Program 3: Creating a View - formatting charts, adding filters, creating calculated fields and defining parameters.

Step 1: Connect to Data
1. Open Tableau Desktop.2
2. **Connect to Your Data Source**:
   a. Click on Connect on the left sidebar.
   b. Choose your data source by selecting text file and load your vgsales dataset into Tableau.
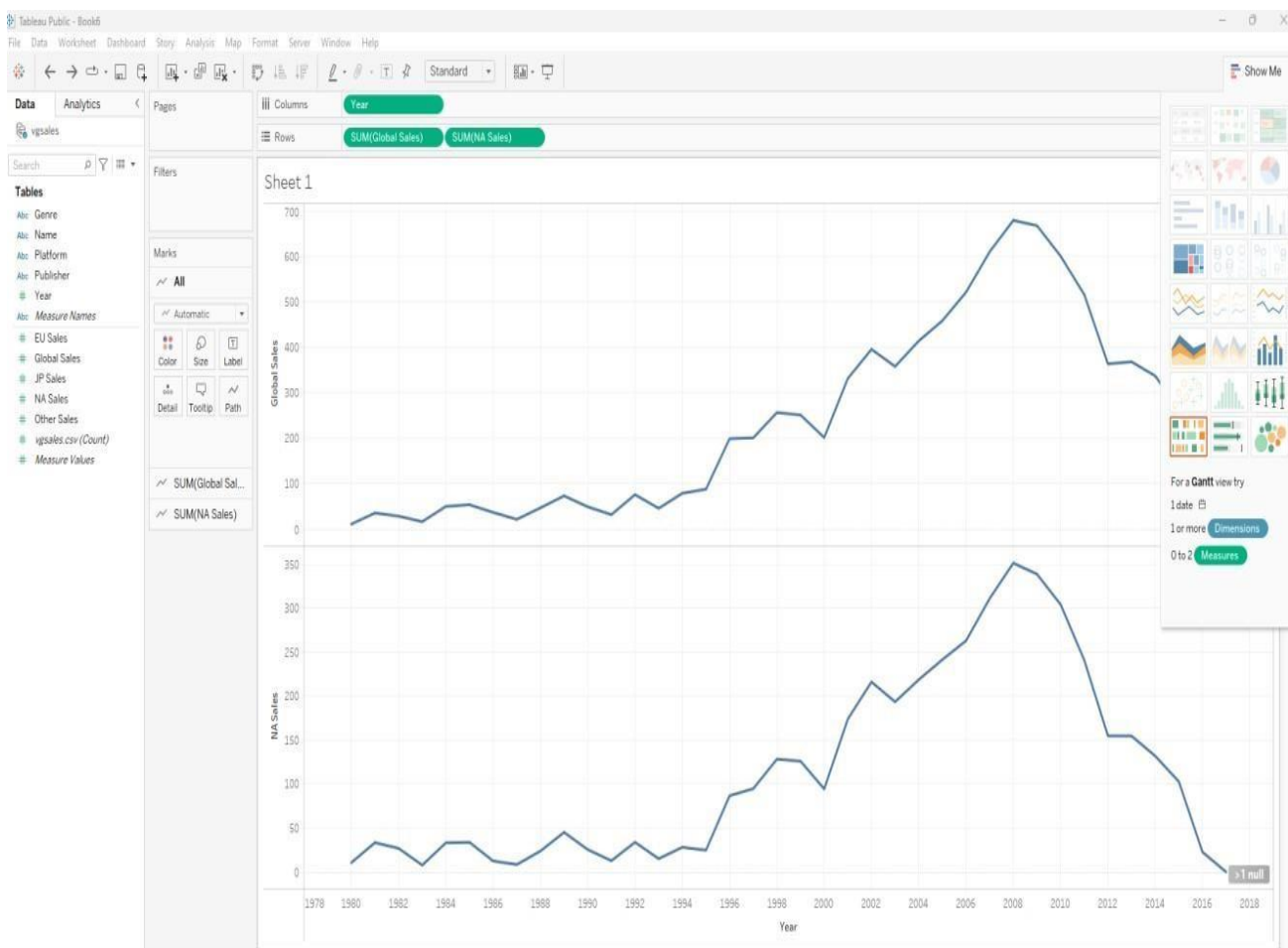
Step 2: Create a Basic Visualization
- **Create a New Worksheet**:

a)Click on the Sheet tab at the bottom of the screen.

