Exp No:1	Study of Tableau tool
Date:	

Aim:

To study the working principles of Tableau visualization tool and explore the features of Joins in Tableau.

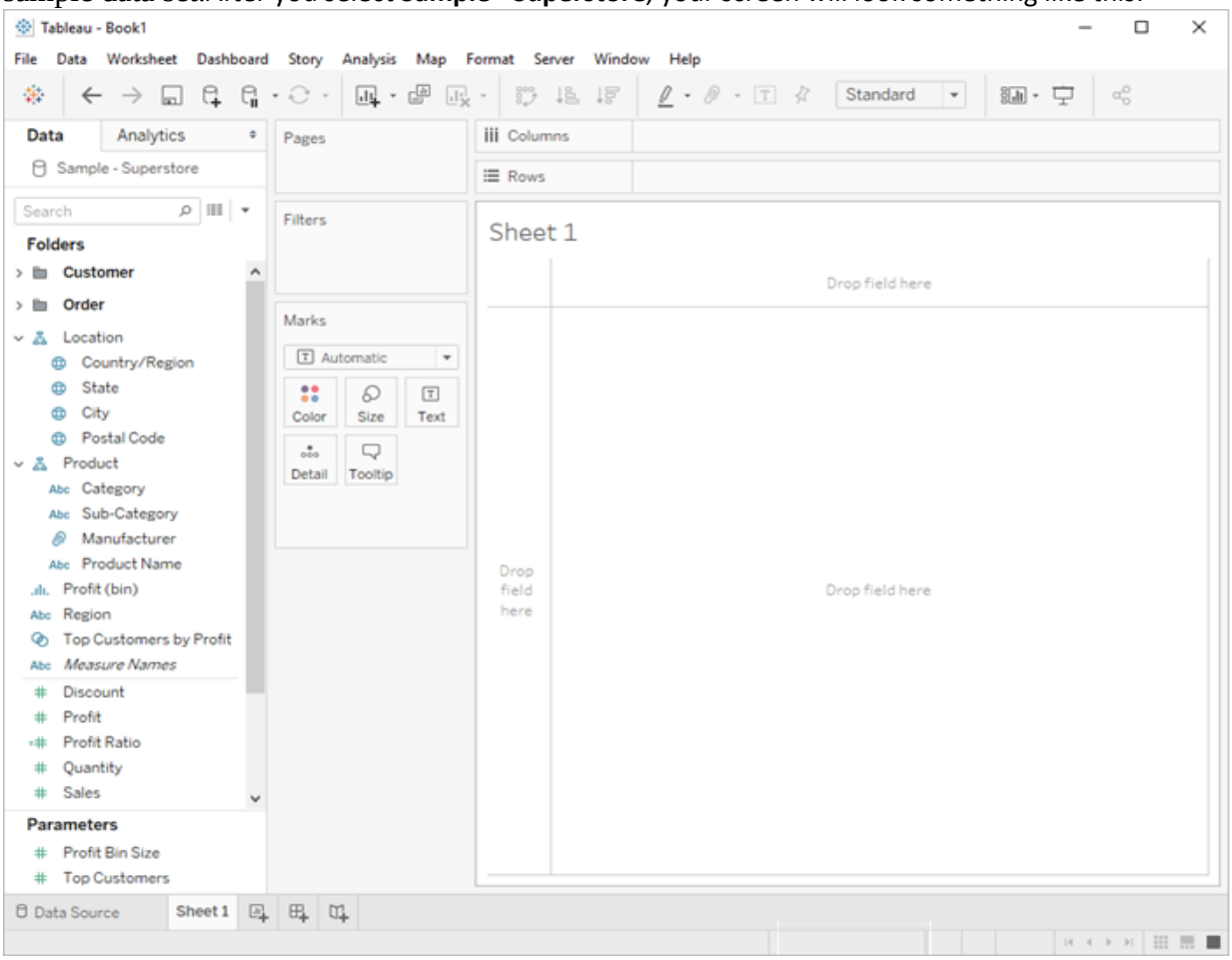
1(a) Working with Tableau:

Data Source: Sample-Superstore.

Procedure:

Step 1: Connect to your data

In the **Connect** pane, under **Saved Data Sources**, click **Sample - Superstore** to connect to the sample data set.After you select **Sample - Superstore**, your screen will look something like this:

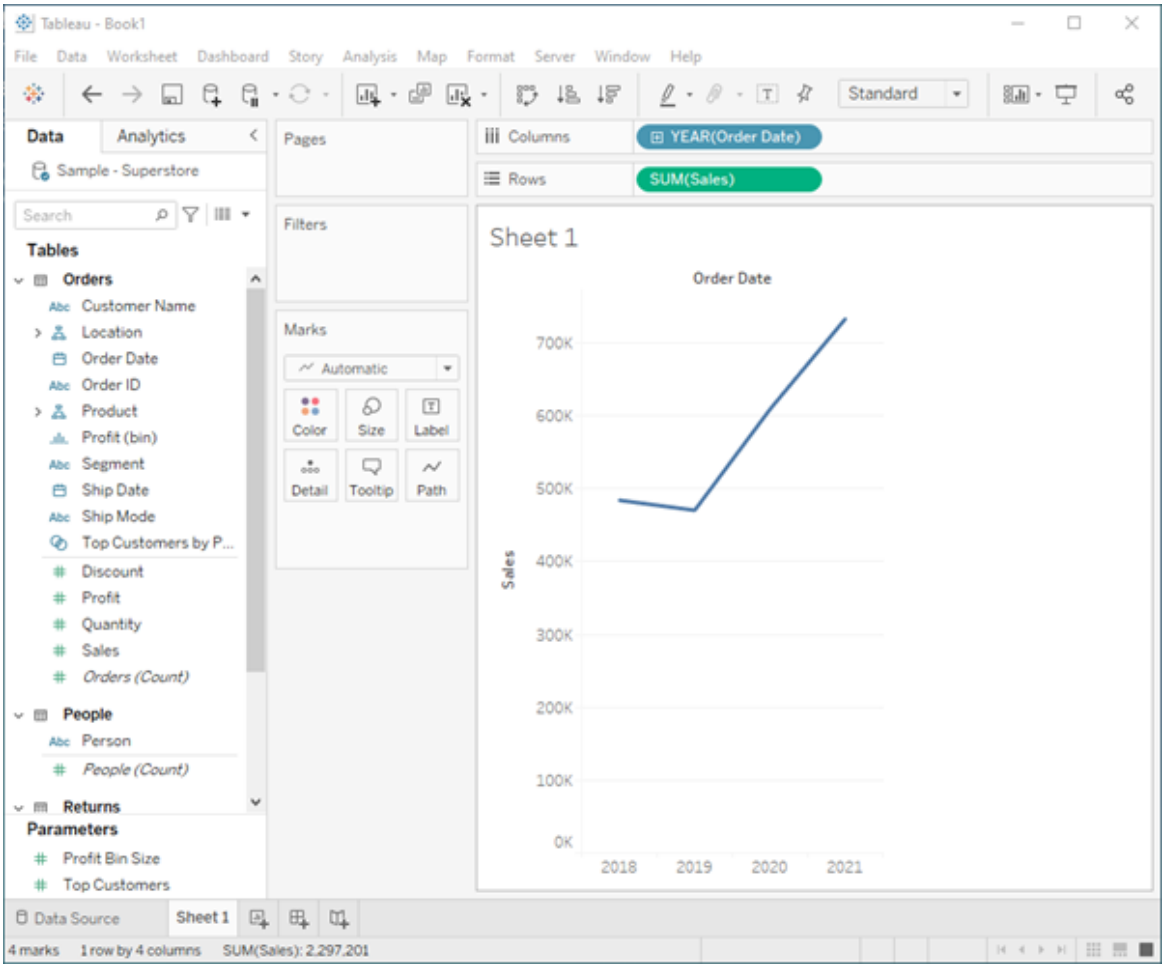


Step 2: Drag and drop to take a first look

2.1 From the **Data** pane, drag **Order Date** to the **Columns** shelf.

2.2 From the **Data** pane, drag **Sales** to the **Rows** shelf.

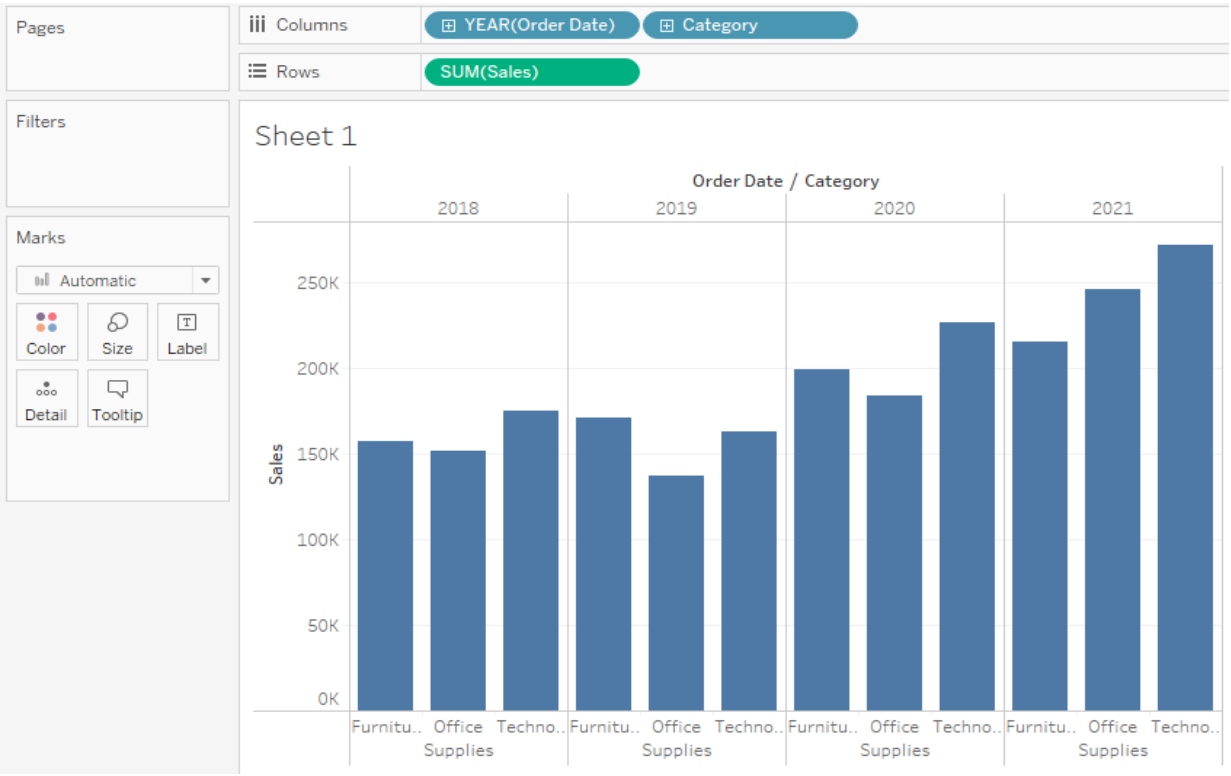
Tableau generates the following chart with sales rolled up as a sum (aggregated). You can see total aggregated sales for each year by order date.



This line chart shows that sales look pretty good and seem to be increasing over time. This is good information, but it doesn't really tell you much about which products have the strongest sales and if there are some products that might be performing better than others.

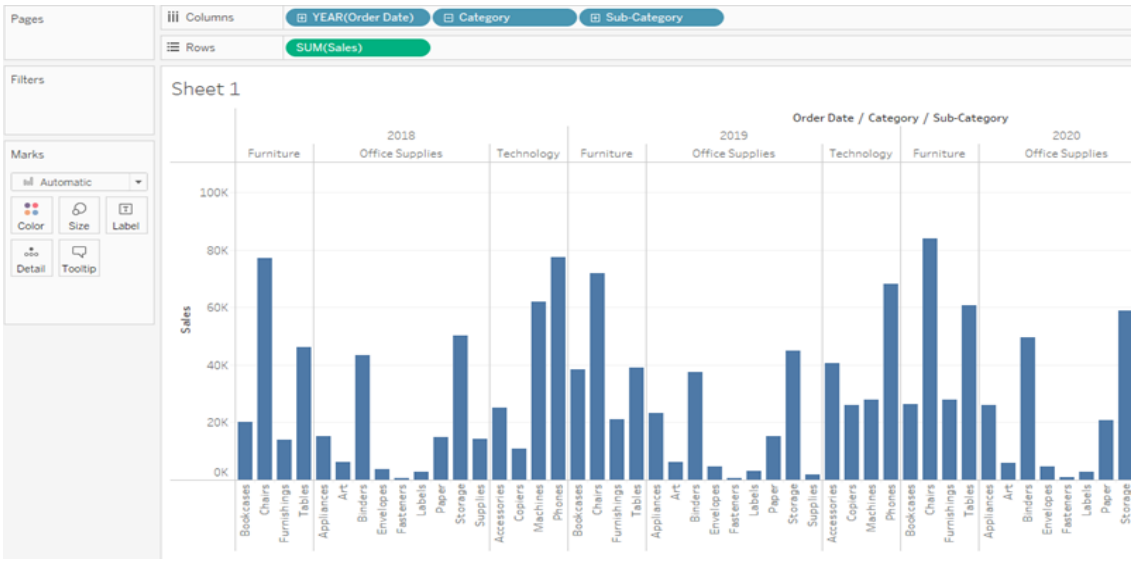
2.3 From the **Data** pane, drag **Category** to the **Columns** shelf and place it to the right of YEAR(Order Date).

Your view updates to a bar chart. By adding a second discrete dimension to the view you can categorize your data into discrete chunks instead of looking at your data continuously over time. This creates a bar chart and shows you overall sales for each product category by year.



2.4 Double-click or drag **Sub-Category** to the **Columns** shelf.

Sub-Category is another discrete field. It creates another header at the bottom of the view, and shows a bar for each sub-category broken down by category and year.

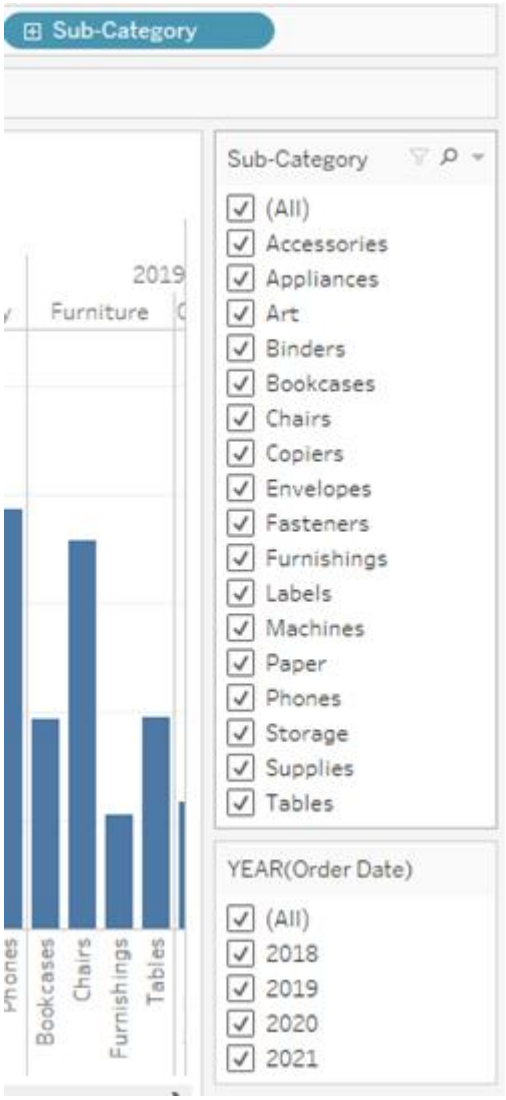


3. Focusing on results

You can use filters to include or exclude values in your view. In this example, you decide to add two simple filters to your worksheet to make it easier to look at product sales by sub-category for a specific year.

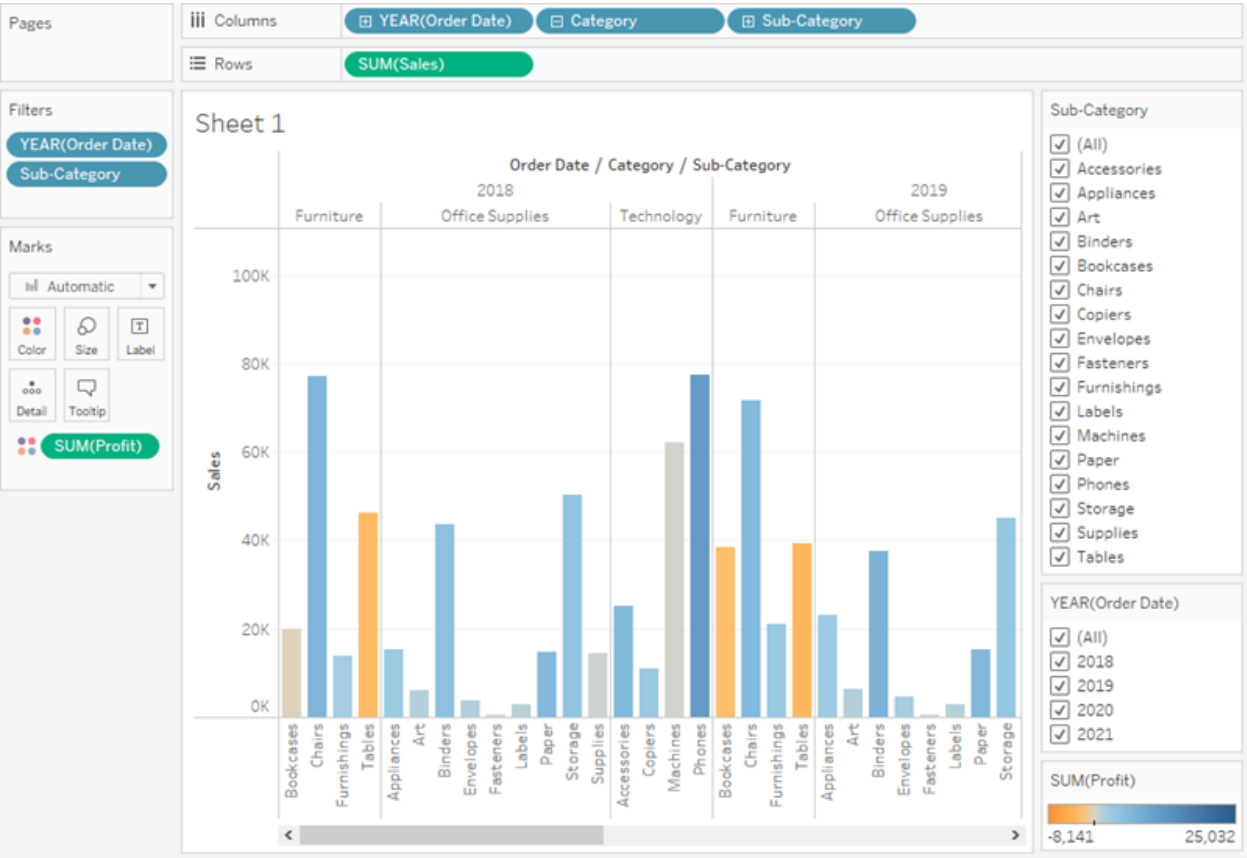
3.1 In the **Data** pane, right-click **Order Date** and select **Show Filter**.
3.2 Repeat the step above for the **Sub-Category** field.

