: No.of boxes shipped in different months.

For creating pie chart we require one or more dimensions and one or two measures.

From the "**Data Source pane**", drag and drop the date field to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a pie chart. You can customize it by adding *labels, titles, and formatting*



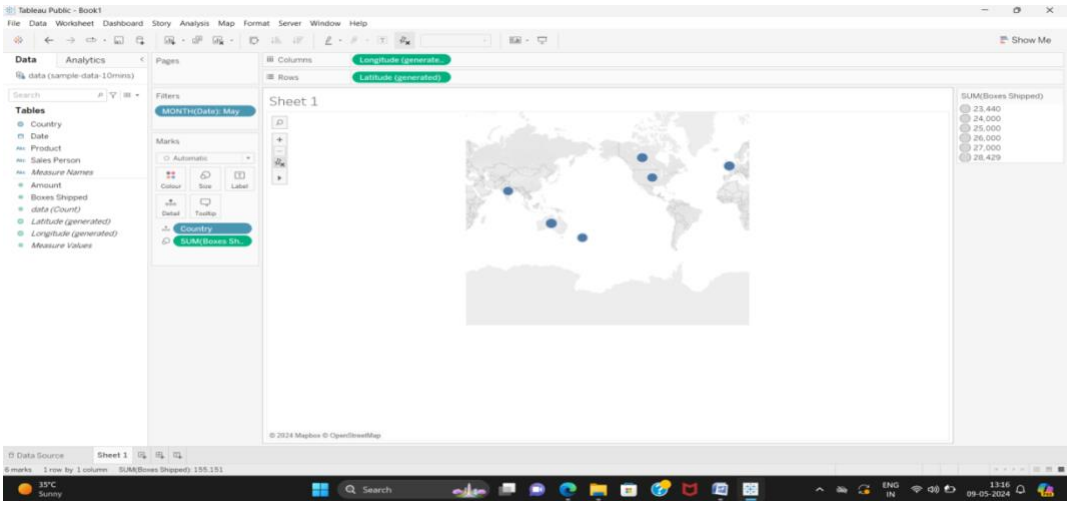
MAP:

- It is used to show geo-coded data like postal code, state and country.
- It highlights the most geographical trends in the most accessible and efficient way.

EXAMPLE: Sales in different countries.

For creating map we require one geo dimension and zero or more dimensions or zero to two measures.

From the "**Data Source pane**", drag and drop the country field to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a map. You can customize it by adding *labels, titles, and formatting*



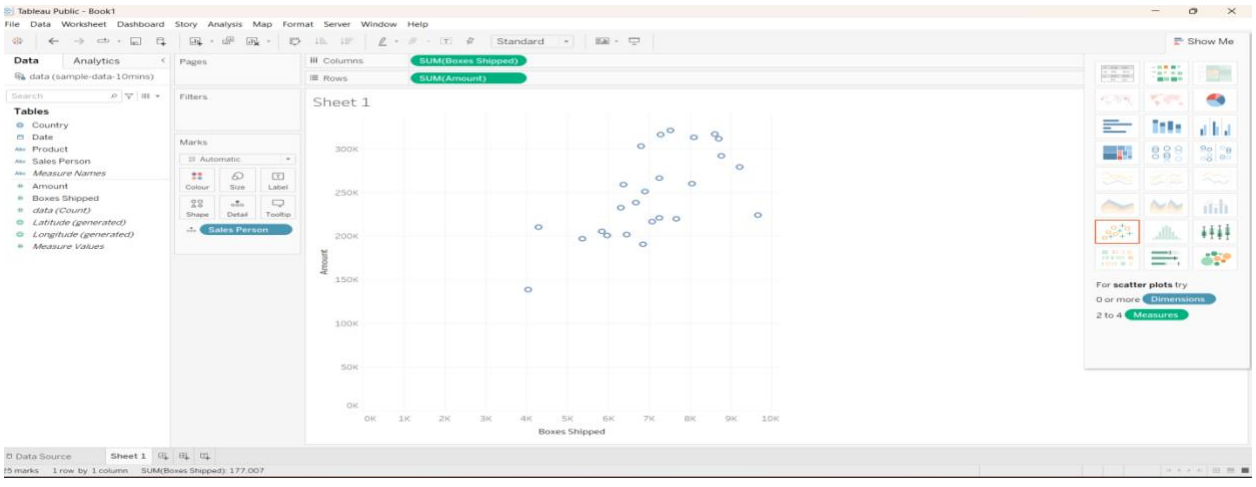
SCATTER PLOT:

- It is used to visualize the relationship between two measures.
- Scatter plot investigates the relationship between different variables.
- The plot is created when both row and column shelf have atleast one measure.

EXAMPLE: No.of boxes shipped by sales person.

For creating scatter plot we require one or more dimensions and two to four measures.

From the "**Data Source pane**", drag and drop the boxes shipped field to the **Columns shelf** and a Amount to the **Rows shelf and add salesperson in marks tab**.
Then **Tableau** will automatically create a scatter plot. You can customize it by adding *labels, titles, and formatting*



