

Tableau 9.x Lab Book

Document Revision History

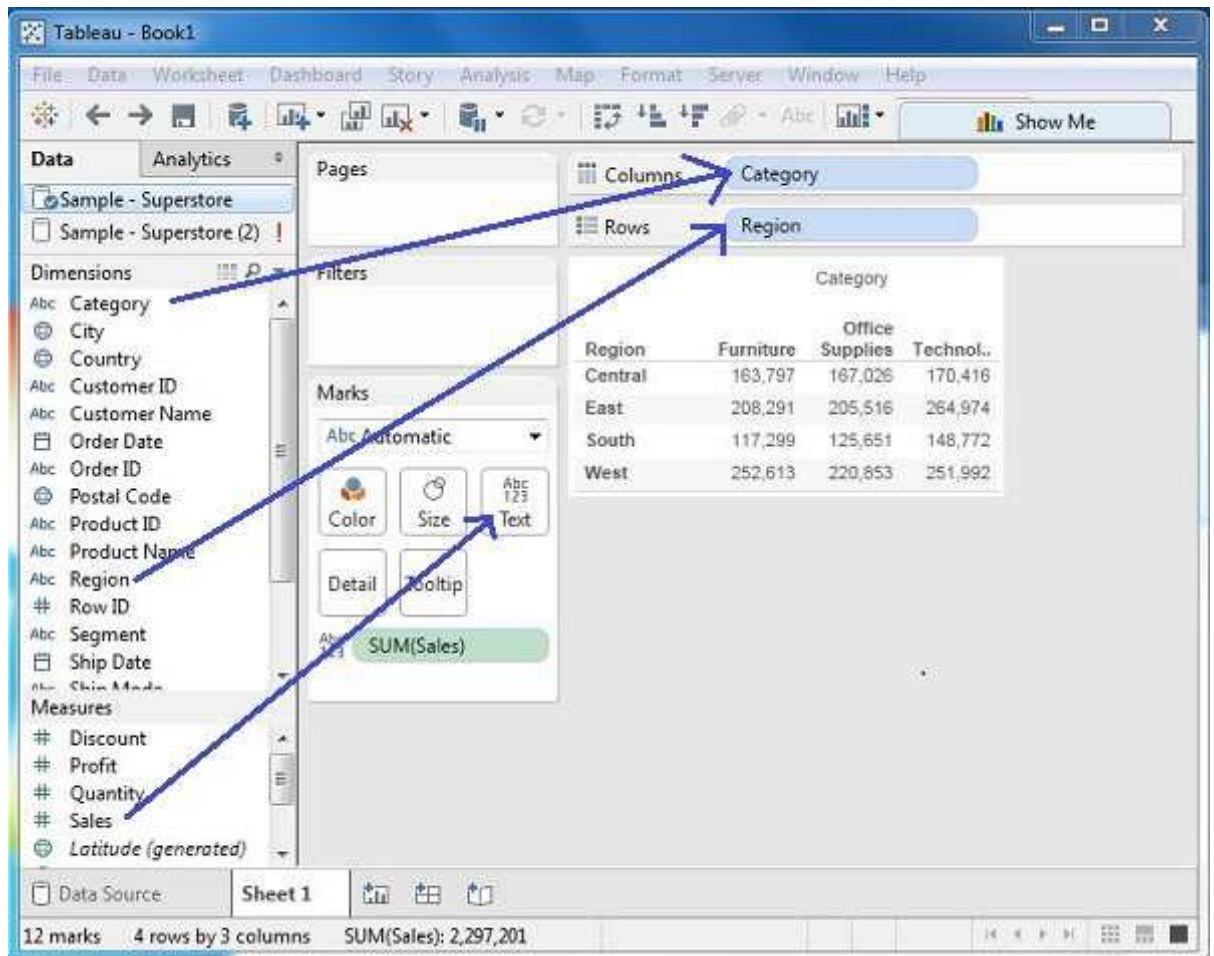
Date	Revision No.	Author	Summary of Changes
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Lab 1	Connect to a data source and create the first view
Description	We will create a cross tab report region wise category wise sum of sales.
Objective	To learn 1. Connect to a data source 2. Choose dimensions and measures 3. Create the report

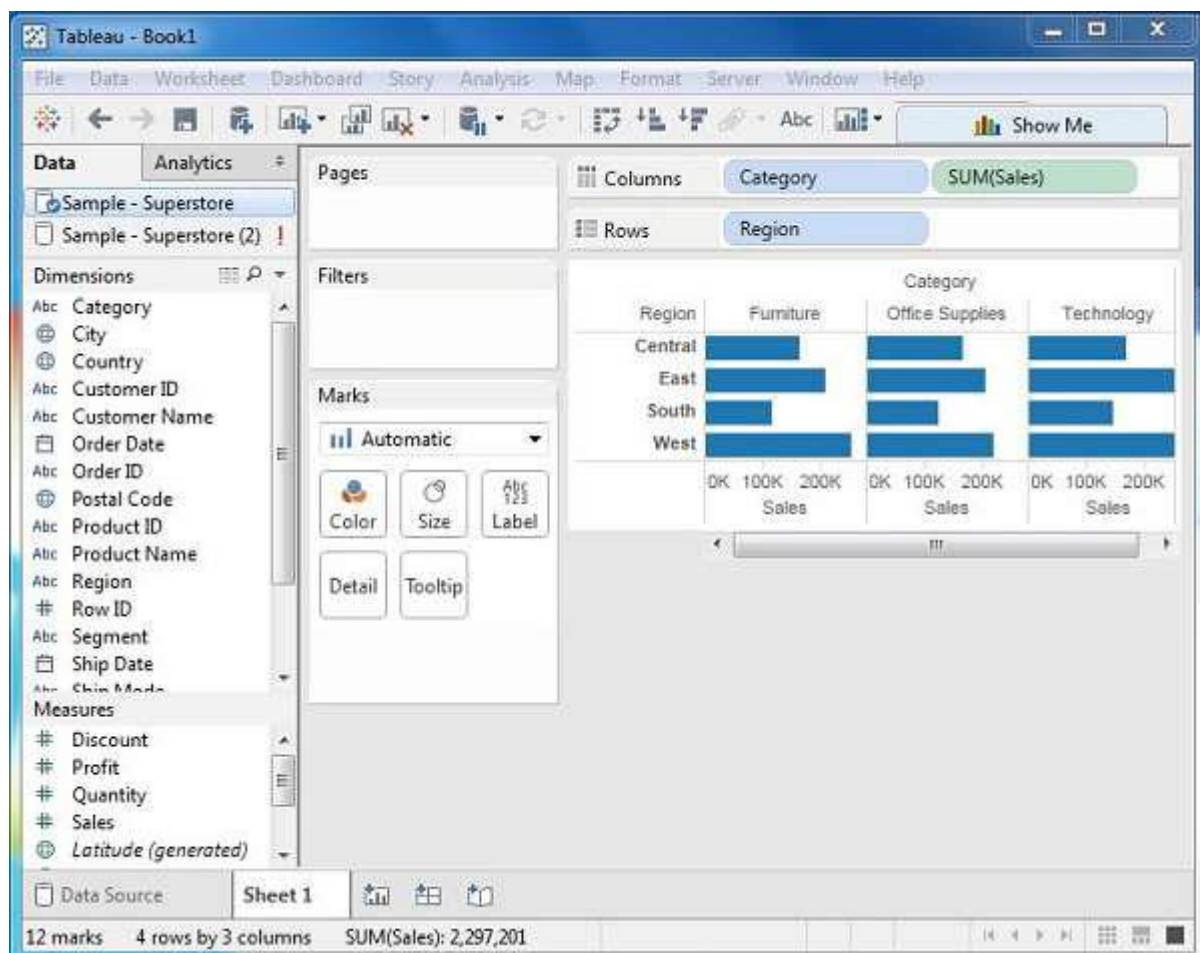
1. Under the header "**Connect**", you have options to choose a file or server or saved data source. Under Files, choose excel. Then navigate to the file "**Sample – Superstore.xls**". The excel file has three sheets named Orders, People and Returns. Choose **Orders**.
2. Choose **Category** and **Region** as the dimensions and **Sales** as the measure. Drag and drop Category to the column shelf, Region to the row shelf and SUM (Sales) to the Text Shelf under marks as shown in the following screenshot. The result shows the Total sales in each category for each region.



Lab 2	Applying visualization Techniques
Description	We will create a cross tab report region wise category wise person segment wise sum of sales.
Objective	To learn 1. How to add visualization techniques to view. 2. How to Different type of Bar charts.

1. Drag and drop the Category column from the Marks tab to the Columns shelf.
2. Drag and drop the sum (sales) column from the Marks tab to the Columns shelf.
3. Drag and drop the Region column from the Marks tab to the Rows shelf.

