COS80025 Data Visualisation

Week 2 Lab tasks

ILO	Create interactive data visualisations using real-world data sets.
Aim	Use Tableau to create: A text table Highlighted text table Heat map Bar chart Stacked bar chart
Resources	Books: Communicating Data with Tableau – Ben Jones (O'Reilly) Tableau Cookbook – Recipe for Data Visualisation – Shweta Sankhe-Savale (Packt)
Requirements for submission to be marked as complete	Submit working Tableau workbook that meets the requirements specified in the document below
Submission	Submit to Canvas • Screenshot of visualisation • Tableau workbook

Note: This Task Guide is not meant to be fully explanatory. You are expected to do an extensive self-study to complete and create the visualisations designated as lab tasks. The textbooks referenced above are good resources to refer to; they provide further explanations on creating visualisations in Tableau.

Task 1: Visualising Sales per Sub Category per Region as a Text Table

Text tables represents data as numbers. They are also known as Crosstab views (similar to Excel pivot table) and are used to show numbers at a glance. Using the same *Sample-superstore* dataset, we will create a text table view that shows the sales for different product categories across different regions.

1. Connect to the data source - *Sample-superstore* dataset
2. Create a new worksheet (1) in Figure 1 ,then double click on the **Sheet 2** to rename it as **Text table**.

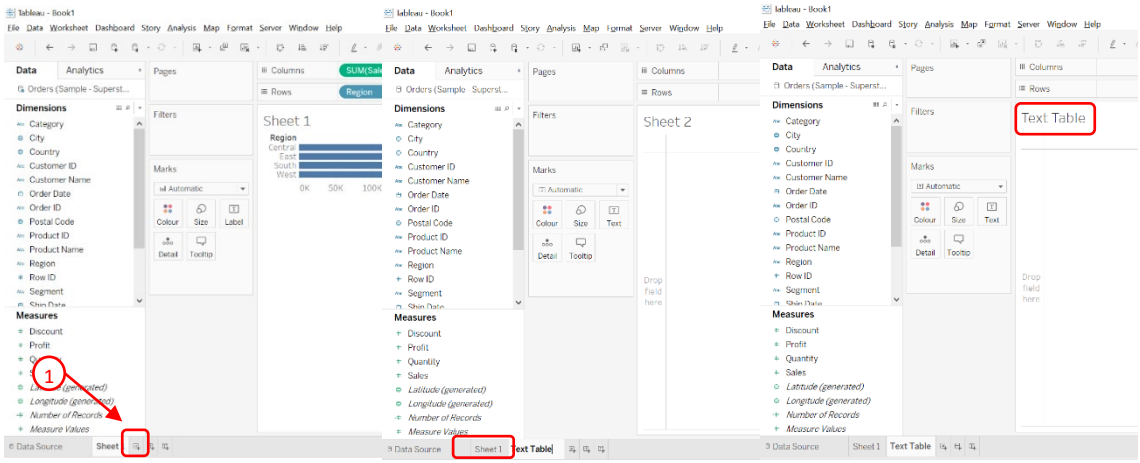
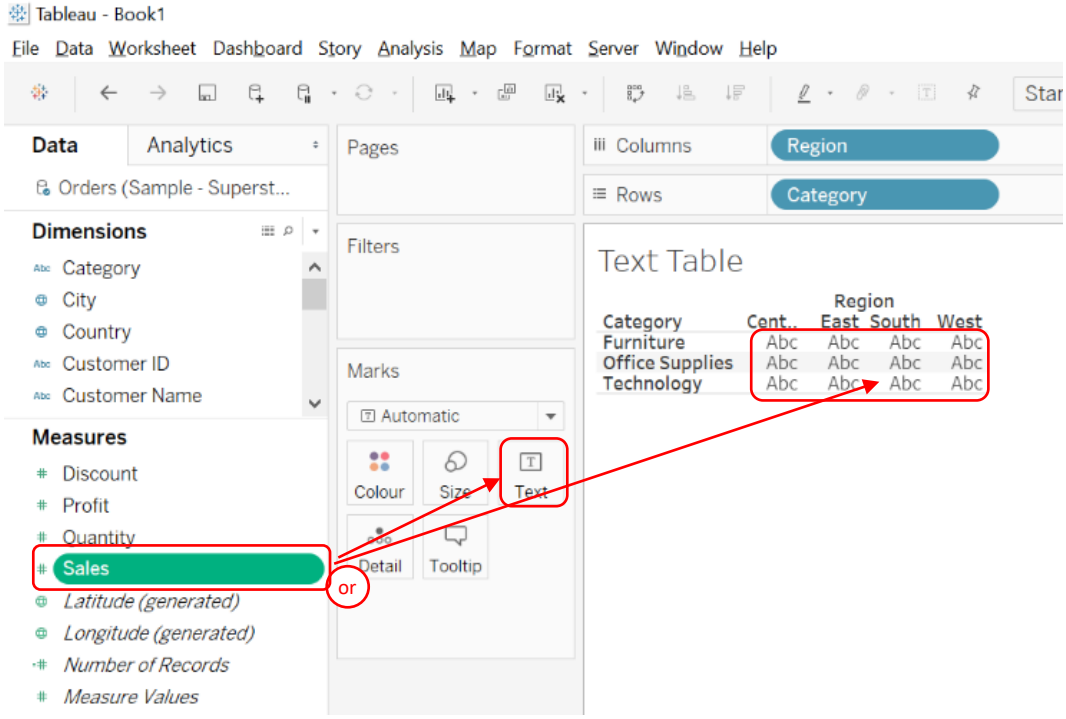