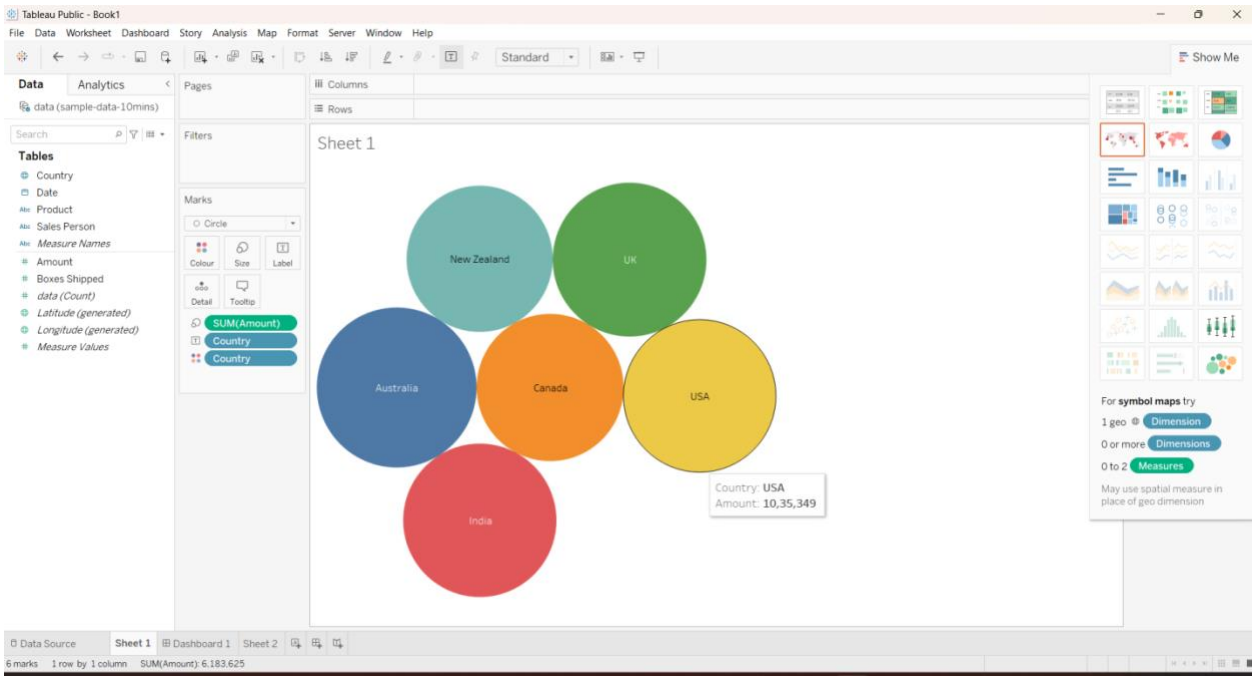
BUBBLE CHART:

- It is used to visualize measure and dimension in bubble form.
- It shows the concentration of data along the axis.
- Having different sizes and colors, it becomes easy to analyze.

EXAMPLE: Country by sales.

For creating bubble chart we require one or more dimensions and zero or two measures.

From the "**Data Source pane**", drag and drop the country field to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a bubble chart. You can customize it by adding *labels, titles, and formatting.*



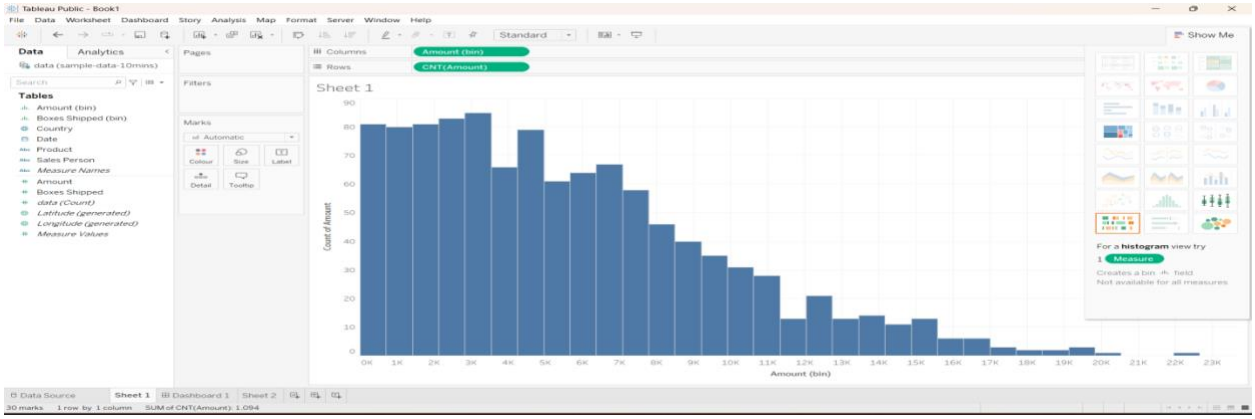
HISTOGRAM CHART:

- A Histogram displays the shape of the distribution.
- Represents how data is distributed across different groups.
- It is used to understand the distribution of the data.

EXAMPLE: sales.

For creating Histogram we require one measure.

From the "**Data Source pane**", drag and drop a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a histogram chart. You can customize it by adding *labels, titles, and formatting*



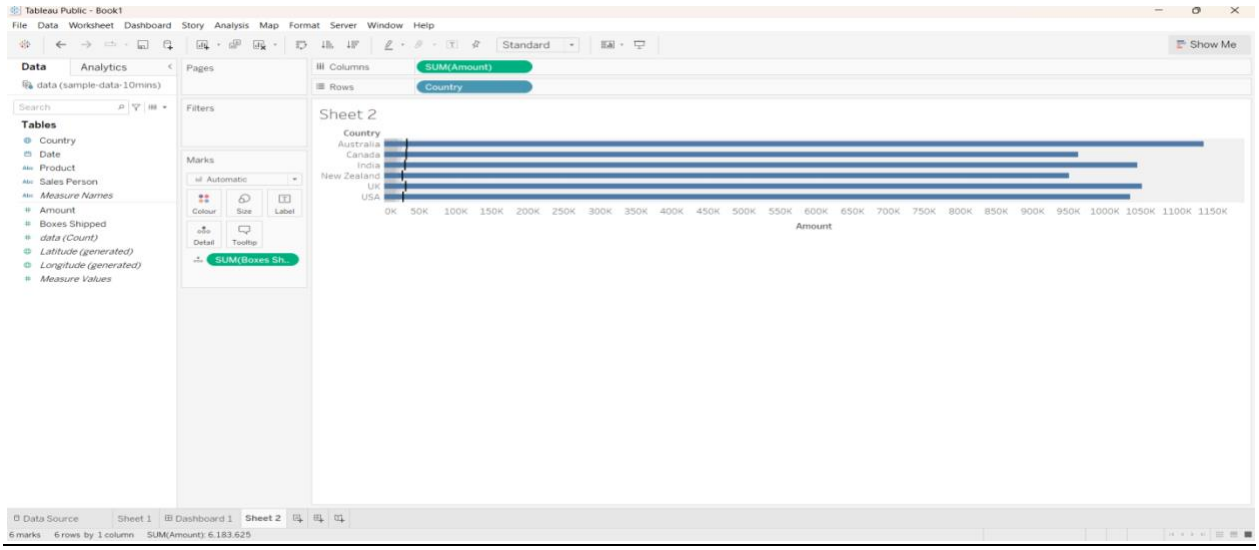
BULLET CHART:

- It is an indicator to show the performance of the measure.
- Compares a primary measure to one or more other measure and present it to define a performance matrix.
- Used to evaluate the performance of a matrix against the goal.