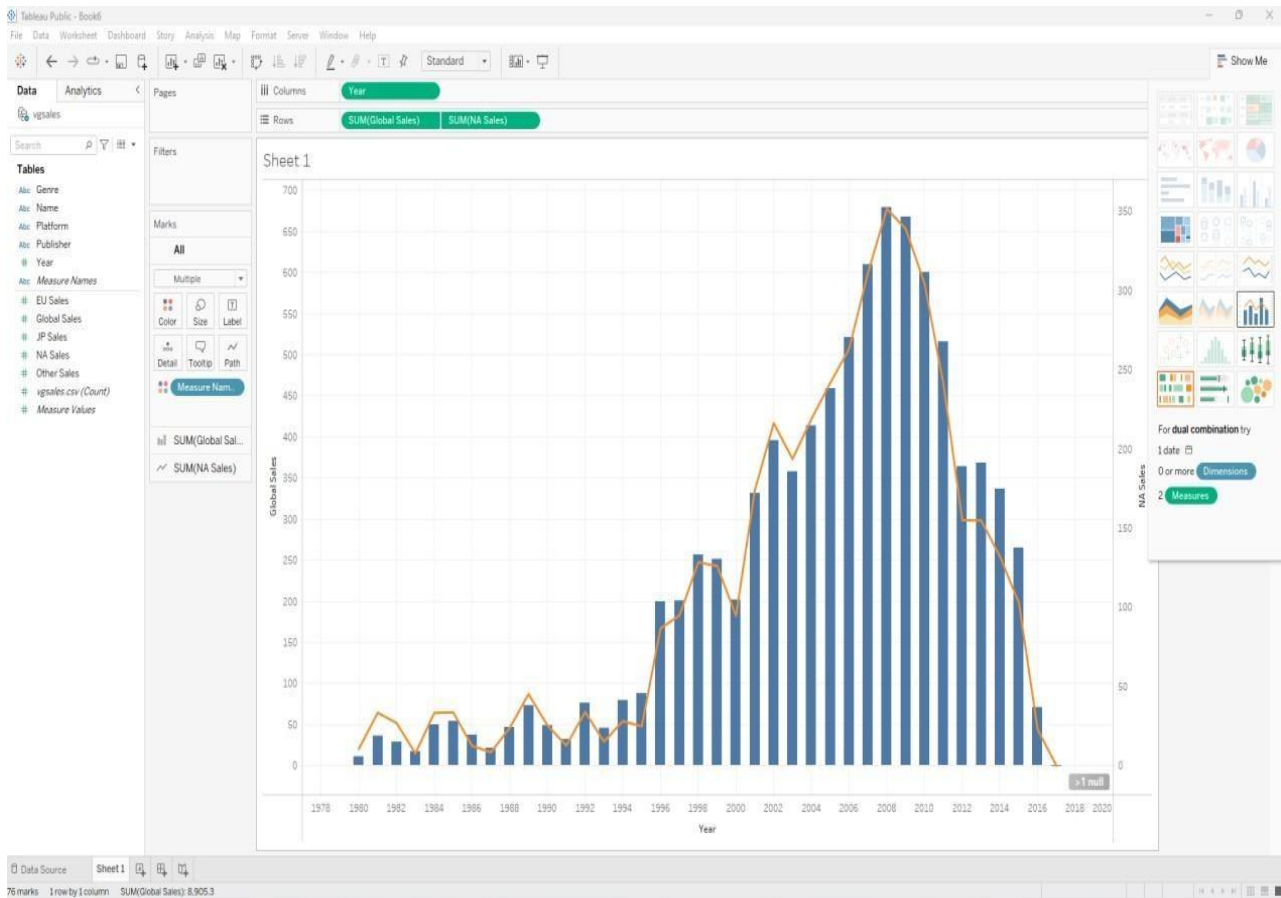- **Drag Fields to Shelves**:
  a) Drag Year to the Columns shelf.
  b) Drag Global Sales to the Rows shelf.
  c) Drag EU Sales to the Rows shelf.

That gives the line graph

2. **Connect to Your Data Source**:

         a) Click on Connect on the left sidebar.

Step 3: Format the Chart

- **Format Axes**:

a) Right-click on the Global Sales axis and select Format.

b) In the Format pane, adjust the font style & size as needed.

- Add Titles and Annotations:

    a) Click on the chart title area and enter a descriptive title - Global Sales by Year.

    b) Add annotations if needed to highlight specific data points – Right click the on the chart which you want to highlight - Select Annotate - Select Mark - Press Ok.