Figure 1: Creating a Blank Sheet

3. Drag the **Category** field from the **Dimensions** pane and drop it into the **Rows** shelf.
4. Drag the **Region** field from the **Dimensions** pane and drop it into the **Columns** shelf.
5. Drag the **Sales** field from the **Measures** pane and either drop it into the **Text shelf** in the **Marks** card, or into **Abc** in the view. Refer to Figure 2.



Figiure 2: Creating the Row and Column of the Text Table

6. Drop **Sales** into the **Text** shelf to see the view shown in Figure 3.

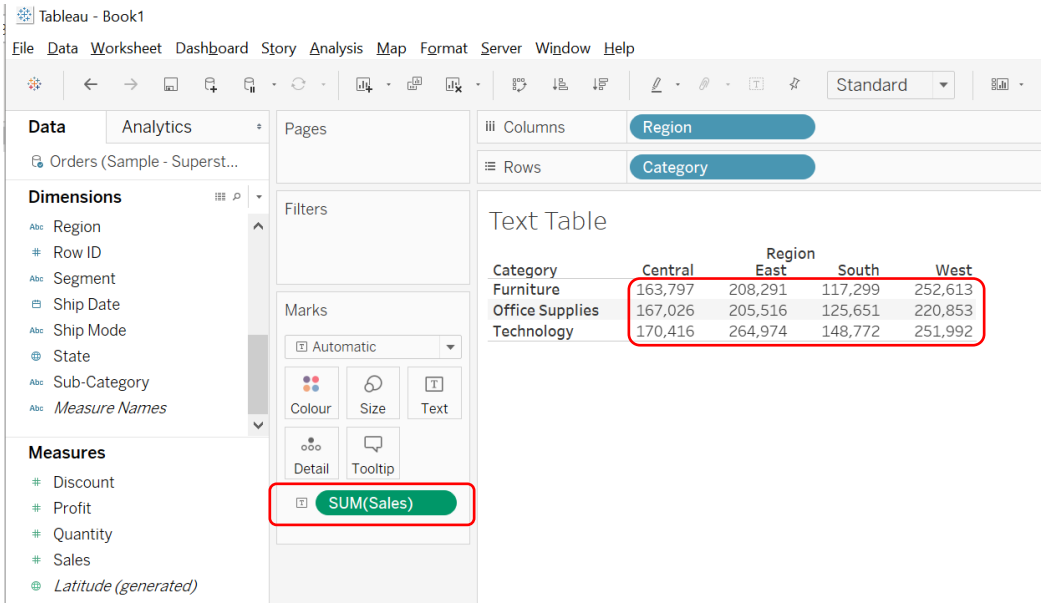


Figure 3: Adding Data to the Text Table

Note: If we drag the measures to the wrong mark, we can right click (or click the inverted triangle) and Remove as show in Figure 4, then repeat the process.