The filters are added to the right side of your view in the order that you selected them. Filters are card types and can be moved around on the canvas by clicking on the filter and dragging it to another location in the view. As you drag the filter, a line appears that shows you where you can drop the filter to move it.



3.3 From the **Data** pane, drag **Profit** to **Color** on the Marks card.

By dragging profit to color, you now see that you have negative profit in Tables, Bookcases, and even Machines.

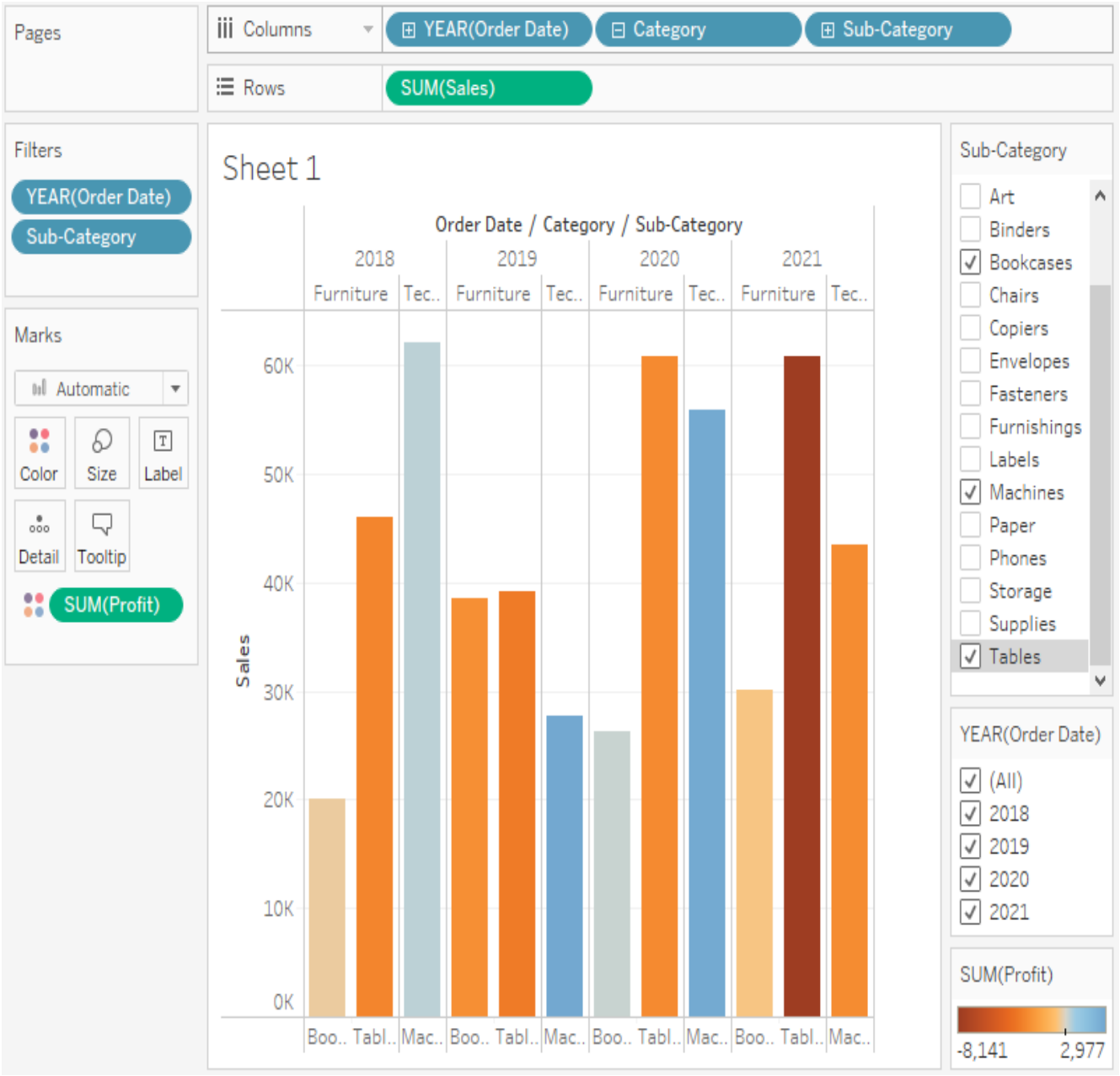


Looking at your view, you saw that you had some unprofitable products, but now you want to see if these products have been unprofitable year over year.

It's time to use your filters to take a closer look.

1. In the view, in the **Sub-Category** filter card, clear all of the check boxes

   except **Bookcases**, **Machines**, and **Tables**.



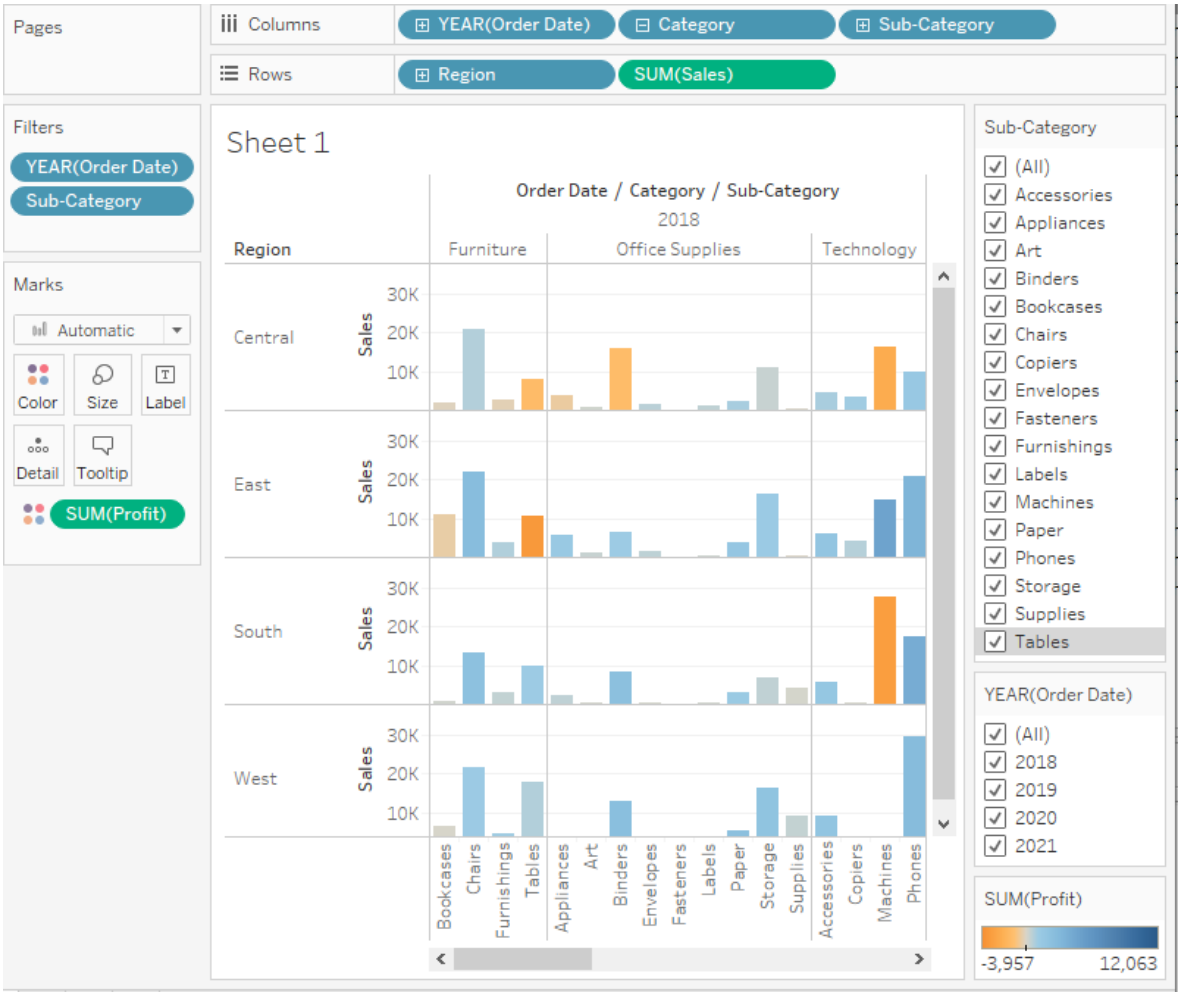
Now you can see that, in some years, Bookcases and Machines were profitable. However, recently Machines are unprofitable. While you've made an important discovery, you want to gather more information before proposing any action items to your boss.

On a hunch, you decide to break up your view by region:

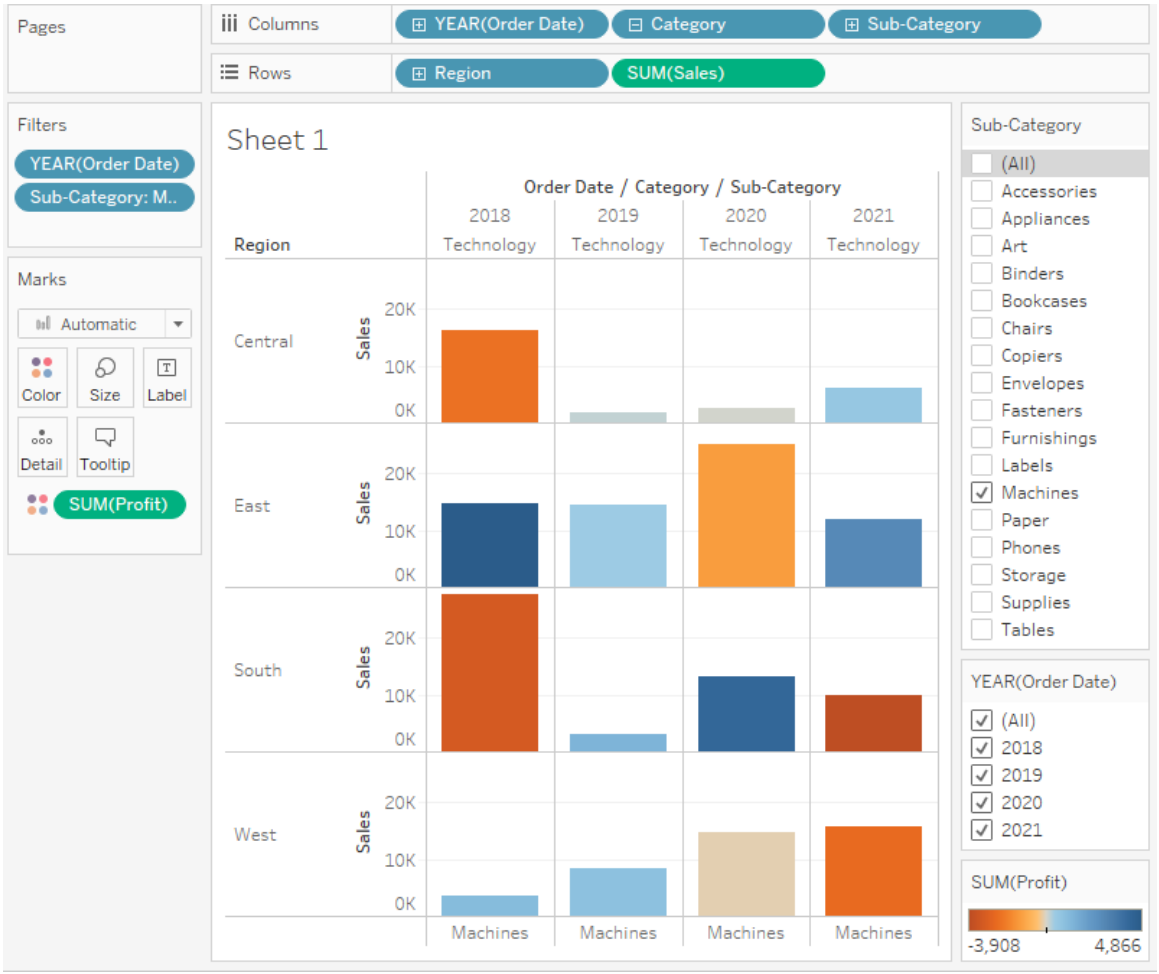
2. Select **All** in the **Sub-Category** filter card to show all sub-categories again

3. From the **Data** pane, drag **Region** to the **Rows** shelf and place it to the left of Sum(Sales).

   Tableau creates a view with multiple axes broken down by region.



Now you see sales and profitability by product for each region. By adding region to the view and filtering the Sub-Category for Machines only, you notice that machines in the South are reporting a higher negative profit overall than in your other regions. You've discovered a hidden insight.



This view best encapsulates your work so far. Select **All** in the **Sub-Category** filter card (if you changed your filter) to show all sub-categories again, name the worksheet, and add a title.

4. At the bottom-left of the workspace, double-click **Sheet 1** and type **Sales by Product/Region**.

   You choose to focus your analysis on the South, but you don't want to lose the view you've created. In Tableau Desktop, you can duplicate your worksheet to continue where you left off.

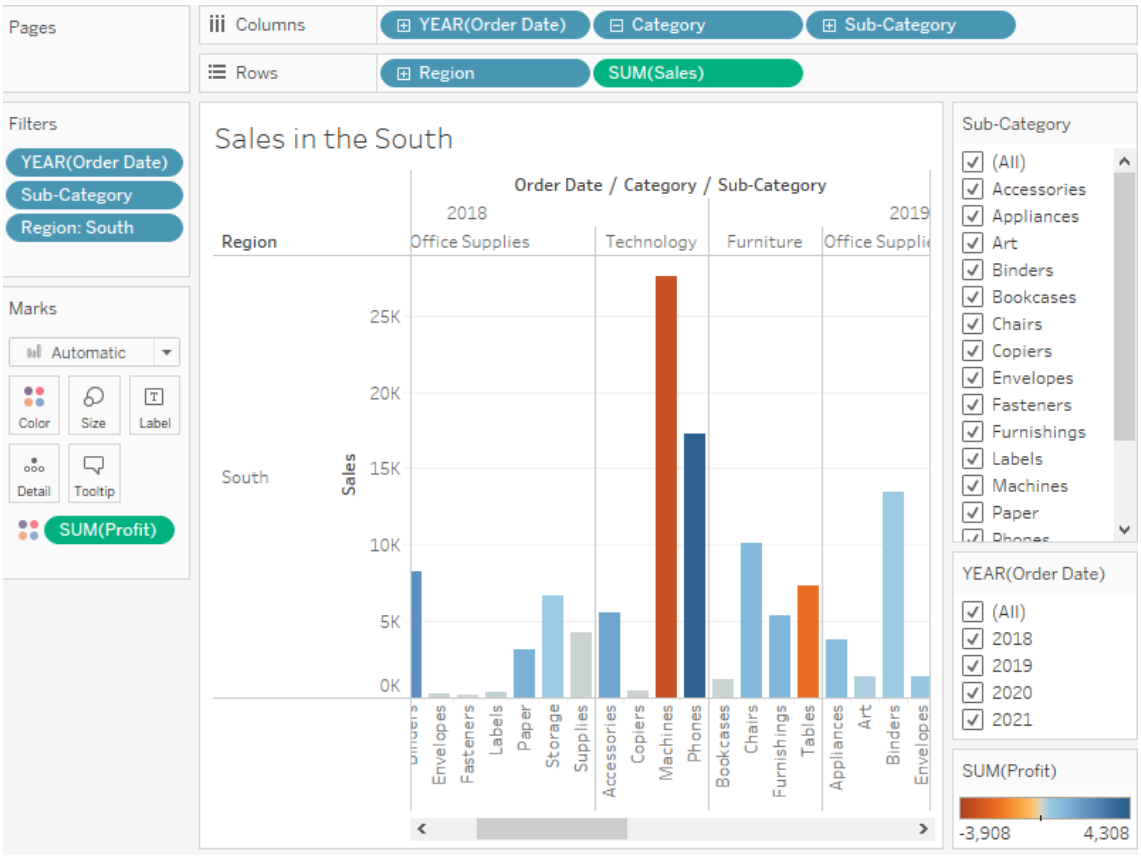
5. In your workbook, right-click the **Sales by Product/Region** sheet and select **Duplicate**.

