

Lesson 5

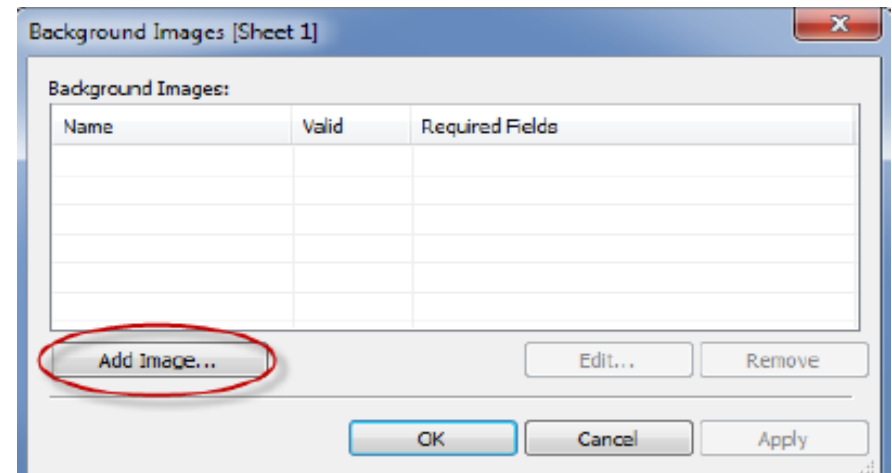
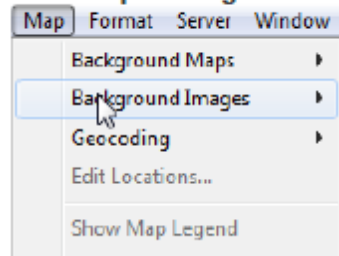
Formatting and Annotations

Background Images and Maps



When you add a background image to the view, you need to specify a coordinate system by mapping both the x and y axes to the values of fields in your database. If you are adding a map, the x and y axes should be longitude and latitude expressed as a decimal. However, you can map the axes to any relevant fields based on your own coordinate system.

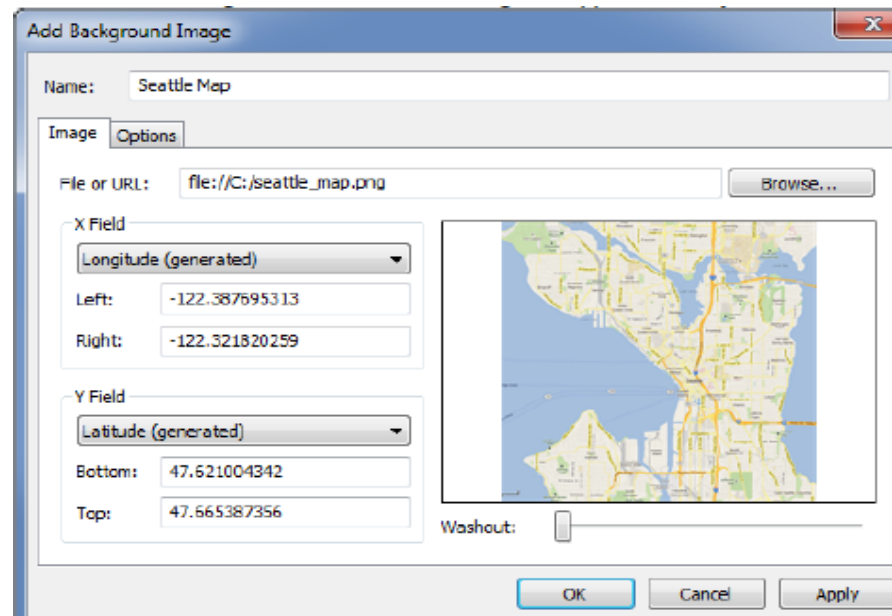
Select **Map > Background Images** and then select a data source.





Background Images and Maps

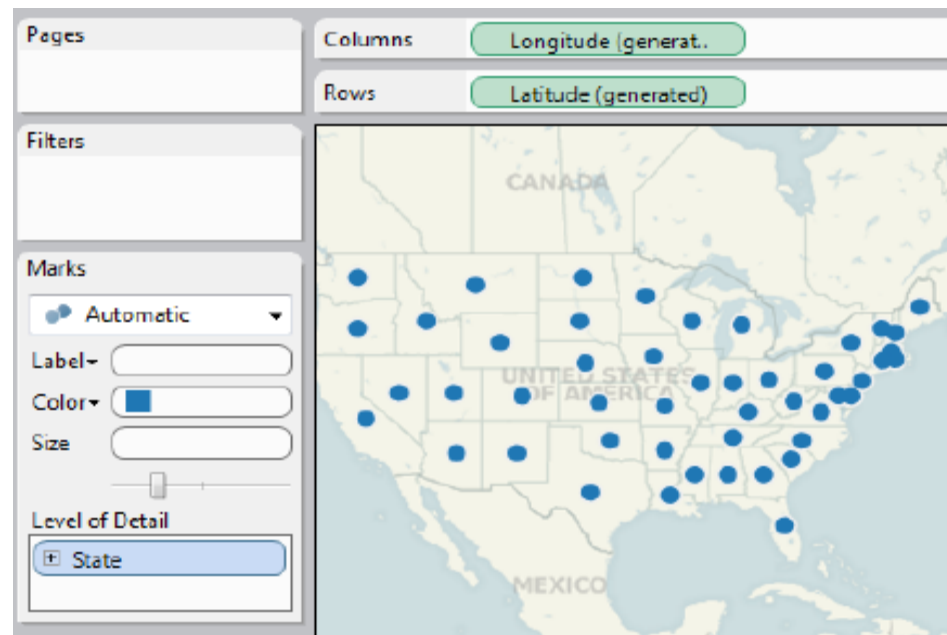
You can adjust the intensity of the image using the Washout slider. The farther the slider moves to the right, the more faded the image will appear behind your data. After all the setting click on "OK"





Maps

You can use the generated latitude and longitude fields to build map views simply by double clicking a geographic field in the Data window. The Show Me! double-click rules will automatically add the generated Latitude and Longitude fields to the shelves and place the geographic field on the Level of Detail shelf.

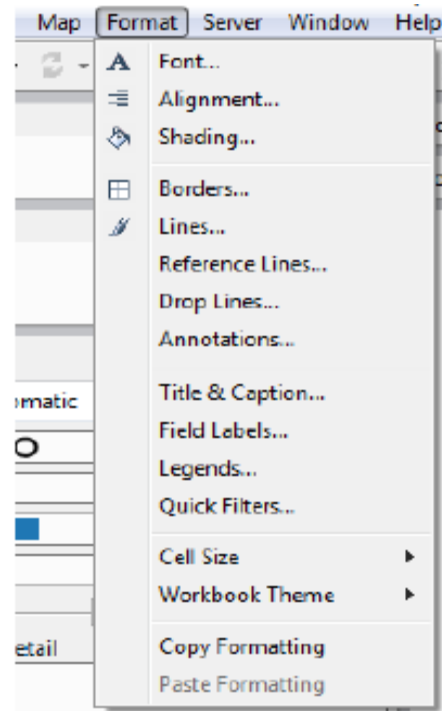




Formatting

Formatting is an important part of both your analysis and presentation. You can format almost everything you see on a worksheet including the fonts, shading, alignment, borders, and graph lines.

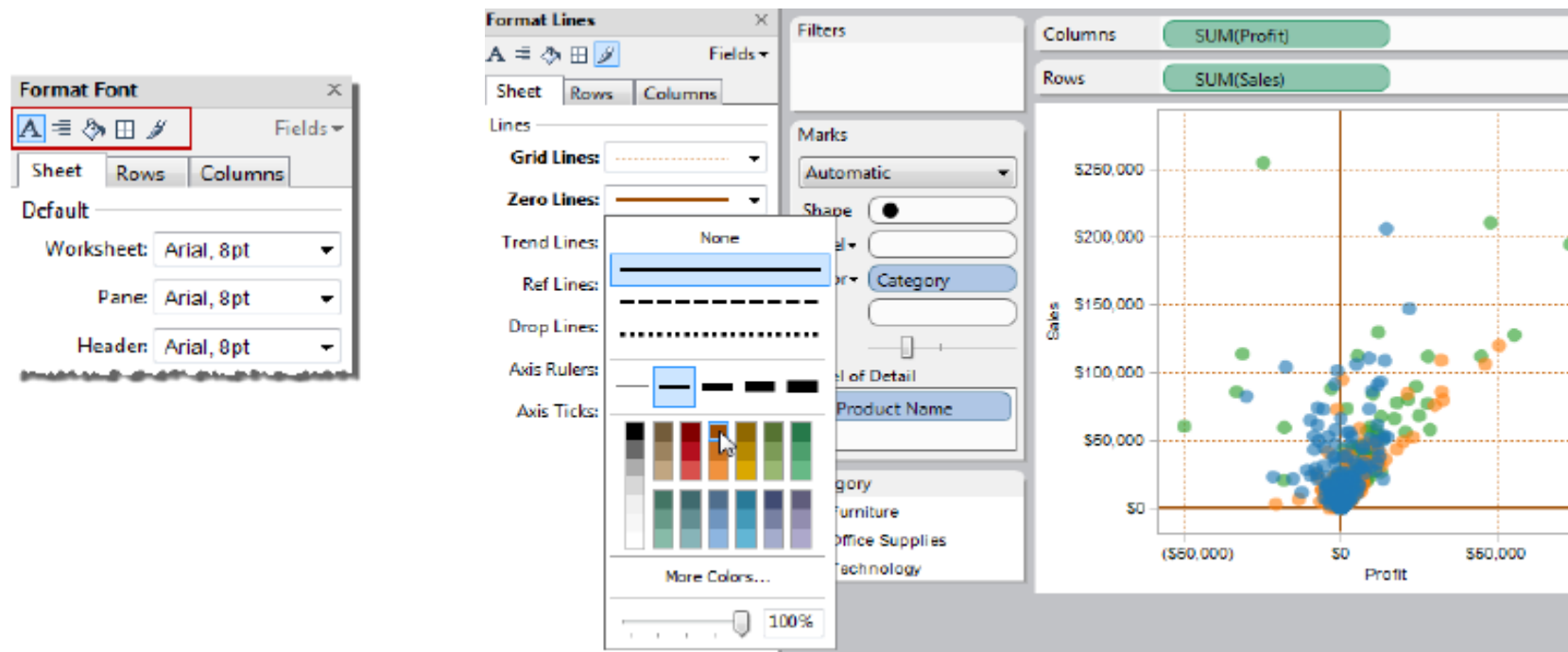
To open the Format window:





Formatting (Cont...)

- The Format window opens on the left side of the workbook, replacing the Data window. At the top of the Format window, there is a toolbar where you can quickly switch between each of the types of format settings available.

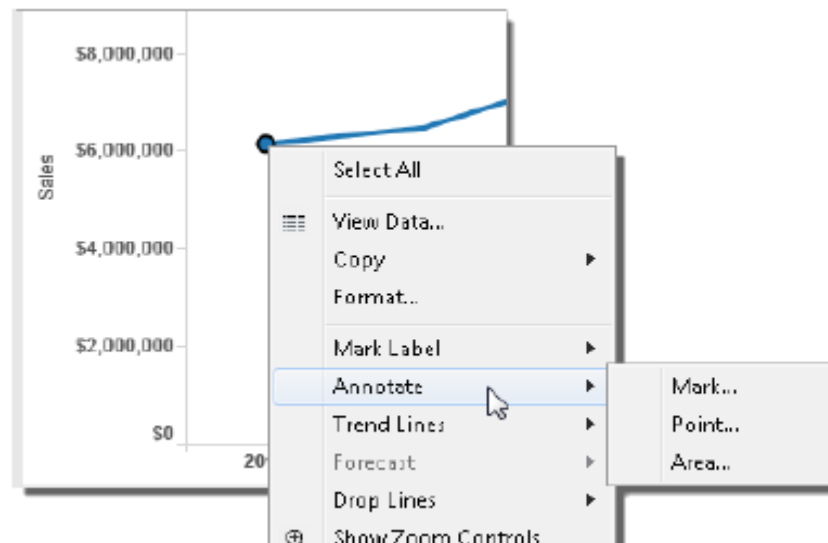




Annotations and Mark Labels

Annotations call attention to specific marks, points, or areas in a view. An annotation, sometimes called a call-out, is most commonly displayed as a text box with a line pointing to a specific point or mark. You can also add an area annotation, which calls out several marks or a region of the view.