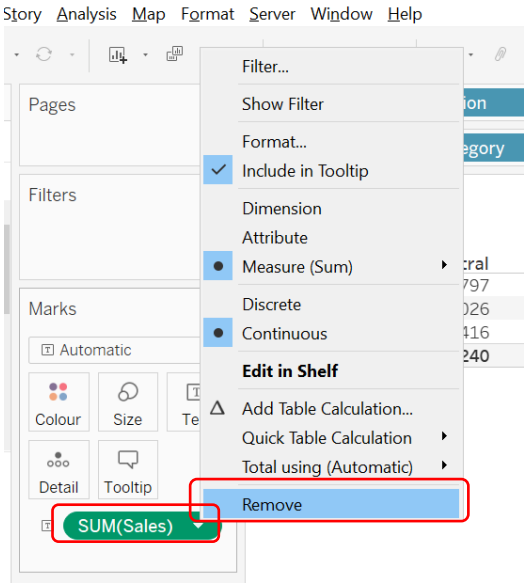


Figure 4: Removing Mark

7. We have successfully created a Text Table in Tableau. Now, these are just numbers that show the **Sales** of each product **Category** across each **Region**. However, we still do not know the total sales of product categories or the total sales of the different **Regions**. To achieve this, we will click on **Analysis** in the **Menu** bar or toolbar. Select **Total** and then select **Show Row Grand Totals** and **Show Column Grand Totals**. See the Figure 5.

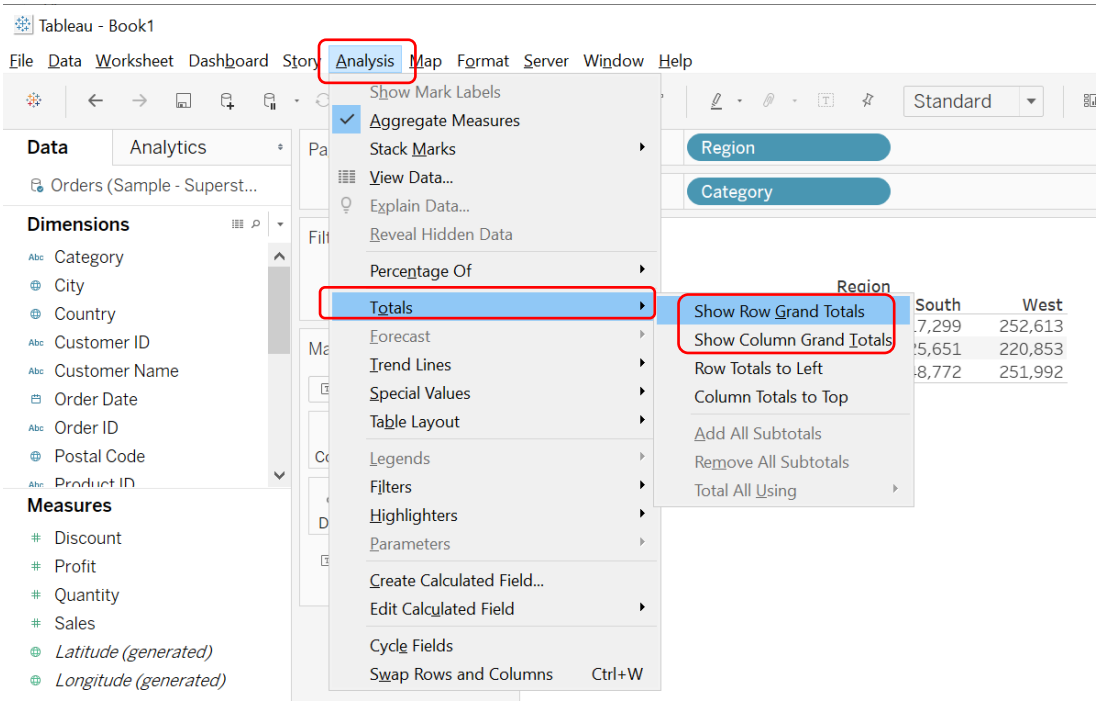


Figure 5: Performing Analysis

Note: Since Tableau does not allow us to simultaneously select Show Row Grand Totals and Show Column Grand Totals, we will have to take the total for rows and columns separately.