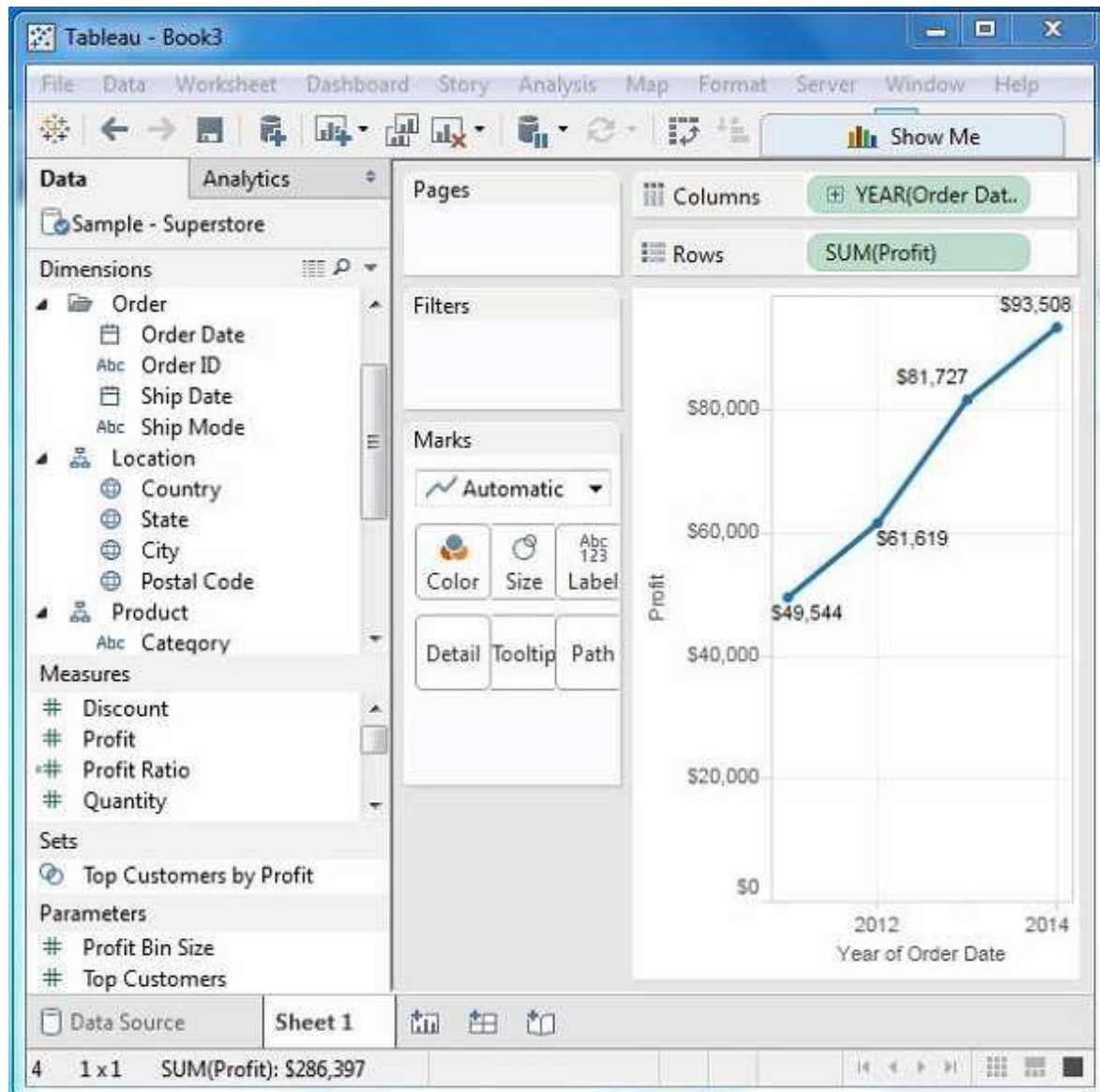
The table showing the numeric values of sales now turns into a bar chart automatically.



Note: Go through the navigational features available in the Tableau interface like File menu, Data menu, Worksheet menu, Dashboard menu, Analysis menu, Format menu etc.

Lab 3	Using Show me
Description	The relation between two fields can be visually analyzed easily by using various graphs and charts available in Show Me. In this case, we choose two fields and apply a line chart.
Objective	To learn 1. How to use Show Me 2. Apply different charts

- 1: Select the two fields (order date and profit) to be analyzed by holding the control key.
- 2: Click the Show Me bar and choose line chart.
- 3: Click the Mark Label button on the scrollbar.

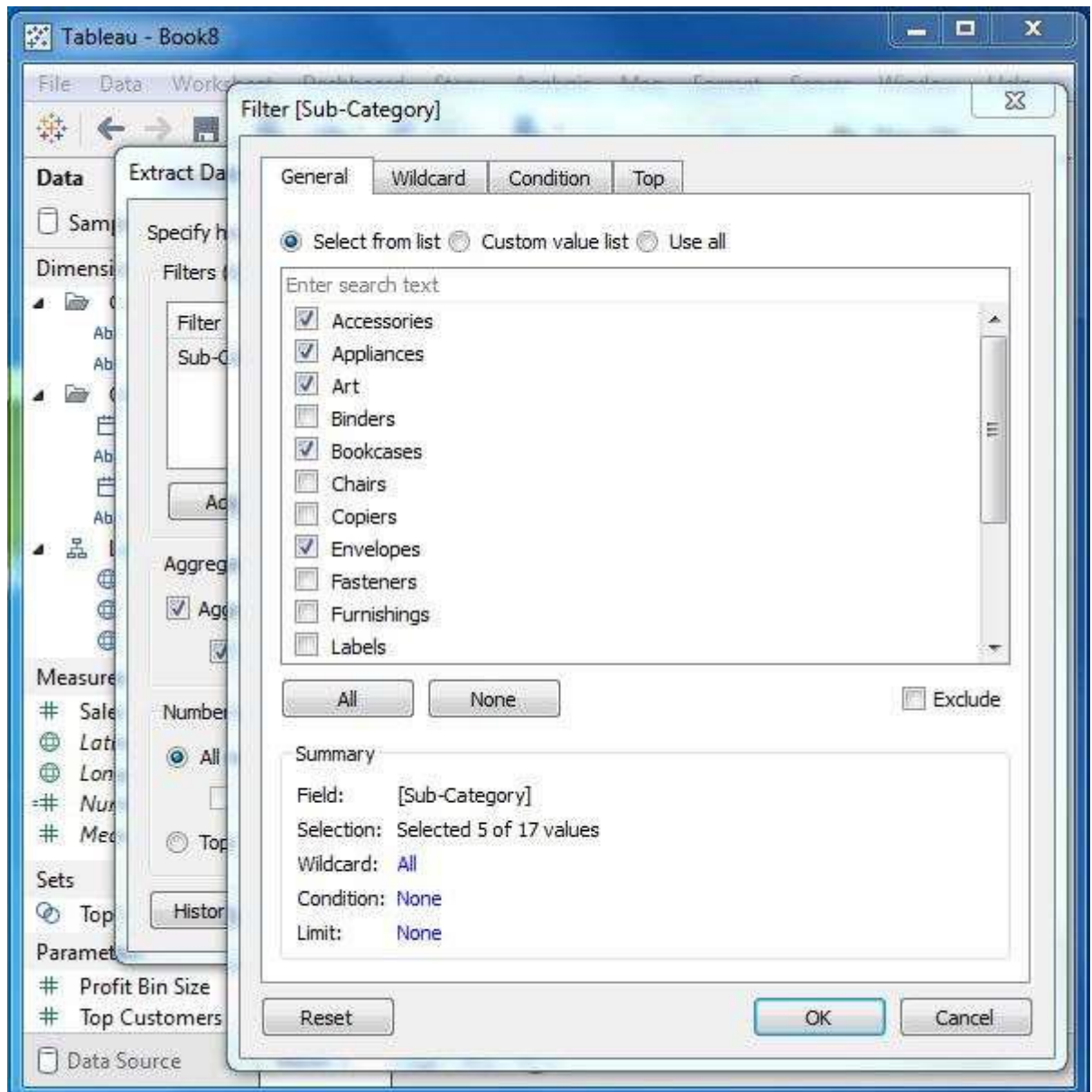


Lab 4	Creating an Extract
Description	We will create an extract from a data source.
Objective	To learn <ol style="list-style-type: none">1. How to create an extract from a data source.2. Applying filters to the extract.3. Adding new data to the extract.

1: Go to Data->Extract Data

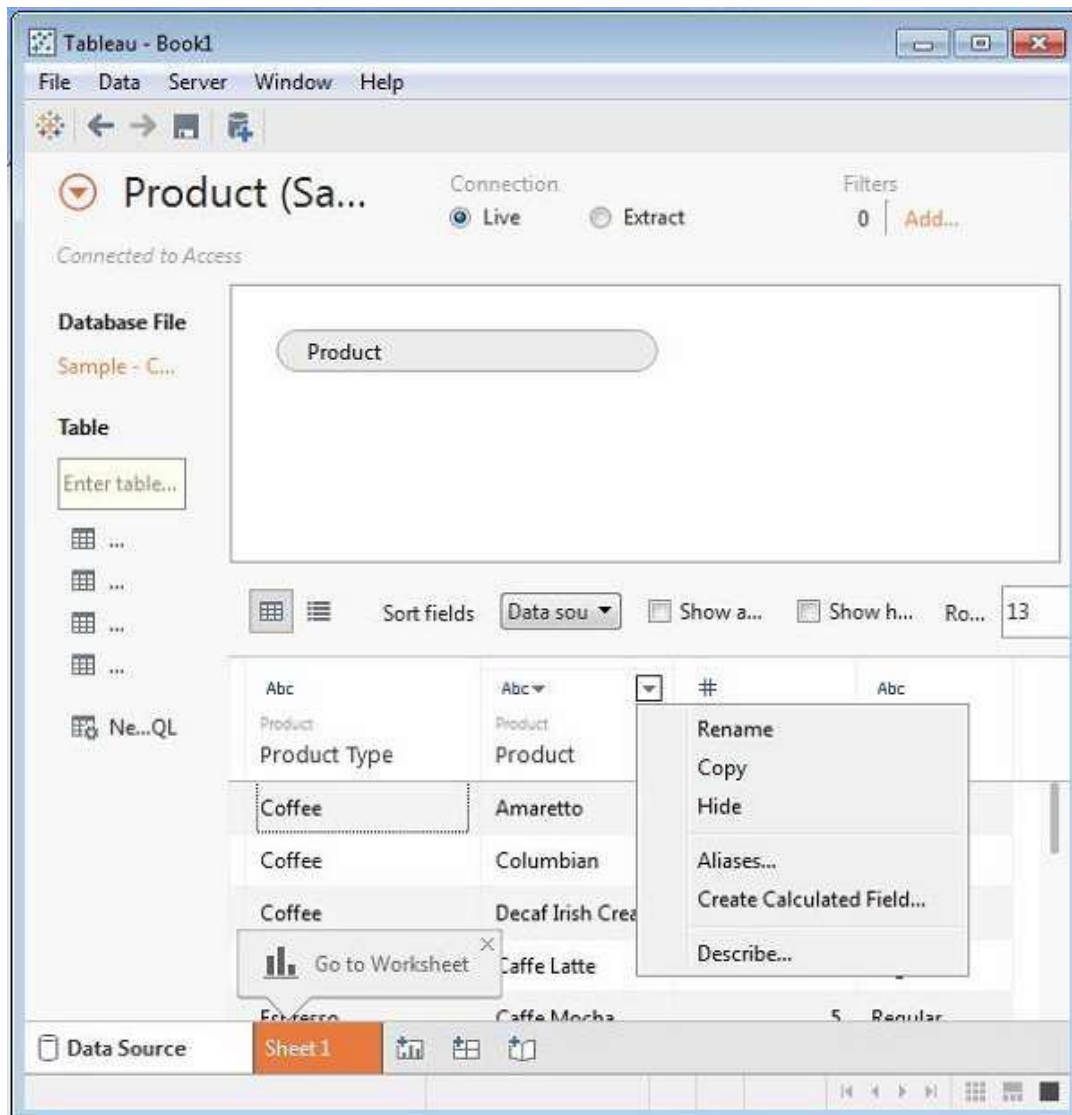
2: In the filter option choose select from list and check mark the values you want to add to the extract.

