Creating and Using Different Types of Calculations: Numeric Calculations

Numeric calculations are used when performing mathematical/arithmetic functions on numeric data in order to return a numeric output. The Number functions supported by Tableau at this point in time (that is, in version 2020.1) are as follows:

- **Basic math functions** such as the ABS function, which is used to return the absolute value of the number; the ROUND function, which is used to round the number to the specified number of decimal places; SQRT, which is used to return the square root of a number; and the ZN function, which returns zero if there are null values, or returns the value itself otherwise.

- **Trigonometric functions** such as **ASIN, ACOS, ATAN, SIN, COS, TAN,** and others.

- **Angular functions** such as **DEGREES** and **RADIANS**.

- **Mapping functions** such as **HEXBINX** and **HEXBINY**.

- **Logarithmic functions** such as **LN** and **LOG**.

- **Exponential and Power functions** such as EXP and POWER, and others.

when selecting any of these functions, you will see the syntax of that function, an explanation of the purpose of that function, along with an example. Further, with these numeric functions, as well as the arithmetic operators above, you can create some immensely powerful and useful calculations.

Exercise 7.02: Creating a Numeric Calculation

The objective of this exercise is to create a numeric calculation to find the average order value of each sub-category. You will continue with the **Orders data** from the *Sample-Superstore.xlsx* file and, using the **Sales** field and the previously created **Count of Orders** field, create a new calculated field called **Average Order Value (AOV)** for each **Sub-Category** and display it in a bar chart.

1. First, drag your **Sub-Category** field and drop it in the **Rows** shelf. Next, drag the Sales and the **Count of Orders** field into the **Columns** shelf. Now enable the labels for your bar charts by clicking on **Show Marks Label** in the toolbar. See the following screenshot:

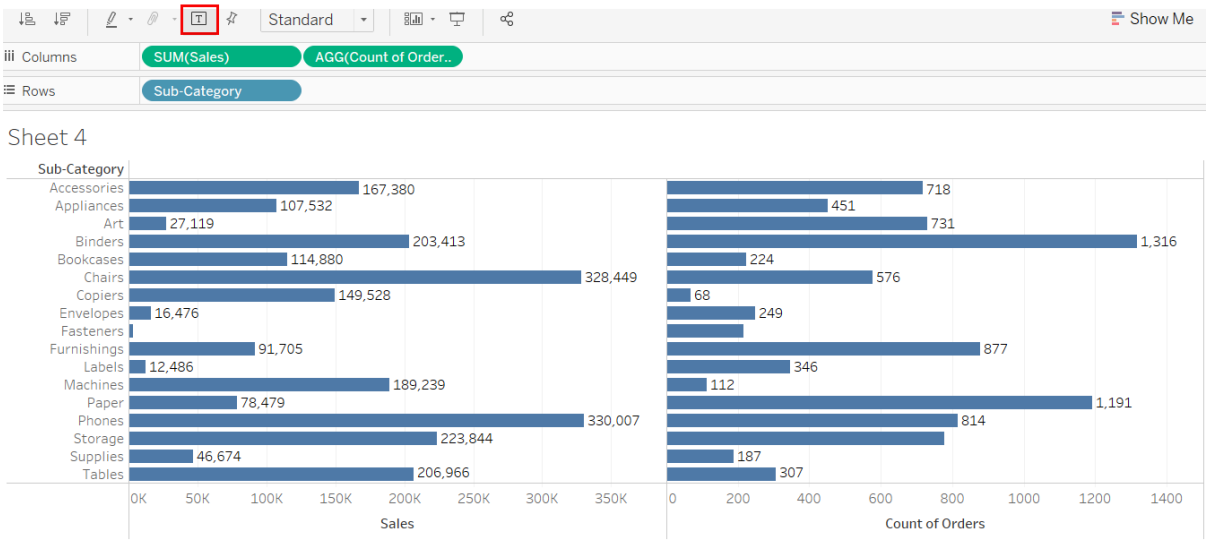

Figure 1: A screenshot showing a bar chart with Sales and Count of Orders across sub-categories

2. Create a calculated field called **Average Order Value (AOV)** with the following formula:

```
SUM([Sales])/[Count of Orders]
```

You should see the following on your screen:

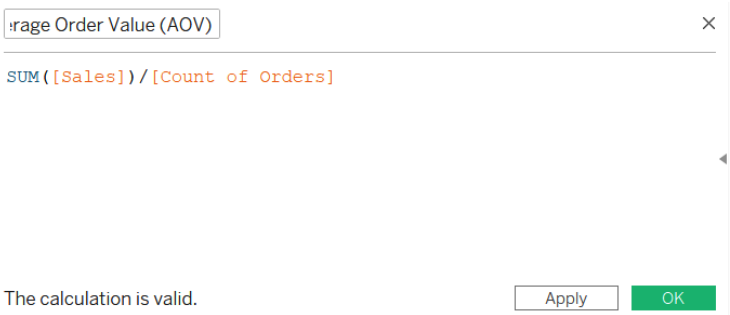

Figure 2: A screenshot showing the formula for the Average Order Value (AOV) calculation

3. Drag and drop the **Average Order Value (AOV)** next to the **Count of Orders** field in the **Columns** shelf. Refer to the following screenshot:

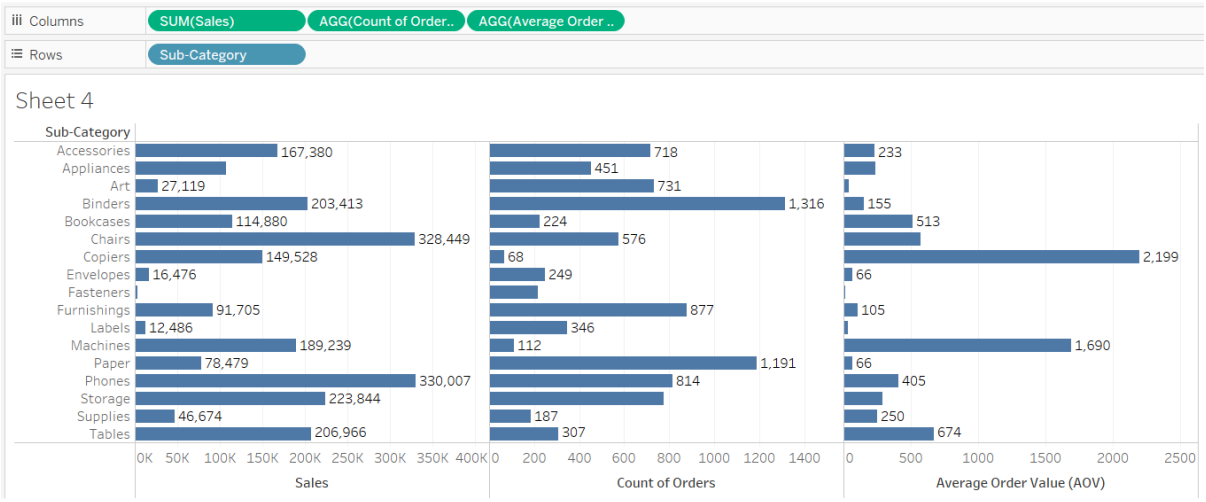

Figure 3: A screenshot showing the bar chart with the Average Order Value (AOV) calculation

As you can see in *Figure 3*, the **Copiers** sub-category has the **highest average order value** followed by **Machines**.

Note that the prefix for **Average Order Value (AOV)** is **AGG**, which stands for **Aggregate**. This is Tableau's way of telling you that the calculation is pre-aggregated by the user (since you are using **SUM()** for sales and the count of orders field is using the **COUNTD()** function).