8. Once we have selected both the respective grand totals of both the rows and columns, we will get the output as shown in Figure 6.

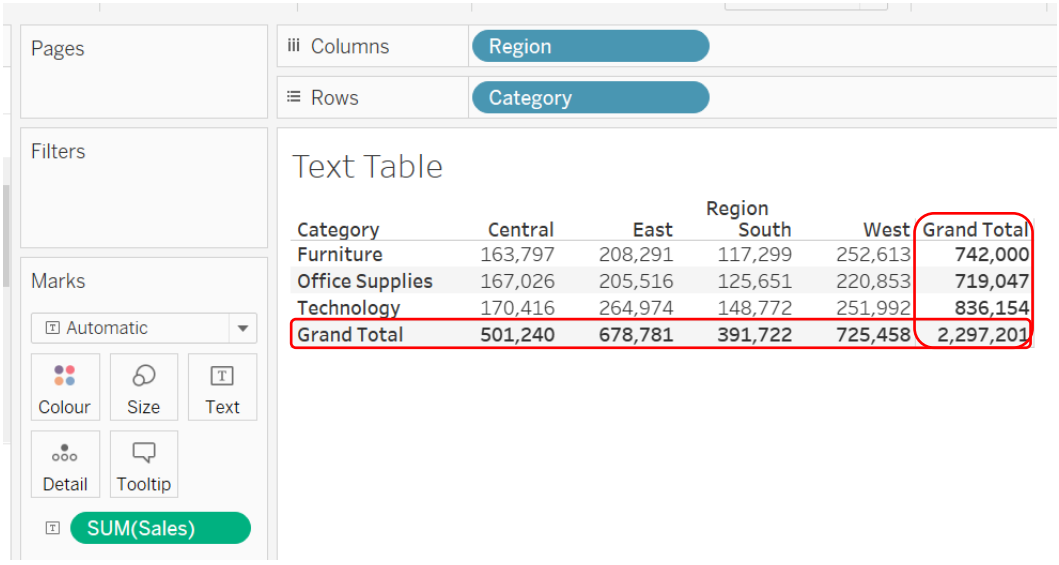


Figure 6: Row and Column Grand Totals

Task 2: Visualising Text Table by Adding Highlights

A Highlight table is actually a Text table with conditional formatting where the color of the cell will denote the value of Measure. When we create a Highlight table, we make use of colors to show values from the highest to the lowest. This is great for comparing a field's value within a row or column or even within an entire table.

1. Since we are going to take up the same example as discussed in Section A above, duplicate the **Text table** sheet and rename it as **Highlight table**. We can either right-click on the **Text Table** tab and select the **Duplicate Sheet** option, or click on the **Duplicate Sheet** option from the toolbar. Refer to Figure 7.