EXAMPLE: No of boxes shipped to different countries by amount.

For creating bullet chart we require one or more dimensions and two measures

From the "**Data Source pane**", drag and drop the country field and boxes shipped to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a bullet chart. You can customize it by adding *labels, titles, and formatting.*



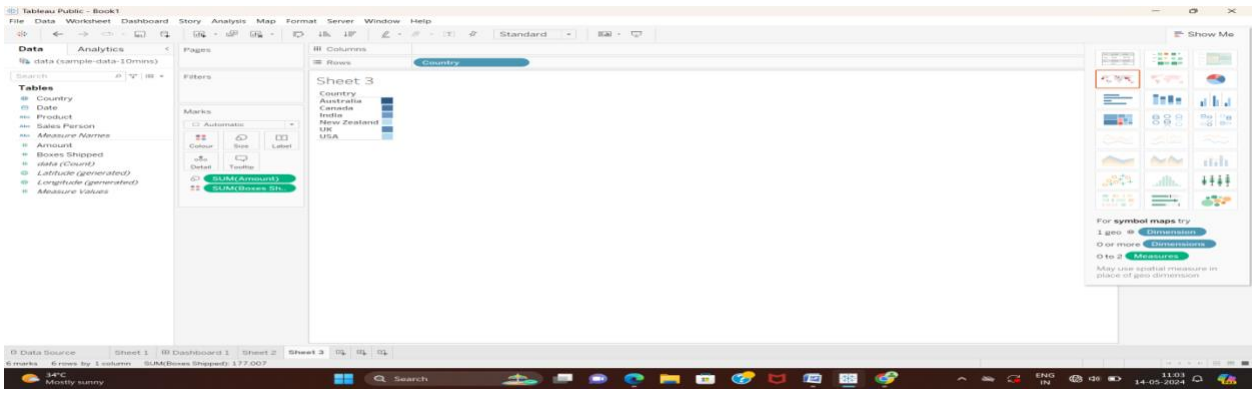
HEAT MAP:

- This is the best way to compare data across different categories is by using colours.
- It shows the relationship between two features.

EXAMPLE: No of boxes shipped to different countries by amount.

For creating heat map we require one or more dimensions and one or two measures

- From the "**Data Source pane**", drag and drop the country field to the **Columns shelf** and a numeric field Amount and boxes shipped to the **Rows shelf**. Then **Tableau** will automatically create a heat map. You can customize it by adding *labels, titles, and formatting.*



HIGHLIGHTED TABLE:

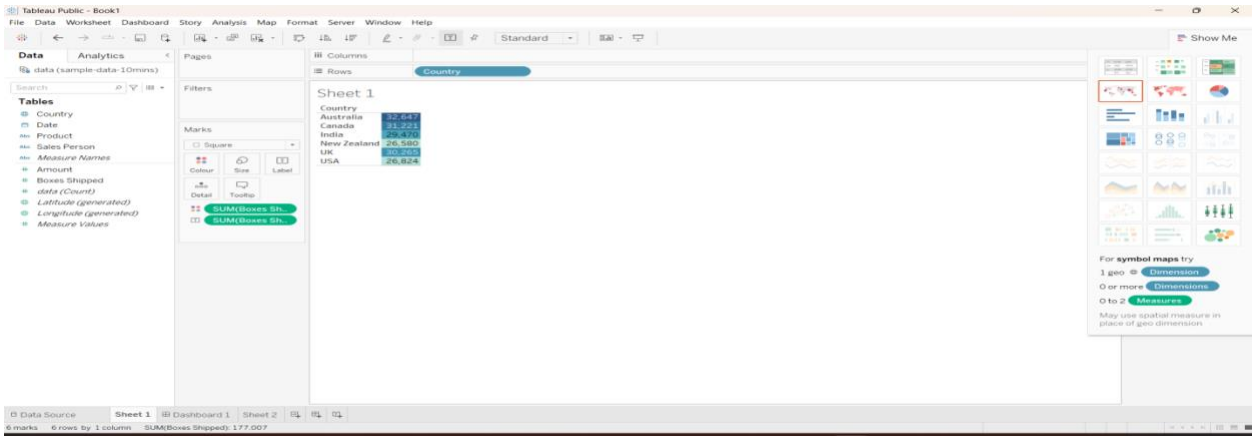
- It can be considered as an extension of the heat map.

- It provides detail information on the heat map.
- It is similar to the text table and the only difference is data is displayed using different colors.

EXAMPLE: No of boxes shipped to different countries.

For creating highlighted table we require one or more dimensions and one measure.