Adding Annotations

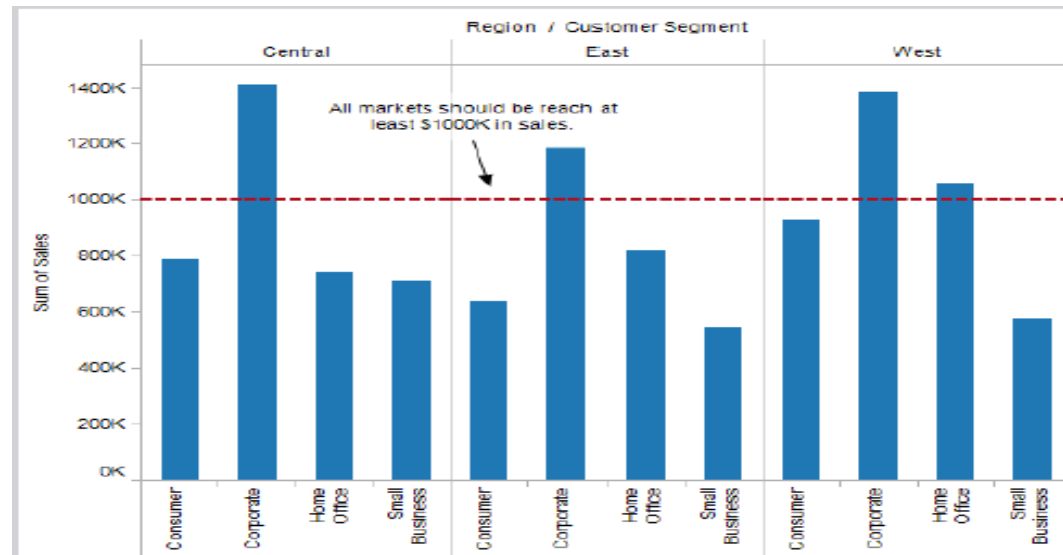
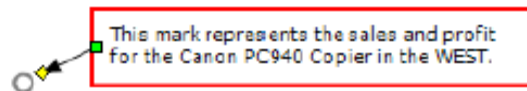




Annotations and Mark Labels

- **Mark Annotations:** When you select a mark annotation the body and line are selected and several resize handles display.

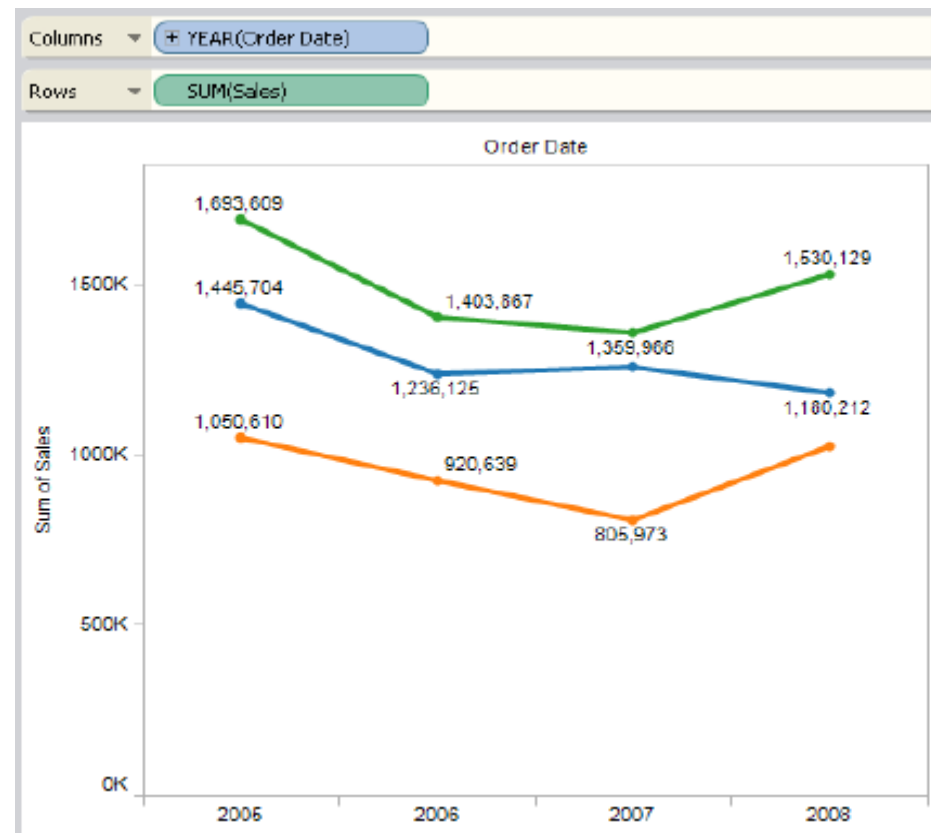
- **Point Annotations:** A point annotation is a specific point in the view such as a reference line or a value on an axis.





Mark Labels

Mark labels are values shown next to each data point in a view. For example, in a view that shows product category sales over time as a line, you can turn on mark labels so the sales values display next to each point along the lines.

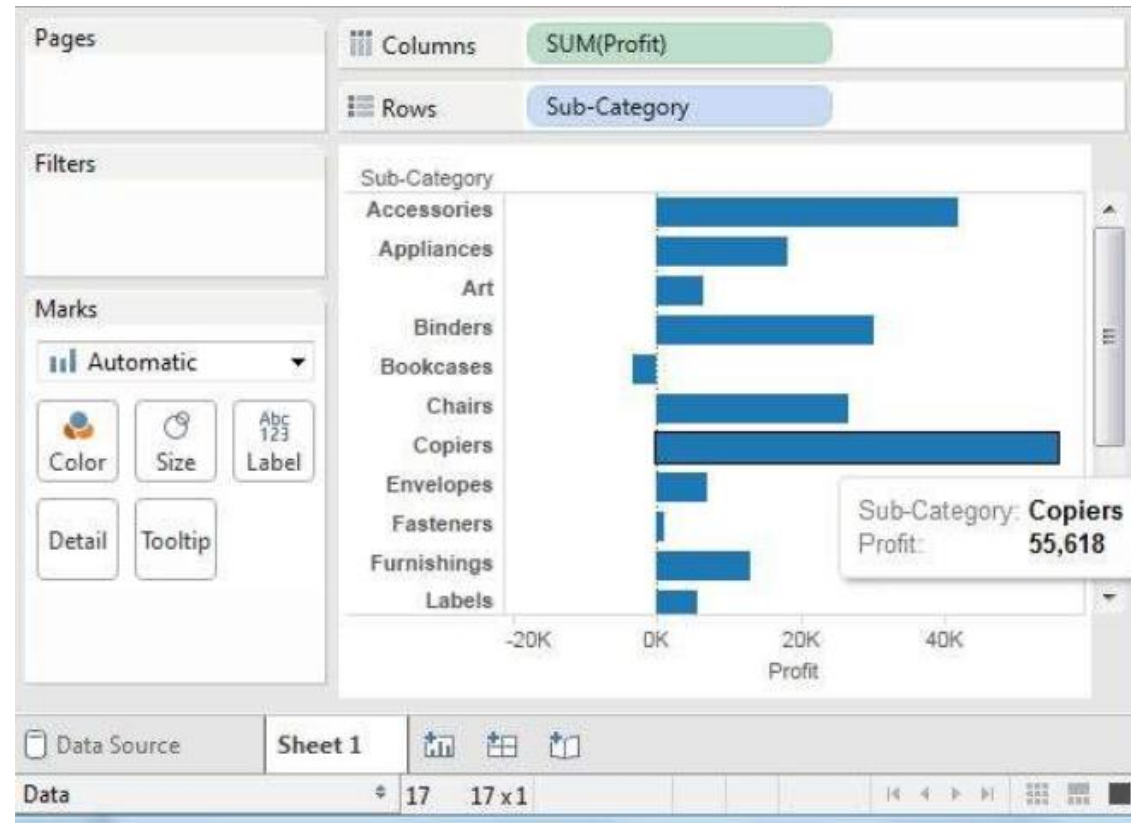




Bar Charts

A bar chart represents data in rectangular bars with the length of the bar showing the value of the variable. Tableau automatically produces a bar chart when you drag a dimension to the Row shelf and measure to the Column shelf.

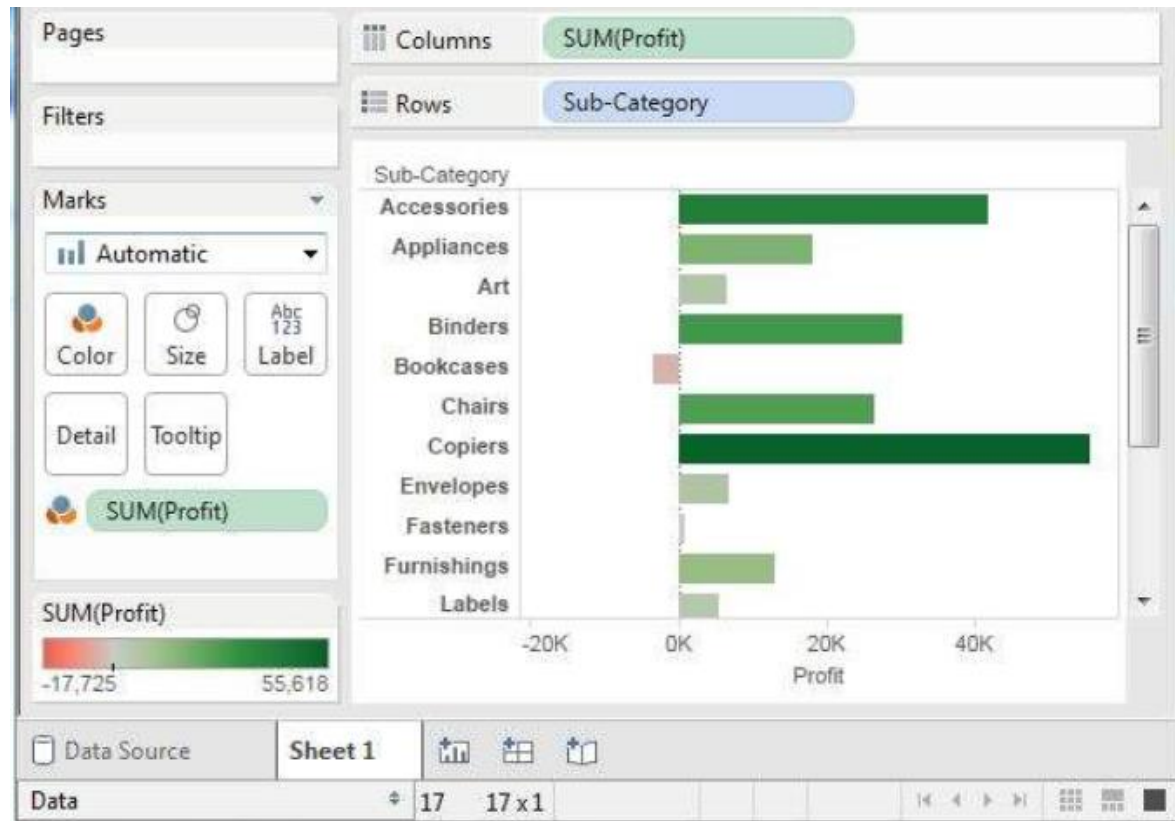
Simple Bar Chart:





Bar Chart with Color Range

Colors can be applied on bars based on their ranges. The longer bars get darker shades and the smaller bars get the lighter shades, it produces a different color for negative bars.