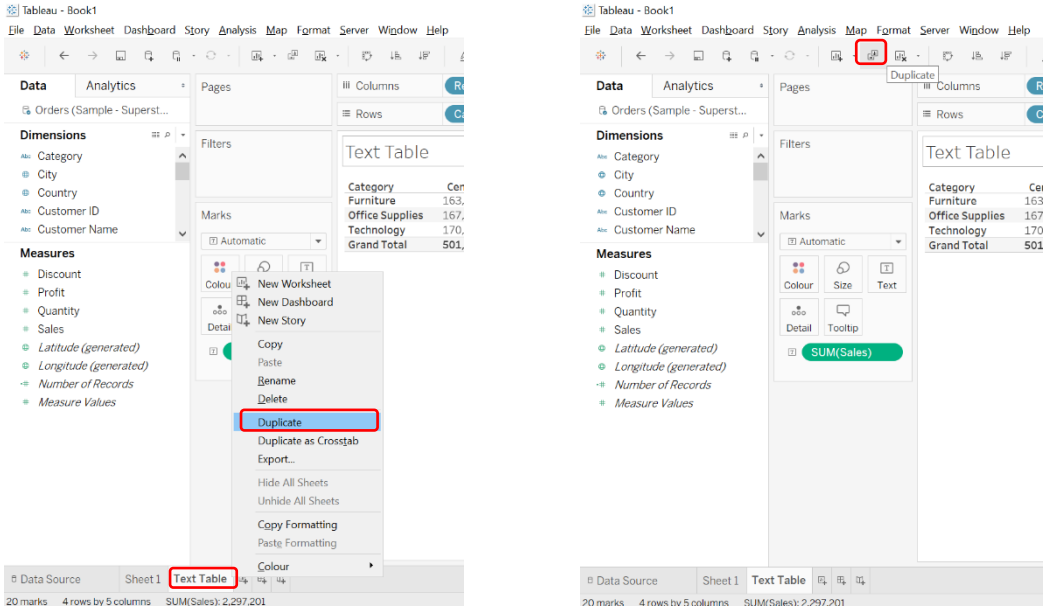


Figure 7: Dupicate Sheet

2. Drag **Sales** again from the **Measures** pane and drop it into the **Color** shelf in the **Marks** card:

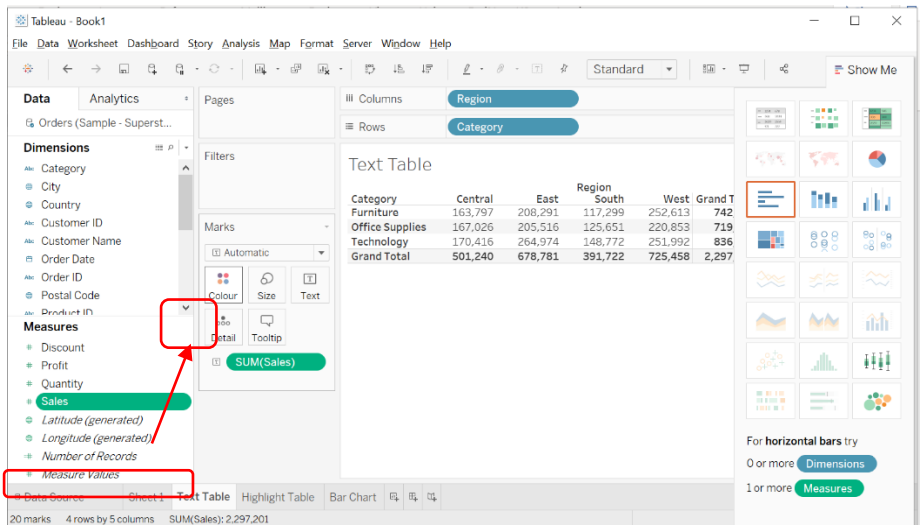


Figure 8: Adding Colour