6. Rename the duplicated sheet to **Sales in the South**.

7. In your new worksheet, from the **Data** pane, drag **Region** to the **Filters** shelf to add it as a filter in the view.

8. In the Filter Region dialog box, clear all check boxes except **South** and then click **OK**.

Your view updates to look like the image below.



Now you can focus on sales and profit in the South. You immediately see that machine sales had negative profit in 2018 and again in 2021. This is definitely something to investigate!

9. Save your work by selecting **File** > **Save As**. Give your workbook a name, such as Regional Sales and Profits.

1(b) Study of Joins in Tableau :

In general, there are four types of joins that you can use in Tableau: inner, left, right, and full outer.

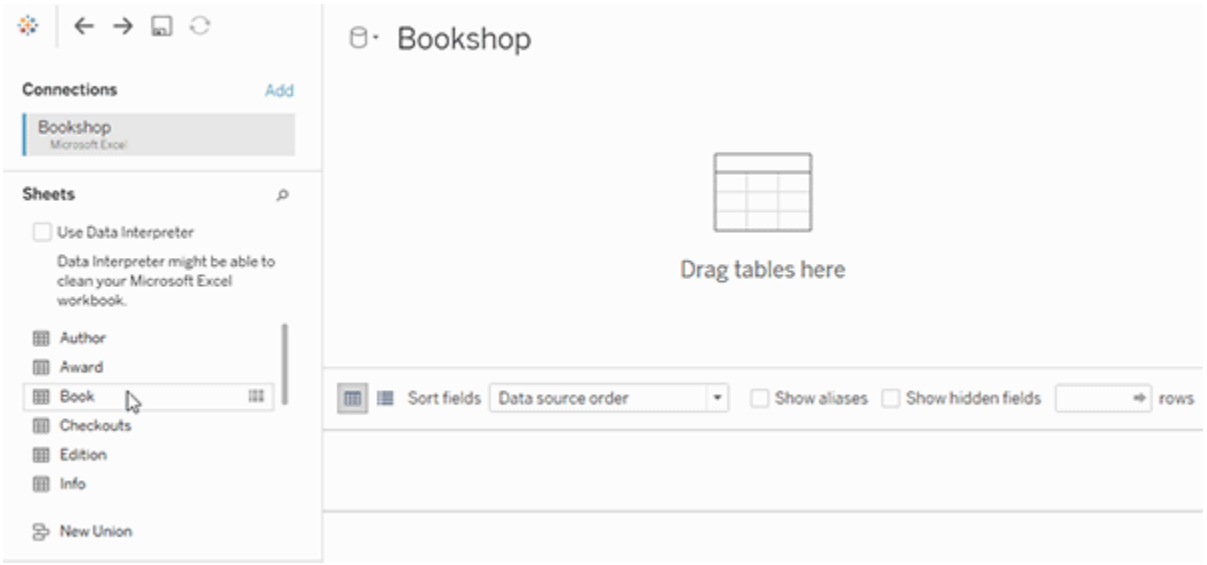
When you use an inner join to combine tables, the result is a table that contains values that have matches in both tables. When you use a left join to combine tables, the result is a table that contains all values from the left table and corresponding matches from the right table. When you use a right join to combine tables, the result is a table that contains all values from the right table and corresponding matches from the left table. When you use a full outer join to combine tables, the result is a table that contains all values from both tables.

To create a join:

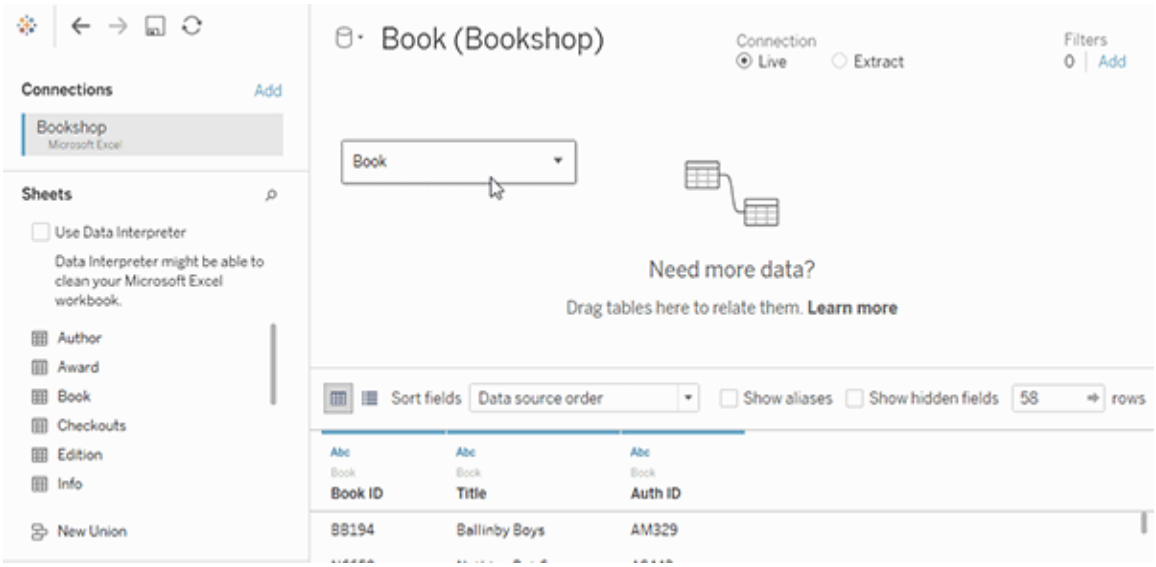
1. To create a join, connect to the relevant data source or sources.

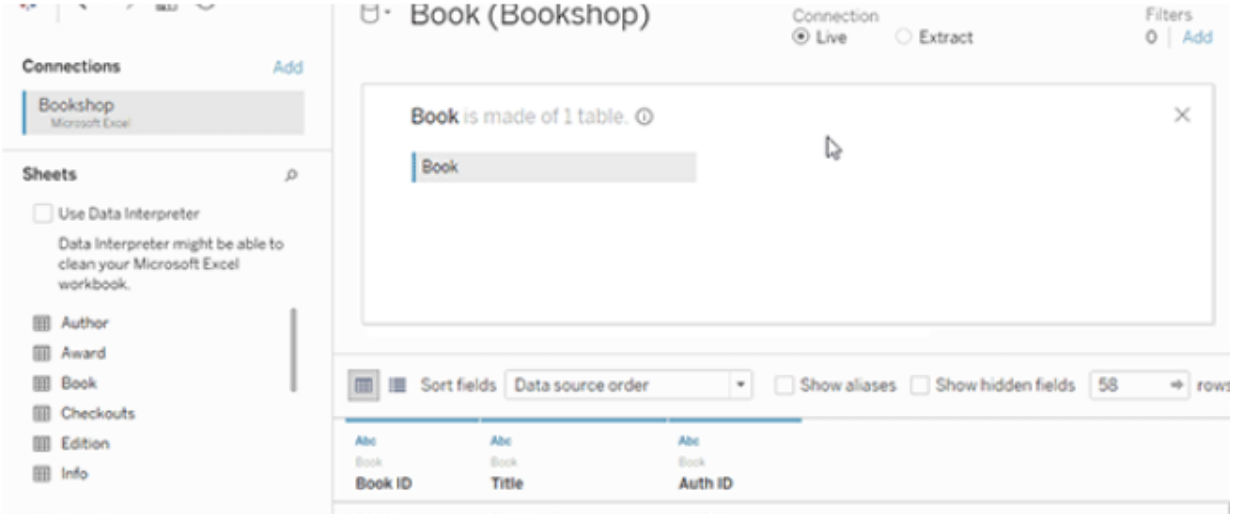
   These can be in the same data source (such as tables in a database or sheets in an Excel spreadsheet) or different data sources (this is known as a cross-database join). If you combined tables using a cross-database join, Tableau colors the tables in the canvas and the columns in the data grid to show you which connection the the data comes from.

2. Drag the first table to the canvas.

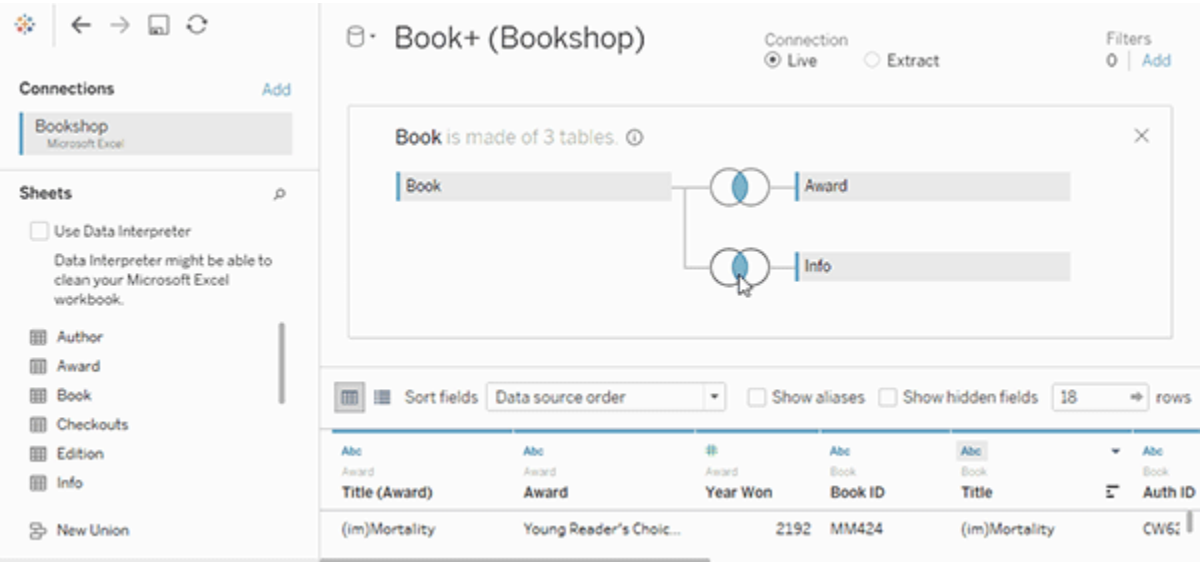


3. Select Open from the menu or double-click the first table to open the join canvas (physical layer).



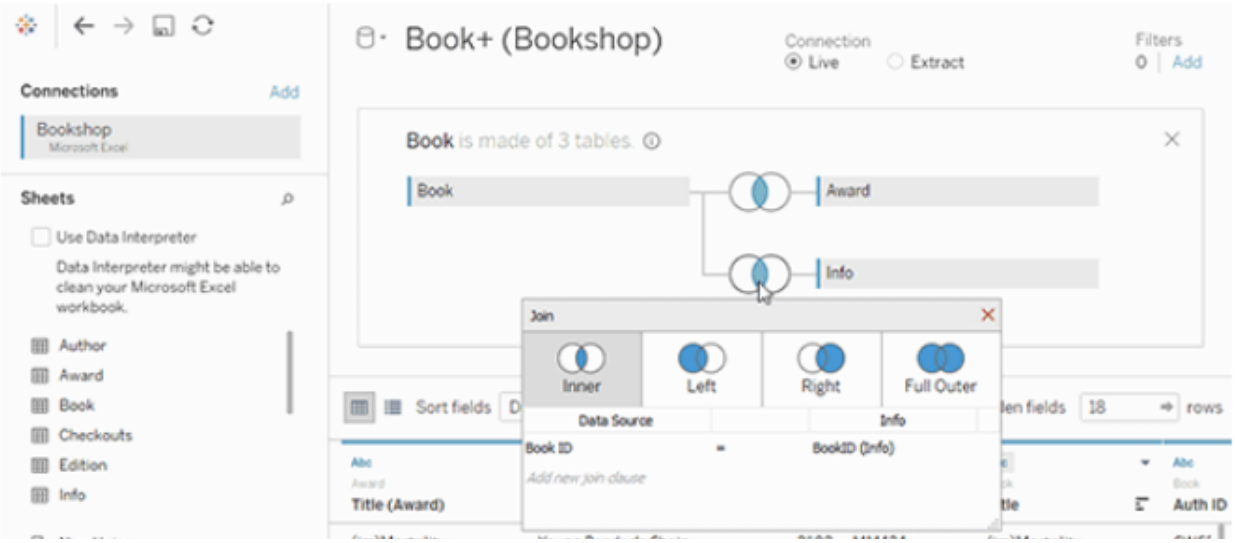


4. Double-click or drag another table to the join canvas.



If your next table is from another data source entirely, in the left pane, under **Connections**, click the **Add** button (⊕ in web authoring) to add a new connection to the Tableau data source. With that connection selected, drag the desired table to the join canvas.

5. Click the join icon to configure the join. Add one or more join clauses by selecting a field from one of the available tables used in the data source, choosing a join operator, and a field from the added table.



6. When finished, close the join dialog and join canvas.

Result:

Thus the study of Tableau basics and joins utilized in tableau has been completed successfully.

Exp No:2	Creating Infographic
Date:	

Aim :

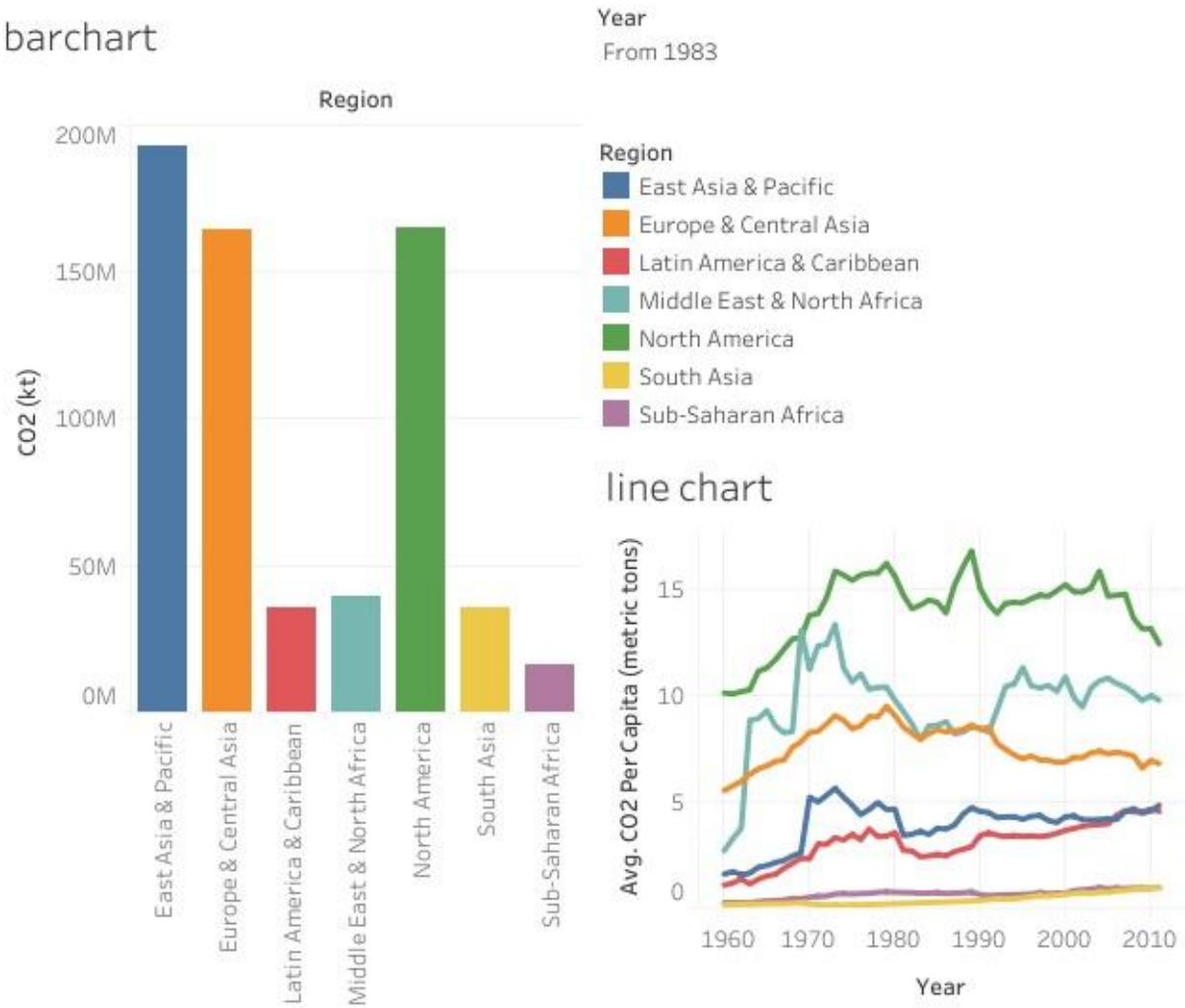
To create an Infographic visualization using Tableau.

Data Source : CO2 emission data

Procedure:

1. Double-click “CO2” (which is total CO2 emissions) from Measures.
2. double-click “Region” from Dimensions
3. Vertical Bar chart is created.
4. To compare total CO2 emissions by year. We can add a filter to the chart. Drag “Year” from Dimensions to the Filters shelf. Click on Years in the Filters shelf and check “Show Filter”.
5. Drag “Region” onto Colors on the Marks shelf.(coloring).
6. Add a new worksheet by clicking on the “New Worksheet” tab at the bottom of the Tableau window.
7. Double-click “CO2 Per Capita” from Measures. Double-click “Year” from Dimensions. Tableau automatically creates a time series line chart from these two clicks. This chart shows the SUM of CO2 Per Capita from all countries and plots the data by year.
8. On the Rows shelf, click on the inverted triangle at the end of the CO2 Per Capita pill to show more options. Change SUM to AVERAGE or MEDIAN.
9. Double-click on “Region” from Dimensions.(time series line chart created).
10. Drag and drop the sheets that you want to include onto the Dashboard.