Stacked Bar Chart

You can add another dimension to a bar chart to produce a stacked bar chart, which shows different colors in each bar. The following chart appears which shows the distribution of each segment in each bar.

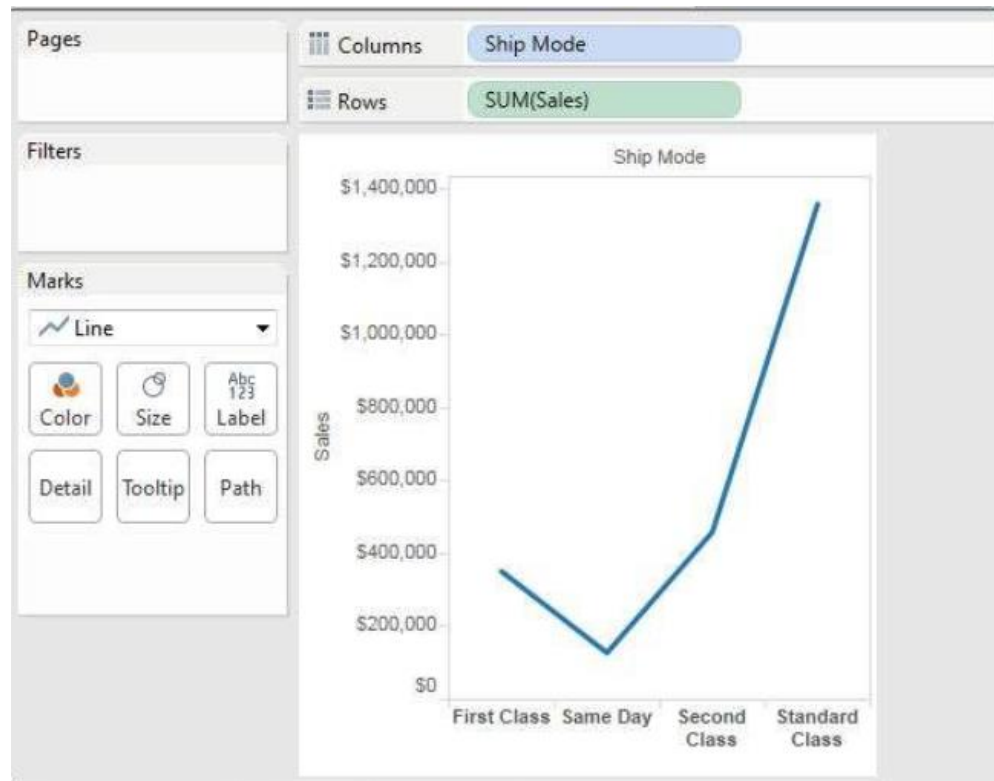




Line Chart

In a line chart, a measure and a dimension are taken along the two axes of the chart area. The pair of values for each observation becomes a point and the joining of all these points create a line showing the variation or relationship between the dimensions and measures chosen.

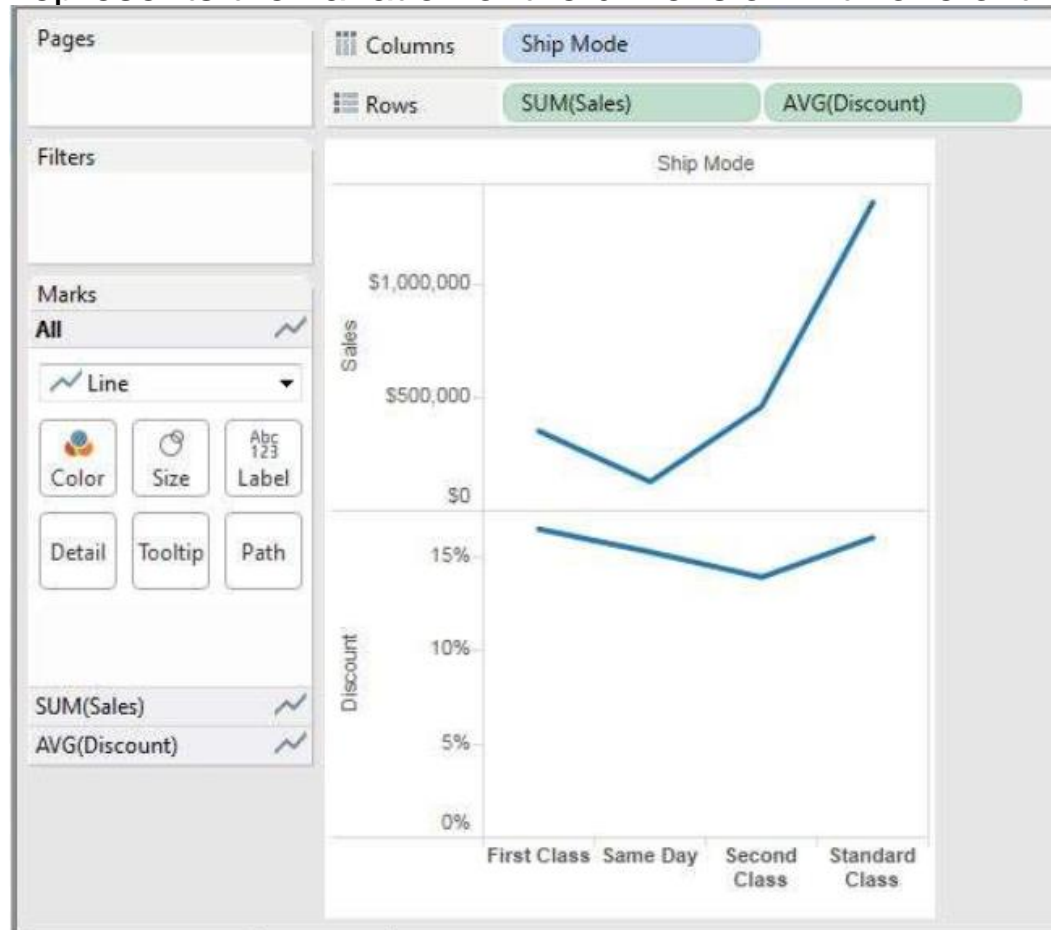
Simple Line Chart: Choose one dimension and one measure to create a simple line chart.





Multiple Measure Line Chart

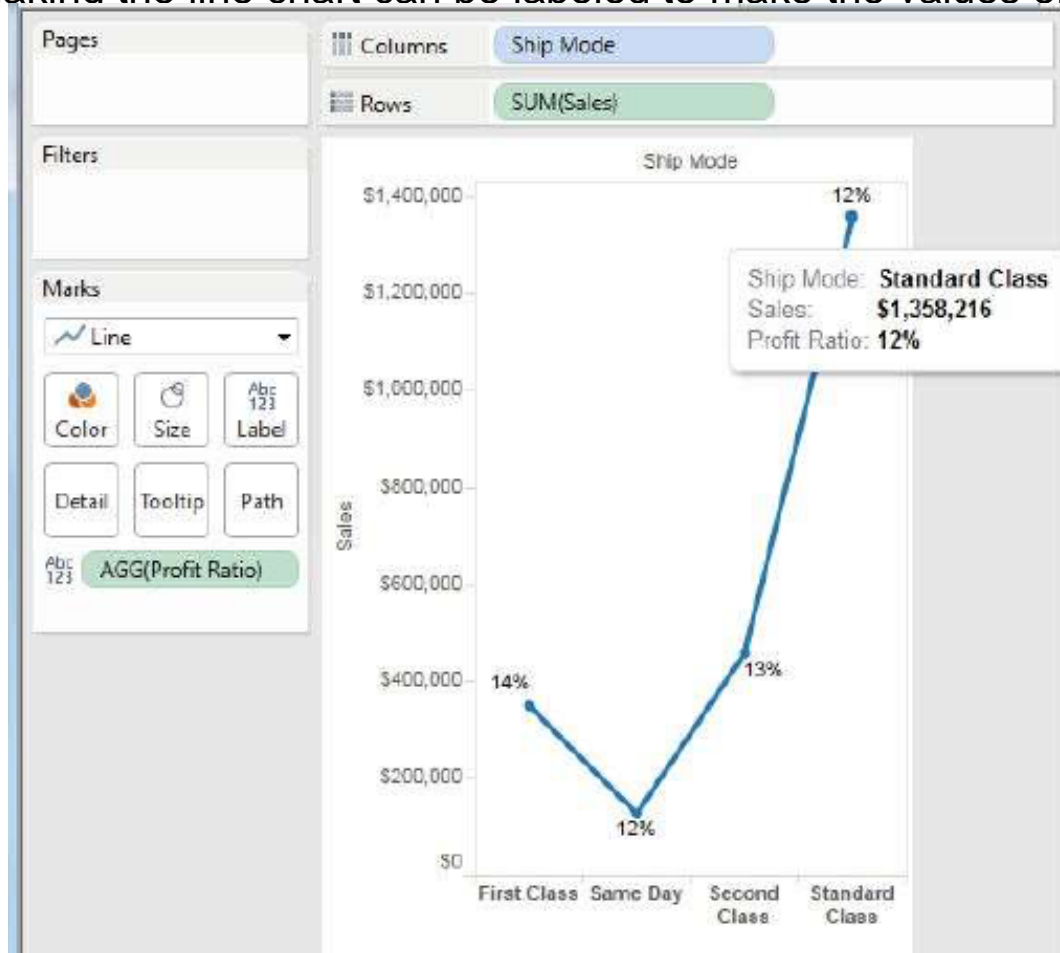
Two or more measures can be used with one dimension. This will produce multiple line charts, each in one pane. Each pane represents the variation of the dimension with one of the measures.