3: Extract->Append Data from File and choose the file



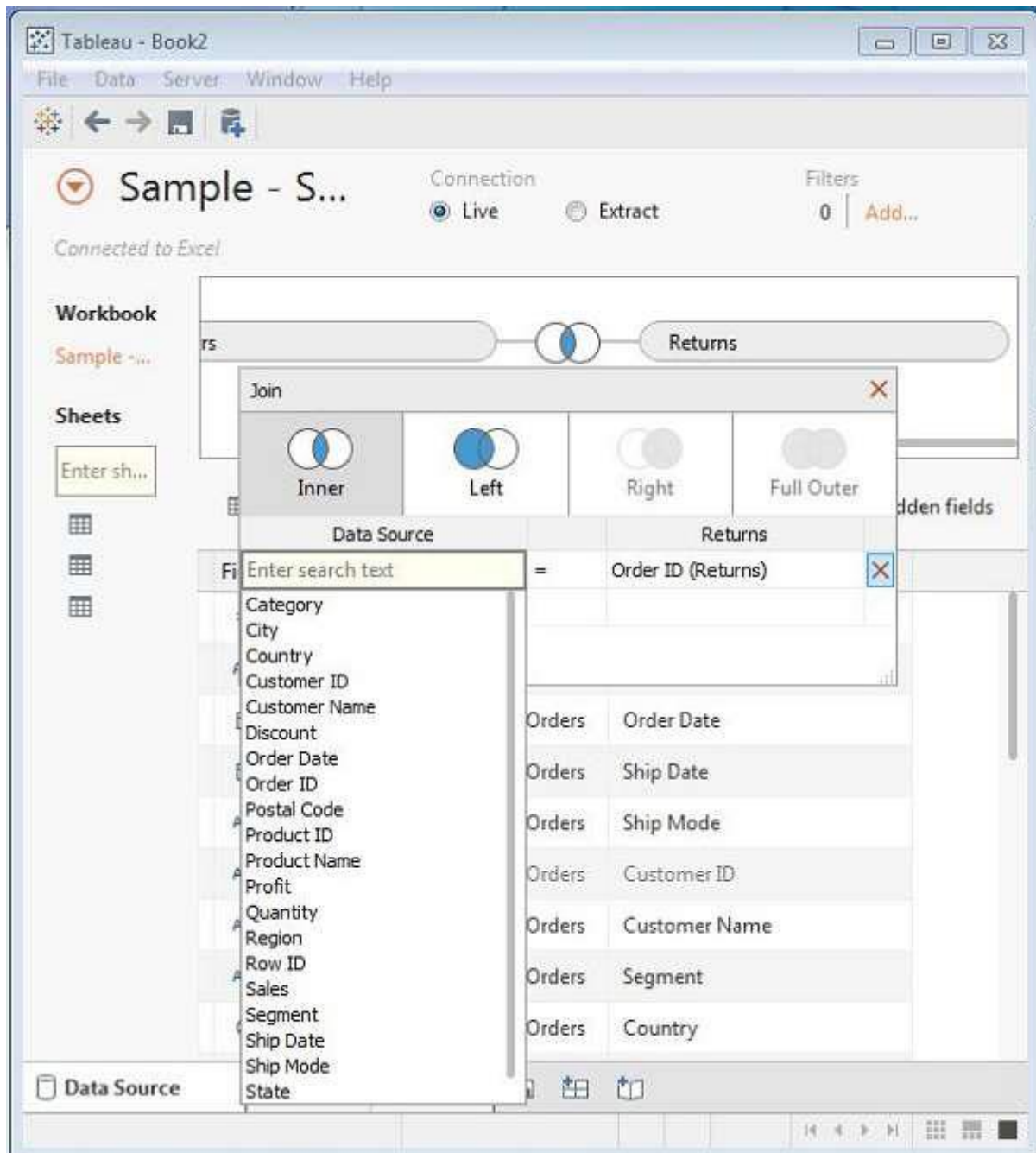
Lab 5	Editing Meta Data
Description	We will change the Data type, Rename and Hide the columns and will give alias to the columns.
Objective	To learn 1. Review the metadata. 2. Change the data type of the columns 3. Renaming and hiding columns 4. Column aliases

- 1: Data->Connect to data source
- 2: Drag the table to the data canvas
- 3: Review the Metadata
- 4: Change the data type of the columns (if required)
- 5: From the drop down, Rename or hide the columns
- 6: Choose the aliases option from the drop down to give aliases name to the columns.



Lab 6	Data Joining
Description	We will create different type of join between two data sets orders and returns
Objective	To learn 1. How to Create joins 2. How to edit join

- 1: Go to the Data menu -> Edit Data Source.
- 2: Drag the two tables, Orders and Returns to the data pane. Depending on the field name and datatype, Tableau will automatically create a join which can be changed later.
- 3: Click the middle of the two circles showing the join.



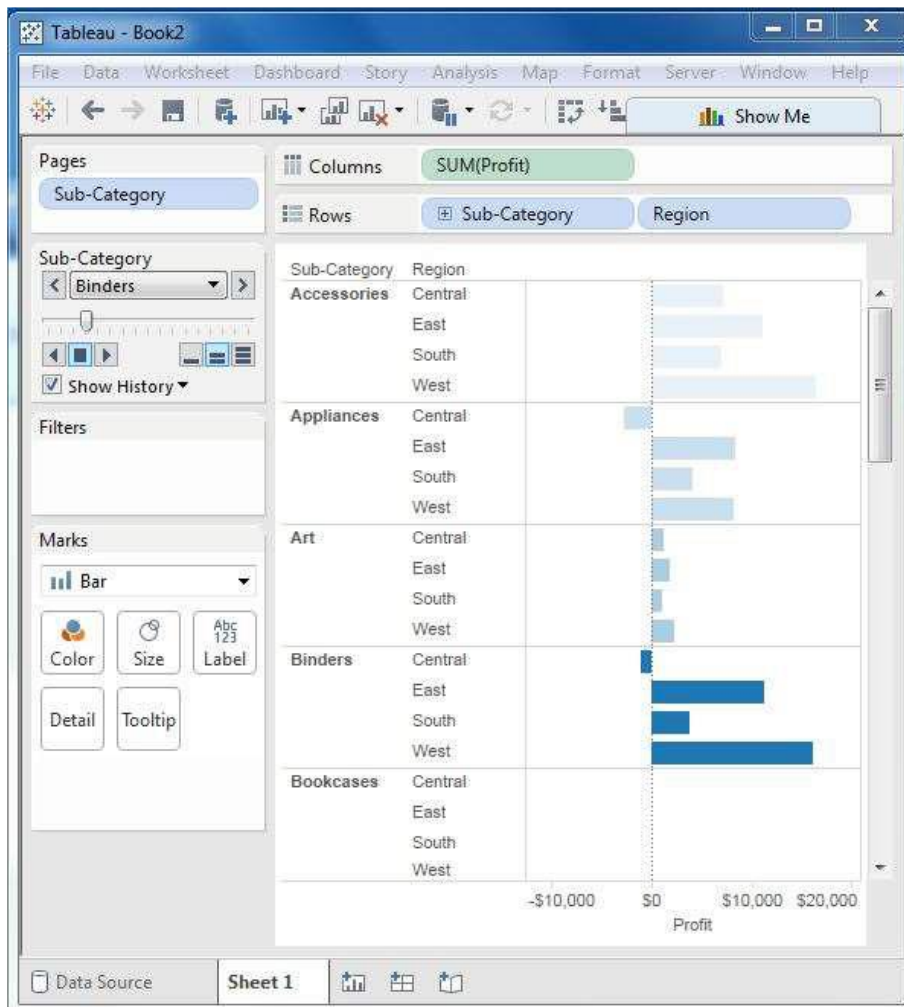
Lab 7	Paged Workbook
Description	We will create a paged workbook for different values of a dimension.
Objective	To learn 1. How to Create paged workbook

1: Create a bar chart with two dimensions and one measure. In this case, drag the Measure Profit to the columns shelf and the dimensions sub-category, and Region to the Rows shelf.

2: Drag the Sub-Category field again to the page shelf. You will see that a page Control is automatically added, just below the Pages shelf.