OUTPUT:



Result :

Thus a simple infographic is created and visualized using Tableau.

Exp No:3	Building Highlight table and creating Heat Map
Date:	

Aim:

To build highlight table and create heat map using Tableau.

Data Source: Sample superstore data

Procedure:

Use highlight tables to compare categorical data using color.

In Tableau, you create a highlight table by placing one or more dimensions on the **Columns** shelf and one or more dimensions on the **Rows** shelf. You then select **Square** as the mark type and place a measure of interest on the **Color** shelf.

You can enhance this basic highlight table by setting the size and shape of the table cells to create a heat map.

To create a highlight table to explore how profit varies across regions, product sub-categories, and customer segments, follow these steps:

1. Connect to the **Sample - Superstore** data source.

2. Drag the **Segment** dimension to **Columns**.

   Tableau creates headers with labels derived from the dimension member names.

3. Drag the **Region** and **Sub-Category** dimensions to **Rows**, dropping **Sub-Category** to the right of **Region**.

   Now you have a nested table of categorical data (that is, the **Sub-Category** dimension is nested within the **Region** dimension).

4. Drag the **Profit** measure to **Color** on the **Marks** card.

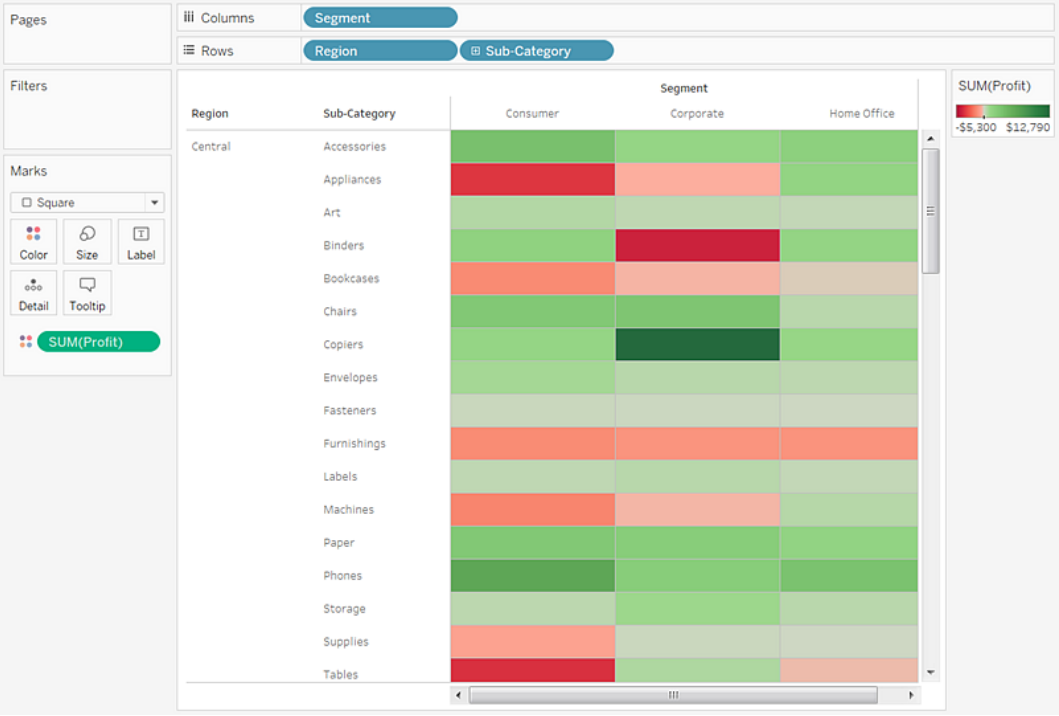
   Tableau aggregates the measure as a sum. The color legend reflects the continuous data range.

5. Click **Color** on the **Marks** card to display configuration options. In the **Border** drop-down list, select a medium gray color for cell borders.

6. The default color palette is Orange-Blue Diverging. A Red-Green Diverging palette might be more appropriate for profit. To change the color palette and to make the colors more distinct, do the following:
    - Hover over the **SUM(Profit)** color legend, then click the drop-down arrow that appears and select **Edit Colors**.
    - In the **Edit Colors** dialog box, in the **Palette** field, select **Red-Green Diverging** from the drop-down list.
    - Select the **Use Full Color Range** check box and click **Apply** and then click **OK**.

OUTPUT:

Highlight table:

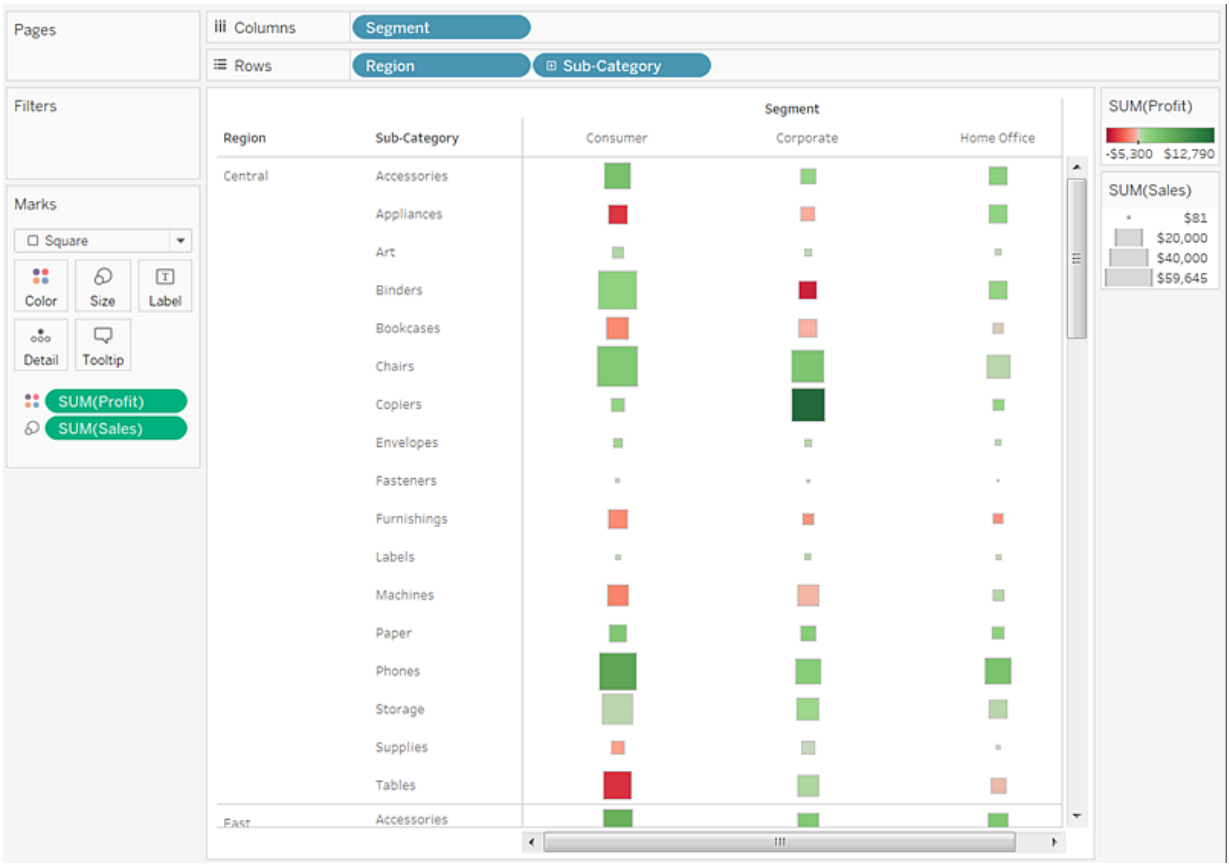


Modify the size to create a heat map:

8. Drag the **Sales** measure to **Size** on the **Marks** card to control the size of the boxes by the Sales measure. You can compare absolute sales numbers (by size of the boxes) and profit (by color).
9. To enlarge the marks, click **Size** on the **Marks** card to display a size slider.
10. Drag the slider to the right until the boxes in the view are the optimal size. Now your view is complete:

OUTPUT:

Heat map:



Result:

Thus Highlight table and heat map are created and visualized using Tableau.

Exp No:4	Exploring and visualizing geographical data
Date:	

Aim:

To explore and visualize geographical data using Tableau.

Data Source: superstore data

Procedure:

Build a map view:

Using superstore data, the basic visualization steps are completed .

Start fresh with a new worksheet.

1. Click the **New worksheet** icon at the bottom of the workspace.(using superstore data,the basic visualization steps are completed

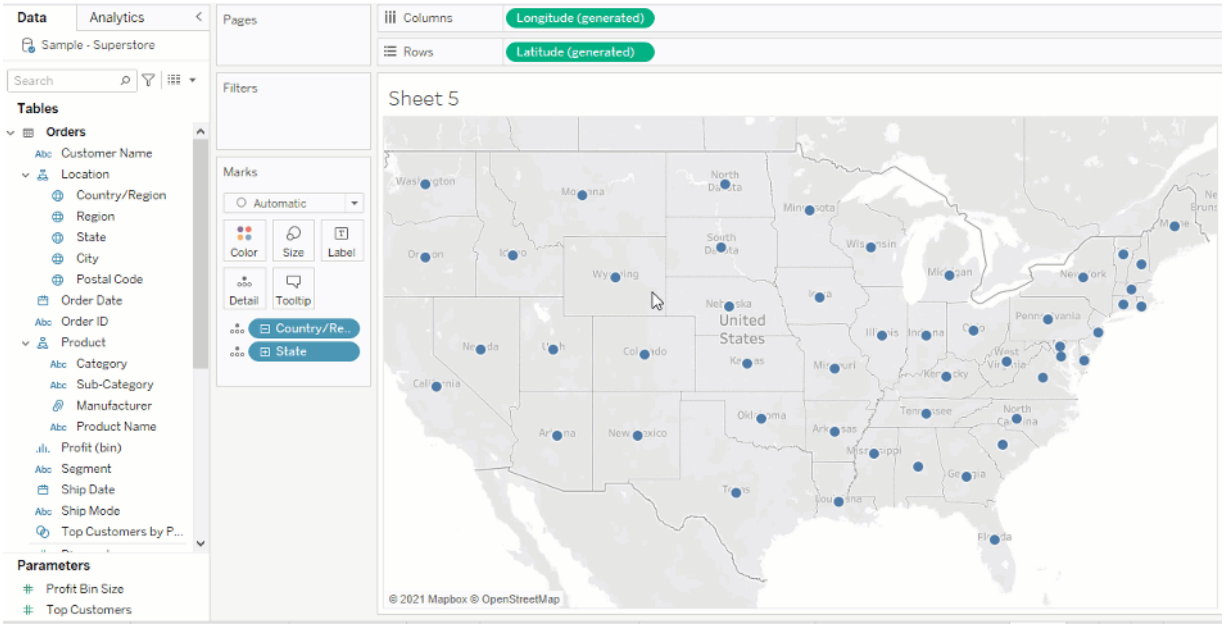
2. In the **Data** pane, double-click **State** to add it to **Detail** on the Marks card.

   Now you've

3. Drag **Region** to the **Filters** shelf, and then filter down to the **South** only. The map view zooms in to the South region, and there is a mark for each state (11 total).

   Now you want to see more detailed data for this region, so you start to drag other fields to the Marks card:

4. Drag the **Sales** measure to **Color** on the Marks card.



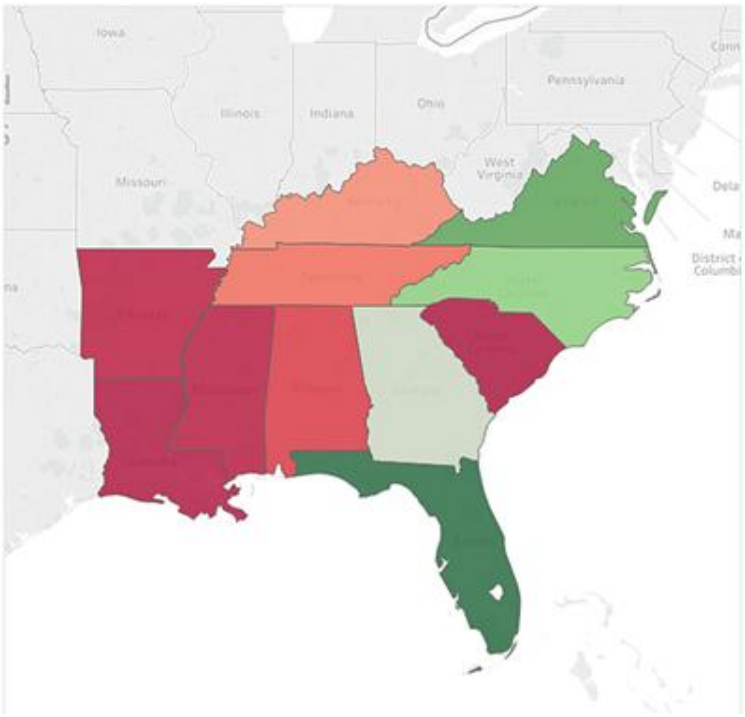
The view automatically updates to a filled map, and colors each state based on its total sales.

5. Click **Color** on the Marks card and select **Edit Colors**.

   For this example, you want to see which states are doing well, and which states are doing poorly in sales.

6. In the Palette drop-down list, select **Red-Green Diverging** and click **OK**. This allows you to see quickly the low performers and the high performers.

OUTPUT:



Result :

Thus exploring and visualizing geographical data is done using Tableau.

Exp No:5	Maps and geographic data analysis
Date:	

Aim :

To create maps in Tableau that show a path over time (flow map) using Tableau.

Data source :

Storm map sheet .It contains data on the paths of storms, and has columns for **Latitude** and **Longitude**, **Date**, and **Storm Name**.

Flow maps are great for when you want to show where something went over time, such as the path of a storm.

Procedure:

1. Open a new worksheet.
2. In the **Data** pane, under Measures, double-click **Latitude** and **Longitude**.

   The Latitude and Longitude fields are added to the Columns and Rows shelves, and a map view with one data point is created.
3. From Dimensions, drag **Storm Name** to **Detail** on the Marks card.

   The map view updates with a data point for every storm in the data source. In the next steps, you will narrow the storms down to only those that occurred in the western Pacific Ocean in 2012.
4. From Dimensions, drag **Date** to the **Filters** shelf.
5. In the Filter Field [Date] dialog box that appears, select **Years**, and then click **Next**.
6. In the Filter [Year of Date] dialog box that appears, click **2012**, and then click **OK**.

The map view updates to show only the storms that occurred in 2012.

7. From Dimensions, drag **Basin** to the **Filters** shelf.

8. In the Filter Field [Basin] dialog box that appears, select **West Pacific**, and then click **OK**.

9. On the Marks card, click the mark-type drop-down and select **Line**.

10. From Dimensions, drag **Date** to **Path** on the Marks card.

11. On the Marks card, right-click the **YEAR(Date)** field and select **Exact Date**.

12. From Measures, drag **Wind Speed** to **Size** on the Marks card.

13. On the Marks card, right-click the **SUM(Wind Speed)** field and select **Measure** > **Average**.

14. From Dimensions, drag **Storm Name** to **Color** on the Marks card.

OUTPUT:

Result:

Thus geographical data is analyzed by creating flow map using Tableau.

Exp No:6	FORECASTING AND PREDICTIVE MODELLING
Date:	

AIM:

To perform forecasting and predictive modelling in Tableau.

DATA SOURCE: Superstore sample data.

PROCEDURE:
FORECASTING:

Forecast in Tableau is often used then we want to have a prediction about future trends or results in a given season.

1. Connect to data- In Tableau Desktop, connect to Superstore sample data provided by Tableau.

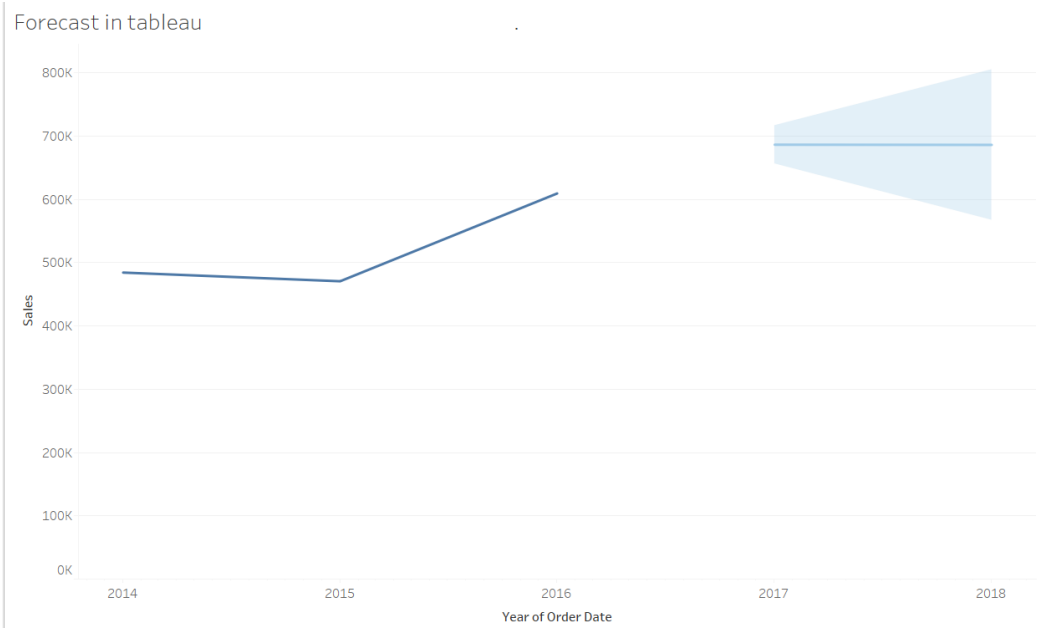
2. Create the visualization

3. Create a line chart with Order Date (Year) in the Columns shelf and Sales in the Rows shelf. Go to the Analysis tab and click on Forecast under Model category.