3. The completion of the previous step will result in Figure 9.

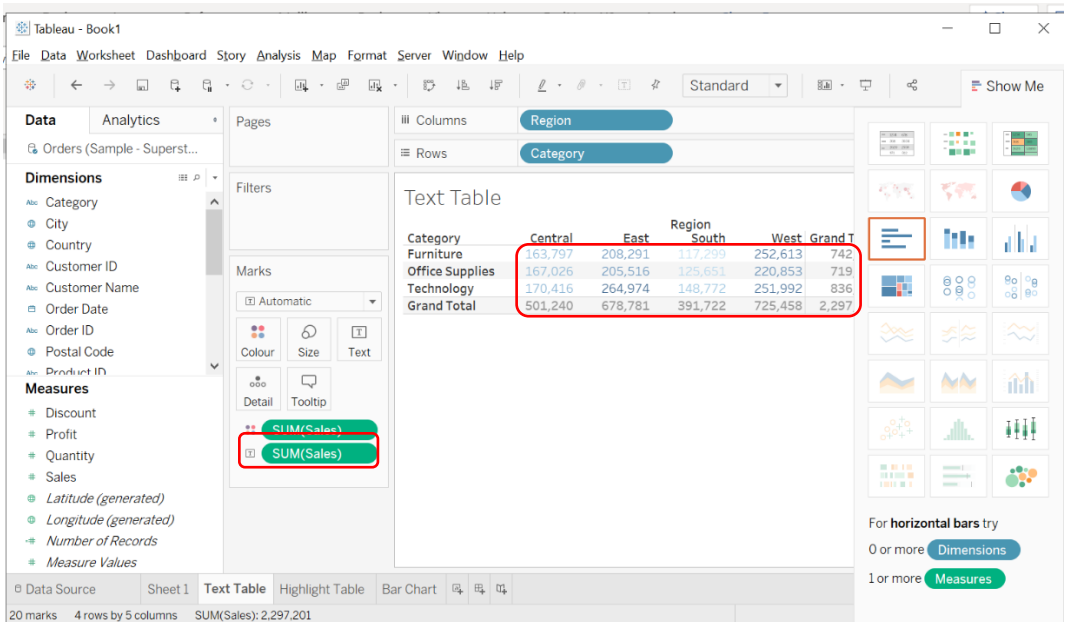


Figure 9: Using Colour in the Marks Pane

4. Change the mark type from **Automatic** to **Square** via the Marks dropdown in the **Marks** shelf. Refer to Figure 10.