Step 4: Add Filters

Add a Filter for Year:Drag Year to the Filters shelf. Choose the range of years you want to display (e.g., 2000-2016).
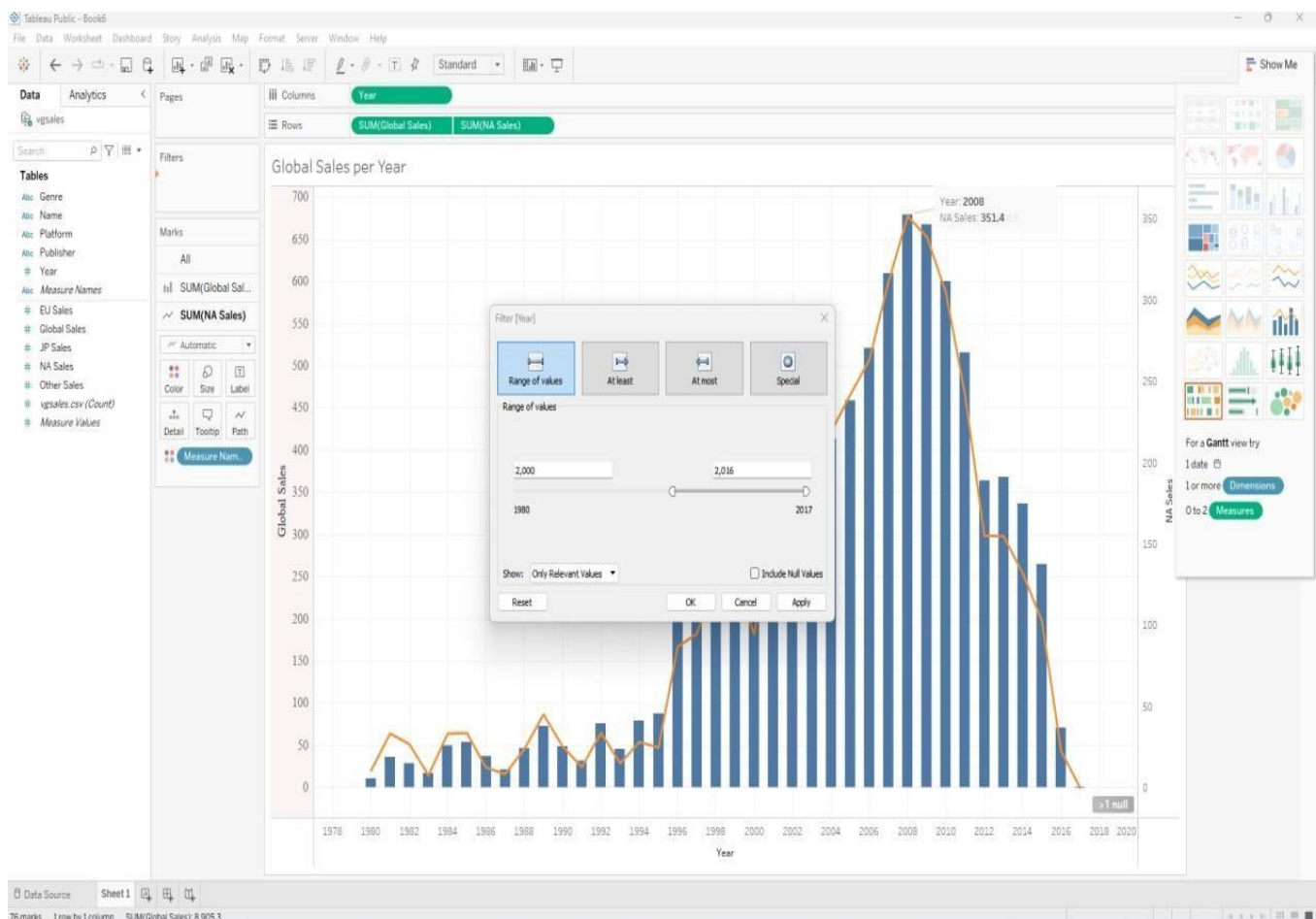
Step 5: Create Calculated Fields

Create a Calculated Field for Sales Category:

a) Right-click on Global Sales - Select Create - Calculated Field.

b) Give name to your calculations as Global Sales - EU Sales

c) Do calculations as per your need - [Global Sales] - [EU Sales]

d) Press Ok

Add Calculated Fields to Visualization:

a) Drag Global Sales-EU Sales to the Rows shelf to show Global Sales over Yearwith GlobalSales-EU Sales over Year.

Step 6: Create a Parameter:

Name: "Select Genre"

- **Data Type**: String
- **Values**: List (e.g., "Action", "Adventure", "Shooter") or Add values from Genre.
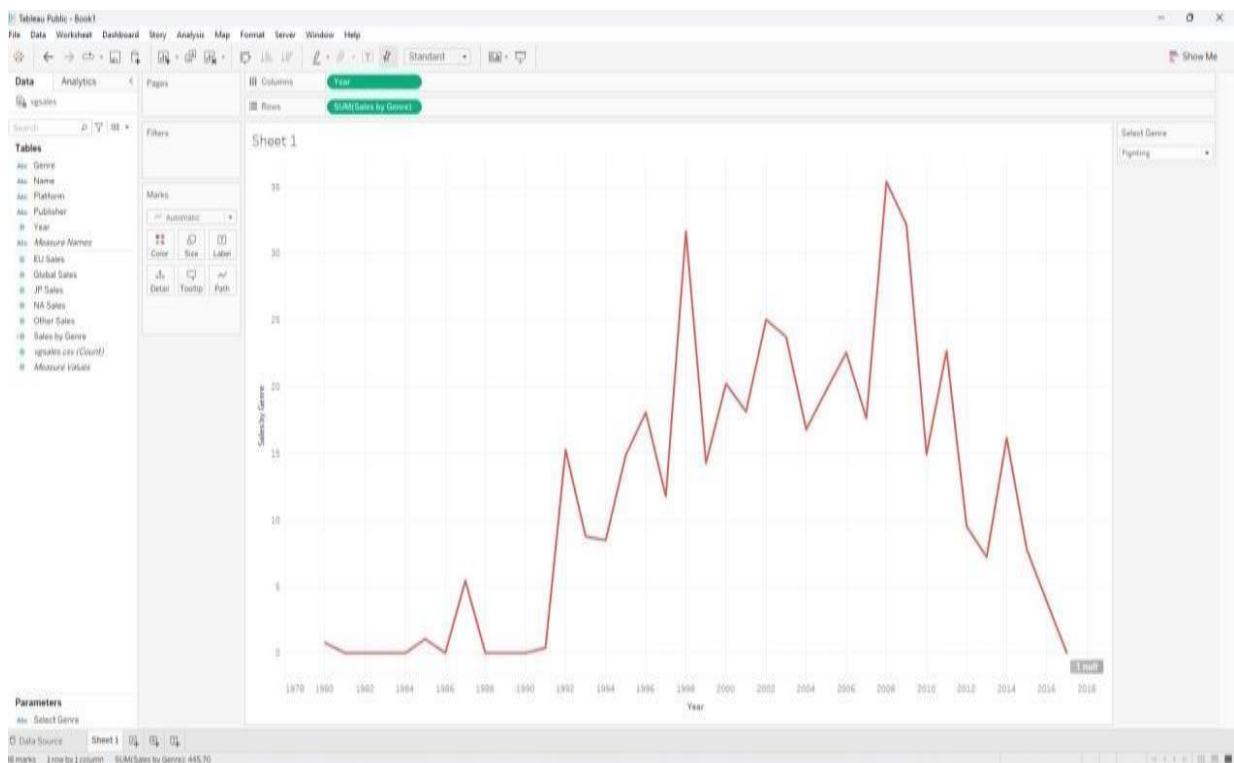
Create a Calculated Field:

- **Name**: "Sales by Genre"
- Formula:
- IF [Genre] = [Select Genre] THEN [Global Sales]
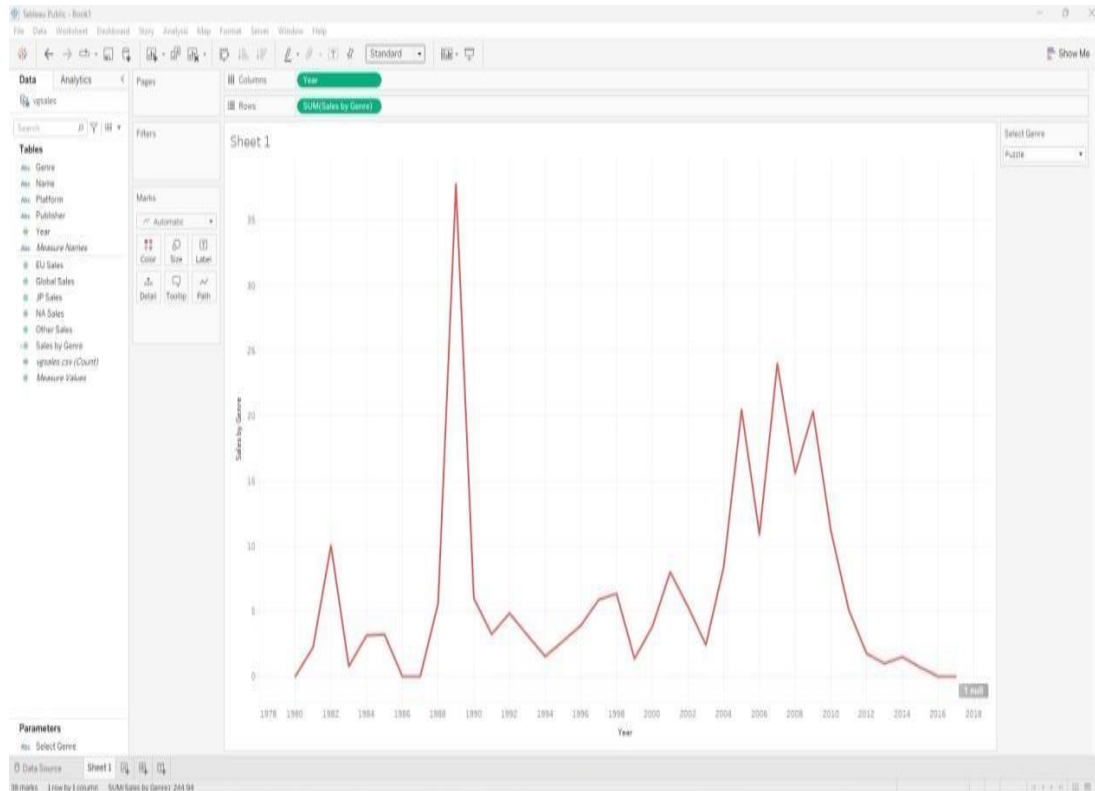 ELSE 0 END

Build the Visualization:

- **Columns**: Drag "Year".
- **Rows**: Drag "Sales by Genre".

At the right side of your sheet you can select required Genre andcan see different

- Visualization Visualization by Genre: Fighting

Visualization by Genre: Puzzle

Example 2: Calculated Field

For example, your data source might contain fields with values for Sales and Profit, but not for Profit Ratio. If this is the case, you can create a calculated field for Profit Ratio using data from the Sales and Profit fields.

Step 1: Create the calculated field

1. In a worksheet in Tableau, select **Analysis** > **Create Calculated Field**.

2. In the Calculation Editor that opens, give the calculated field a name. In this example, the calculated field is called **Profit Ratio (Sample – Superstore** dataset**)**