4. On completing the above step, you will find the option to set various options for forecast. Choose the Forecast Length as 2 years and leave the Forecast Model to Automatic and then click OK.

5. You can also get minute details of the forecast model by choosing the option Describe Forecast. To get this option, right-click on Forecast diagram.

OUTPUT:



PREDICTIVE MODELLING:

Predictive modelling is a statistical technique using machine learning and data mining to predict and forecast likely future outcomes with the aid of historical and existing data.

1. Connect to data

   In Tableau Desktop, connect to Sample – Superstore sample data provided by Tableau.

2. Create the visualization

3. From the Data pane, drag the Order Date dimension to the Columns shelf.

4. Open the measure's context menu to change its list level to Month and Year

5. Drag Profit to the Rows shelf

6. Create a prediction calculation- Click to open the Analysis menu at the top, and then select Create Calculated Field.

7. In the Calculation Editor, do the following:

   Name the calculation: Quantile Predict Median Profit.
   Enter the following formula:

   MODEL_QUANTILE(0.5, SUM([Profit]),ATTR(DATETRUNC('month', [Order Date])))

   When finished, click OK.The prediction calculation is now added as a calculated field in the Data pane.

8. Add the prediction calculation to the view

9. Drag the prediction calculation to the Rows shelf, to the right of SUM(Profit).

10. Right-click (Control-click on Mac) the measure and select Dual Axis.

11. To align the two axes in a dual axes chart to use the same scale, right-click (Control-click on Mac) the secondary axis, in this case Quantile Predict Median Profit, and select Synchronize Axis.

    This aligns the scale of the two axes.

12. Extend the date range and densify the data

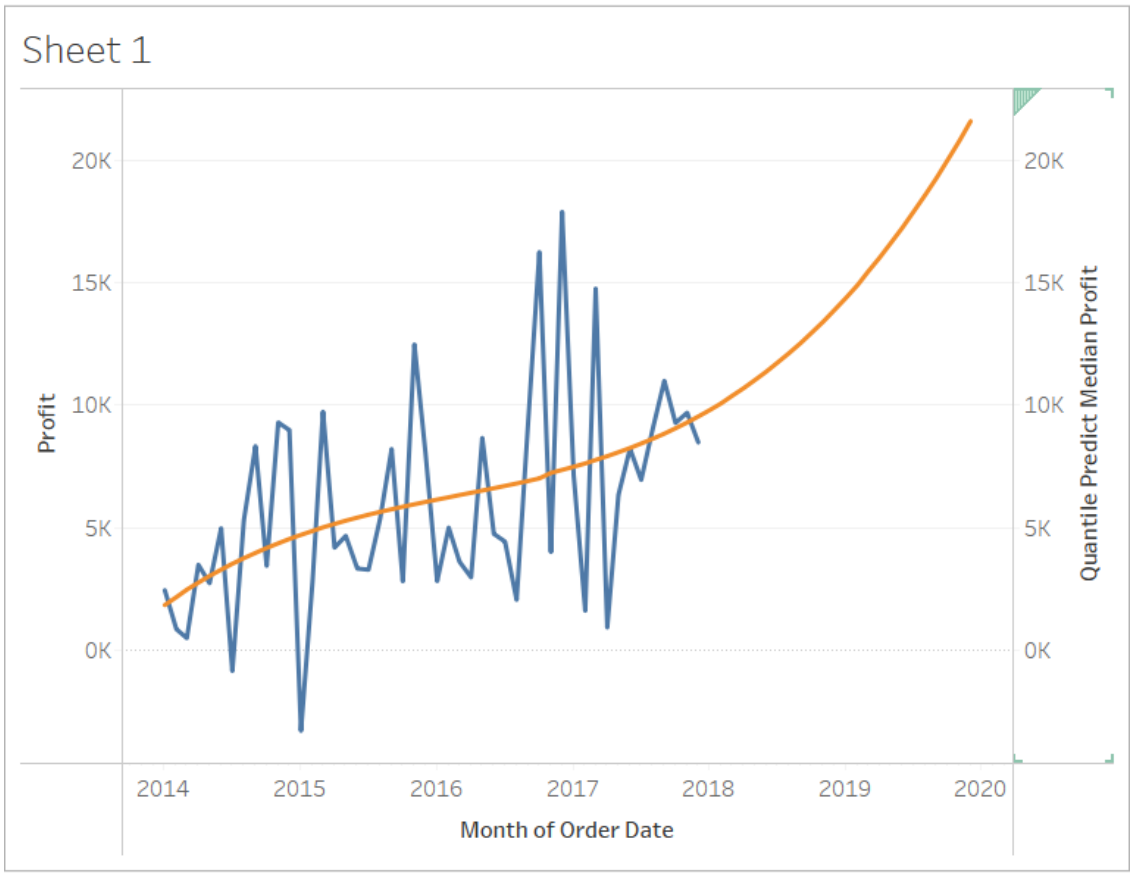
    The final step is to extend the horizontal axis into the future so that you can add marks beyond the current date range.

    → To do this, open the context menu of the MONTH (Order Date) pill, and select Extend Date Range.

13. In the Extend Date Range dialog, let's extend the axis by 16 months.

Tableau has automatically updated the view by extending the horizontal axis and includes predictions on these future dates.

OUTPUT:



RESULT:

Thus, forecasting and predictive modelling was done for the data in Tableau.

Exp No:7	CREATING DASHBOARDS AND DASHBOARD LAYOUTS FOR DIFFERENT DEVICES
Date:	

AIM:

To create dashboard and dashboard layout for different devices.

DATA SOURCE : CO2 emission data

PROCEDURE:

Preview and manually add device layouts

1. Open a dashboard.

2. On the Dashboard tab on the left, click Device Preview.

3. click through the Device types and Models and explore the different screen sizes. Then set these options:
    a. To see how the dashboard will look in landscape vs. portrait mode, click . Usually, landscape is optimal for tablets and portrait is best for phones.

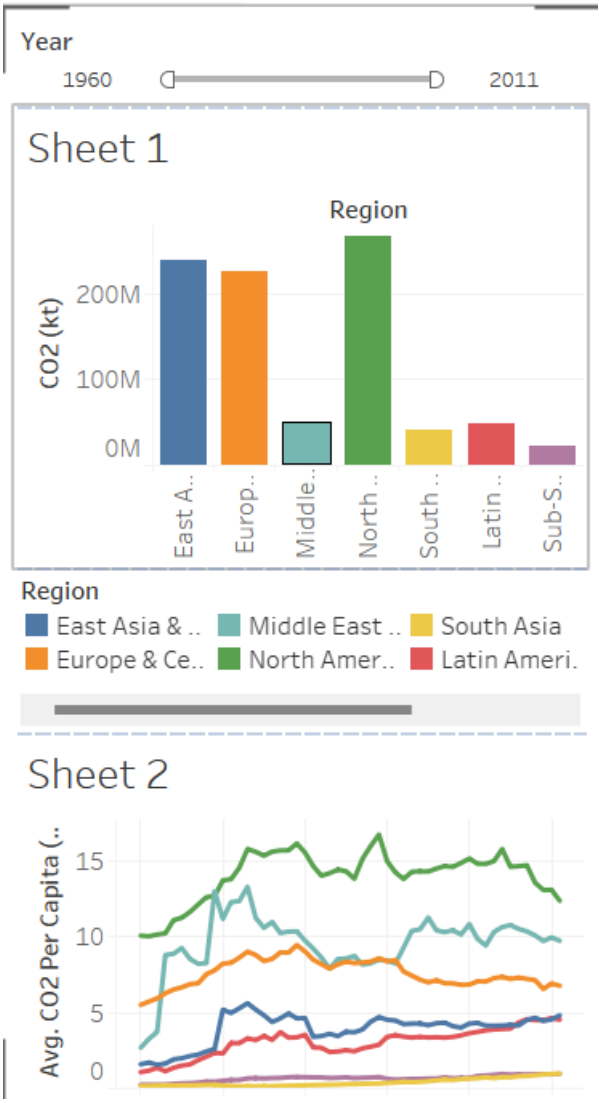
    b. Select Tableau Mobile app to see how the dashboard will look with the app instead of the browser. This option is available for iOS or Android devices and shrinks the dashboard slightly, leaving space for the app controls.

4. Choose a Device type, such as Tablet.

5. In the upper-right corner, click the Add Layout button for the device type you selected (for example, Add Tablet Layout).

6. Add an additional layout by selecting a new Device type and clicking Add Layout.

OUTPUT:



RESULT:

Thus, the creation of dashboard and dashboard layout for different devices using tableau has been successfully completed.

Exp No:8	CALCULATIONS IN TABLEAU
Date:	

AIM:

To create and use calculated fields in Tableau

DATA SOURCE : Sample-Superstore

PROCEDURE:

Calculated fields can be used for many reasons. Some examples include:

To segment data
To convert the data type of a field, such as converting a string to a date.
To aggregate data
To filter results
To calculate ratios

CREATING A CALCULATED FIELD:

1. In Tableau, select Analysis > Create Calculated Field.

2. In the Calculation Editor that opens, do the following:

   Enter a name for the calculated field. In this example, the field is called, Discount Ratio.
   Enter a formula. This example uses the following formula:

   IIF([Sales] !=0, [Discount]/[Sales],0)

   This formula checks if sales are not equal to zero. If true, it returns the discount ratio (Discount/Sales); if false, it returns zero.

3. When finished, click OK.

   The new calculated field is added to Measures in the Data pane because it returns a number. An equal sign (=) appears next to the data type icon. All calculated fields have equal signs (=) next to them in the Data pane.

   =#DiscountRatio

USE A CALCULATED FIELD IN THE VIEW

1. Build the view

    a. From Dimensions, drag Region to the Columns shelf.
    b. From Dimensions, drag Category to the Rows shelf.
    c. On the Rows shelf, click the plus icon (+) on the Category field to drill-down to Subcategory.

2. Add the calculated field to the view

    a. From Measures, drag Discount Ratio to Color on the Marks card.
    b. On the Rows shelf, right-click SUM(Discount Ratio) and select Measure (Sum) > Average.

EDIT A CALCULATED FIELD:

To edit a calculated field:

1. In the Data pane, right-click the calculated field and select Edit.

2. In the Calculation Editor that opens, you can do the following:

    a. Edit the name of the calculated field.
    b. Update the formula.

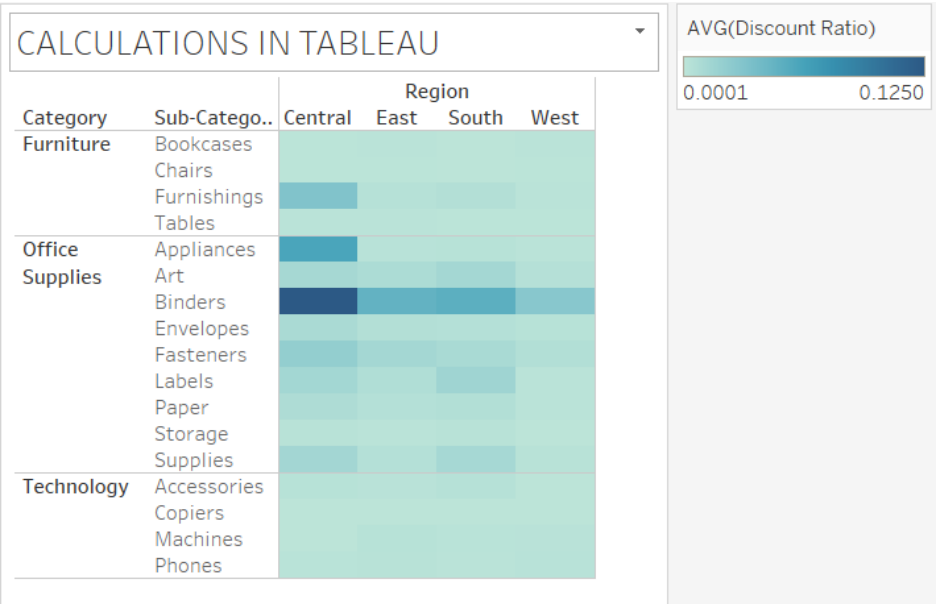
        For this example, the formula is changed to return a discount ratio for orders over 2000 USD in sales:

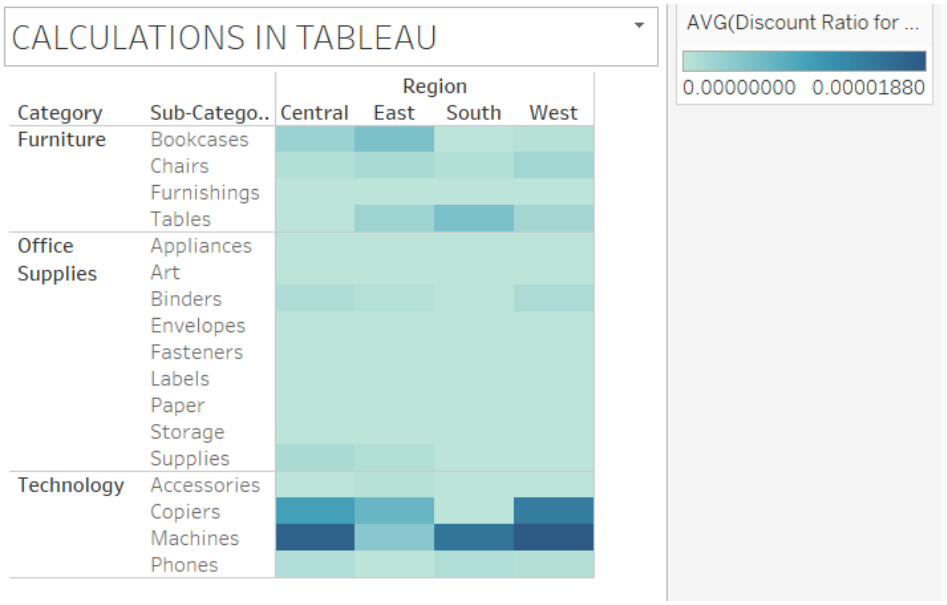
        IIF([Sales] > 2000, [Discount]/[Sales],0)

3. Click OK.

The view updates to reflect the changes automatically. You do not need to re-add the updated calculated field to the view.

OUTPUT:





RESULT:

Thus, the study to create, use and edit calculated fields in Tableau have been successfully completed and visualized.

Exp No:9	VISUALIZATION USING DIFFERENT CHARTS
Date:	

AIM:

To visualize data using different charts in Tableau.

DATA SOURCE: Amazon Prime TV Dataset

PROCEDURE:

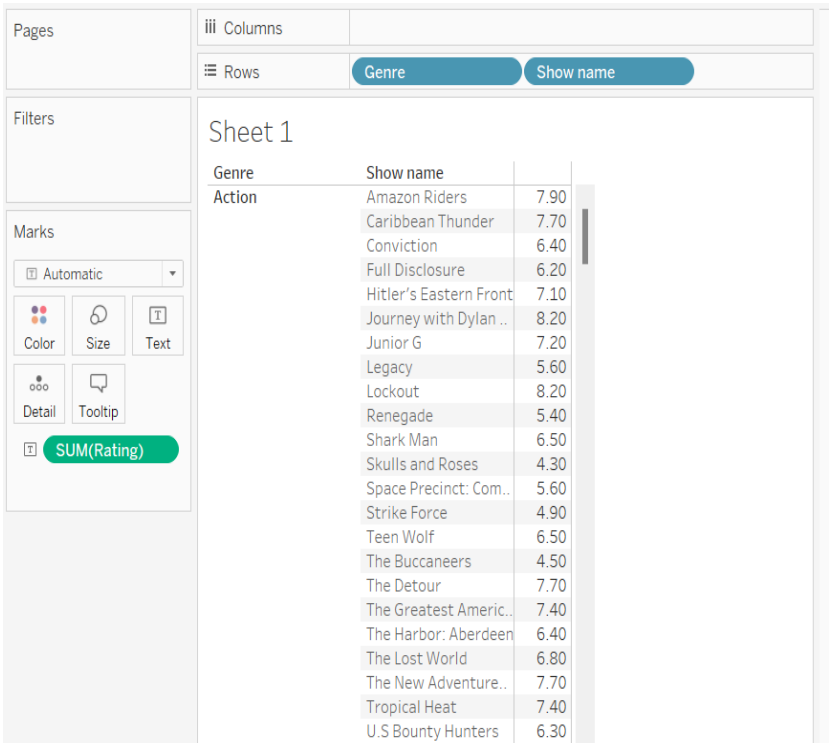
TEXT TABLE / PIVOT TABLE

Text table is one of the simplest and most straightforward charts representing data in rows and columns. Text Tables are also called pivot tables by placing one dimension on the Rows shelf and another dimension on the Columns shelf.

How to Create a Text Table? The steps below will help to create a Text Table.