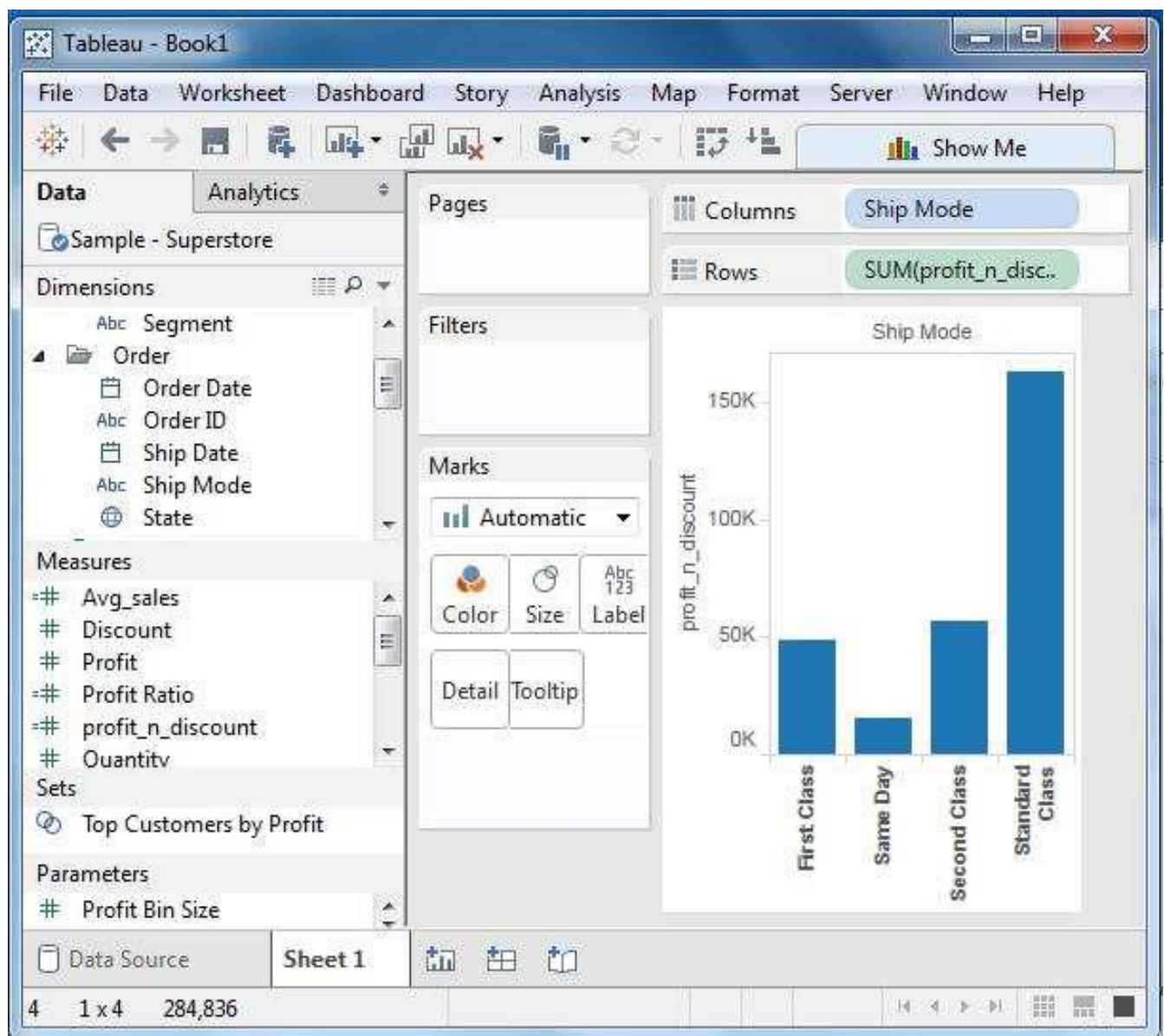
To go to a specific page, click on the drop-down on the page control and select Accessories.

3: For automatic display of pages, keep the show history checkbox ticked and click the play button.



Lab 8	Calculated field
Description	We will create calculated field called profitNdiscount by subtracting discount from profit.
Objective	To learn <ol style="list-style-type: none"> 1. How to Create paged workbook 2. Apply formula for the field 3. Use the new field in the view

- 1: Go to the Analysis menu -> 'Create Calculated Field'
- 2: Give a new name to the field
- 3: Add the formula as Profit-Discount
- 4: Drag the new field to the row shelf and Ship mod into the column shelf.



Lab 9	Table Calculation
Description	We will calculate the running total of profit.
Objective	To learn 1. How to calculate the running total.

- 1: Drag Profit to the column shelf.
- 2: Right click on the measure and choose Quick table Calculation
- 3: Choose one of the following options to be applied on the measure.
 - Running Total
 - Difference
 - Percent Difference
 - Percent of Total
 - Rank
 - Percentile
 - Moving Average
 - Year to Date (YTD) Total
 - Compound Growth Rate
 - Year over Year Growth
 - Year to Date (YTD) Growth

Lab 10	LOD Expression
Description	We will apply all three types of LOD like fixed, include and exclude to calculate the amount of Sales for each state in each region.
Objective	To learn <ol style="list-style-type: none">1. Apply fixed LOD2. Apply include LOD3. Apply exclude LOD

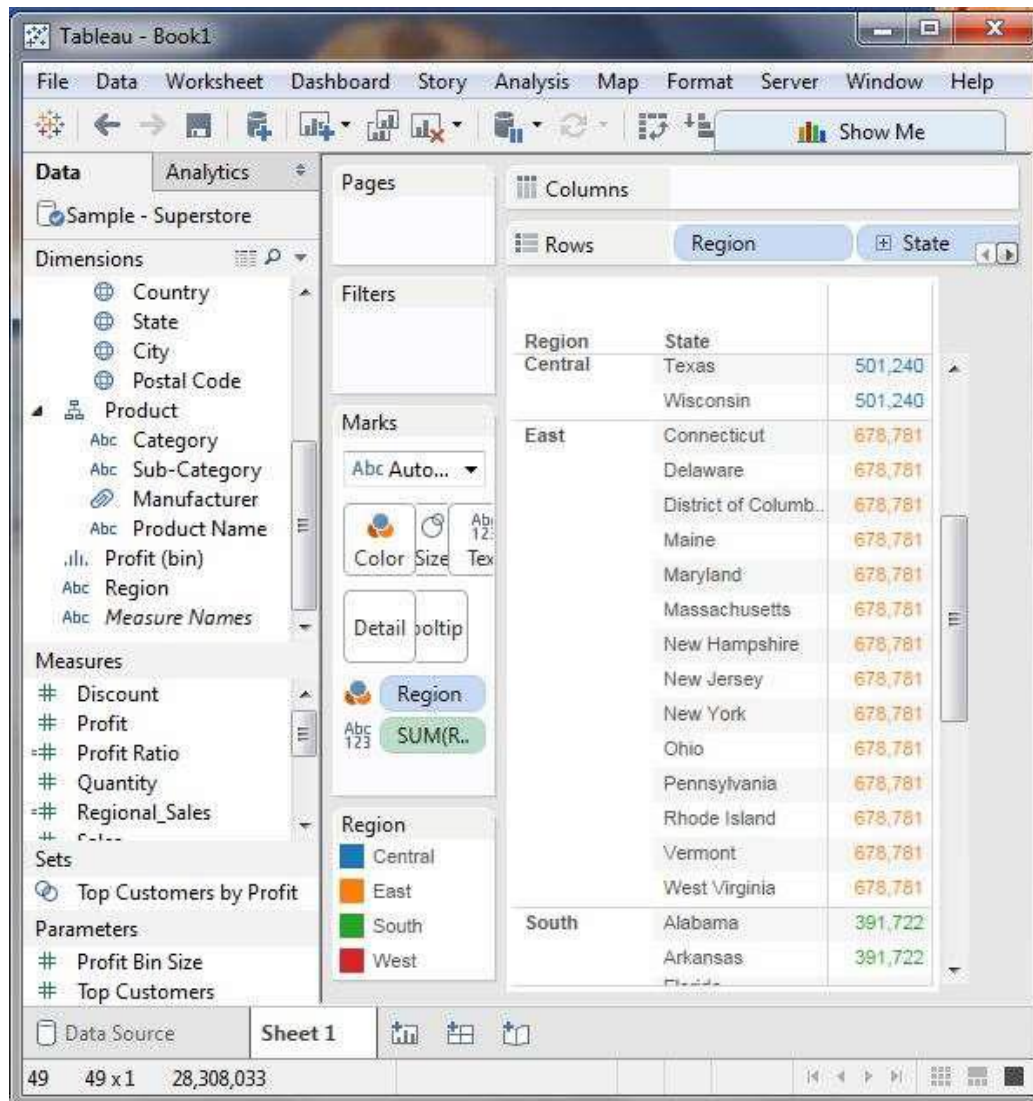
Fixed LOD

1: create the formula field named Regional Sales using the formula
{ FIXED [Region] : SUM ([Sales]) }

2: Drag the Region and State field to the Rows shelf and the calculated field to the Text shelf under the Marks card.

3: Drag the Region field to the Color shelf.

This produces the following view, which shows a fixed value for different states. That is because we have fixed the dimension as region for the calculation of Sales value.