From the "**Data Source pane**", drag and drop the country field to the **Columns shelf** and a numeric field boxes shipped to the **Rows shelf**. Then **Tableau** will automatically create a highlighted table.. You can customize it by adding *labels, titles, and formatting.*



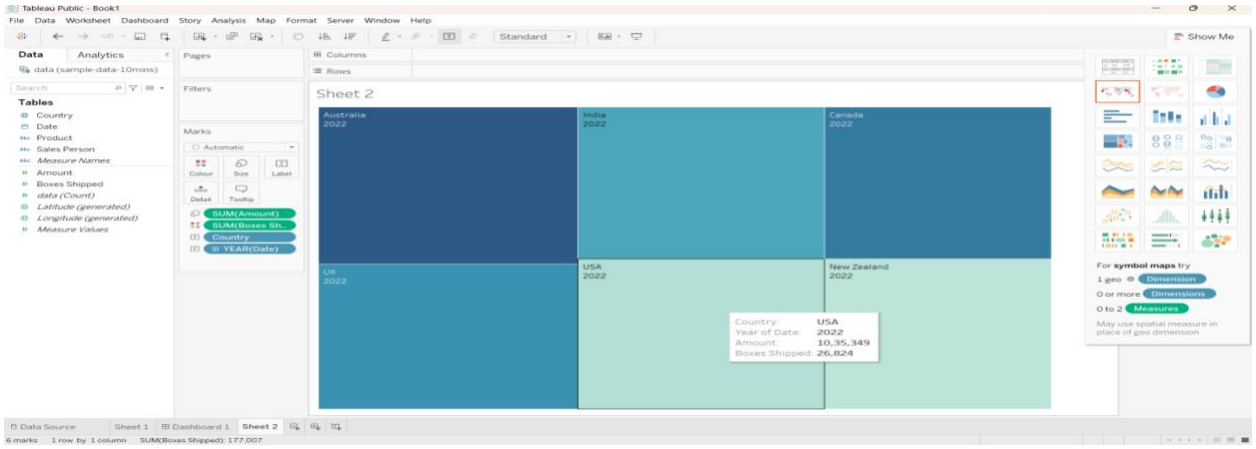
TREE MAP:

- Rectangular chart representing data in nested rectangle.
- It is used to show hierarchical data as a portion of a whole.
- It makes efficient use of space to display the entire data at once.

EXAMPLE: No of boxes shipped to different countries by amount and date.

For creating tree map we require one or more dimensions and one or two measures.

From the "**Data Source pane**", drag and drop the country field and date to the **Columns shelf** and a numeric field Amount and boxes shipped to the **Rows shelf**. Then **Tableau** will automatically create a bullet chart. You can customize it by adding *labels, titles, and formatting.*



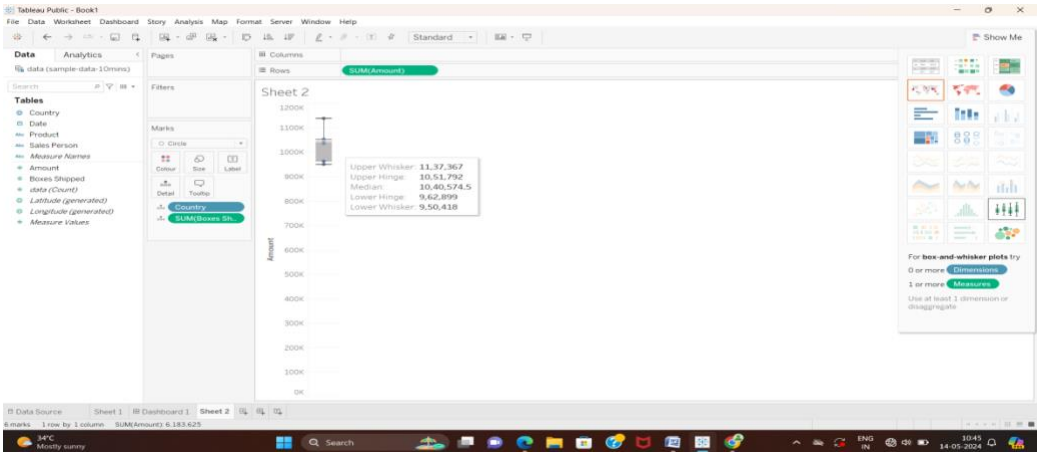
BOX -AND-WHISKER PLOT:

- It is used to show the distribution of a set of data.
- Box-and-Whisker plots are divided in to two parts
  - Box: consists of the median, first and third quartile of the data.
  - Whisker : consists of the data with 1.5 times 1QR (1QR = first quartile - Third quartile).

EXAMPLE: No of boxes shipped to different countries by amount.

For creating box and whisker plot we require zero or more dimensions and one or more measures.

From the "**Data Source pane**", drag and drop the country field and boxes shipped to the **Columns shelf** and a numeric field Amount to the **Rows shelf**. Then **Tableau** will automatically create a box and whisker plot. You can customize it by adding *labels, titles, and formatting.*