- Create a worksheet
- Rename the worksheet if necessary
- Hover over the Show-me tab for understanding the prerequisites
- We have Genre, Movie name, and IMDb rating columns available in the dataset
- Select Genre + ctrl + Select Name of the Show + ctrl + IMDb Ratings
- Select the Show-me tab and chose text chart

OUTPUT:



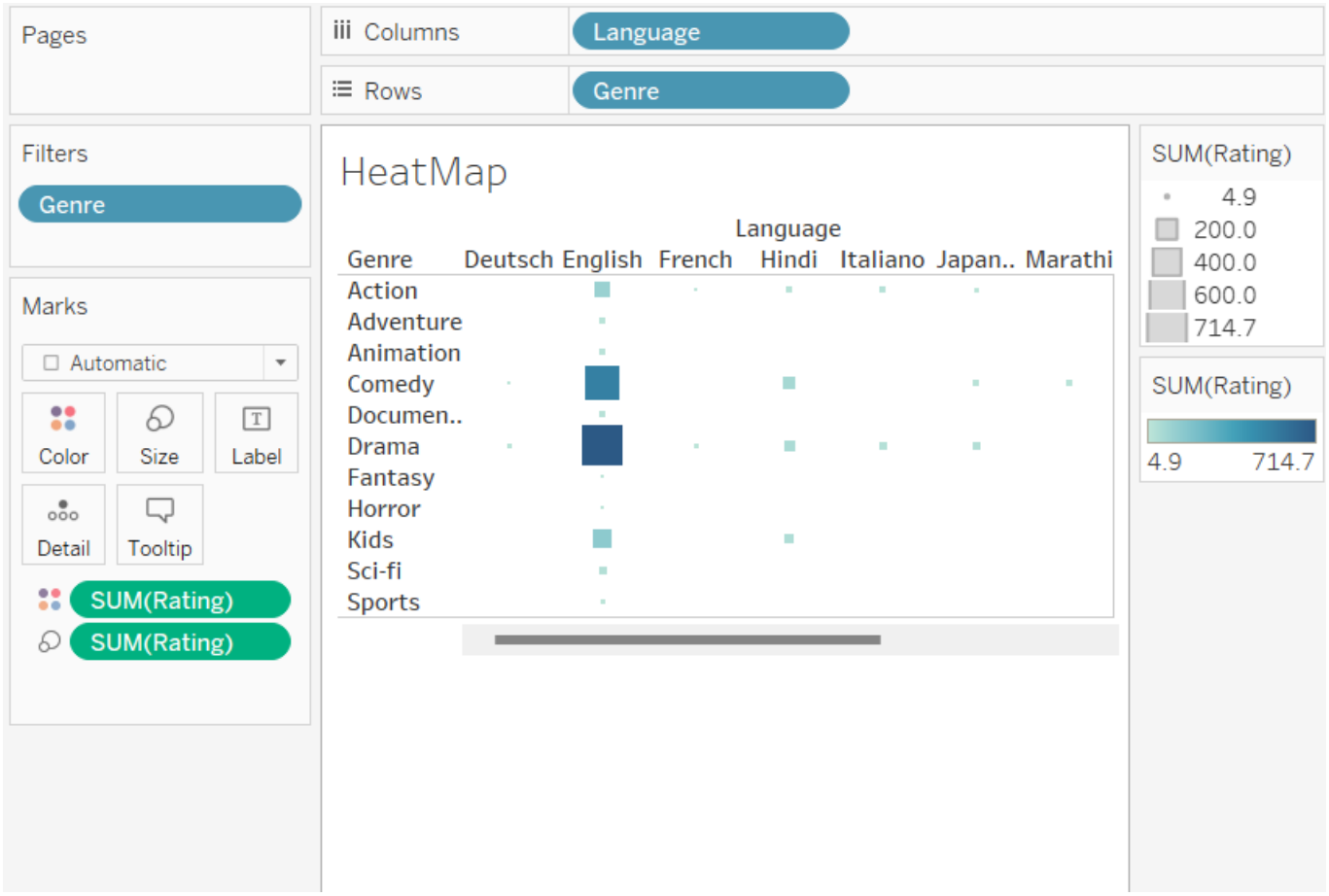
HEATMAP:

Another simpler yet effective way to represent your data is by using HeatMaps. HeatMaps generally display data in the form of colors. Heatmaps are created in the tableau by using one or more dimensions and a measure.

How to create a HeatMap? The steps below will help to create a HeatMap

- Create a worksheet
- Rename the worksheet if necessary
- Hover over the Show-me tab for understanding the prerequisites
- Drag language to the column from Amazon Prime TV dataset
- Drag Genre to Rows from Amazon Prime TV dataset
- Select Heat maps from the Show-me tab
- Drag Sum(IMDb) ratings to Colour in Marks card
- Drag Sum(IMDb) ratings to Size in Marks card

OUTPUT:



TREE MAP:

A TreeMap in the tableau charts is a simple rectangular chart representing data in nested rectangles. Dimensions define the structure of the rectangles in a TreeMap.

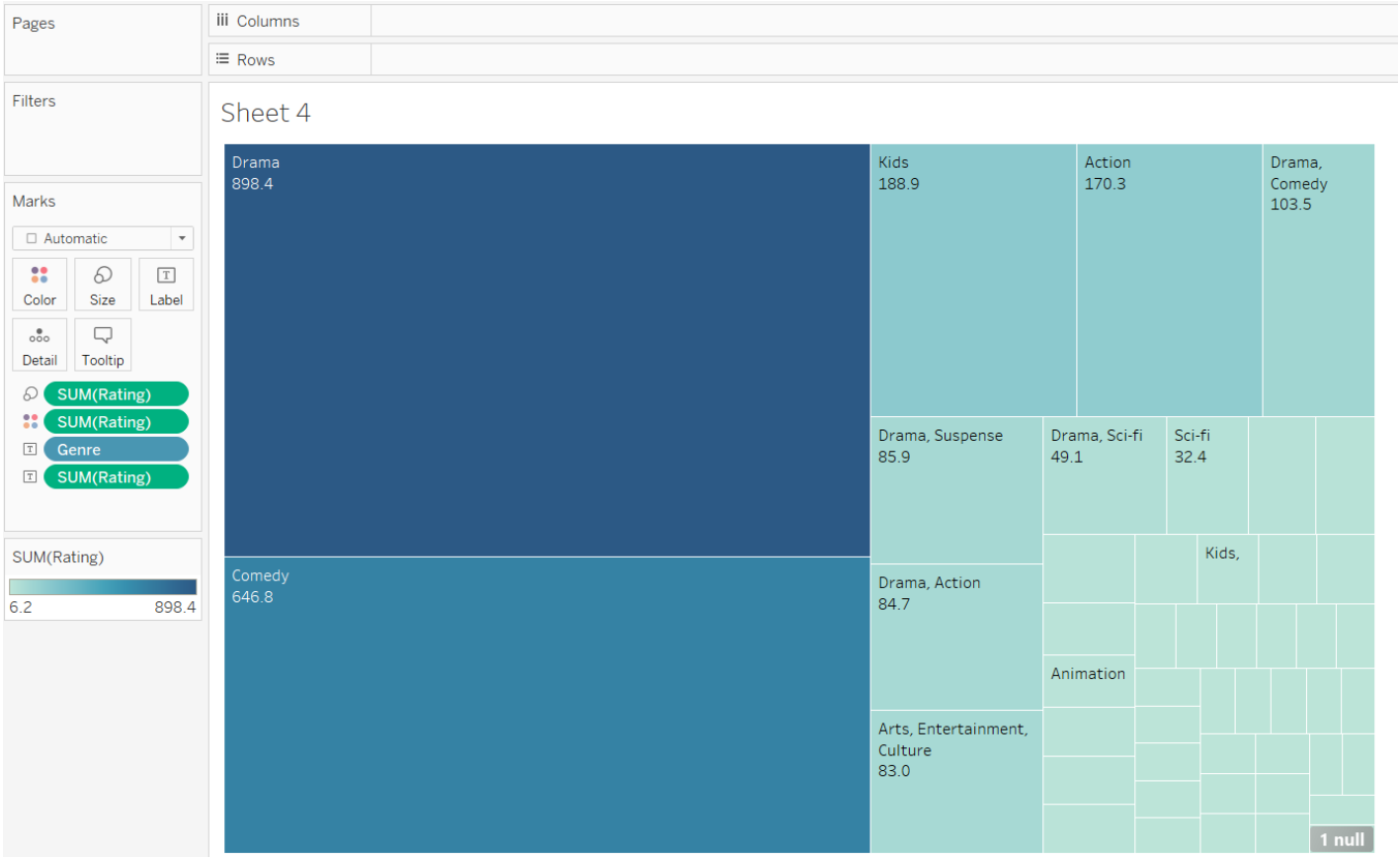
Now, let us use the TreeMap Charts in Tableau to find the volume of a particular genre based on the number of shows released.

How to create a TreeMap?

The steps below will help to create a Treemap.

- Create a worksheet
- Rename the worksheet if necessary
- Hover over the Show-me tab for understanding the prerequisites
- Select Genre + ctrl + IMDb Ratings
- Go to the Show-me tab
- Select TreeMap

OUTPUT:



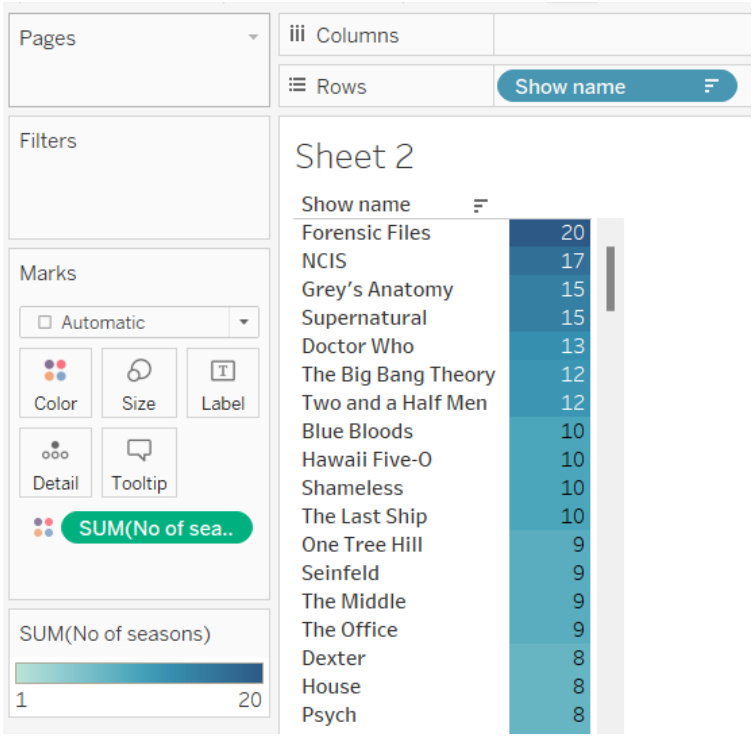
HIGHLIGHT TABLE:

The Highlight Table in the tableau is completely similar to the text table. The only difference is that the highlight table's data is displayed using different colors based on the categorical values.

How to create a Highlight Table? The steps below will help to create a Highlight Table.

- Create a worksheet
- Rename the worksheet if necessary
- Hover over the Show-me tab for understanding the prerequisites
- Drag name of the show to rows
- Select Highlight table from the show-me tab
- Drag number of seasons to color
- Drag number of seasons to label

OUTPUT:



BAR CHART:

The Bar Chart represents the data in the form of bars. The length of the bar is proportional to the variable value.

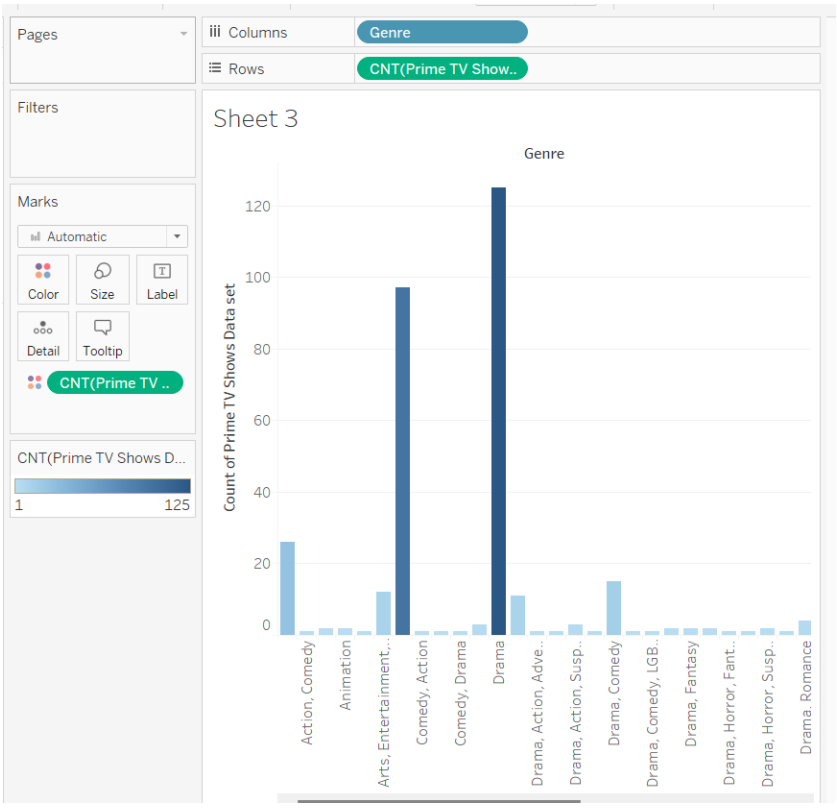
Now, let us use the Bar Charts in Tableau to find the total count of series in a particular genre.

How to create a Bar Chart?

The steps below will help to create a Bar Chart.

- Create a worksheet
- Rename the worksheet if necessary
- Hover over the Show-me tab for understanding the prerequisites
- Drag Genre to Columns
- Drag CNT (Prime TV Shows) to Rows

OUTPUT:



RESULT:

Thus, the visualization of data using different charts in Tableau has been successfully completed.

Exp No:10	CREATION OF INTERACTIVE DASHBOARD
Date:	

AIM:

To create an interactive dashboard using Tableau.

DATA SOURCE: Sample Superstore

PROCEDURE:

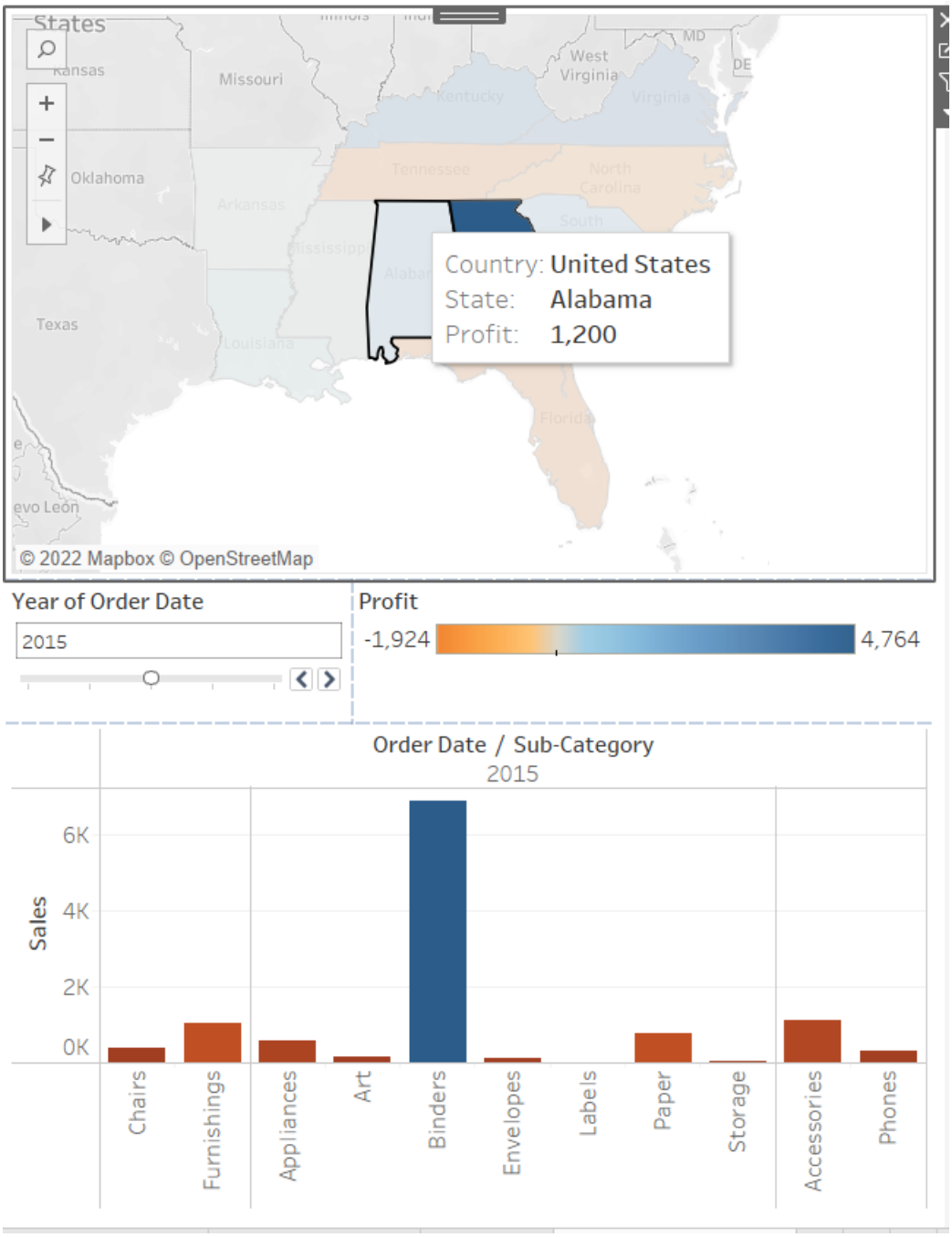
1. Select **Profit Map** in the dashboard, and click the **Use as filter** icon  in the upper right corner.
2. Select a state within the Southern region of the map.

   The Sales in the South bar chart automatically updates to show just the sub-category sales in the selected state. You can quickly see which sub-categories are profitable.
3. Click an area of the map other than the colored Southern states to clear your selection.