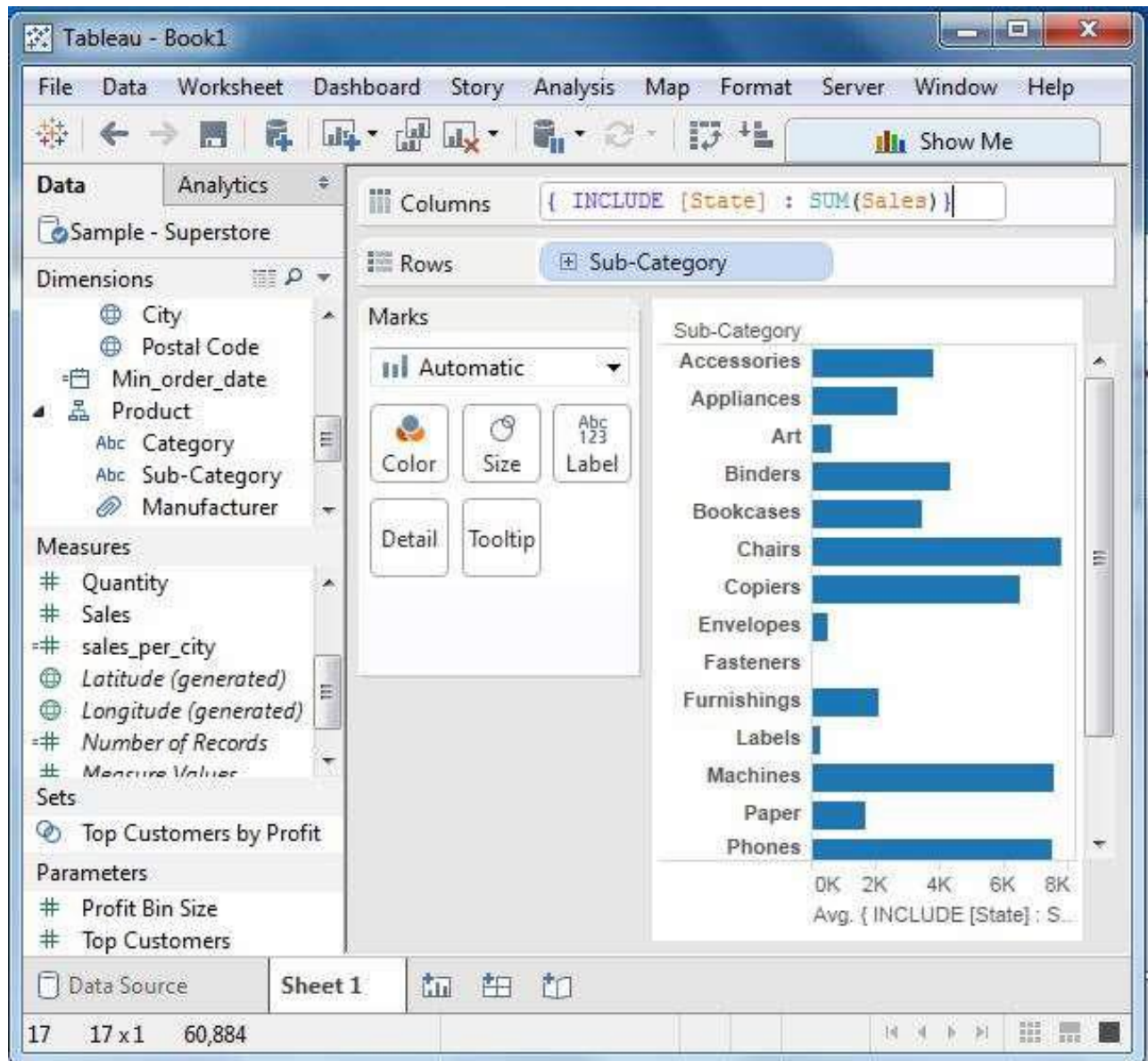
Include LOD

Calculate the sum of sales per state for each sub-category of products.

1: Drag the Sub-Category field to the Rows shelf.

2: write the expression in the Columns shelf as

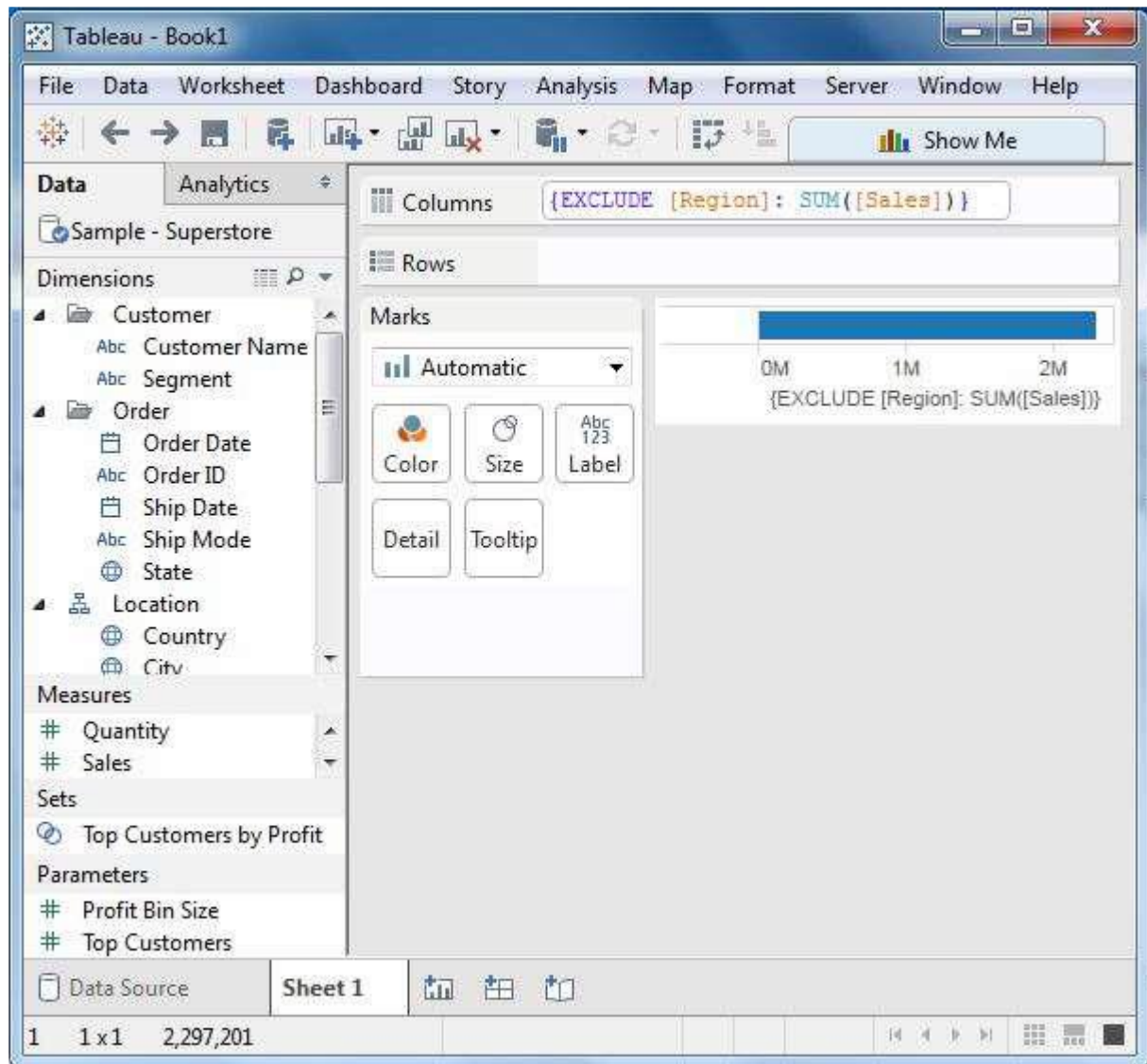
{ INCLUDE [State] : SUM ([Sales]) }



Exclude LOD

Exclude Region from Sales figure calculated for every month.

- 1: Create the formula in the column shelf as
`{ EXCLUDE [Region] : SUM ([sales]) }`
- 2: Drag Region and sales to the column shelf.
- 3: Drag Order date to the row shelf.



Lab 11	Filter
Description	We will apply dimension filter and measure filter on the view to create customized output.
Objective	To learn <ol style="list-style-type: none">1. Apply filter on dimension2. Apply filter on measure3. Apply filter on dates

Dimension filter: Create a view for showing profit for each sub-category of products according to their shipping mode.

- 1: Drag the dimension field "Sub-Category" to the Rows shelf.
- 2: Drag the measure field "profit" to the Columns shelf.
- 3: Drag the Sub-Category dimension to the Filters shelf.
- 4: Apply the filter options.

Measure filter: Create a view with ship mode and subcategory as dimensions and Average of profit as measure.

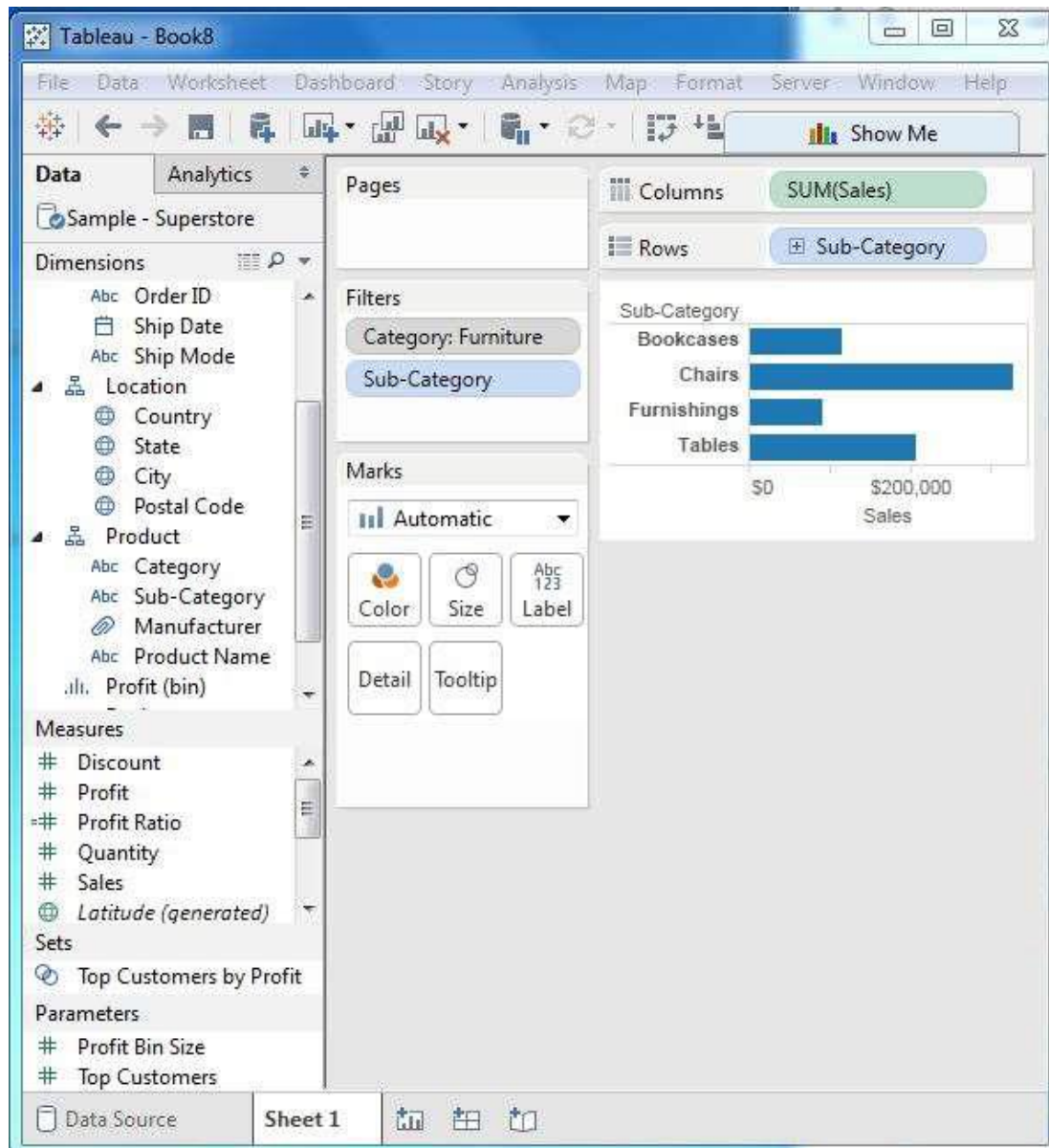
- 1: Drag the dimension field "Sub-Category" to the Rows shelf.
- 2: Drag AVG (profit) to column shelf.
- 3: Drag the AVG (profit) value to the filter pane.
- 4: Apply the filter options in the filter dialog box.