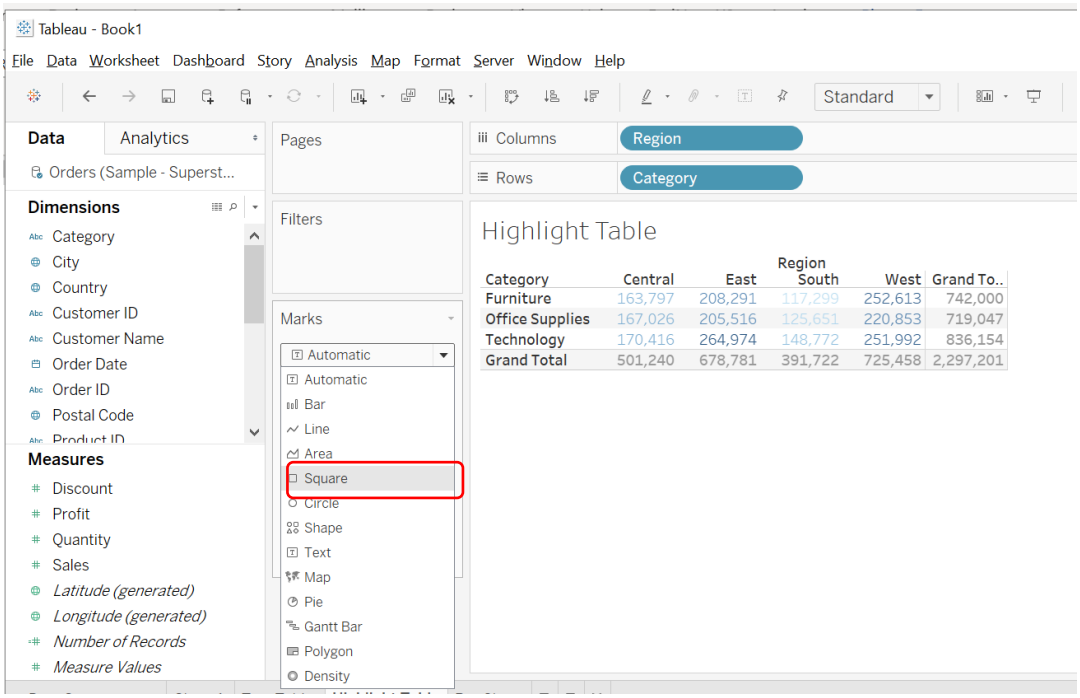


Figure 10: Adding Cell Colour

5. The completion of the previous step will result in the Highlight table view show in Figure 11.

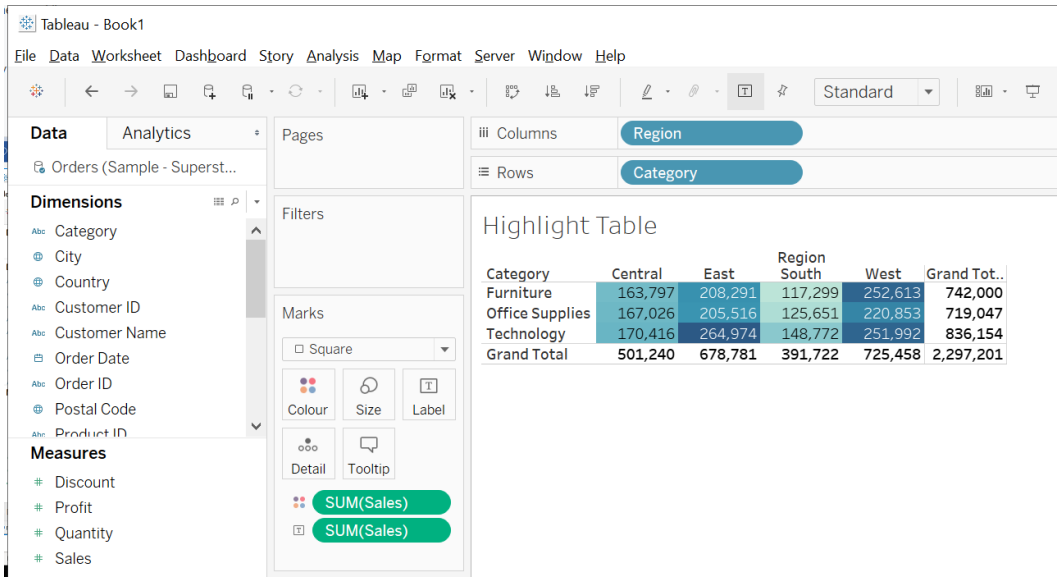


Figure 11: Using Cell Colour

Task 3: Visualsing Sales per Region as Vertical Bar chart

Bar chart is one of the most commonly used chart type for comparing information across various categories. We will create a Bar chart using the Sample-superstore dataset following the steps below:

1. Make sure you are connected to the data source.
2. Create a new worksheet and name it ***Bar Chart***.
3. This time, drag **Sales** from the **Measures** pane and drop it into the **Rows** shelf.
4. Drag **Region** from the **Dimensions** pane and drop it into the **Columns** shelf. Once we do this, we will see this as a vertical bar chart instead of a horizontal bar chart as shown in Figure 12.