   You also want viewers to be able to see the change in profits based on the order date.
4. Select the **Year of Order Date** filter, click its drop-down arrow, and select **Apply to Worksheets** > **Selected Worksheets**.
5. In the Apply Filter to Worksheets dialog box, select **All in dashboard**, and then click **OK**.

   This option tells Tableau to apply the filter to all worksheets in the dashboard that use this same data source

OUTPUT:



RESULT:

Thus, the creation of an interactive dashboard in Tableau has been successfully completed.

Exp No:11	STUDY OF TABLEAU STORYBOARD
Date:	

AIM:

To study the steps involved in creating stories (Storyboard) using Tableau.

DATA SOURCE: existing workbook (Earth quake)

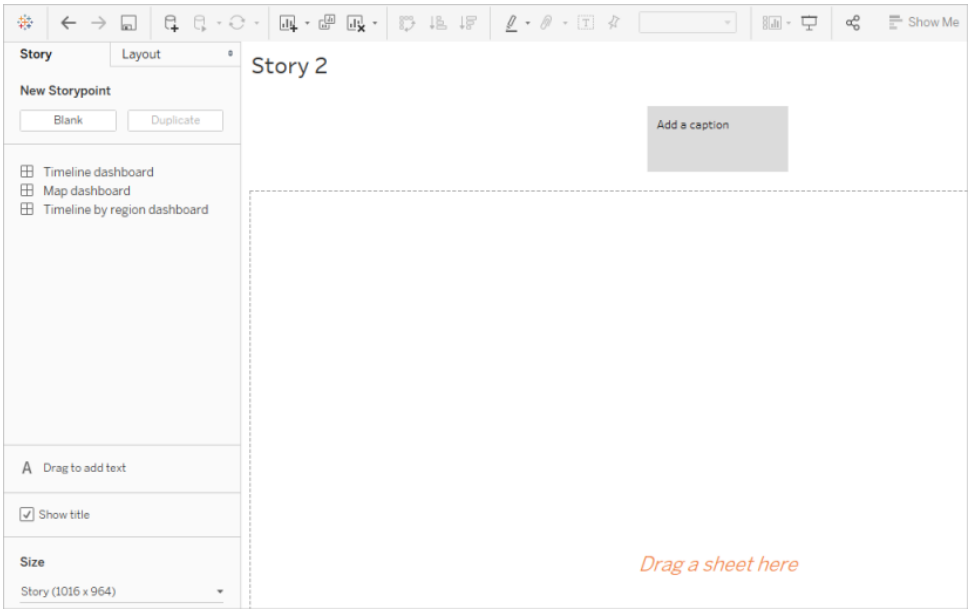
PROCEDURE:

Building a story about earthquake trends over time.

Create a story worksheet

1. Use Tableau Desktop to open the Earthquake Trend Story workbook that you downloaded.
2. Click the **New Story** tab.

Tableau opens a new worksheet as your starting point.



3. Right-click the **Story 2** tab, choose **Rename Sheet**, and type **Earthquake story** as the worksheet name.

State the question

Story titles are in view at all times and they're a handy way to keep your story's purpose front and center. By default, Tableau uses the worksheet name as the story title. In Tableau Desktop you can override that by doing the following:

1. Double-click the title.

2. In the Edit Title dialog box, replace **<Sheet Name>** with the following:

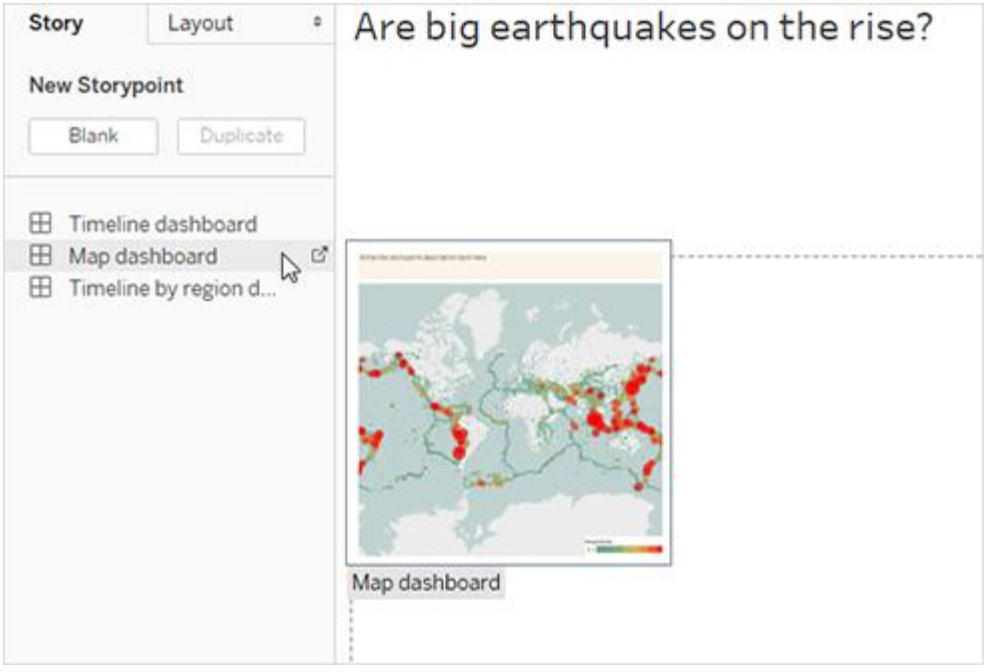
   Are big earthquakes on the rise?

3. Click **OK**.

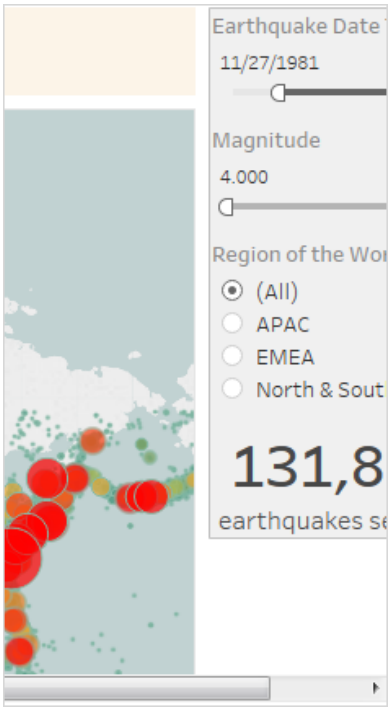
Story point

First story point you create will show the broadest possible viewpoint—all earthquakes, across the entire planet.

1. On the Story pane, double-click **Map dashboard** to place it on the story sheet. If you're using Tableau Desktop, you can also use drag-and-drop to add views and dashboards to a story sheet.

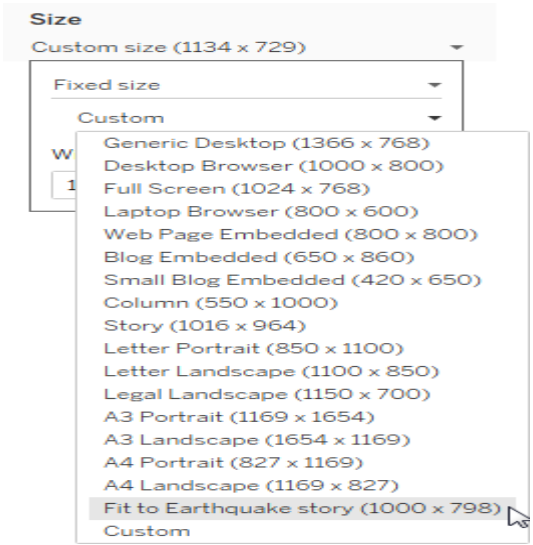


   Notice how there's a horizontal scroll bar and the legend isn't fully displayed.



There's a special setting you can use on your dashboards to prevent this from happening.

2. Select **Map dashboard** and under **Size** on the Dashboard pane, select **Fit to Earthquake story**. This setting is designed to make dashboards the perfect size for a story.

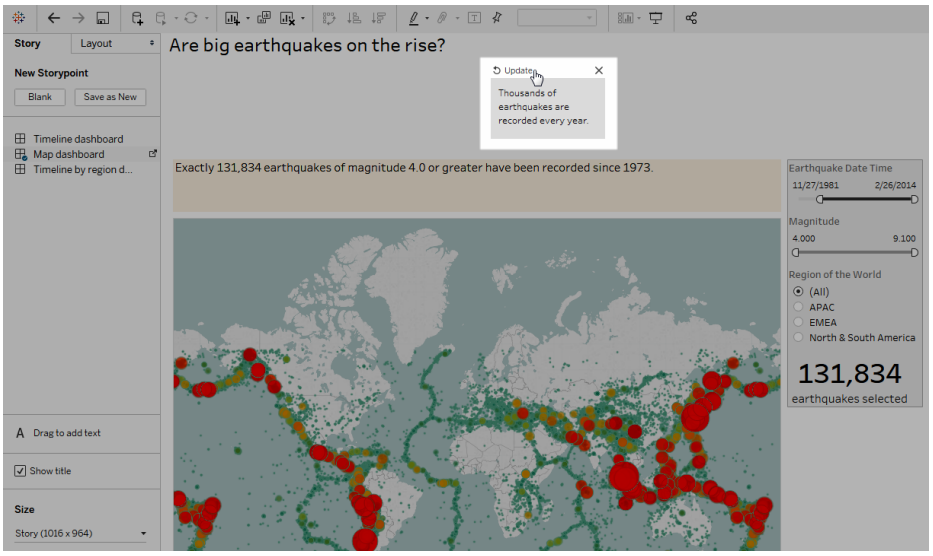


Look at the Earthquake story again. You see that its size has been adjusted and the scroll bars are gone.

3. If you're using Tableau Desktop, add a description for this story point, such as *Exactly 131,834 earthquakes of magnitude 4.0 or greater have been recorded since 1973*.

4. Add caption text by clicking the area that reads **Write the story point description text here**.

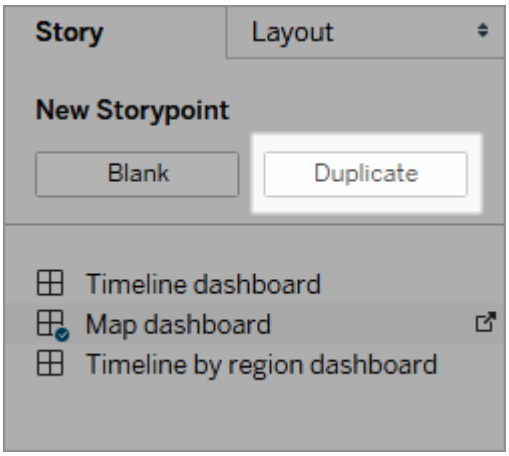
5. Click **Update** on the caption to save your changes to the story point.



drill-down

Use the drill-down technique in order to narrow down the scope of the story and keep the narrative moving.

1. To use your first story point as a baseline for your next, click **Duplicate** under **New Storypoint** on the left.

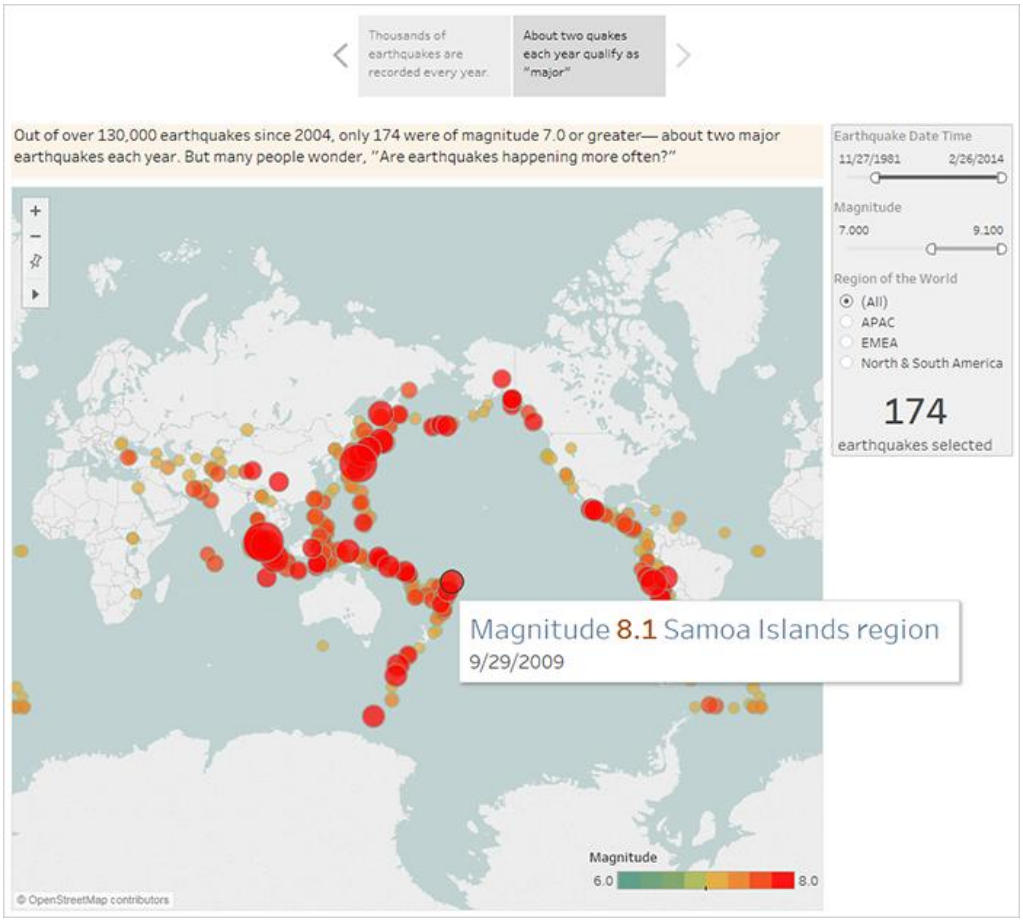


2.Change the **Magnitude** filter to **7.000 – 9.100** so that the map filters out smaller earthquakes.

3.Add a caption, such as *About two quakes each year qualify as "major"*

4.If you're using Tableau Desktop, edit the description to describe what you've done in this story point. For example: *Out of over 130,000 earthquakes since 2004, only 174 were of magnitude 7.0 or greater—about two major earthquakes each year. But many people wonder, "Are earthquakes happening more often?"*

5. Click **Update** in the story toolbar above the caption to save your changes.



In the next story point, you're going to drill down further, narrowing the story's focus so that a specific type of earthquake—the "megaquake"—comes into view.

1. Click **Duplicate** in your second story point to use it as the baseline for your third story point.

2. Change the **Magnitude** filter to **8.000 – 9.100** so that the map filters out everything except the megaquakes.

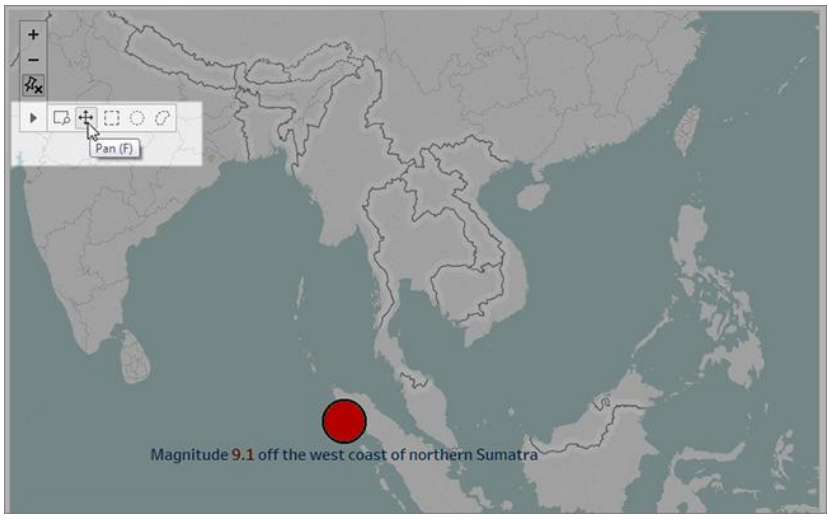
3. Add the caption and description text.
    - Caption: *These megaquakes have drawn a lot of attention*
    - Description (Tableau Desktop only): *Recent megaquakes of magnitude 8.0 and higher have often caused significant damage and loss of life. The undersea megaquakes near Indonesia and Japan also caused tsunamis that have killed many thousands of people.*

4. Click **Update** to save your changes.

Highlight outliers

In the next two story points, you're going to further engage your audience by examining data points at the far end of the scale: the two most deadly earthquakes in recent history.

1. As you've done before, use **Duplicate** to create a new story point as your starting point.
2. Adjust **Magnitude** to **9.000–9.100** and you'll see just two data points.
3. Select one of the marks, such as the Indian Ocean earthquake and tsunami of 2004 that had a magnitude of 9.1.
4. Use the pan tool on the maps menu to center it in your story point.