Dates filter:

- 1: Drag order date in the column shelf.
- 2: Drag profit in the rows shelf.
- 3: Drag the "order date" field to the filter shelf.
- 4: Choose Range of dates in the filter dialog box.

Lab 12	Context Filter
Description	We will create a view to show 10 Sub-Category of products for the category called Furniture using a context filter.
Objective	To learn 1. What is context filter 2. Apply context filter on a view

- 1: Drag the dimension Sub-Category to the Rows shelf.
- 2: Drag measure Sales to the Columns Shelf.
- 3: Choose the horizontal bar chart as the chart type.
- 4: Drag the dimension Sub-Category again to the Filters shelf.
- 5: Go the fourth tab named Top in the filter dialog box.
- 6: Choose the option by field. From the next drop-down, choose the option Top 10 by Sales Sum.
- 7: Drag the dimension Category to the filter shelf.
- 8: Under the general tab choose Furniture from the list.
- 9: Right-click the Category: Furniture filter and select the option Add to Context.



Lab 13	Bar Chart
Description	We will create different kind of Bar charts.
Objective	To learn <ol style="list-style-type: none">1. Simple bar chart2. Bar chart with color range3. Stacked bar chart

Simple bar chart:

- 1: Drag profit to the columns shelf.
 - 2: Drag Sub-Category to the rows shelf.
- It automatically produces a horizontal bar chart or you can choose bar chart from Show Me.

Bar Chart with Color Range:

- 1: Drag profit to the columns shelf.
- 2: Drag Sub-Category to the rows shelf.
- 3: Drag the profit field to the color palette under the Marks Pane

Stacked Bar Chart:

- 1: Drag profit to the columns shelf.
- 2: Drag Sub-Category to the rows shelf.
- 3: Drag the profit field to the color palette under the Marks Pane
- 4: Drag the dimension field named segment to the Marks pane and drop it in colors.



Lab 14	Line Chart
Description	We will create different kind of Line charts.
Objective	To learn <ol style="list-style-type: none">1. Simple line chart2. Multiple measure line chart3. Labeled line chart

Simple line chart:

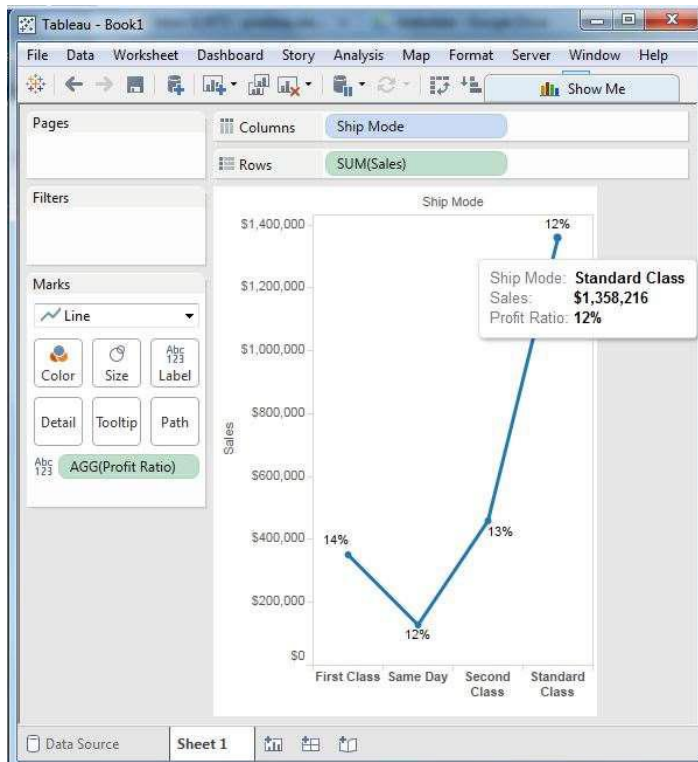
- 1: Drag the dimension Ship Mode to Columns Shelf
- 2: Drag Sales to the Rows shelf.
- 3: Choose the Line chart from the Marks card.

Multiple measure line chart:

- 1: Drag the dimension Ship Mode to Columns Shelf
- 2: Drag Sales to the Rows shelf.
- 3: Drag AVG (Profit) to the Rows shelf.
- 4: Choose the Line chart from the Marks card.

Labeled line chart:

- 1: Drag the dimension Ship Mode to Columns Shelf
- 2: Drag Sales to the Rows shelf.
- 3: Drop another measure Profit Ratio into the labels pane in the Marks card.
Choose average as the aggregation
- 4: Choose the Line chart from the Marks card.



Lab 15	Pie Chart
Description	We will create different kind of pie charts.
Objective	To learn 1. Simple pie chart 2. Drill down pie chart

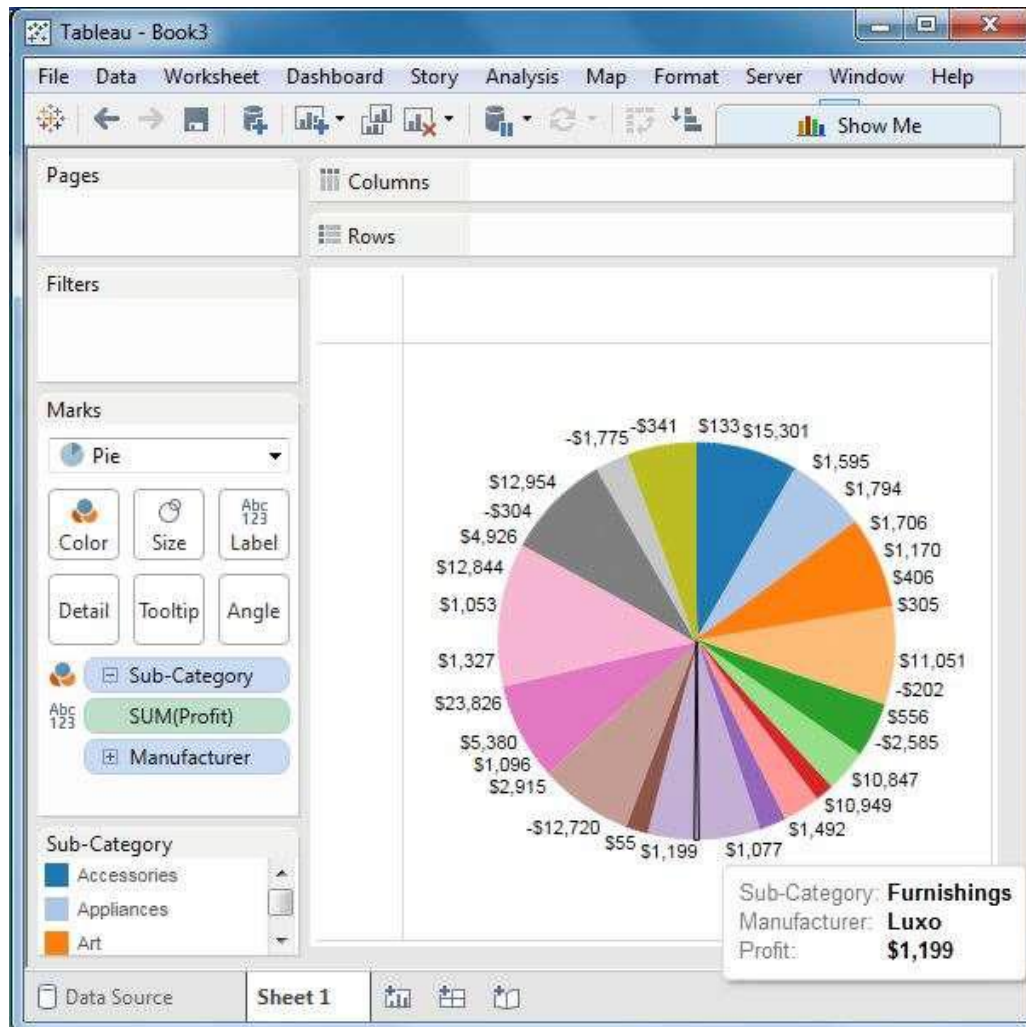
Simple pie chart:

- 1: Drop the Region dimension in the colors and label marks.
- 2: Drop the Profit measure into the size mark.
- 3: Choose the chart type as Pie.

Drill down pie chart

You can choose a dimension with hierarchy and as you go deeper into the hierarchy.