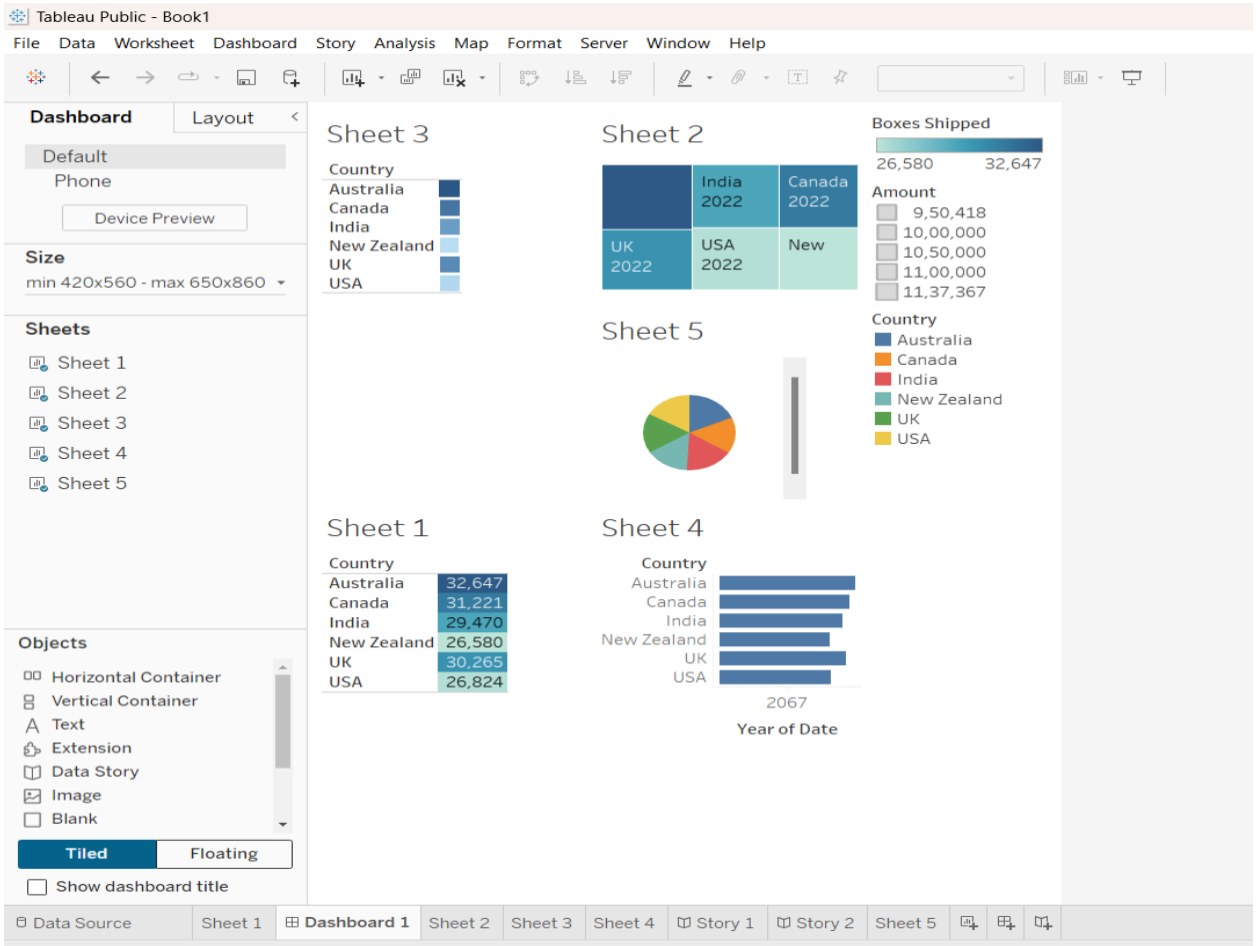
ASSEMBLING THE DASHBOARD

In Tableau a *Dashboard* is a display that brings together the content from multiple sheets. A dashboard may also have additional text and images, and it can be configured with *Actions* to make it more interactive.

Assembling the pieces of a dashboard can take time, especially as you learn to adjust the size, position, formatting, and relationships among the components of your dashboard.

1 Add a dashboard

1. From the top menu select *Dashboard -> New Dashboard*
2. Your sheets are listed on the left; drag them into position in the central dashboard pane.

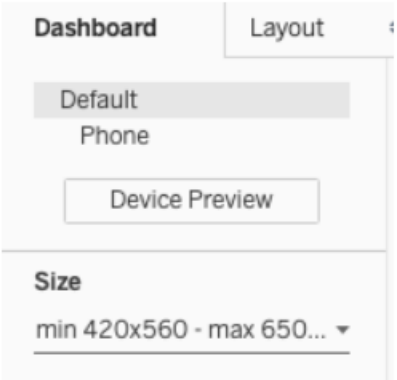


Dashboard tips

The content, formatting, and behavior choices for a dashboard will depend on its audience and purpose. There are many more features than we can cover in this workshop - here are some tips to get you started.

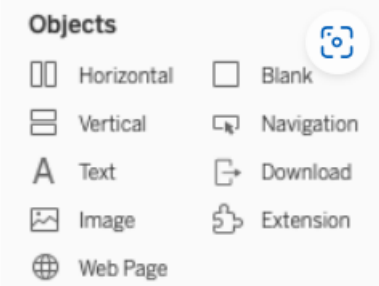
Choosing the size

In the top left of the screen are options for setting the dashboard size and checking how it will display on various interfaces (e.g. phones, tablets, laptops).



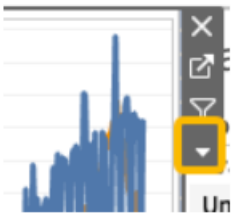
Adding text and images:

In the bottom left are other non-sheet *Objects* you can add by dragging them to the desired position on the dashboard. Use a *Text* object to create a dashboard title or add a note about the data source. A *Blank* object is sometimes useful for spacing content.



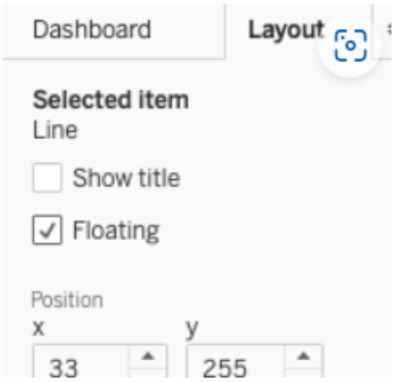
Add legends, filters, and adjust object settings:

When an object on the dashboard is selected a set of icons will appear in the top-right corner. Click the down arrow for a menu with additional formatting options. If you want to include a filter for the user to control, choose it from the *Filter* submenu.



Layout options

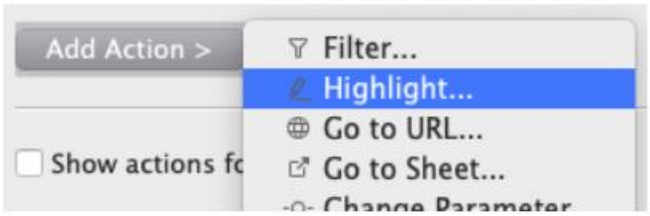
A tab at the top left of the screen leads to other layout options. *Floating* changes how the selected object can be positioned on the dashboard, allowing it to overlap other objects.



Adding *Actions*

Dashboard *Actions* can make your dashboard more interactive. A *Highlight* action, for example, can highlight corresponding content in *all* sheets when a viewer hovers over one of them.

To add an action select *Dashboard -> Actions* from the top menu, then use the pop-up window to add the desired action.



Saving your work

Use the *File -> Save* menu to save your work as a Tableau *workbook*. The saving options depend on which Tableau product you are using.

- **Tableau Public** users must save their work to an online Tableau Public account. Accounts are free, but saving online is not suitable if you are
- **Tableau Desktop** users may save their work locally or to an online Tableau Public account.