Step 2: Enter a formula
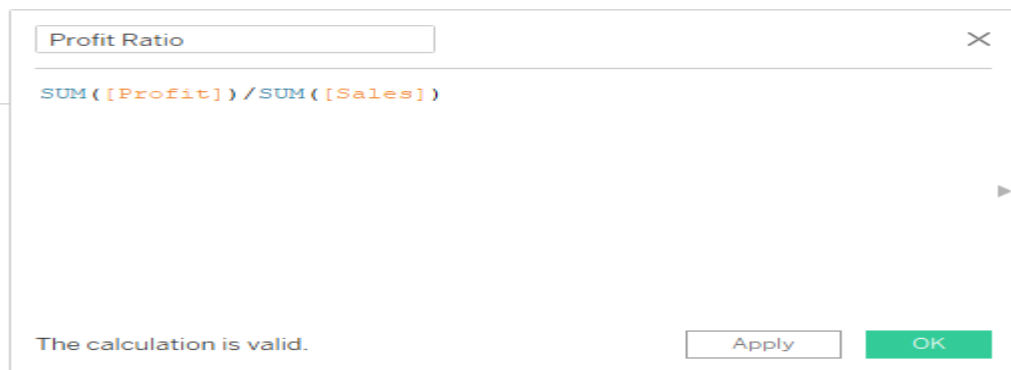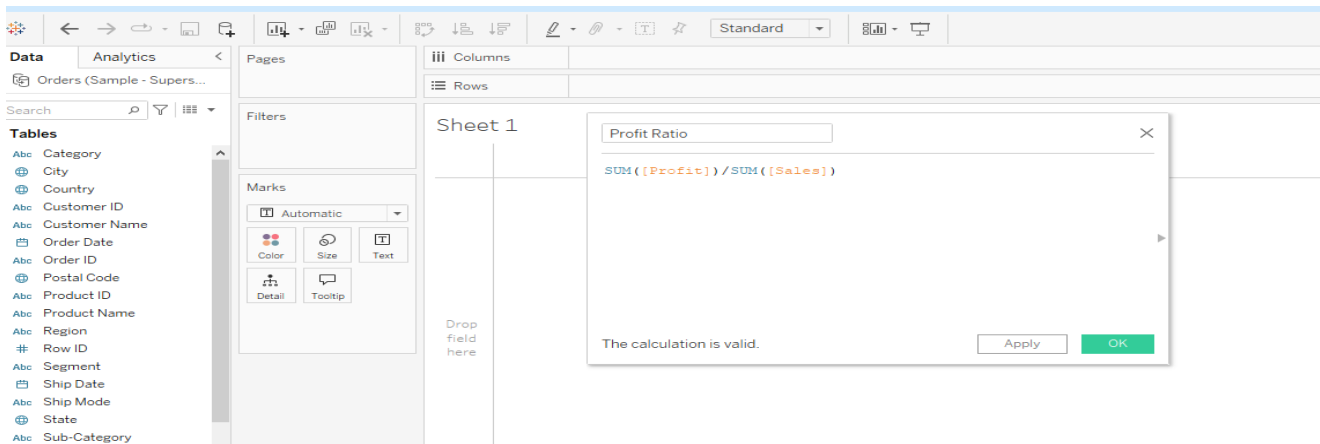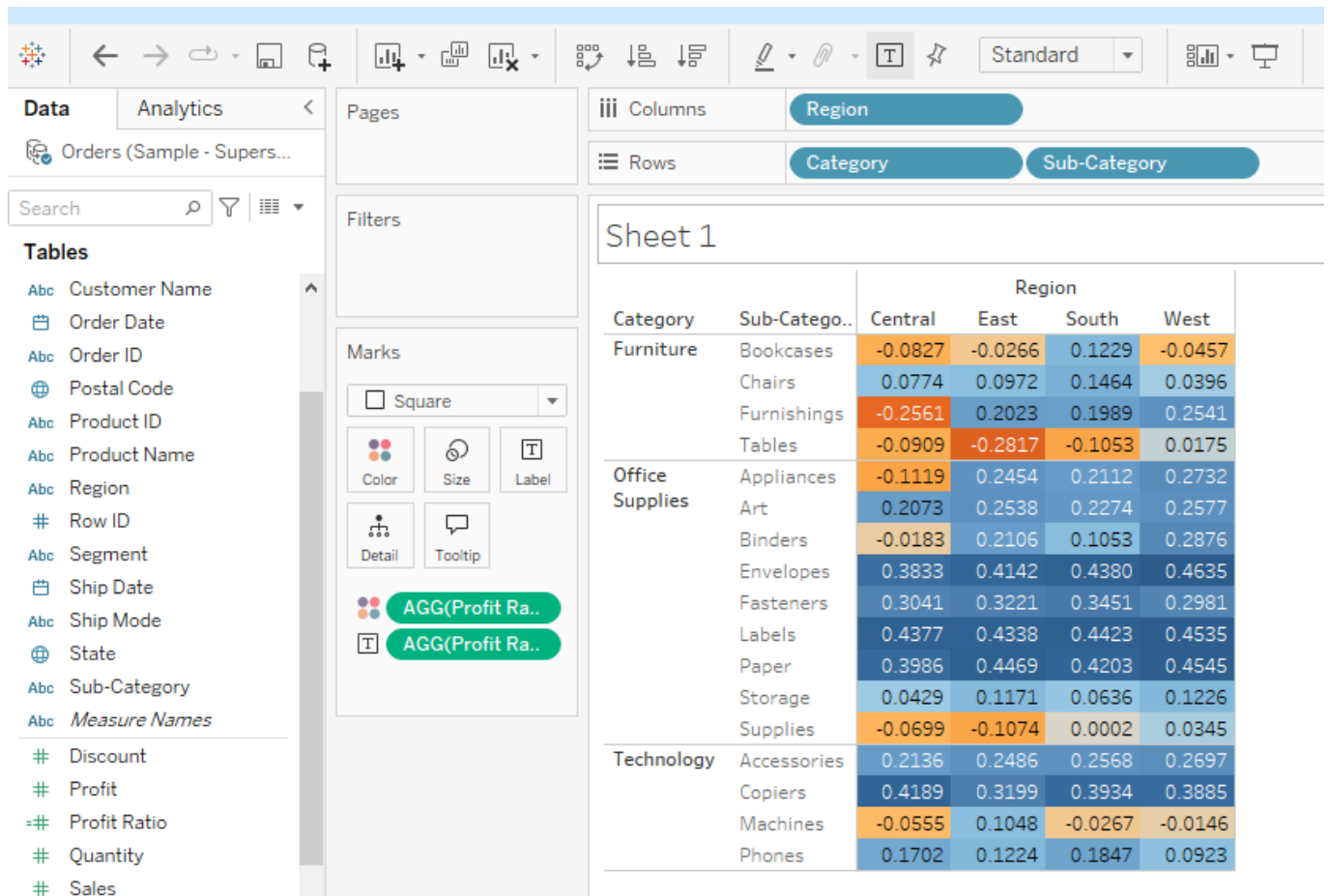
1. In the Calculation Editor, enter the following formula:

    SUM([Profit])/SUM([Sales])

2. When finished, click OK. The new calculated field is added to the Data pane with an = in front of the data type icon to indicate it's a calculated field.

You are now ready to use the calculated field in the view.

Create Calculated Field:

Data	Analytics	<
Orders (Sample - Supers...		

Tables

Abc Customer Name
📅 Order Date
Abc Order ID
🌐 Postal Code
Abc Product ID
Abc Product Name
Abc Region
Row ID
Abc Segment
📅 Ship Date
Abc Ship Mode
🌐 State
Abc Sub-Category
Abc *Measure Names*
Discount
Profit
≕# Profit Ratio
Quantity
Sales

Pages

Filters

Marks

☐ Square ▾

Color | Size | Label
Detail | Tooltip

AGG(Profit Ra..
AGG(Profit Ra..

Columns | Region
Rows | Category | Sub-Category

Sheet 1

|		Region			
Category	Sub-Catego..	Central	East	South	West
Furniture	Bookcases	-0.0827	-0.0266	0.1229	-0.0457
	Chairs	0.0774	0.0972	0.1464	0.0396
	Furnishings	-0.2561	0.2023	0.1989	0.2541
	Tables	-0.0909	-0.2817	-0.1053	0.0175
Office Supplies	Appliances	-0.1119	0.2454	0.2112	0.2732
	Art	0.2073	0.2538	0.2274	0.2577
	Binders	-0.0183	0.2106	0.1053	0.2876
	Envelopes	0.3833	0.4142	0.4380	0.4635
	Fasteners	0.3041	0.3221	0.3451	0.2981
	Labels	0.4377	0.4338	0.4423	0.4535
	Paper	0.3986	0.4469	0.4203	0.4545
	Storage	0.0429	0.1171	0.0636	0.1226
	Supplies	-0.0699	-0.1074	0.0002	0.0345
Technology	Accessories	0.2136	0.2486	0.2568	0.2697
	Copiers	0.4189	0.3199	0.3934	0.3885
	Machines	-0.0555	0.1048	-0.0267	-0.0146
	Phones	0.1702	0.1224	0.1847	0.0923

Drag Profit Ratio to Color and select Square.
Drag Profit Ratio to Label and right click select format, the following window appears.
 Default: Numbers drop down : Select Percentage: Decimal place to 0.
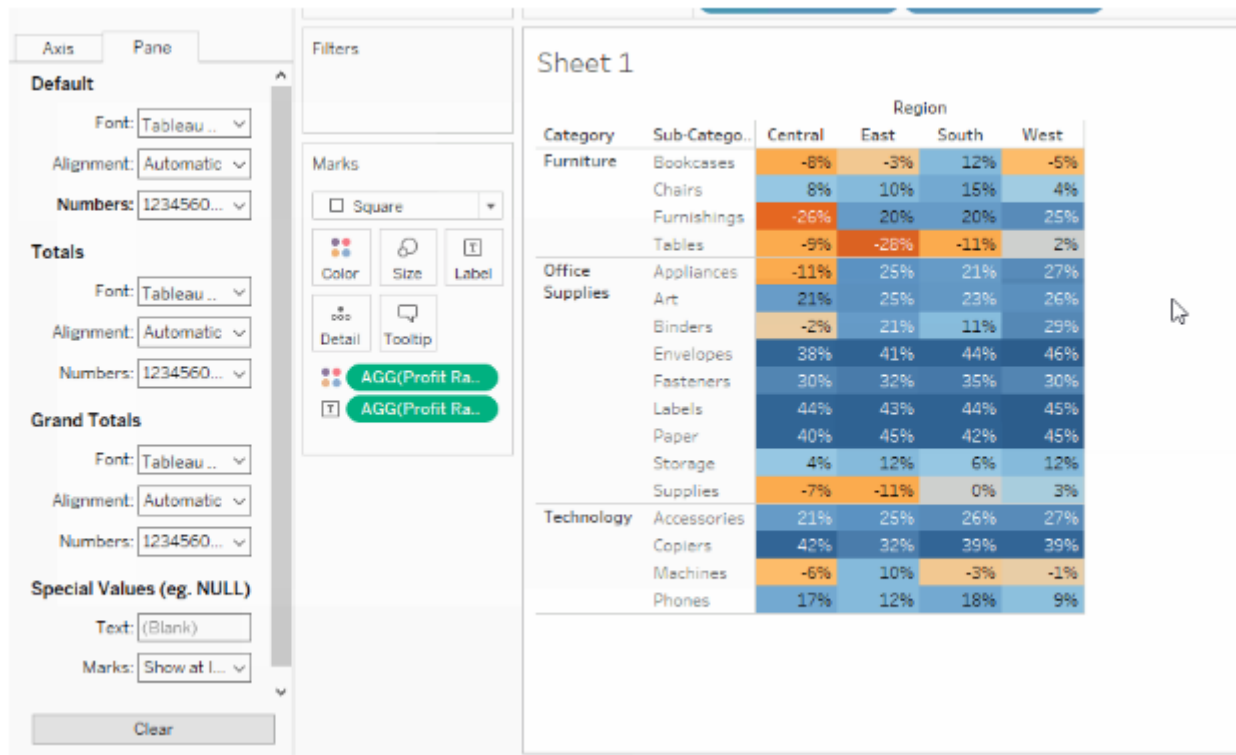
Note: https://help.tableau.com/current/pro/desktop/en-us/functions_operators.htm