Line Chart with Label

Each of the points making the line chart can be labeled to make the values of the measure visible

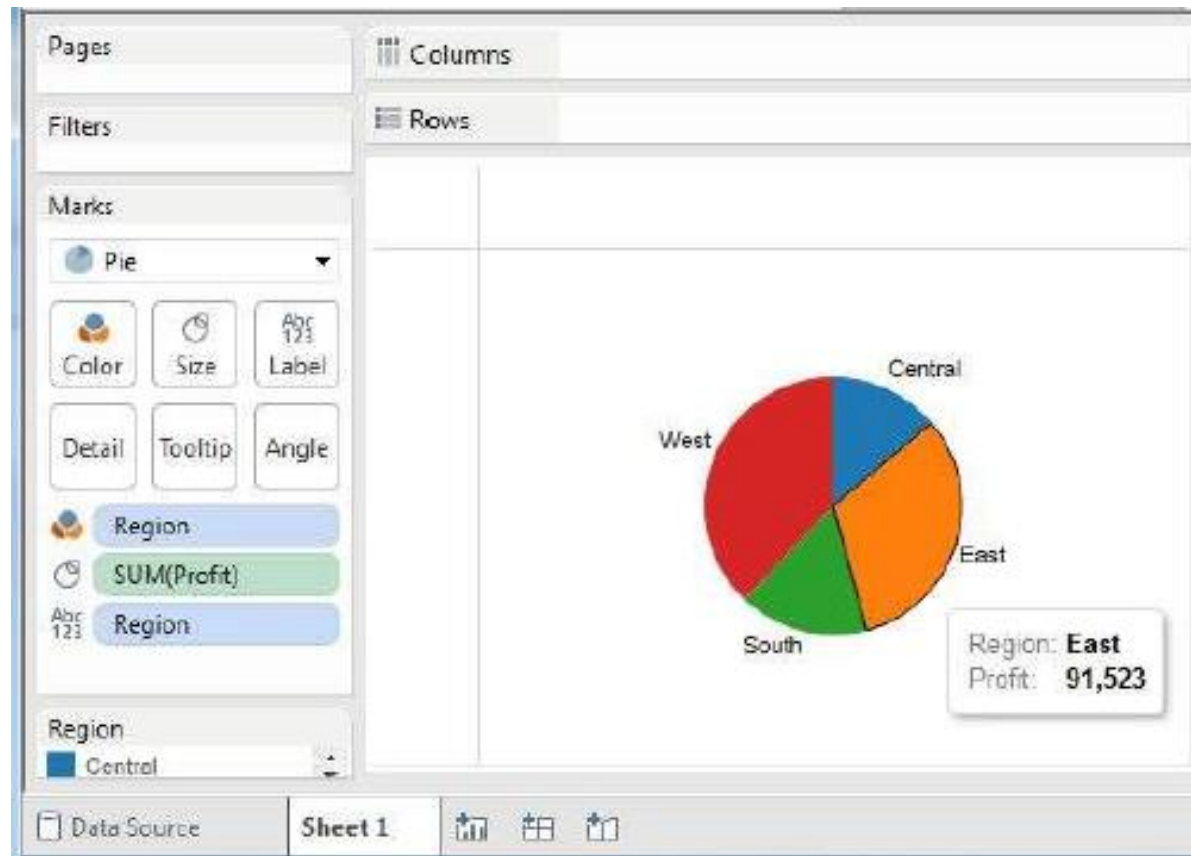




Pie Chart

A pie chart represents data as slices of a circle with different sizes and colors. The slices are labeled and the numbers corresponding to each slice is also represented in the chart.

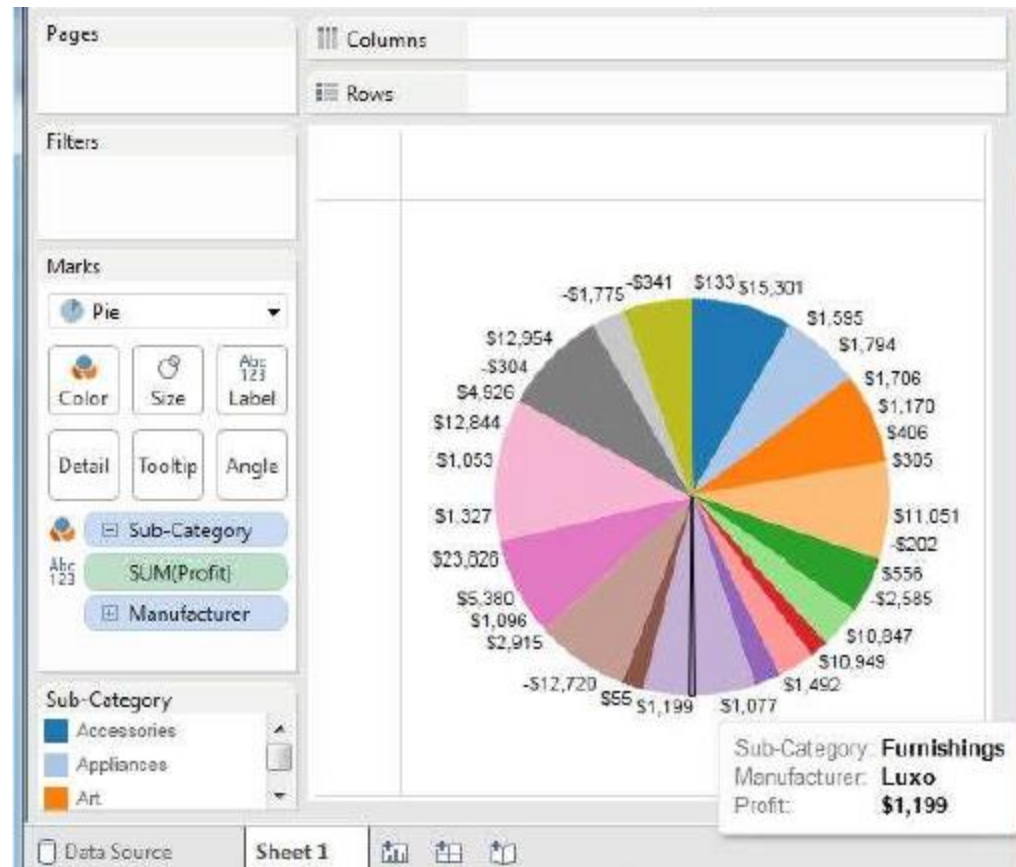
Simple Pie Chart: Choose one dimension and one measure to create a simple pie chart.





Drill-Down Pie Chart

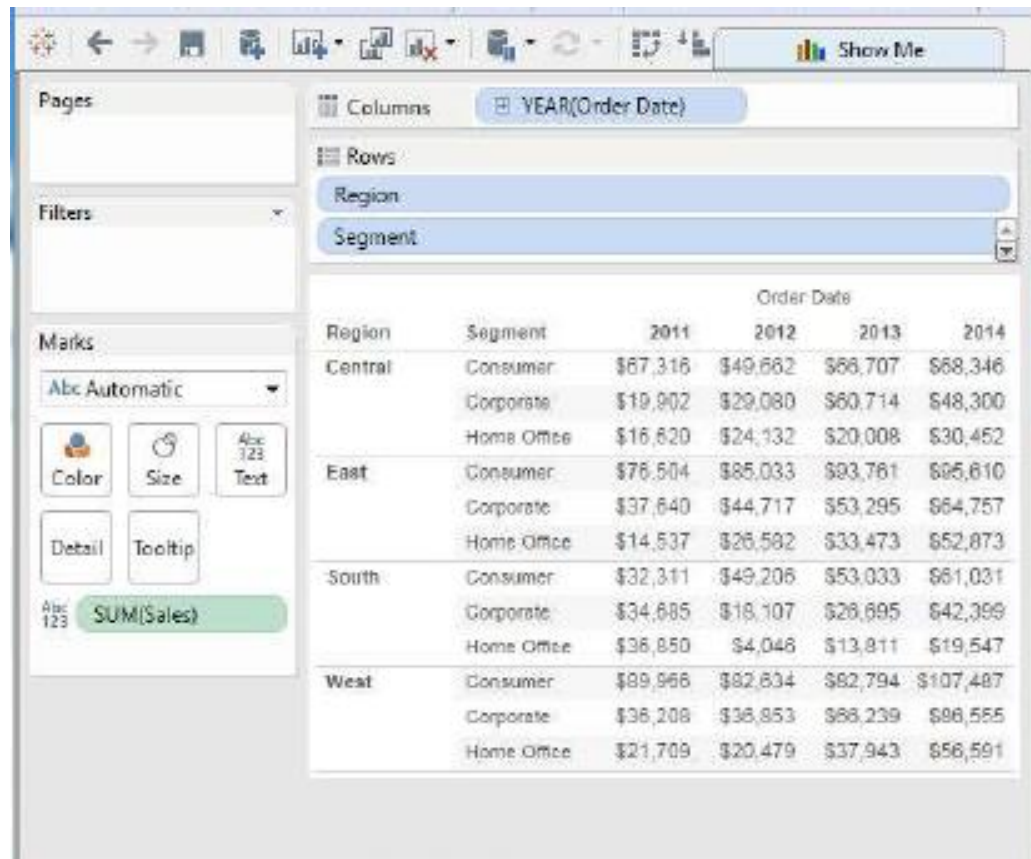
You can choose a dimension with hierarchy and as you go deeper into the hierarchy, the chart changes reflect the level of the dimension chosen.





Cross Tab

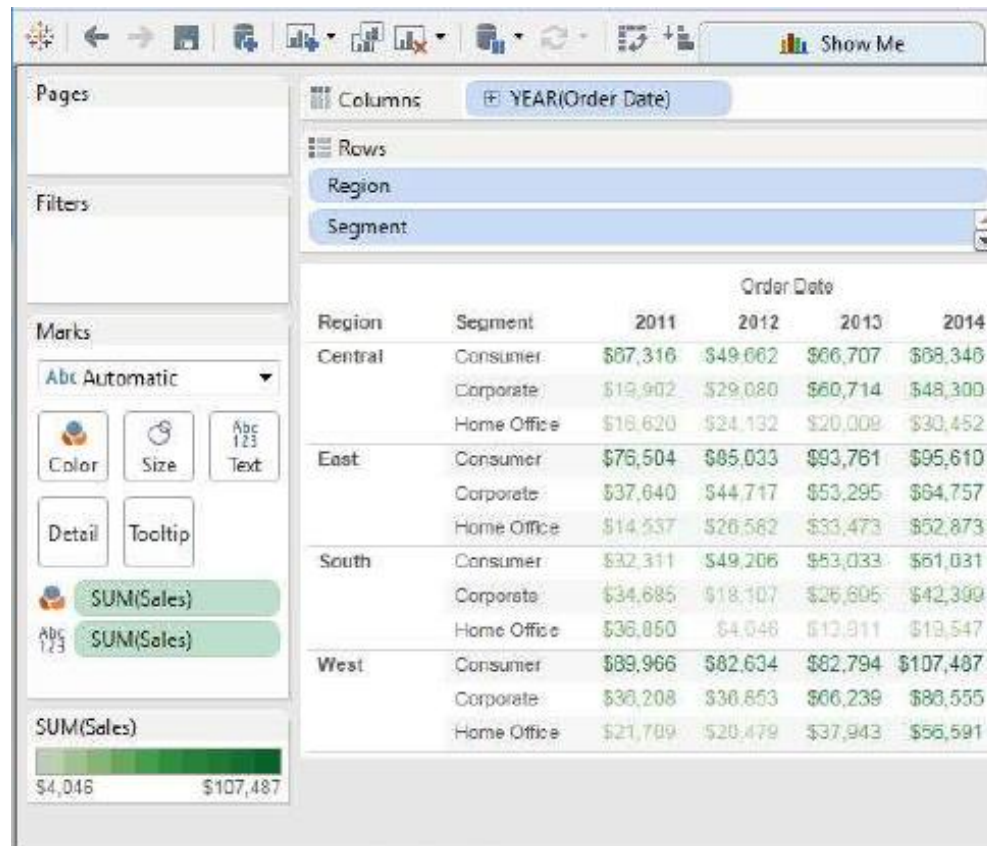
A crosstab chart in Tableau is also called a Text table, which shows the data in textual form. The chart is made up of one or more dimensions and one or more measures. This chart can also show various calculations on the values of the measure field such as running total, percentage total, etc.





Crosstab - Color Encoded

You can get the values color encoded in the crosstab chart by dropping the measure field into the Color shelf as shown in the following screenshot. This color coding shows the strength of the color depending on the value of the measure. The larger values have a darker shade than the lighter values.