USING DASHBOARD FILTERS

To use dashboard filters in Tableau, follow these steps:

1. Create Filters:
    - In a worksheet, right-click on a dimension or measure and select "Show Filter" to create a filter for that field.
    - Customize the filter as needed (e.g., dropdown, slider, multiple values).
2. Add Filters to Dashboard:
    - Open a dashboard or create a new one.
    - Drag the filter from the "Filters" pane on the left to the dashboard.
3. Apply Filters:
    - Interact with the filter on the dashboard to apply it to the data.
    - The data in all visualizations connected to the filter will update based on the filter selection.
4. Filter Multiple Worksheets:
    - Right-click on the filter in the dashboard and select "Apply to Worksheets" > "Selected Worksheets."
    - Choose the worksheets you want the filter to apply to.
5. Customize Filters:
    - Right-click on the filter on the dashboard and select "Edit Filter" to customize its behavior and appearance.
    - You can also format the filter to match the design of your dashboard.
6. Add Multiple Filters:
    - Repeat the above steps to add multiple filters to your dashboard.
    - Users can interact with these filters independently to refine their analysis.

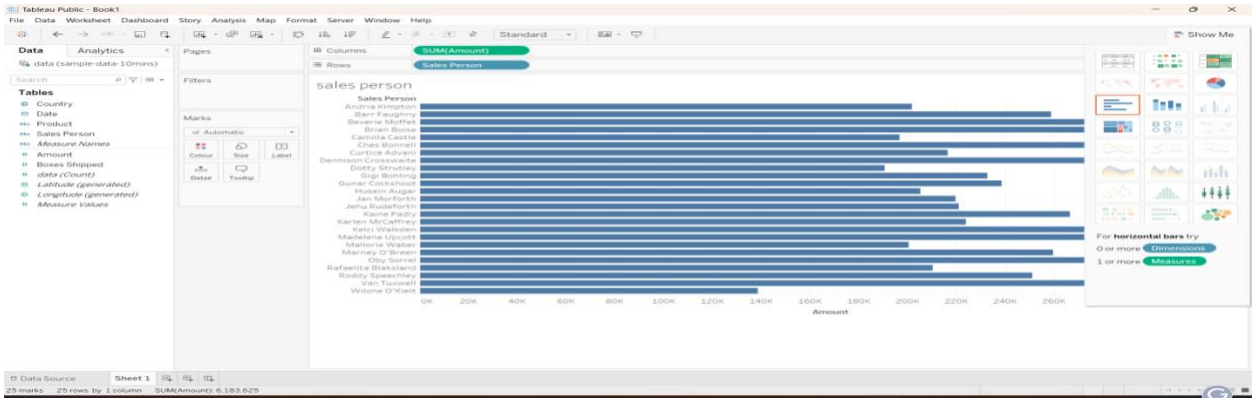
Using dashboard filters in Tableau can help you create interactive and dynamic dashboards that allow users to explore data and gain insights.

Creating filter to worksheet:

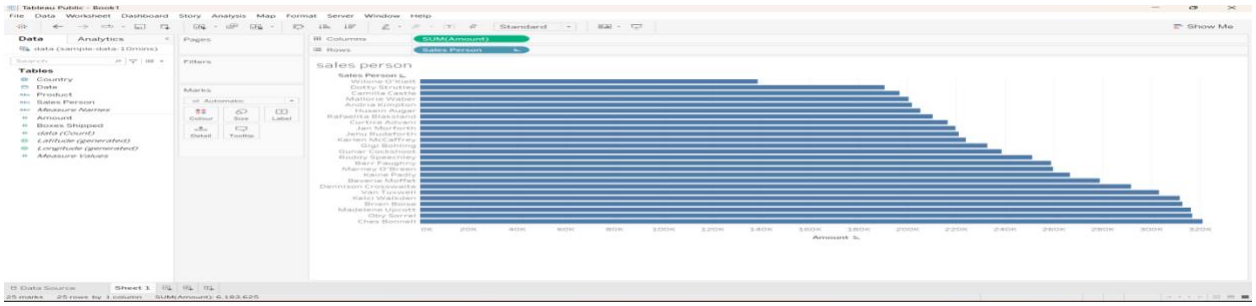
Example: filtering top 10 sales person.

First we have to create a sheet “sales person”, and sort them by using sort option.

Before sorting:



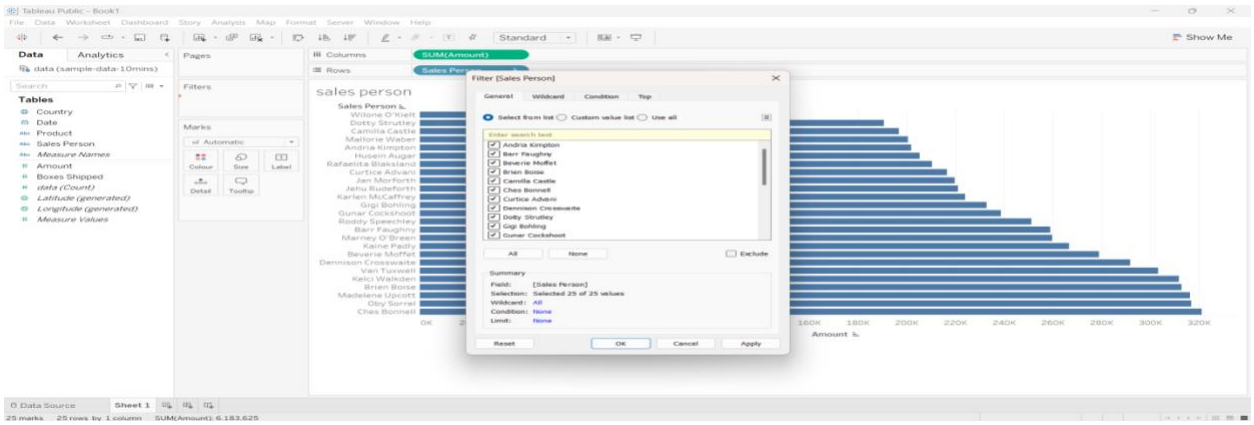
After Sorting:



Sorted in ascending order.