Example 2: Add a Parameter to a Map View

This example uses the World Indicators sample data source to demonstrate the following:

- How to build a map view that shows the birth rate for each country in the world.
- How to create a calculated field that distinguishes countries/regions with a low birth rate from those with a high birth rate.
- How to create and display a parameter so that users can set the threshold for low vs. high birth rate.

Build a map view

1. In the **Data** pane, double-click **Latitude** and then **Longitude**.

   Tableau puts **Longitude** on **Columns**, **Latitude** on **Rows**, and displays a map of the world.

2. Drag the **Year** dimension to **Filters**.

3. In the Filter Field [Year] dialog box, choose **Years** and then click **Next**:

4. In the Filter [Year of Year] dialog box, select 2012 and then click OK:

5. Drag the Country dimension to Detail.

6. Set the Marks type to Map:
7. Drag the Birth Rate measure to Label.

You now have a map that shows birth rates for countries/regions around the world:
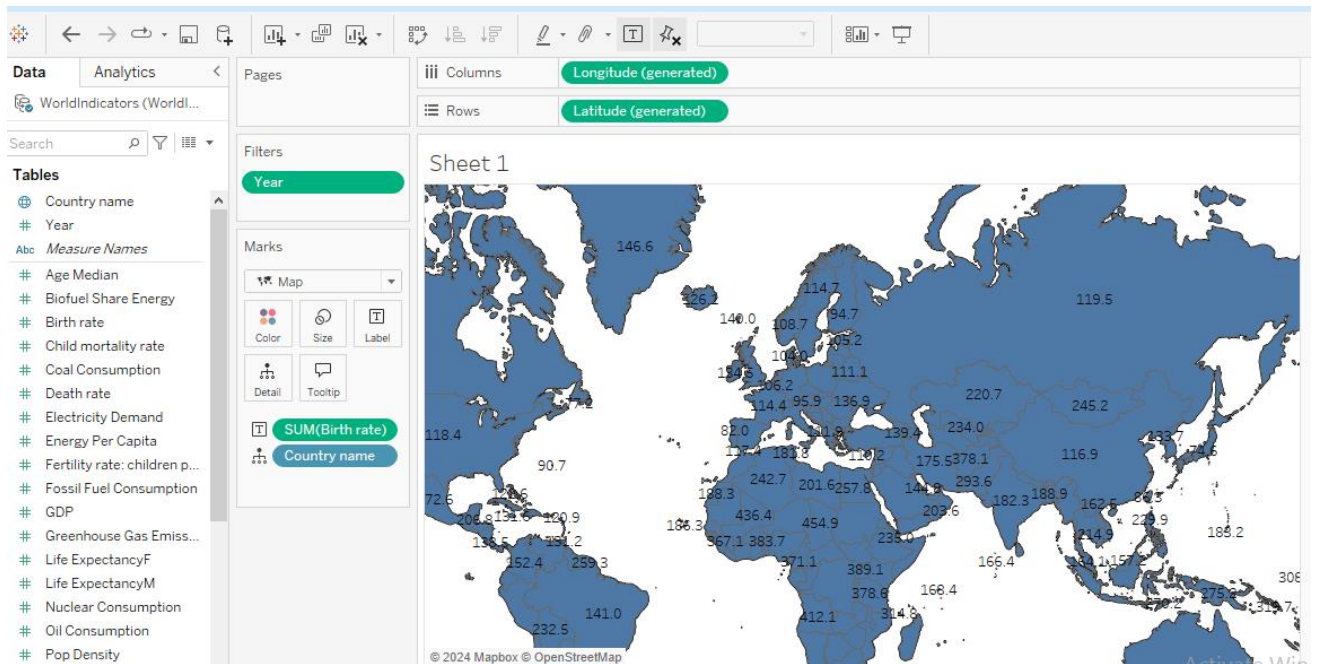
You can zoom the map or hover to see a tooltip for any country.

Create a calculated field to set a threshold

Next, you'll distinguish a low birth rate from a high birth rate.