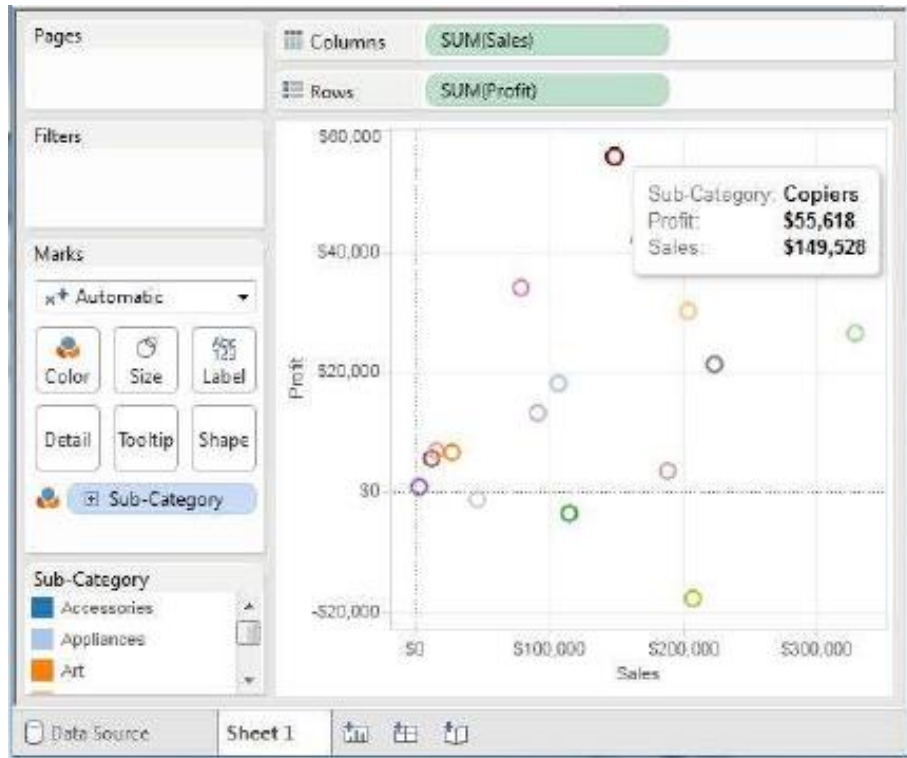




Scatter Plot

A scatter plot shows many points scattered in the Cartesian plane. It is created by plotting values of numerical variables as X and Y coordinates in the Cartesian plane. Tableau takes at least one measure in the Rows shelf and one measure in the Columns shelf to create a scatter plot. However, we can add dimension fields to the scatter plot which play a role in marking different colors for the already existing points in the scatter graph.

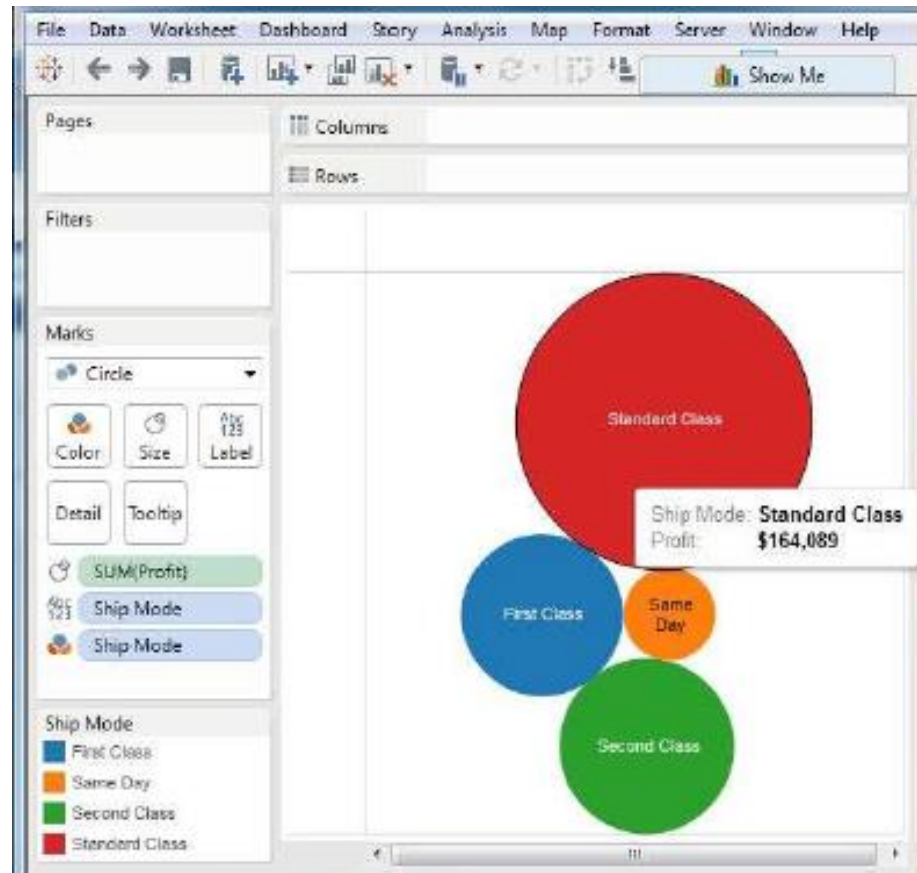
Simple Scatter Plot:





Bubble Chart

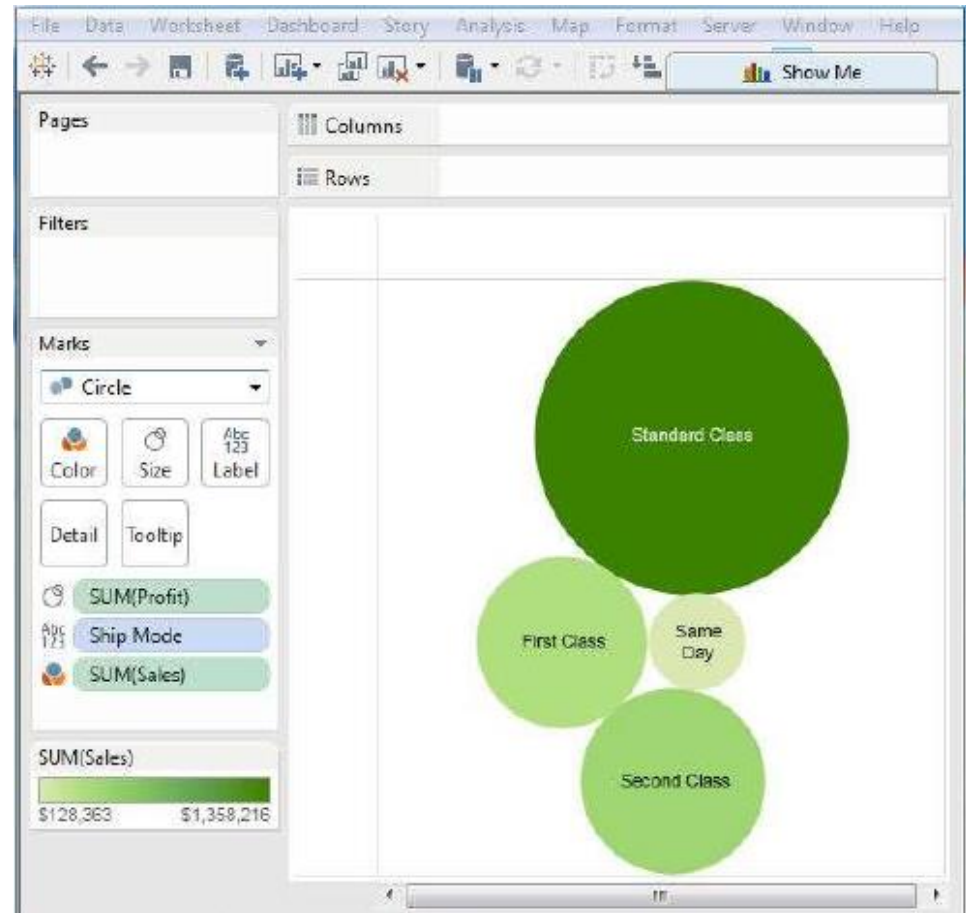
Bubble charts display data as a cluster of circles. Each of the values in the dimension field represents a circle whereas the values of measure represent the size of those circles. You can drag the required fields to different shelves under the marks card.





Bubble Chart with Measure Colors

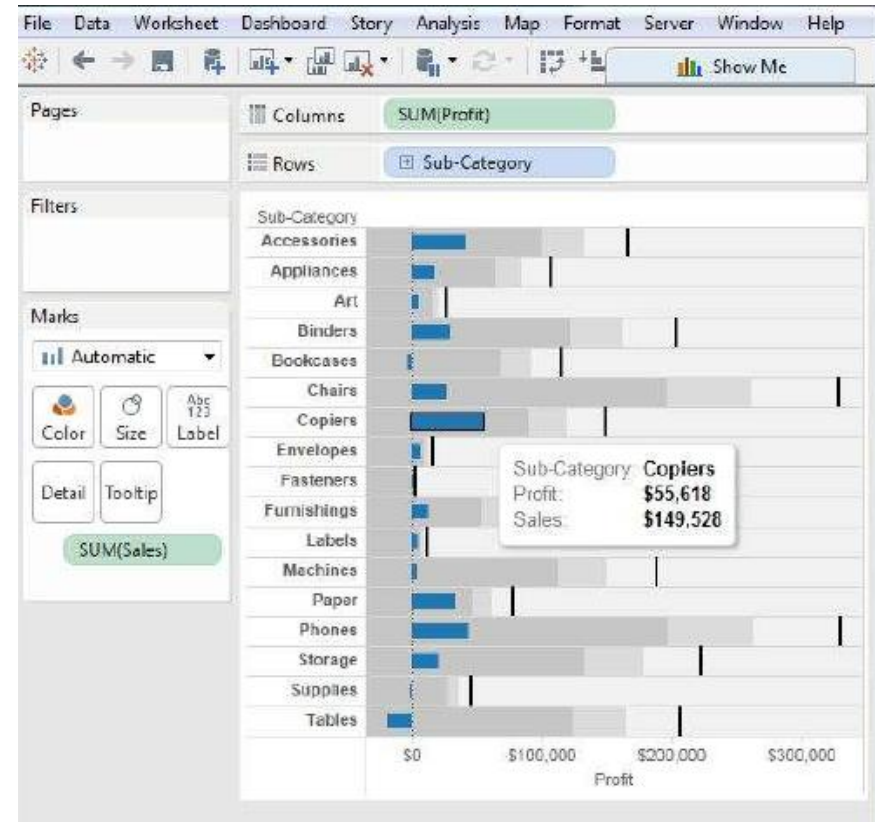
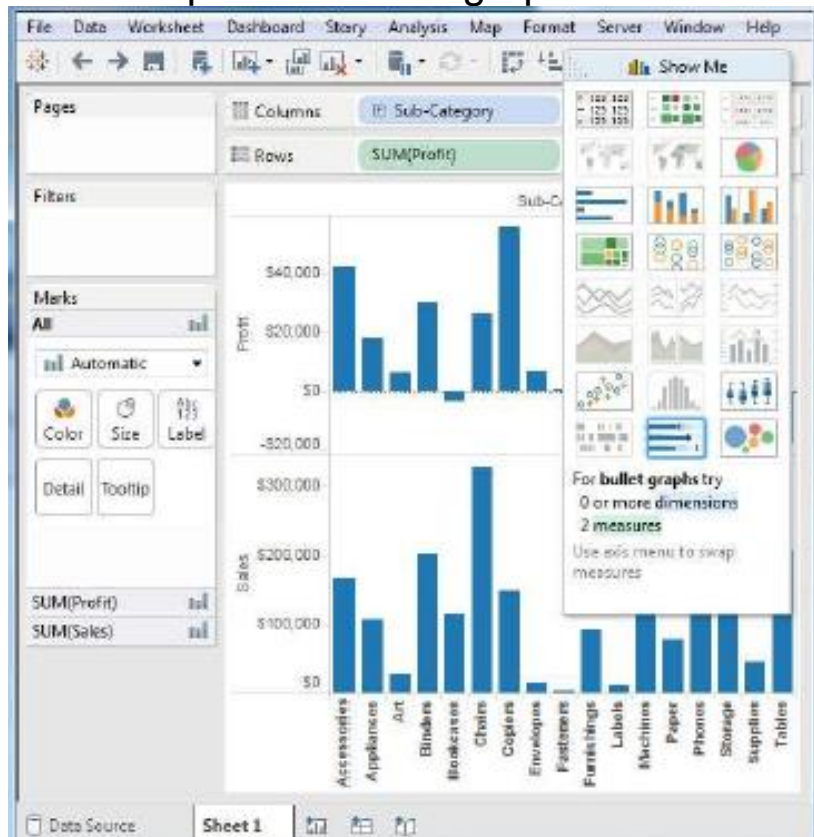
Instead of coloring each circle with a different color, you can use a single color with different shades. For this, drag the measure sales into the color shelf. The higher values represent darker shades while the smaller values represent lighter shades.