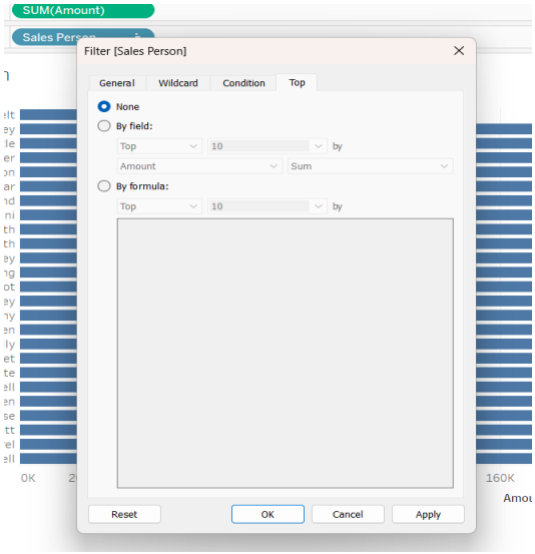
By using this sheet we want to filter top 10 sales persons. For that we have to create filter.

1. Drag and drop salesperson dimension into filters tab. One dialogue box will open

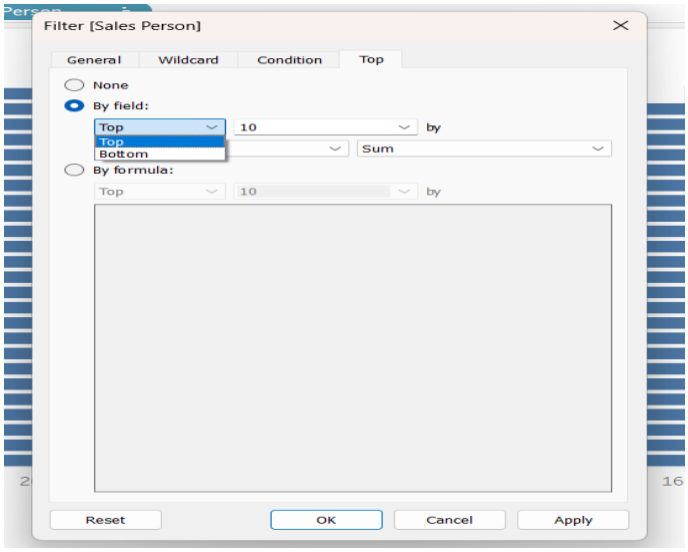


Here we can manually exclude or include sales persons by checking and un-checking the boxes.

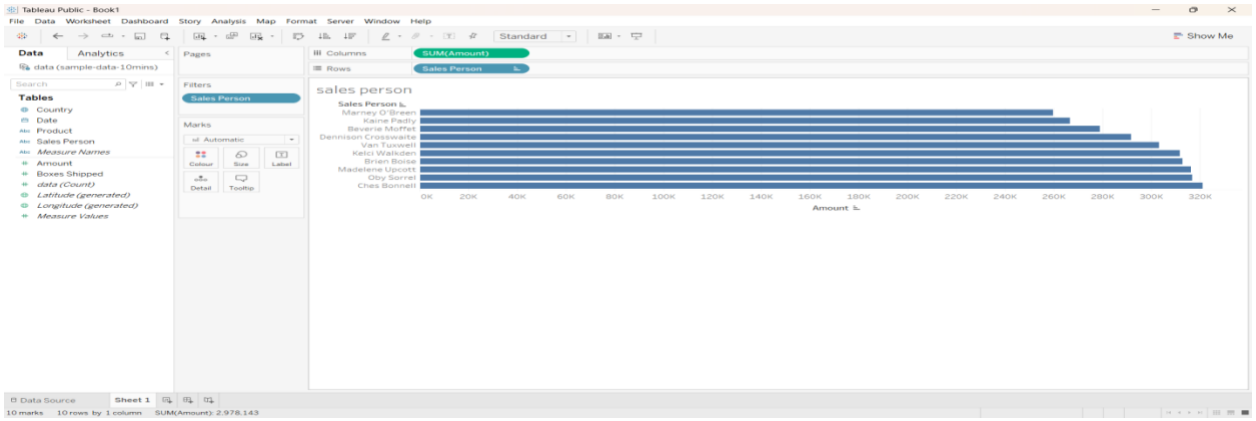
2. Then click on top option



3. Select By field and select top and number as 10.



4. Then click ok, we will get our top 10 sales persons.

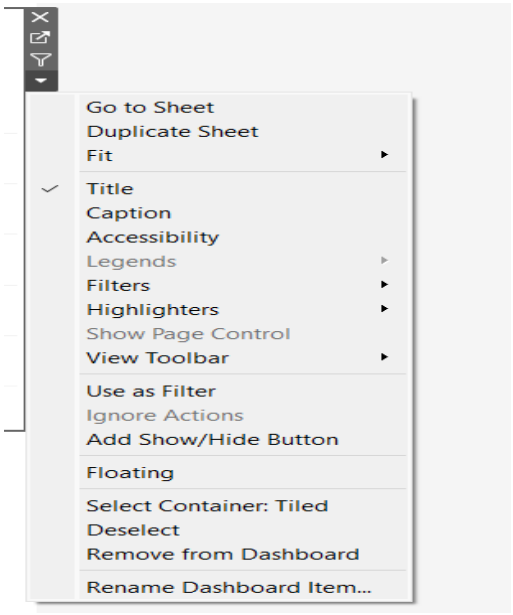


Adding filter to dashboard:

If a filter card is already shown on a worksheet before the worksheet is added to the dashboard, then the filter card will automatically be added to the dashboard as well. Adding additional filters later to either the dashboard in general, or to a specific device layout, can be done with the following steps:

Scenario 1: Add a filter to a dashboard

1. Click on the worksheet on the dashboard to select it.
2. You will see 4 icons in the upper corner of the gray outline. Select the down arrow to expose the options shown below.