1. From the top menu, select **Analysis** > **Create Calculated Field**.

2. Name the field High Birth Rate and type or paste this calculation in the formula field:

    IF ([Birth Rate]) >= 0.014 THEN "High" ELSE "Low" END

    The value 0.014 is equivalent to 1.4%. The range of actual values that we can see on the map range from below 1% up to nearly 5%.

    When you click **OK** to apply and save this calculation, Tableau categorizes it as a dimension.

3. Drag **High Birth Rate** to **Color**.

    The map now shows low birth rate countries/regions in one color and high birth rate countries/regions in another:
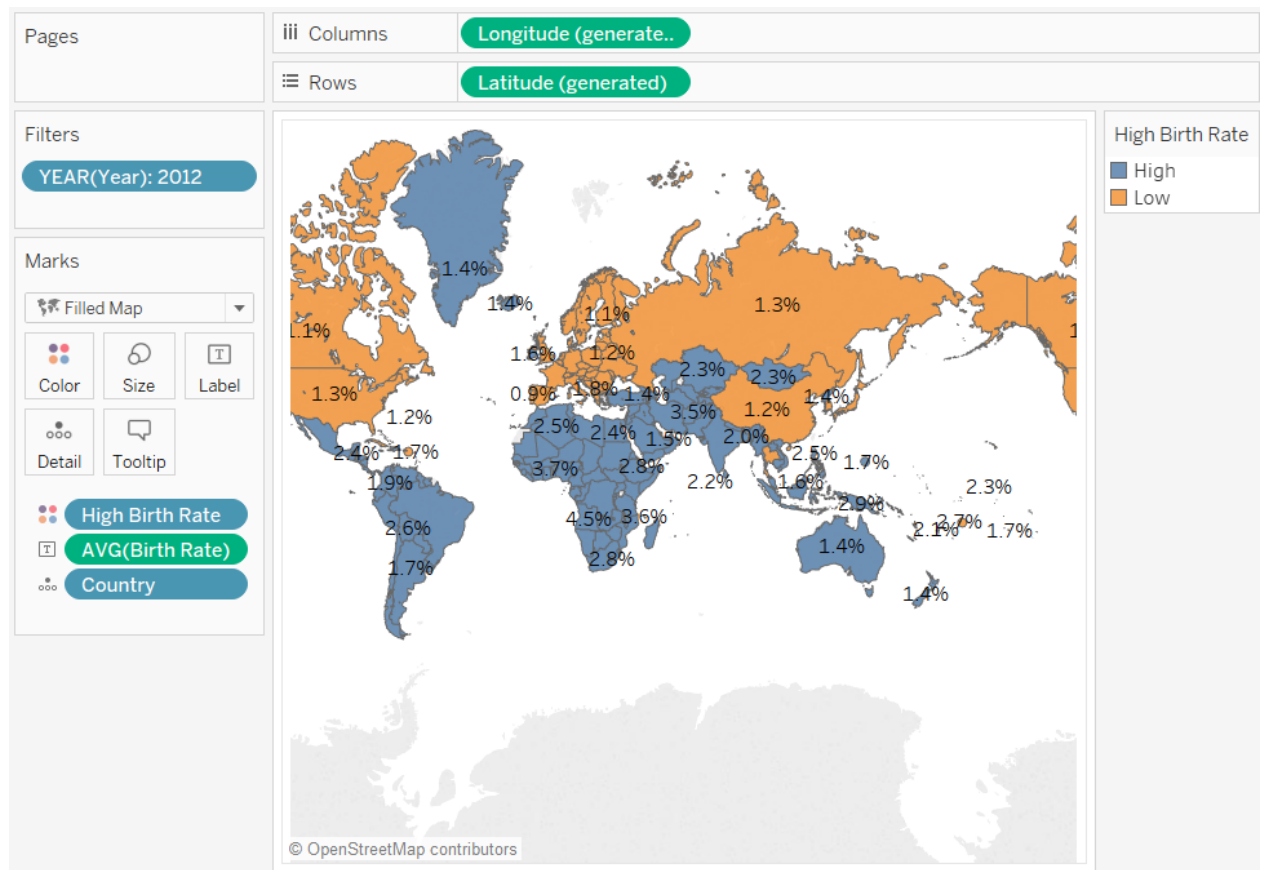
Create a parameter

1. Right-click (control-click on a Mac) in the **Data** pane and select **Create** > **Parameter**.
2. In the Create Parameter dialog box, name the new parameter Set Birth Rate and configure it as shown:

Because the **Data Type** is **Float**, the parameter control, when you display it in the next procedure, will be in the form of a slider. This is because floating point values are continuous—there are an infinite number of possible values.

The **Current value** sets the default for the parameter: 0.019 is 1.9%. The **Range of values** section sets the minimum and the maximum values and the step size—that is, the least amount by which the value can change.

3. Click **OK**

Create and display the parameter control

Now you must connect the parameter to the **High Birth Rate** field.

1. Right-click **High Birth Rate** in the **Data** pane and select **Edit**.

2. Replace the hard-coded 0.014 value in the field definition with the parameter name:

    ```
    IF ([Birth Rate]) >= [Set Birth Rate] THEN "High" ELSE "Low" END
    ```

    Then click OK.

3. Right-click the **Set Birth Rate** parameter in the **Data** pane and select **Show Parameter Control**.

By default, the parameter control is shown on the right. Now you and users of your view can raise or lower this value incrementally to see how changing the definition of "high birth rate" affects the map.