Bullet Graph

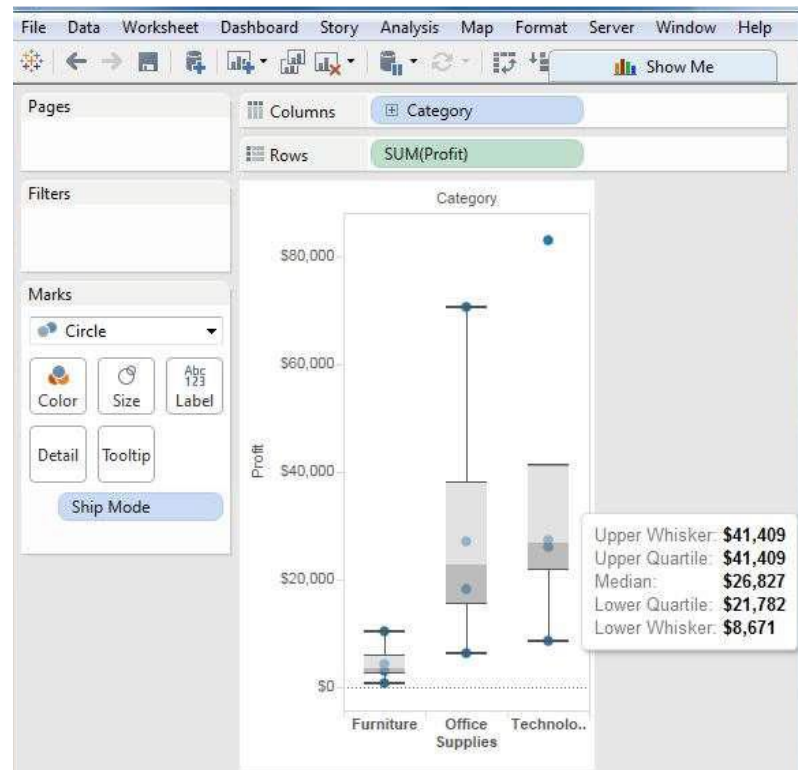
A bullet chart is a variation of Bar chart. In this chart, we compare the value of one measure with another measure in the context of finding the variation in the first measure within a range of variations in the second measure. It is like two bars drawn upon one another to indicate their individual values at the same position in the graph.





Box Plot

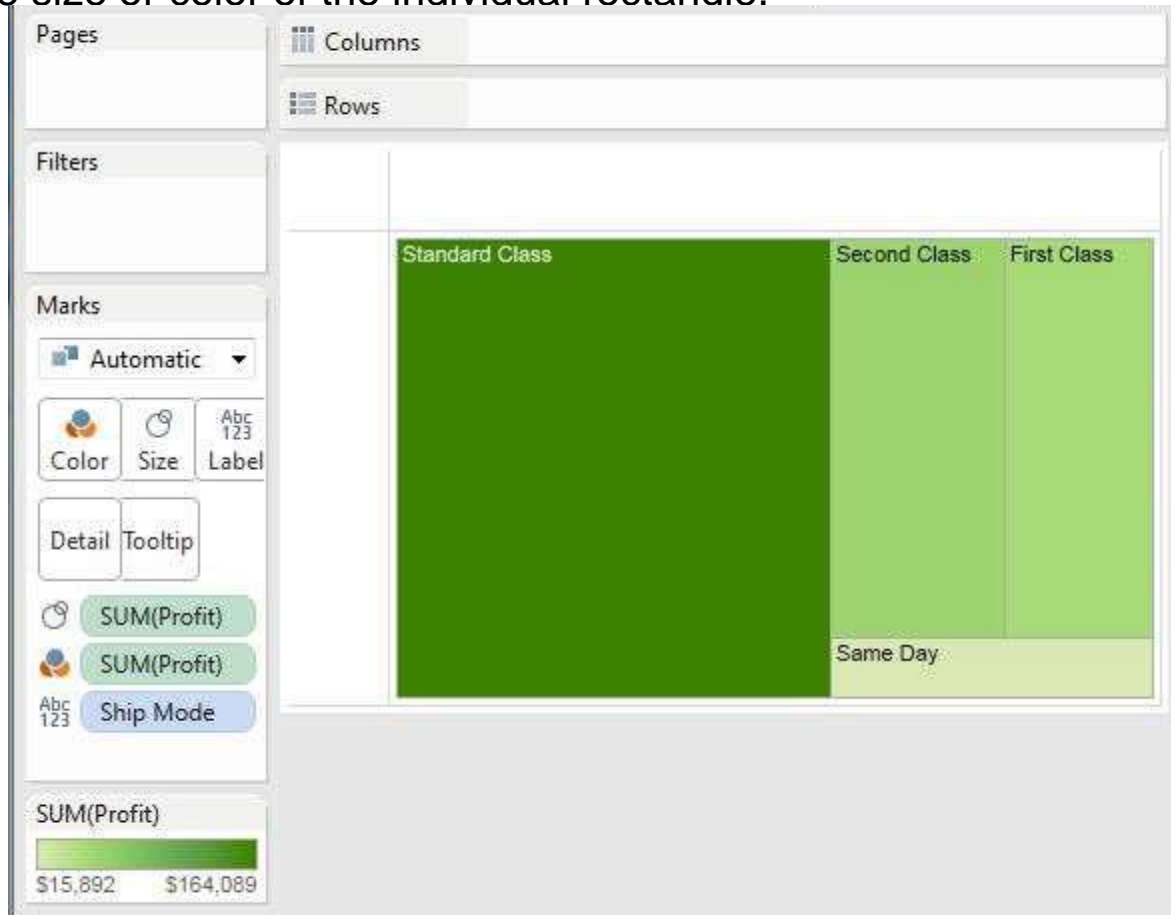
The box plots are also known as a box-and-whisker plots. They show the distribution of values along an axis. Boxes indicate the middle 50 percent of the data which is, the middle two quartiles of the data's distribution. The remaining 50 percent of data on both sides is represented by lines also called whiskers, to display all points within 1.5 times the interquartile range, which is all points within 1.5 times the width of the adjoining box, or all points at the maximum extent of the data.





Tree Map

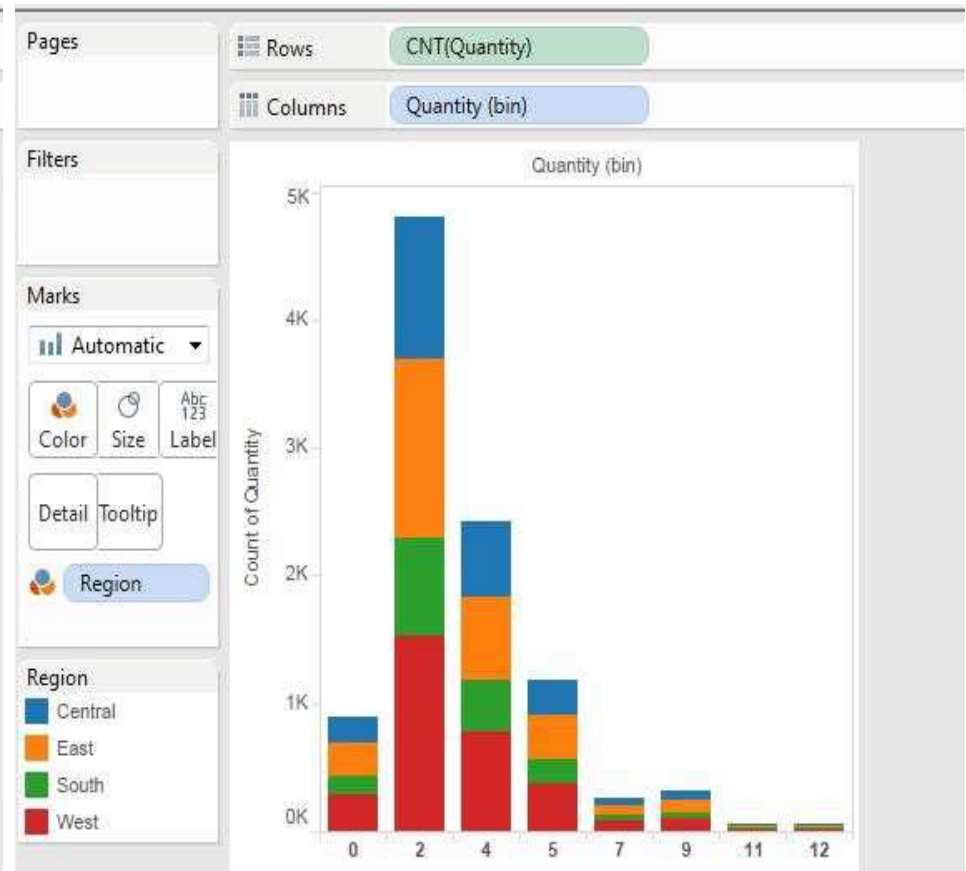
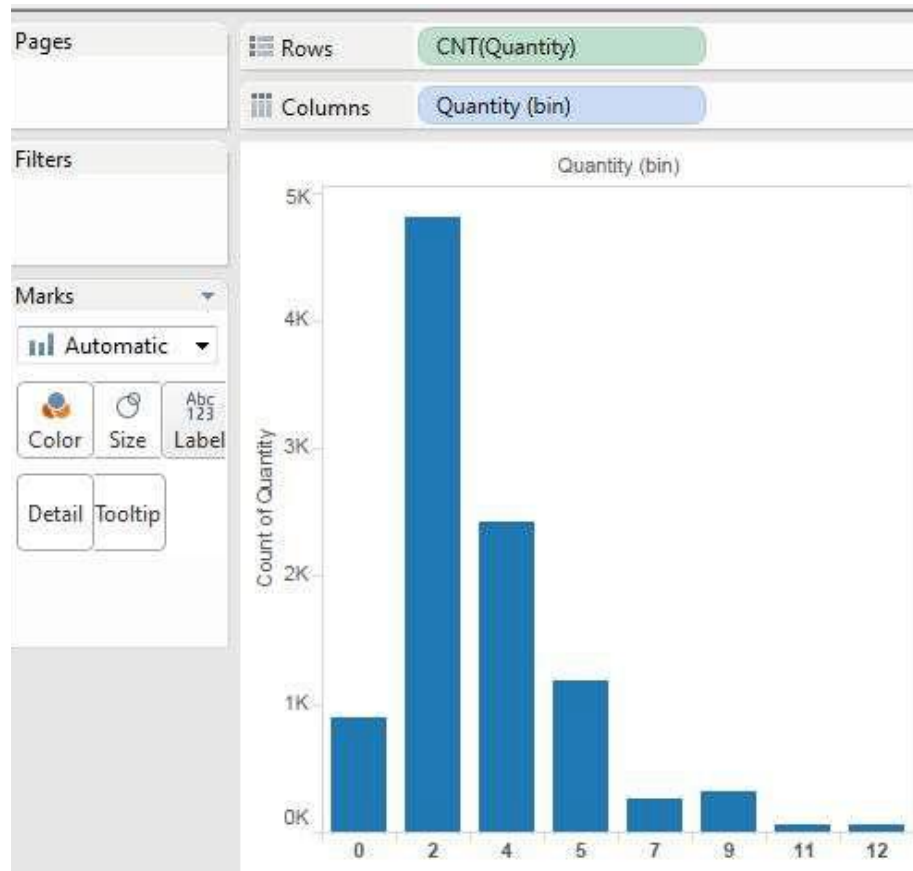
The tree map displays data in nested rectangles. The dimensions define the structure of the tree map and measures define the size or color of the individual rectangle.