- 1: Drop the subcategory dimension in the colors and label marks.
- 2: Drop the Profit measure into the size mark.
- 3: Choose the chart type as Pie



Lab 16	Crosstab
Description	We will create different kind of crosstabs.
Objective	To learn 1. Simple crosstab 2. Crosstab - Color Encoded

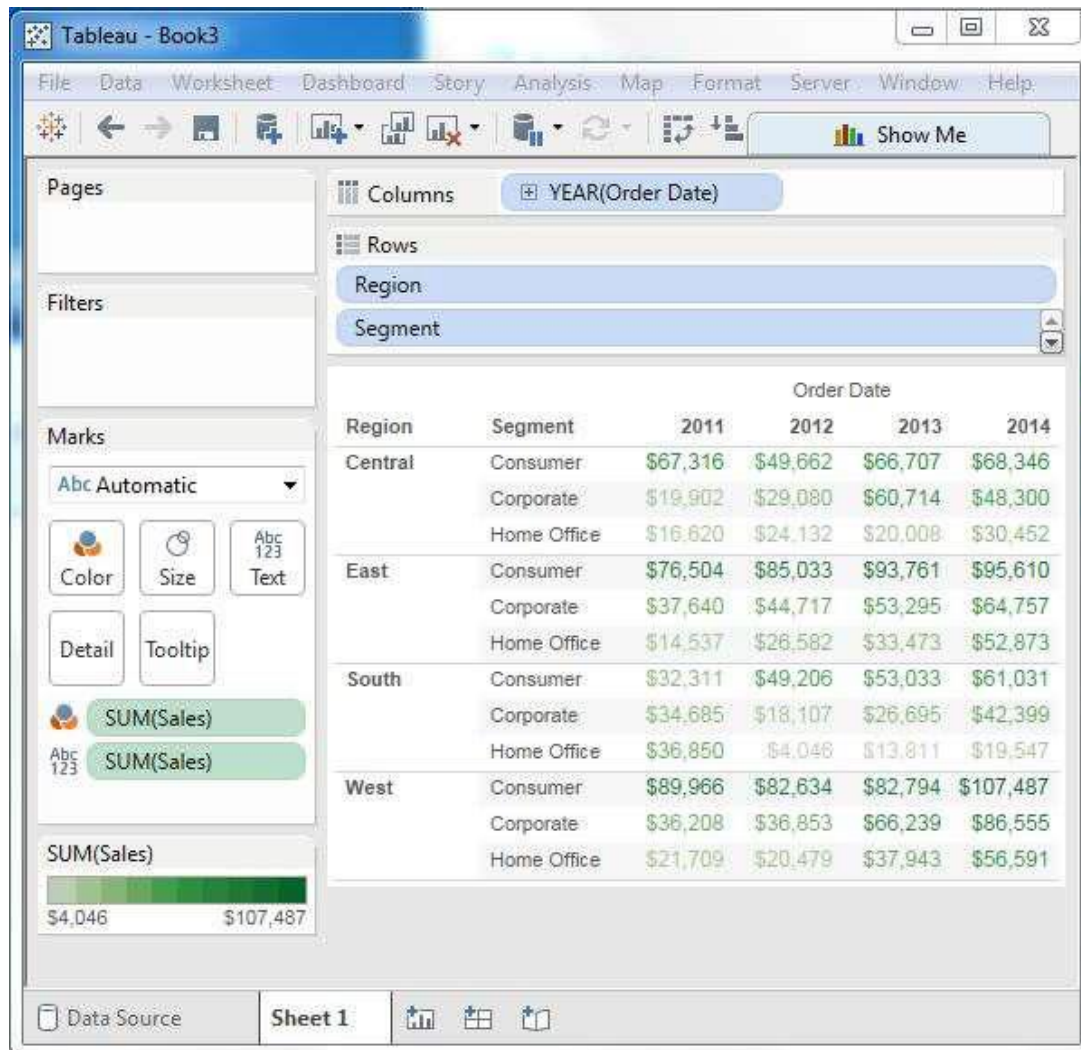
Simple crosstab:

To find amount of sales for each segment in each region by each year.

- 1: Drag and drop the dimension order date to the columns shelf.
- 2: Drag and drop the dimensions region and segment to the rows shelf.
- 3: Pull the measure Sales to the labels Shelf under Marks.

Crosstab - Color Encoded:

- 1: Drag and drop the dimension order date to the columns shelf.
- 2: Drag and drop the dimensions region and segment to the rows shelf.
- 3: Pull the measure Sales to the labels Shelf under Marks.
- 4: Pull the measure Sales to the color Shelf under Marks.



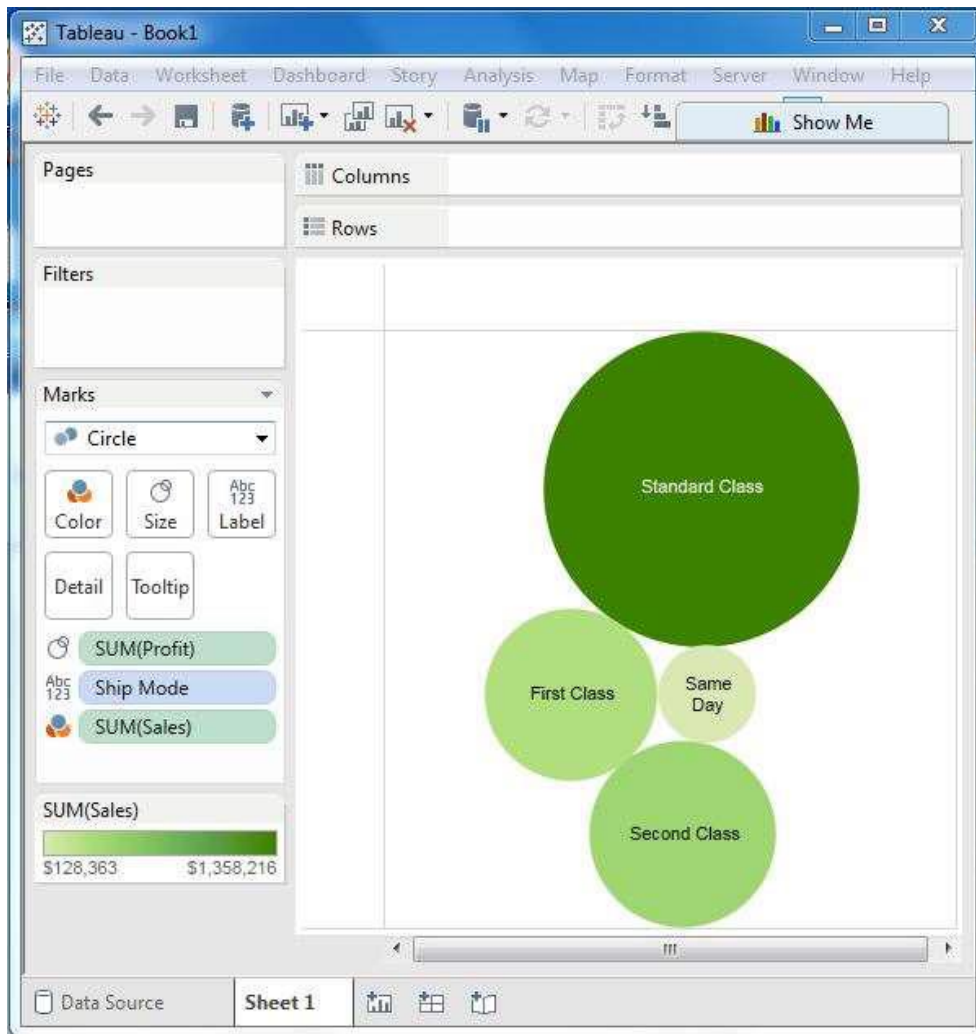
Lab 17	Bubble Chart
Description	We will create different kind of bubble charts.
Objective	To learn <ol style="list-style-type: none">1. Bubble Chart with Measure Values2. Bubble Chart with Measure Colors

Bubble Chart with Measure Values

- 1: Drag and drop the measure profit into the Size shelf under Marks card.
- 2: Drag and drop the dimension ship mode into the Labels shelf under Marks Card.
- 3: Pull the dimension ship mode to the Colors shelf under Marks card.
- 4: Drag the sales measure into the Labels shelf (optional).

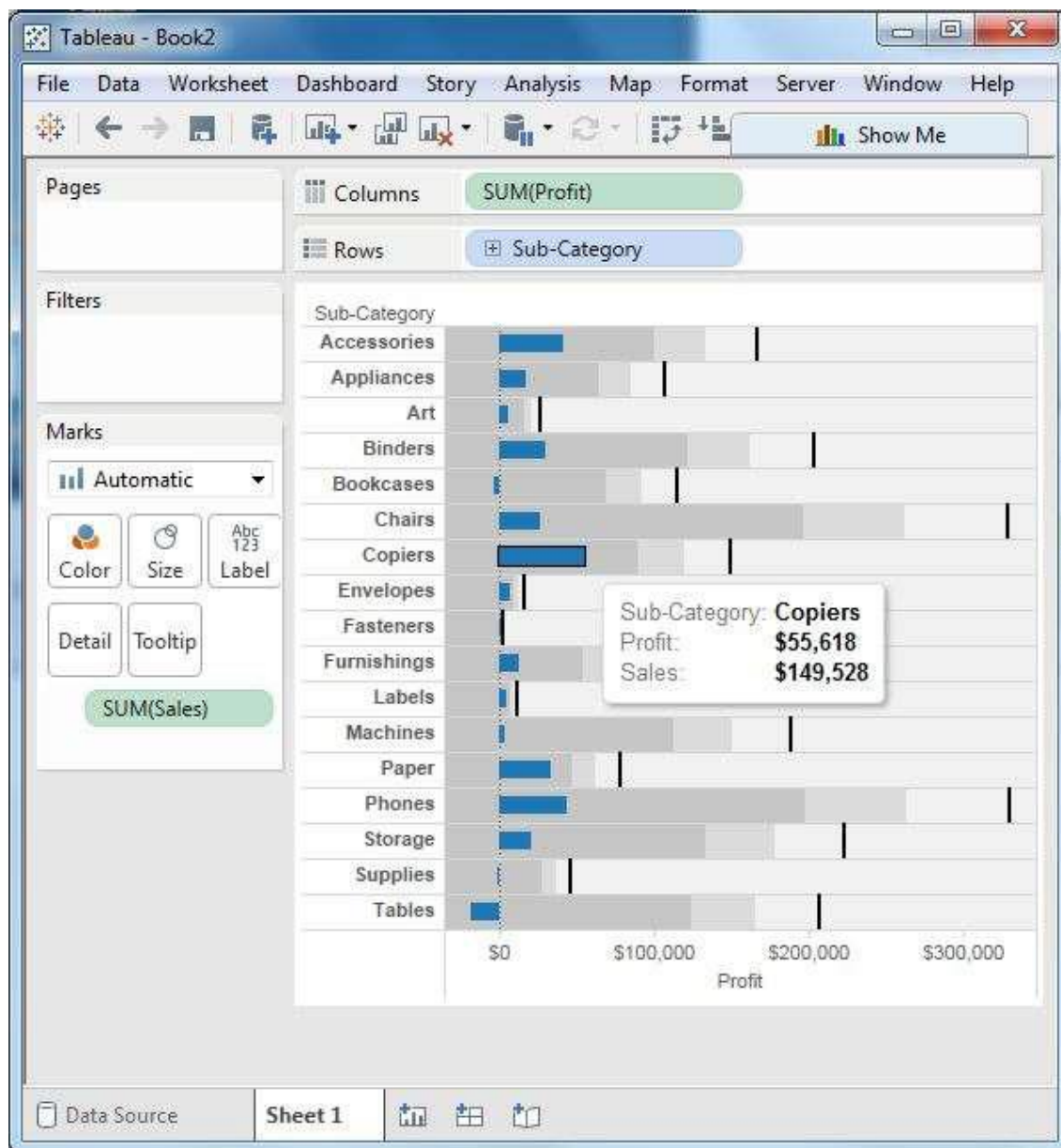
Bubble Chart with Measure Colors:

- 1: Drag and drop the measure profit into the Size shelf under Marks card.
- 2: Drag and drop the dimension ship mode into the Labels shelf under Marks Card.
- 3: Drag the measure sales into the color shelf.



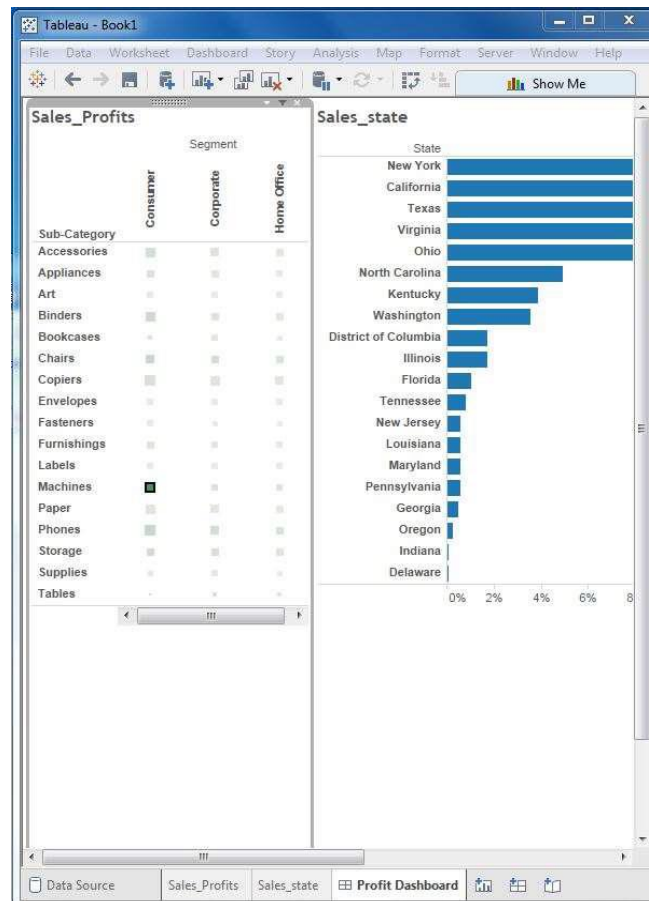
Lab 18	Bubble Chart
Description	We will create bullet chart to find size of profits for the respective sales figures in each Sub-Category.
Objective	To learn 1. Create Buller chart.

- 1: Drag and drop the dimension Sub-Category from the data pane into the column shelf.
- 2: Drag and drop the measures Profit to the Rows shelf.
- 3: Drag and drop the measures sales to the Rows shelf.
- 4: Drag the sales measure to the Marks card.
- 5: Using Show Me, choose the bullet graph option.



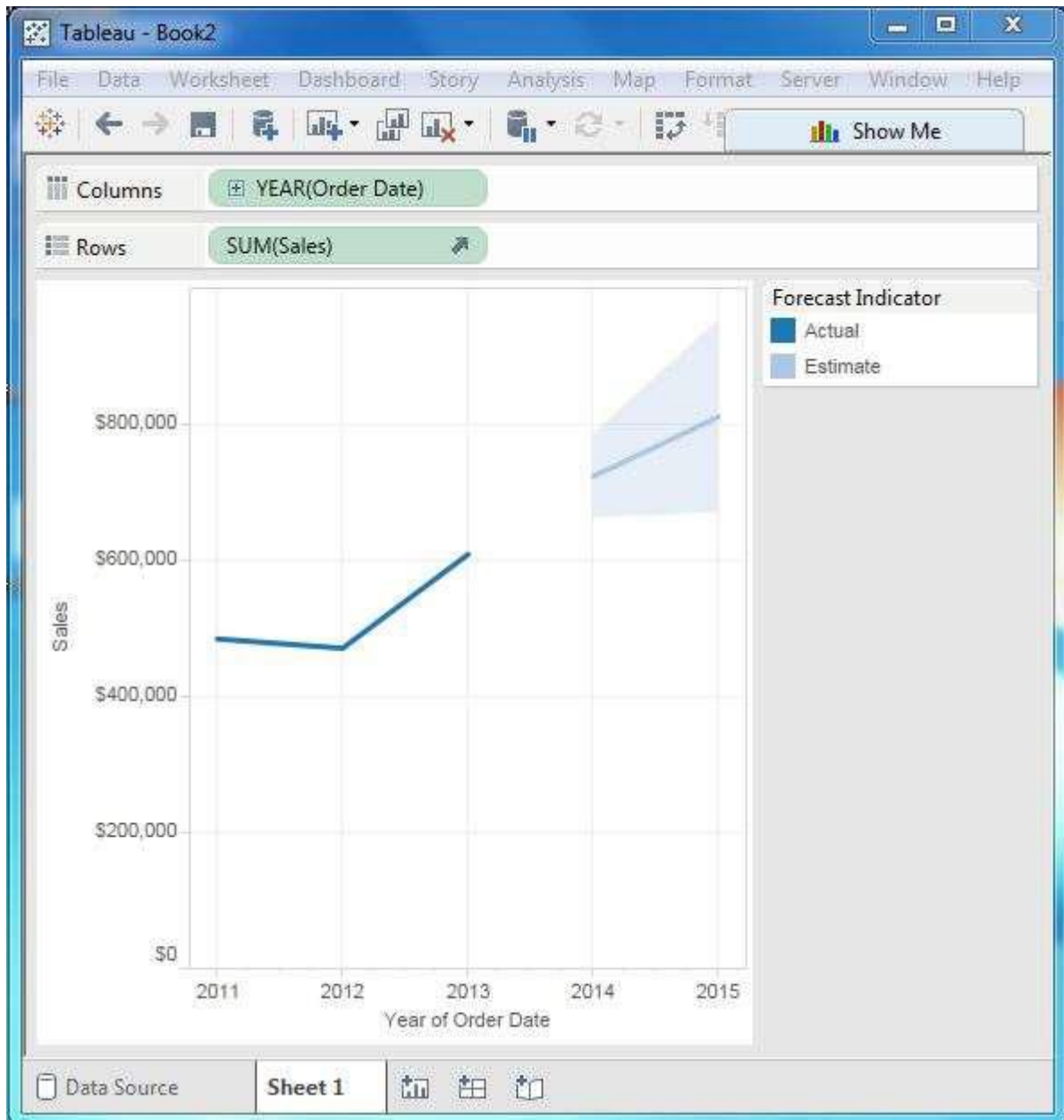
Lab 19	Dash Board
Description	We will create a dash board to show sales and profits for different segments and Sub-Category of products across all the states.
Objective	To learn <ol style="list-style-type: none">1. Create Dash board2. How the work sheets interact with each other with in the dash board.

- 1: Create a blank worksheet by dragging the dimension Segment to the columns shelf and the dimension Sub-Category to the Rows Shelf. Drag and drop the measure Sales to the Color shelf and the measure Profit to the Size shelf.
- 2: Create another sheet by dragging the dimension State to the Rows shelf and the measure Sales to the Columns shelf.
- 3: Apply a filter to the State field to arrange the Sales in a descending order.
- 4: Create a blank dashboard by clicking the Create New Dashboard link at the bottom of the workbook.
- 5: Drag the two worksheets to the dashboard.
- 6: Click the middle icon in the first worksheet, which shows the prompt Use as Filter on hovering the mouse over it.
- 7: Click the box representing a Sub-Category and a segment. You can notice that only the states where the sales happened for this amount of profit are filtered out in the second worksheet.



Lab 20	Forecasting
Description	We will create a forecast to forecast the value of the measure sales for next year.
Objective	To learn 1. Create forecast. 2. Model known as exponential smoothing.

- 1: Create a line chart with Order Date (Year) in the columns shelf and Sales in the Rows shelf.
- 2: Go to the Analysis tab and click Forecast under Model category.
- 3: Choose the Forecast Length as 2 years and leave the Forecast Model to Automatic.



Lab 21	Trend Line
Description	We will create trend line to find the trend for the value of the measure sales for next year.
Objective	To learn 1. Create trend line.

- 1: Drag the dimension Order date to the Column shelf and the measure Sales to the Rows shelf.
- 2: Choose the chart type as Line chart.
- 3: In the Analysis menu, go to model and choose Trend Line.
- 4: Clicking on Trend Line pops up an option showing different types of trend Lines that can be added. Choose the linear model.