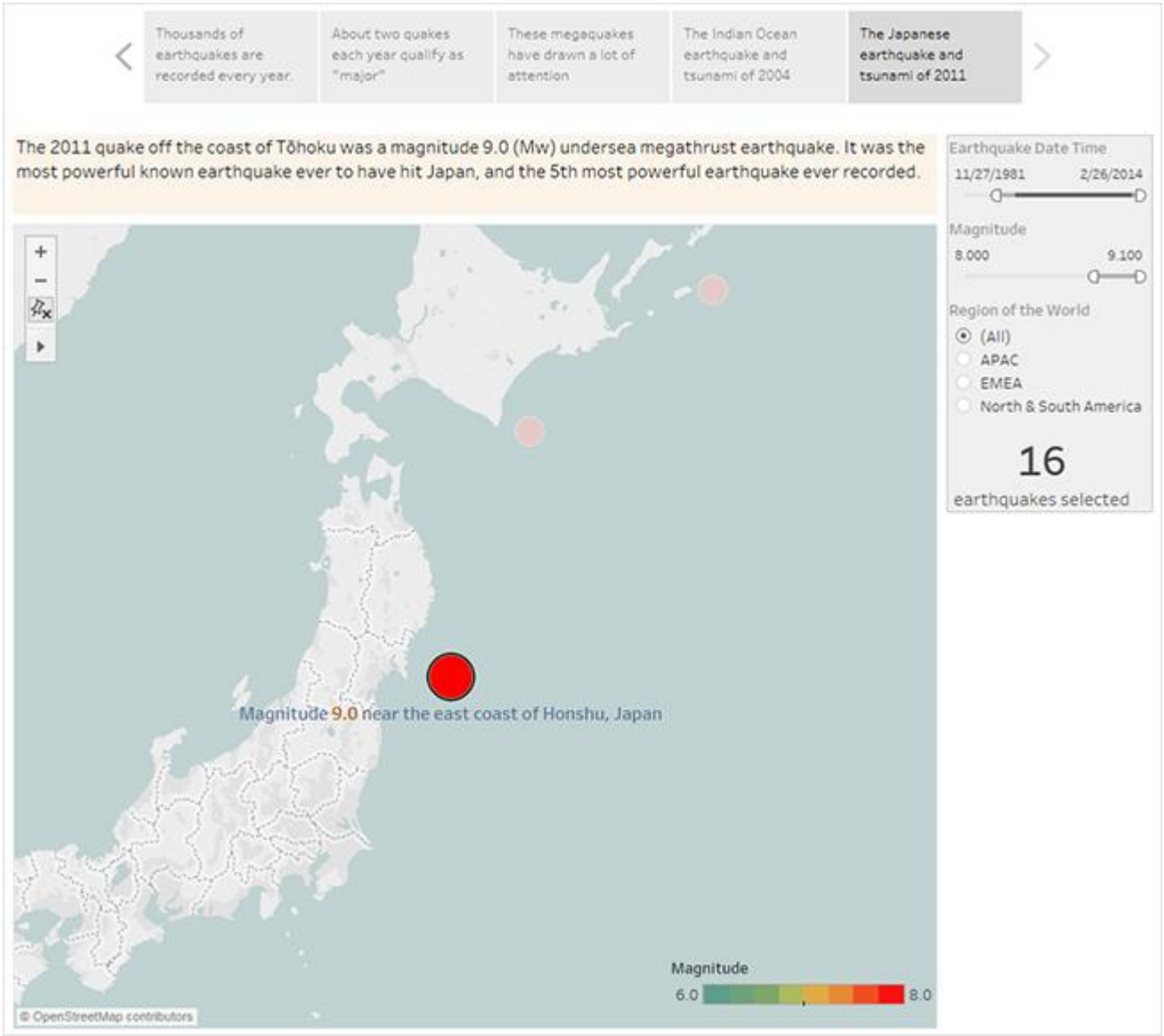


5. Add caption and description text. For example:
    - Caption: *The Indian Ocean earthquake and tsunami of 2004*
    - Description (Tableau Desktop only): *The 2004 Indian Ocean earthquake was an undersea megathrust earthquake that occurred on December 26, 2004. It is the third largest earthquake ever recorded and had the longest duration of faulting ever observed, between 8.3 and 10 minutes.*

6. Click **Update** to save your changes.

7. Repeat the preceding steps for the Japanese earthquake and tsunami of 2011, using the following as caption and description text.
    - Caption: *The Japanese earthquake and tsunami of 2011*
    - Description (Tableau Desktop only): *The 2011 quake off the coast of Tõhoku was a magnitude 9.0 undersea megathrust earthquake. It was the most powerful known earthquake ever to have hit Japan, and the 5th most powerful earthquake ever recorded.*

    Notice that you've already created a compelling visual story using just a single dashboard—all by filtering the data and zooming and panning the map.

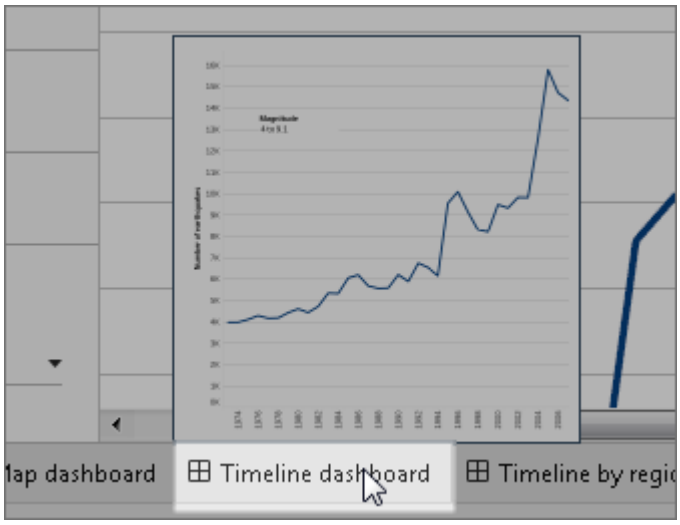


We still haven't answered the key question, however: Are big earthquakes on the rise? The next story points will dig in to that angle.

Show a trend

In the next story point, you'll switch to a line chart (the Timeline dashboard) to show your audience a trend you spotted when you were initially creating views and dashboards.

1. Switch from the story you're building to **Timeline dashboard**.



2. On the Timeline dashboard, set size to **Fit to Earthquake story**.

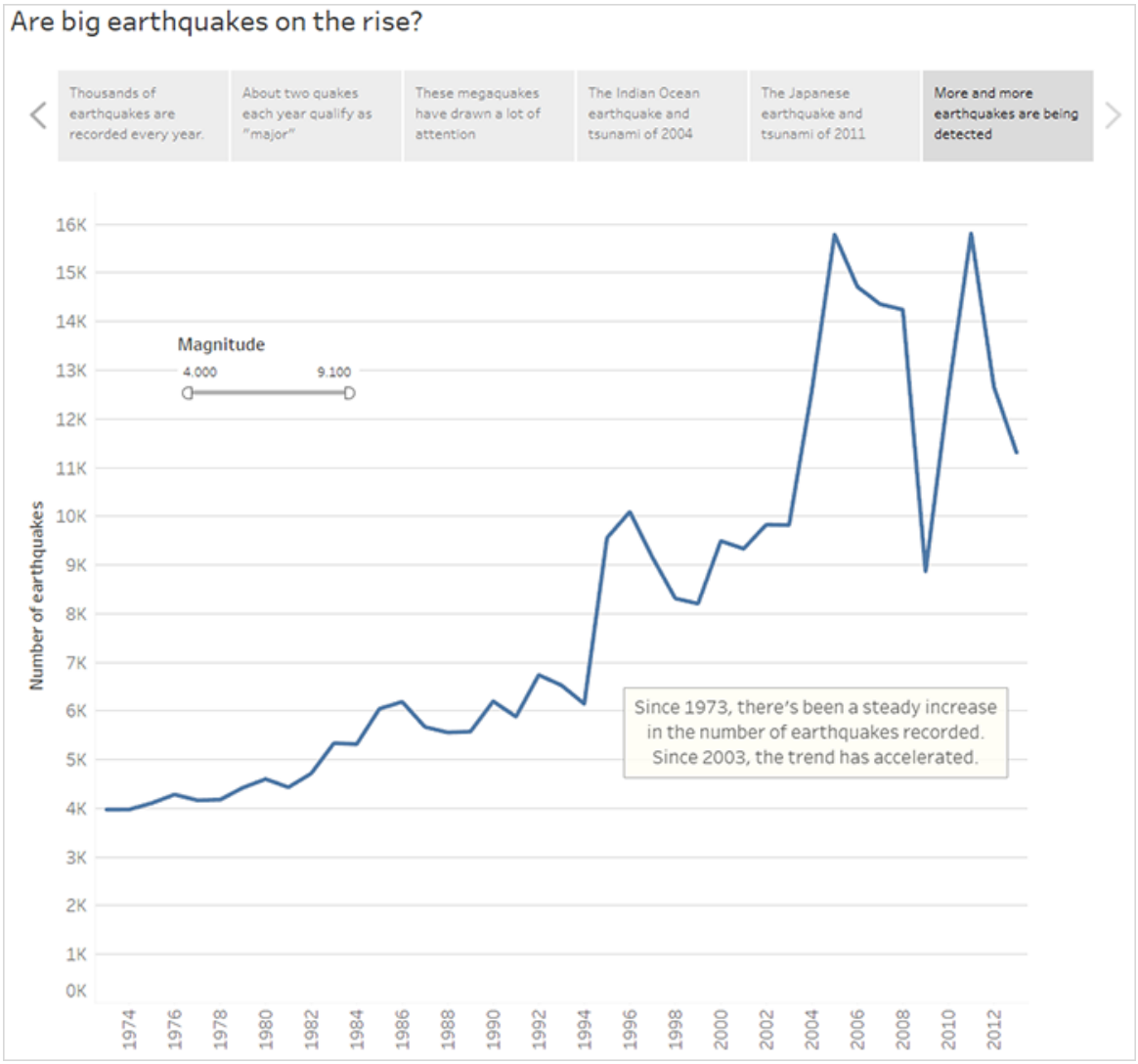
3. Go back to your story and click **Blank** to create a fresh story point.

4. Double-click the **Timeline dashboard** to add it to your story sheet.

   More earthquakes are being reported over time since 1973. In fact, it's increased significantly!

5. Add a caption, such as: *More and more earthquakes are being detected*

6. Use **Drag to add text** to add a description of the trend (Tableau Desktop only): *Since 1973, there's been a steady increase in the number of earthquakes recorded. Since 2003, the trend has accelerated.*



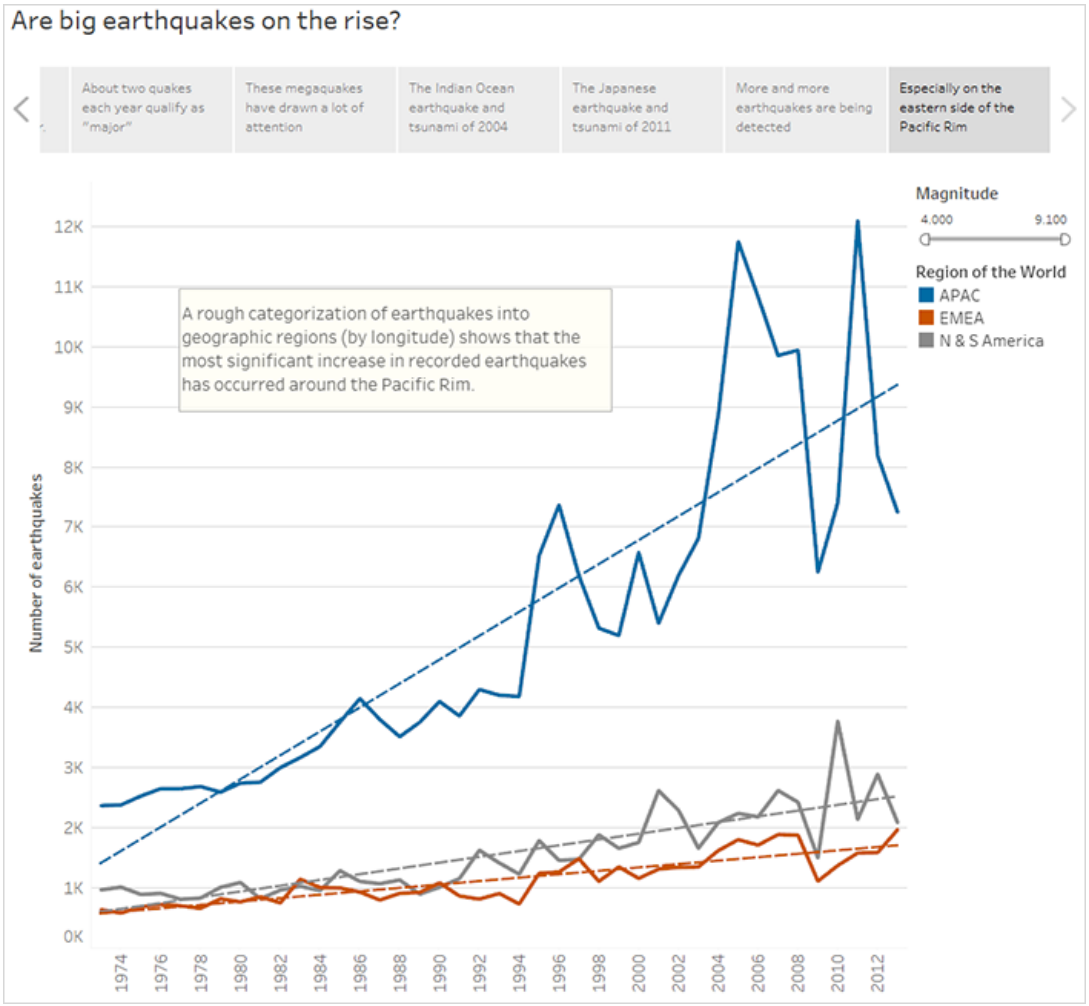
Offer your analysis

From your earlier work in this story with the **Map dashboard** you know that there are regional differences in earthquake frequency. In your next story point, you'll pull in the **Timeline by region dashboard**, which breaks out earthquakes by region, and adds trend lines, which help reduce the variability in the data.

1. Click **Blank** to create a new story sheet.

2. Double-click the **Timeline by region dashboard** to the story sheet. The APAC region clearly stands out.

3. Add a caption then use **Drag to add text** to add a comment that points out the large number of earthquakes in the APAC region.
    - Caption: *Especially on the eastern side of the Pacific Rim*
    - Description (Tableau Desktop only): *A rough categorization of earthquakes into geographic regions (by longitude) shows that the most significant increase in recorded earthquakes has occurred around the Pacific Rim.*



Answer the question

Thus far, your data story has concluded that earthquake frequency in the Pacific Rim has increased since 1973, but your original question was about whether big earthquakes are becoming more frequent.

To answer this question, in your final story point, you'll filter out weaker earthquakes and see what the resulting trend line is.

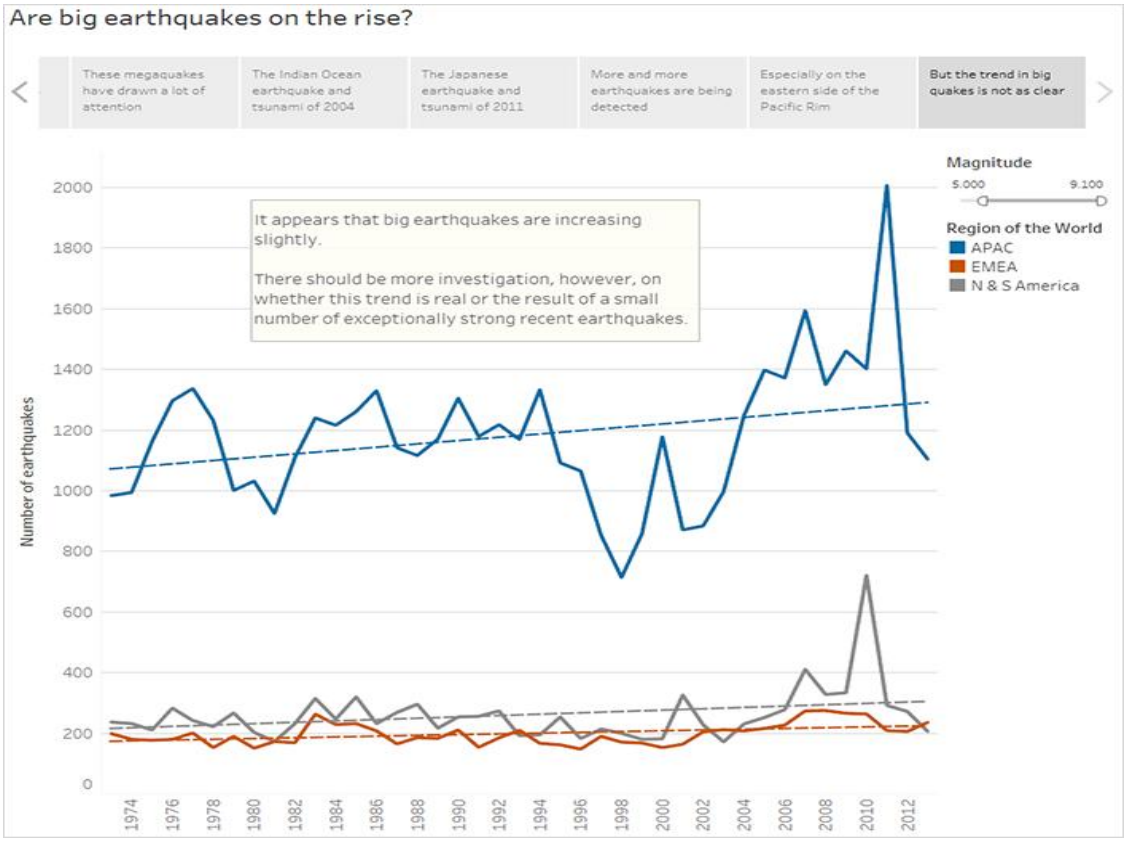
1. Click **Duplicate** to create a new story sheet.

2. Set the **Magnitude** filter to **5.000–9.100**. Notice how the trend lines have flattened out but there's still a slight increase.

3. Add a caption then use **Drag to add text** to add your answer to the story point.

   Caption: *But the trend in big quakes is not as clear*

   Description (Tableau Desktop only): *It appears that big earthquakes are increasing slightly. There should be more investigation, however, on whether this trend is real or the result of a small number of exceptionally strong recent earthquakes.*



RESULT:

Thus the concept of Story board in Tableau is studied and evaluated.