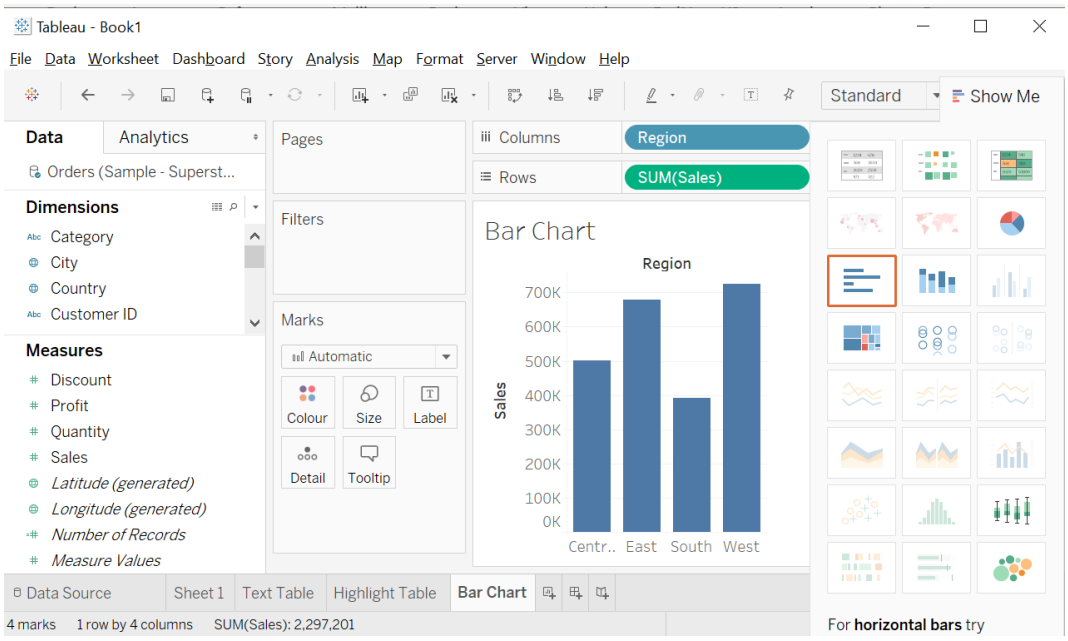


Figure 12: Vertical Bar Chart

5. We have successfully created a Bar chart in Tableau. To see the **Sales** value on top of the bars, we will again drag **Sales** from the **Measures** pane and drop it into the **Label** shelf in the **Marks** card. Refer to the Figure 13.

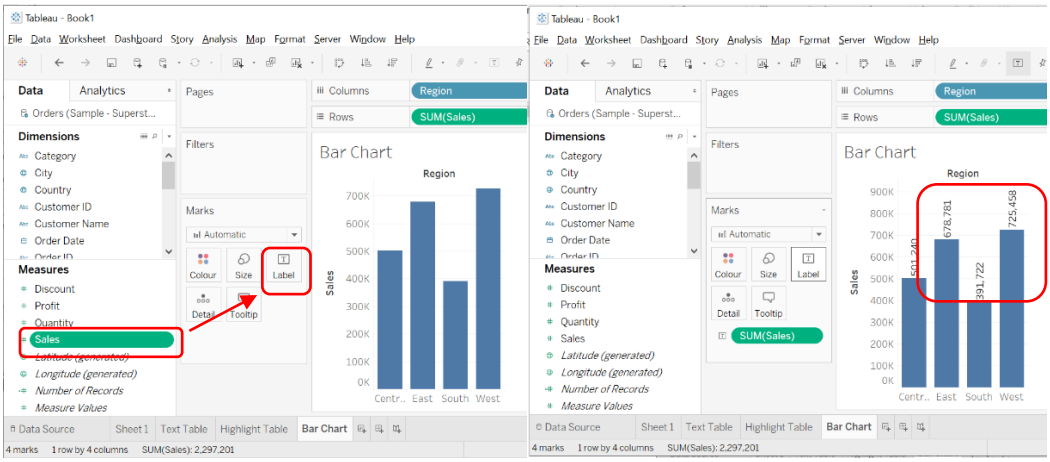


Figure 13: Adding Labels

Task 4: Self-Assessment Lab Tasks

1. Visualise of Sales per Category per Region from the Sample-superstore dataset using Heat Map. In this task, the size and colour convey that same information which is Sales. The data visualisaton should look like Figure 14.

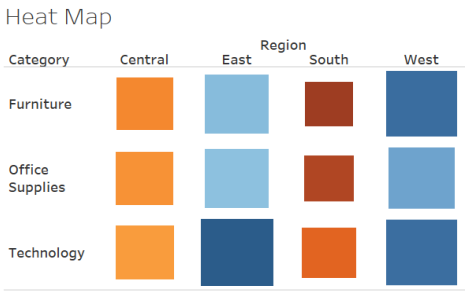


Figure 14: Heat map of Sales per Category per Region

2. Visualise of Sales per Category per Region from the Sample-superstore dataset using a Stacked Bar Chart. Note that in this task, the colour and size of each bar represent different information. Carefully analyse what does each property represent when creating the visualisation. The resulting visualisation should look like Figure 15.

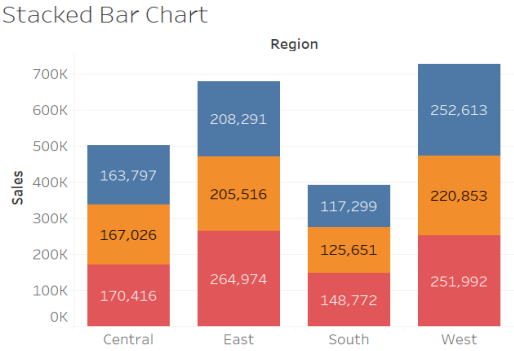


Figure 15: Stacked Bar Chart of Sales per Category per Region