Histogram

A histogram represents the frequencies of values of a variable bucketed into ranges. Histogram is similar to bar chart but it groups the values into continuous ranges. Each bar in histogram represents the height of the number of values present in that range.

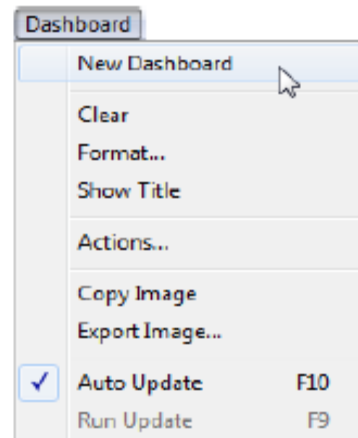




Dashboards

A dashboard is a collection of several worksheets and supporting information shown in a single place so you can compare and monitor a variety of data simultaneously. For example, you may have a set of views that you review every day. Rather than flipping through each worksheet, you can create a dashboard that displays all the views at once.

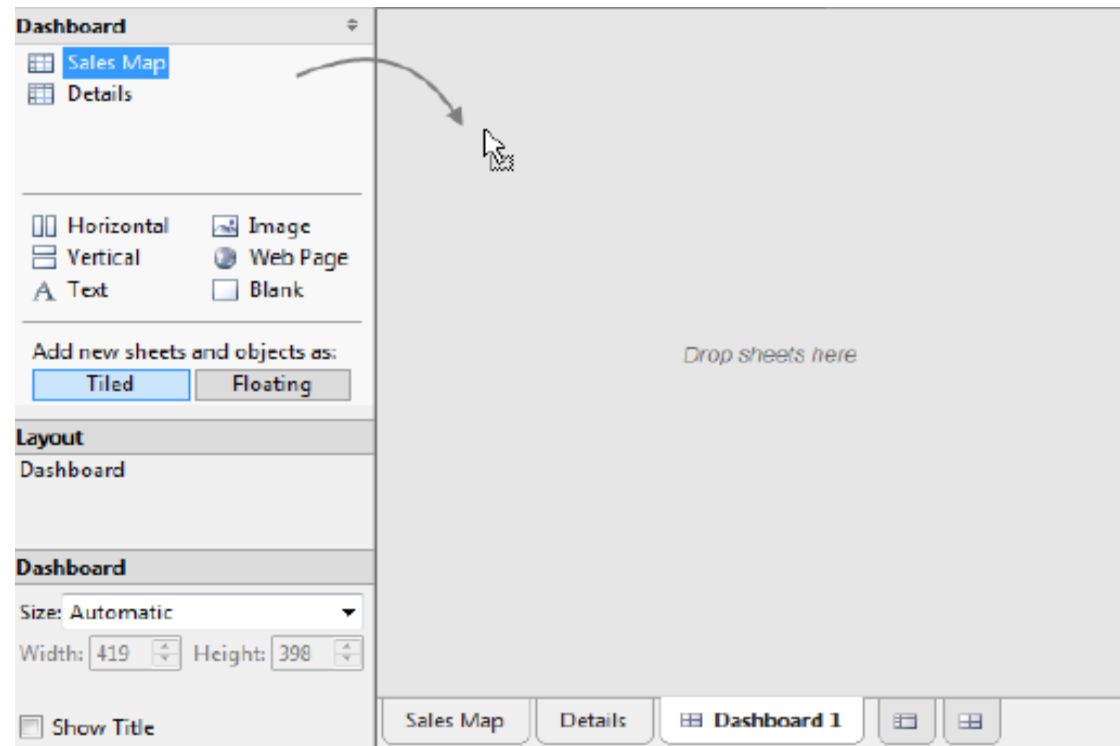
Select **Dashboard > New Dashboard**





Adding Views to a Dashboard

Click and drag a worksheet from the Dashboard window to the dashboard on the right.

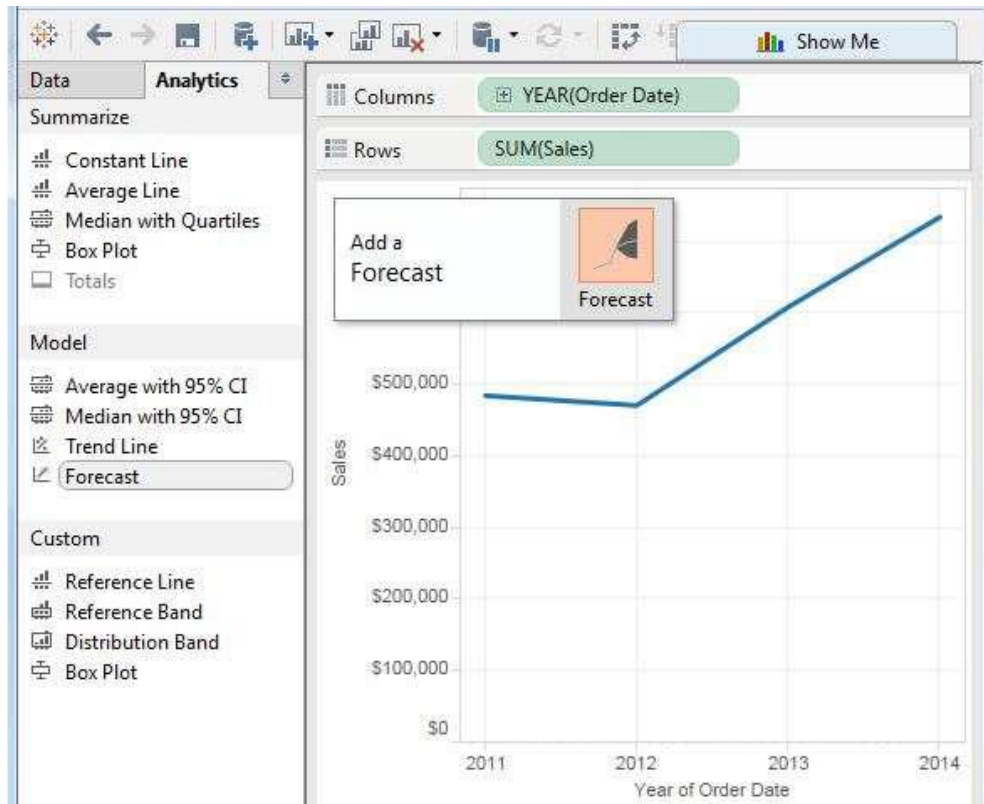




Forecasting

Forecasting is about predicting the future value of a measure. There are many mathematical models for forecasting. Tableau uses the model known as **exponential smoothing**. In exponential smoothing, recent observations are given relatively more weight than older observations.

Step 1: Create a line chart as follow.





Forecasting (cont...)

Step 2: Go to the Analysis tab as shown in the following screenshot and click Forecast under Model category. Choose the Forecast Length and Forecast Model.

Forecast Options

Forecast Length

☐ Automatic: Next 5 quarters

☐ Exactly: 1 Years

☒ Until: 2 Years

Source Data

Aggregate by: Automatic (Quarters)

Ignore last: 1 Quarters

☒ Fill in missing values with zeroes

Forecast Model

Automatic

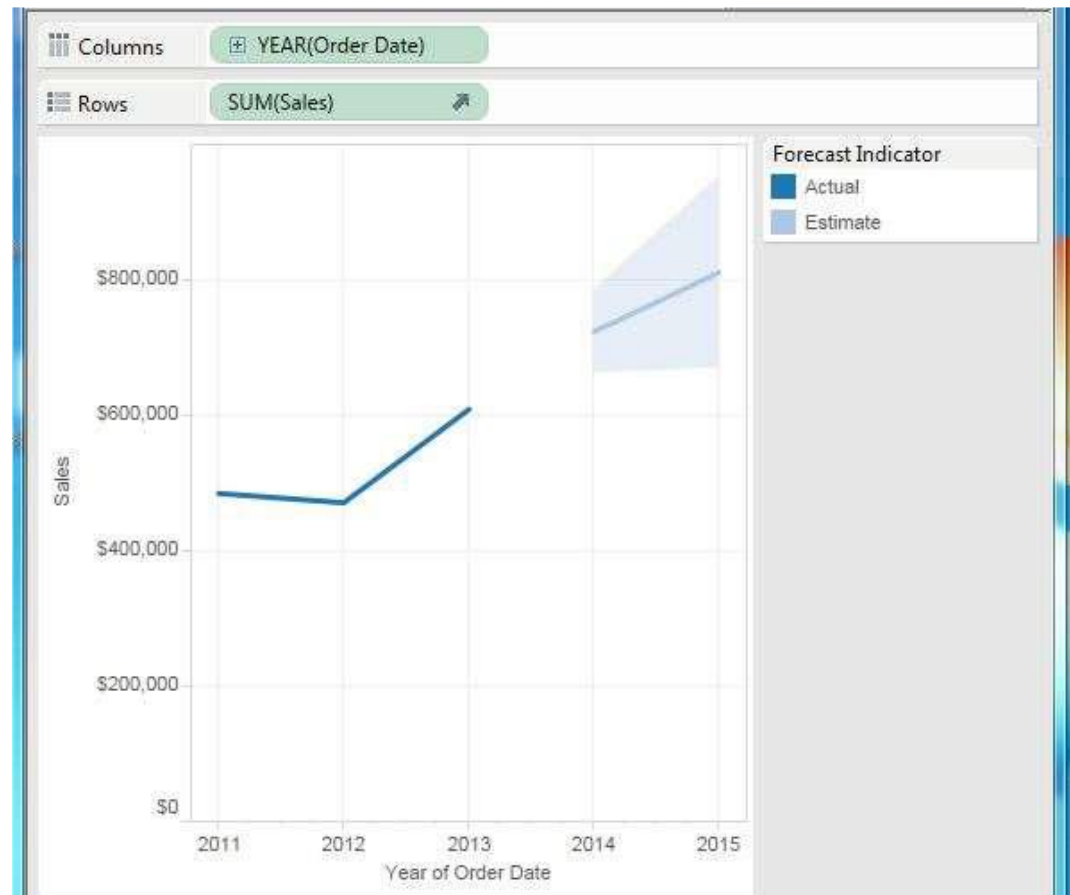
Automatically selects an exponential smoothing model for data that may have a trend and may have a seasonal pattern.

☒ Show 95% prediction intervals

Currently using source data from Q1 2011 to Q3 2014 to create a forecast through Q4 2015. Looking for potential seasonal patterns every 4 Quarters.

[Learn more about forecast options](#)

OK





Describe Forecast

You can also get minute details of the forecast model by choosing the option Describe Forecast.