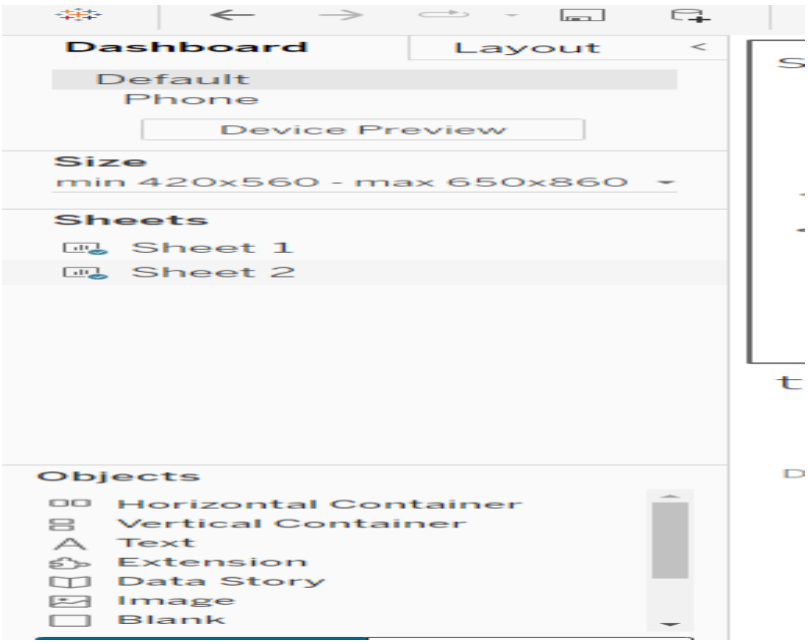


3. Select Filters and add the new field to be added as a filter.

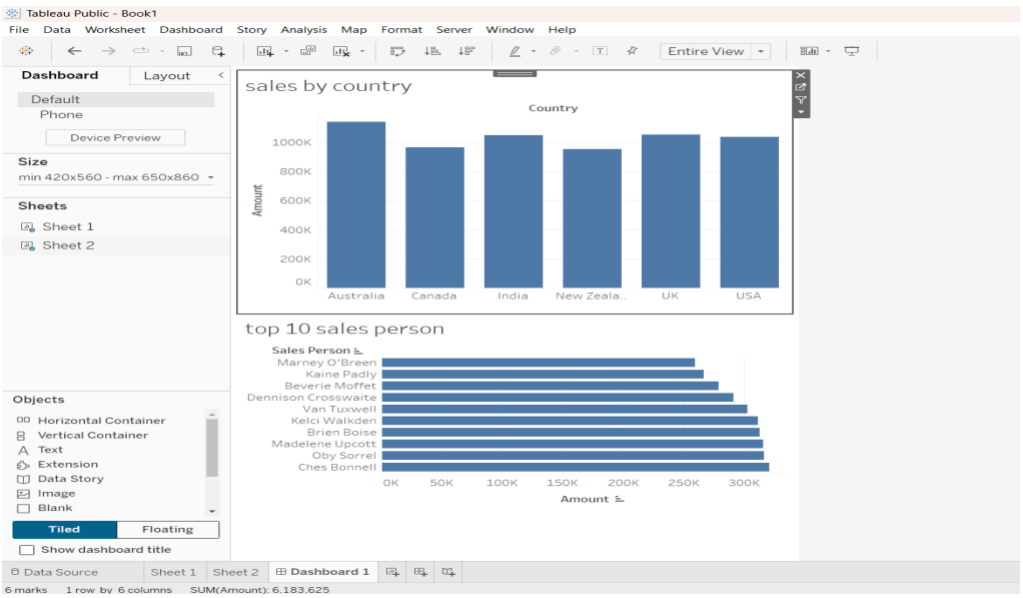
Scenario 2: Add a filter to a custom device layout

1. Use the above method to add the filter to the Default layout. Tableau Desktop will automatically add the filter to all device layouts if they are set to "Default" rather than "Custom" in the Layout section of the left-hand Dashboard pane.

2. In the Dashboard pane, under Layout, drag the desired filter from the list of all possible filters into the view



Example:

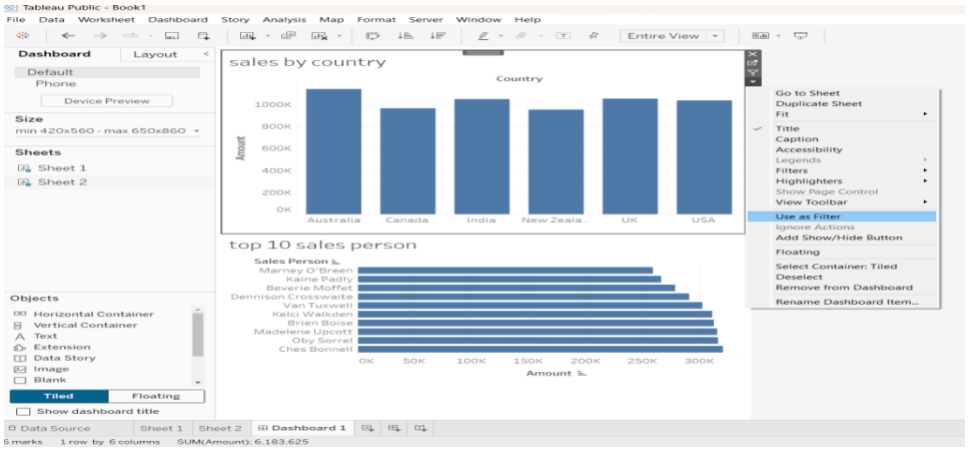


Here the dashboard having two sheets

- ✓ Sales by country and

- ✓ Top 10 sales persons

Here I want to apply top 10 sales person filter to my dashboard by using “use as filter” option then we will get top 10 sales persons in different countries.



Now if I click on one country it will show top 10 sales persons in that particular country.

For example I click on USA it will show top 10 sales persons in USA.