SummaryModels

Options Used to Create Forecasts

Time series: Year of Order Date
Measures: Sum of Sales
Forecast forward: 5 quarters (Q4 2014 – Q4 2015)
Forecast based on: Q1 2011 – Q3 2014
Ignore last: 1 quarter (Q4 2014)
Seasonal pattern: 4 quarter cycle

Sum of Sales

Initial	Change From Initial	Seasonal Effect			Contribution		Quality	
Q4 2014	Q4 2014 – Q4 2015	High	Low		Trend	Season		
\$269,667 ± \$61,429	\$38,044	Q4 2015	\$1	Q1 2015	\$1	100.0%	0.0%	Good

☐ Show values as percentages

Copy to Clipboard

[Learn more about the forecast summary](#)

Close



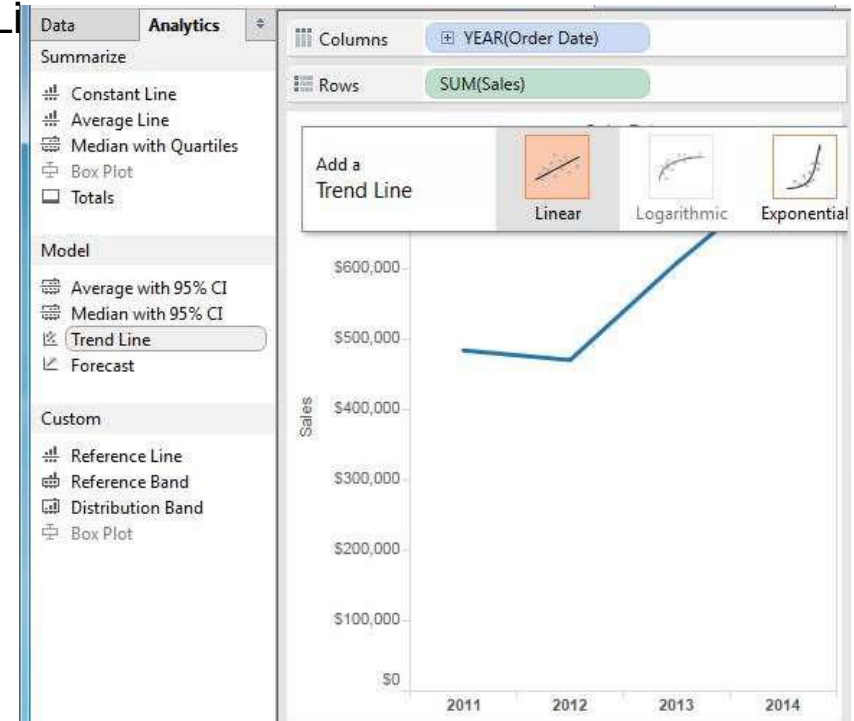
Trend Lines

Trend lines are used to predict the continuation of a certain trend of a variable. It also helps to identify the correlation between two variables by observing the trend in both of them simultaneously. There are many mathematical models for establishing trend lines.

Tableau provides four options. They are Linear, Logarithmic, Exponential, and Polynomial.

Tableau takes a time dimension and a measure field to create a Trend Line.

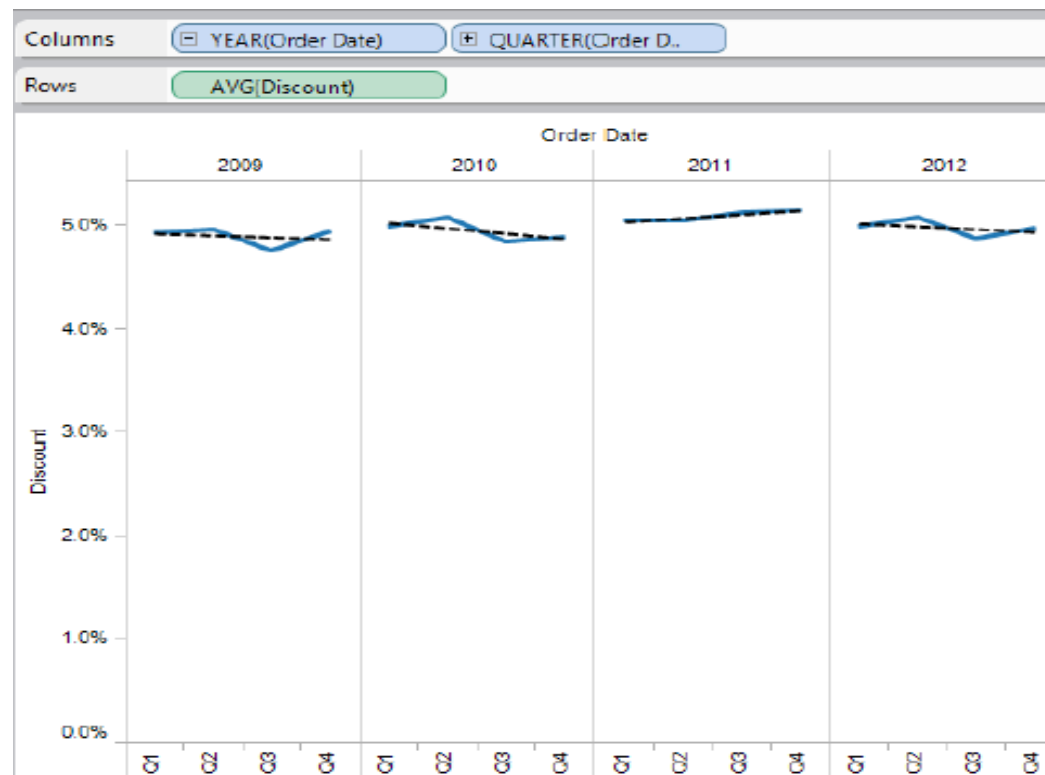
Create a line chart and choose Model->Trend Li





Answering Questions with Trend Lines

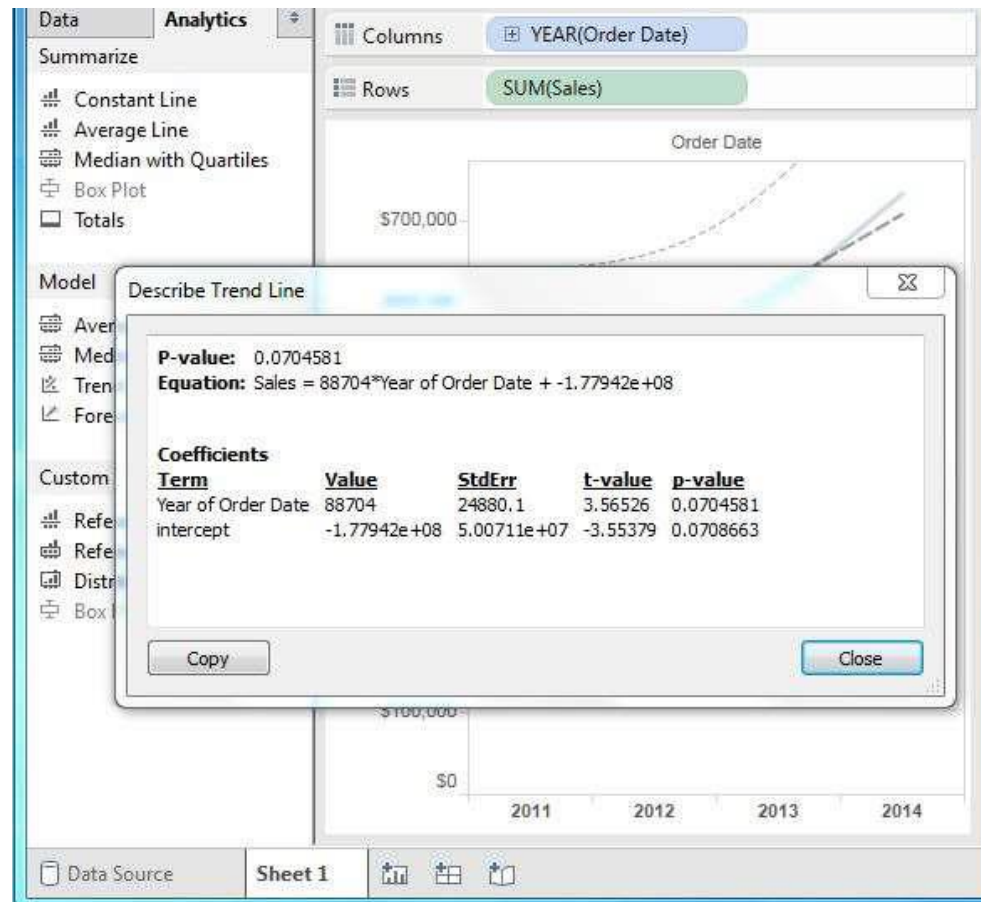
Using trend lines, we can find out which variables correlate with high discounts. The view below shows the average monthly discount rates for all stores over a four-year range.





Describe the Trend Line

Right-click on the chart and select the option Describe Trend Line to get a detailed description of the Trend Line chart. It shows the coefficients, intercept value, and the equation.





Saving and Exporting

- **Saving Your Work:** After you create useful views of your data, you should save the results. Tableau provides three ways for you to save your work:
- **Workbooks** – Saves all open worksheets.
- **Packaged Workbooks**– Saves the workbook along with all referenced local file data sources and images into a single file.
- **Bookmarks** – Saves the current worksheet.
- To save a Tableau bookmark: Select **Window > Bookmark > Create Bookmark**.

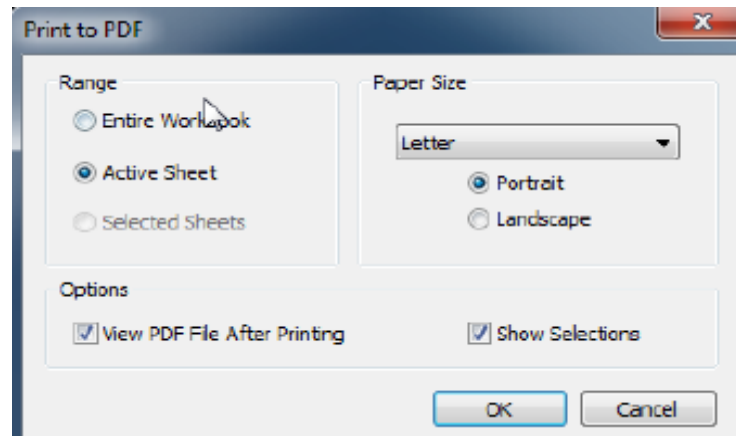
➤ Exporting Your Work:

- **Export Data** – Copy the data from a view to an Excel worksheet or export as an Access database.
- **Export as an Image** – Copy images of your views into other applications such as Microsoft Office or PowerPoint. You can also include the images in web pages.



Publishing and Subscriptions

- **Publish as PDF:** You can publish one or more views to PDF by selecting **File > Print to PDF**



- **Subscriptions:** We can use the option of subscription via Tableau Server through which we can schedule a subscription. Users can get the screenshot of the dashboard in their outlook instead of logging into the Server and then using appropriate filters to view the output.



Create a Performance Recording

- **To create a performance recording in Tableau Desktop**
- To start recording performance, follow this step in Tableau Desktop:
- **Help > Start Performance Recording**
- To stop recording, and then view a temporary workbook containing results from the recording session, follow this step:
- **Help > Stop Performance Recording**
- You can then save this workbook as a packaged workbook (.twbx) file, and send it to Tableau support.



Quiz

1: How to display top 5 and last 5 sales in same view?

- A. Filter and calculated
- B. Calculated and quick
- C. Both A and B

2: Can we have multiple value selection in parameter?

- A. Yes
- B. No

3: How many maximum tables can you join in Tableau?

- A. 32
- B. 16
- C. 8



Quiz (Cont...)

1: What is Forecasting in Tableau?

2: What is a Trend line in tableau?

3: What are sets?

4: What are groups?



Q & A