



Building Your Visualization (Basic)

In this section we'll learn different ways to create a visualization and the types of chart types we can use in Tableau.



ways to create visualization



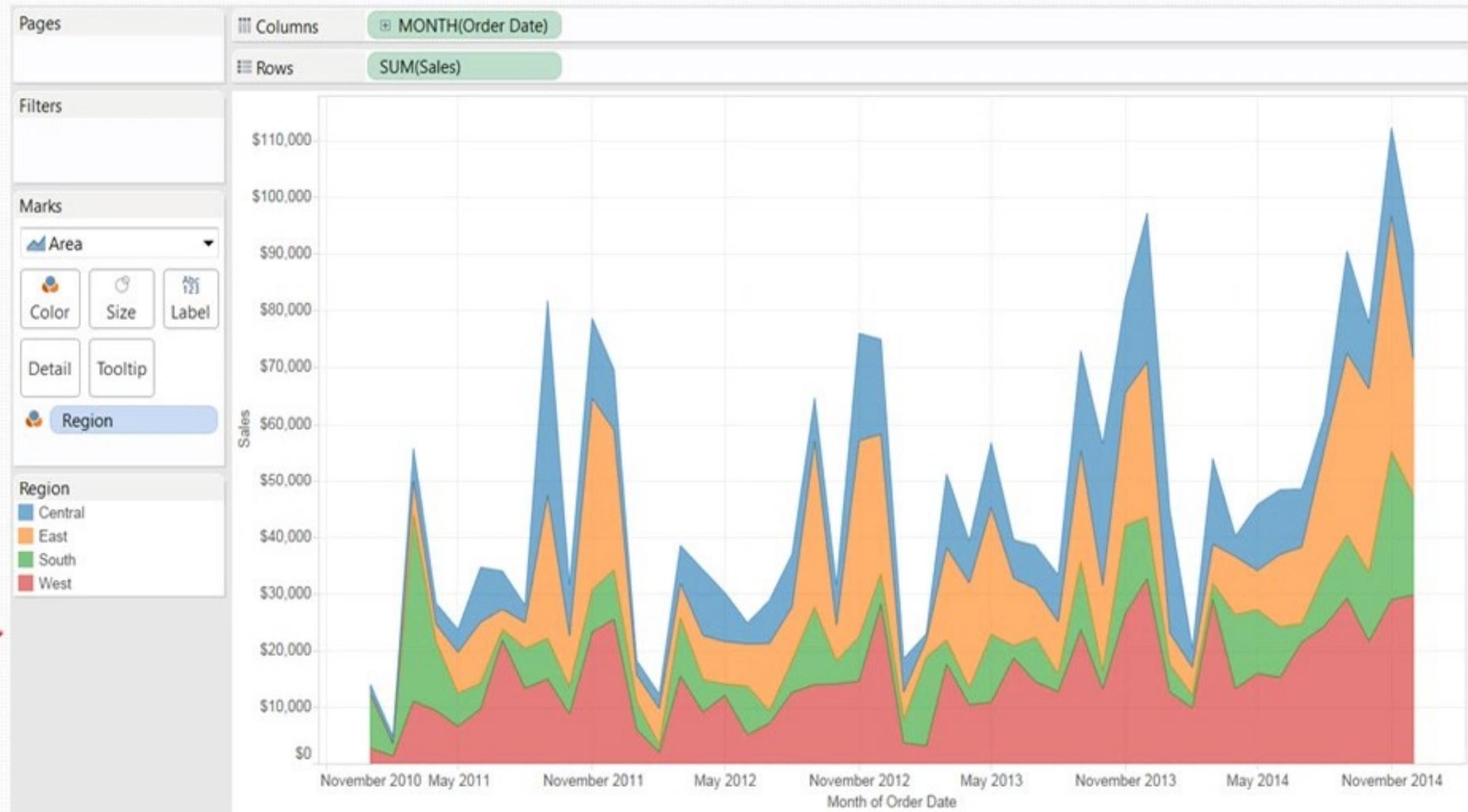
Drag And Drop

Show Me



Create views through drag & drop

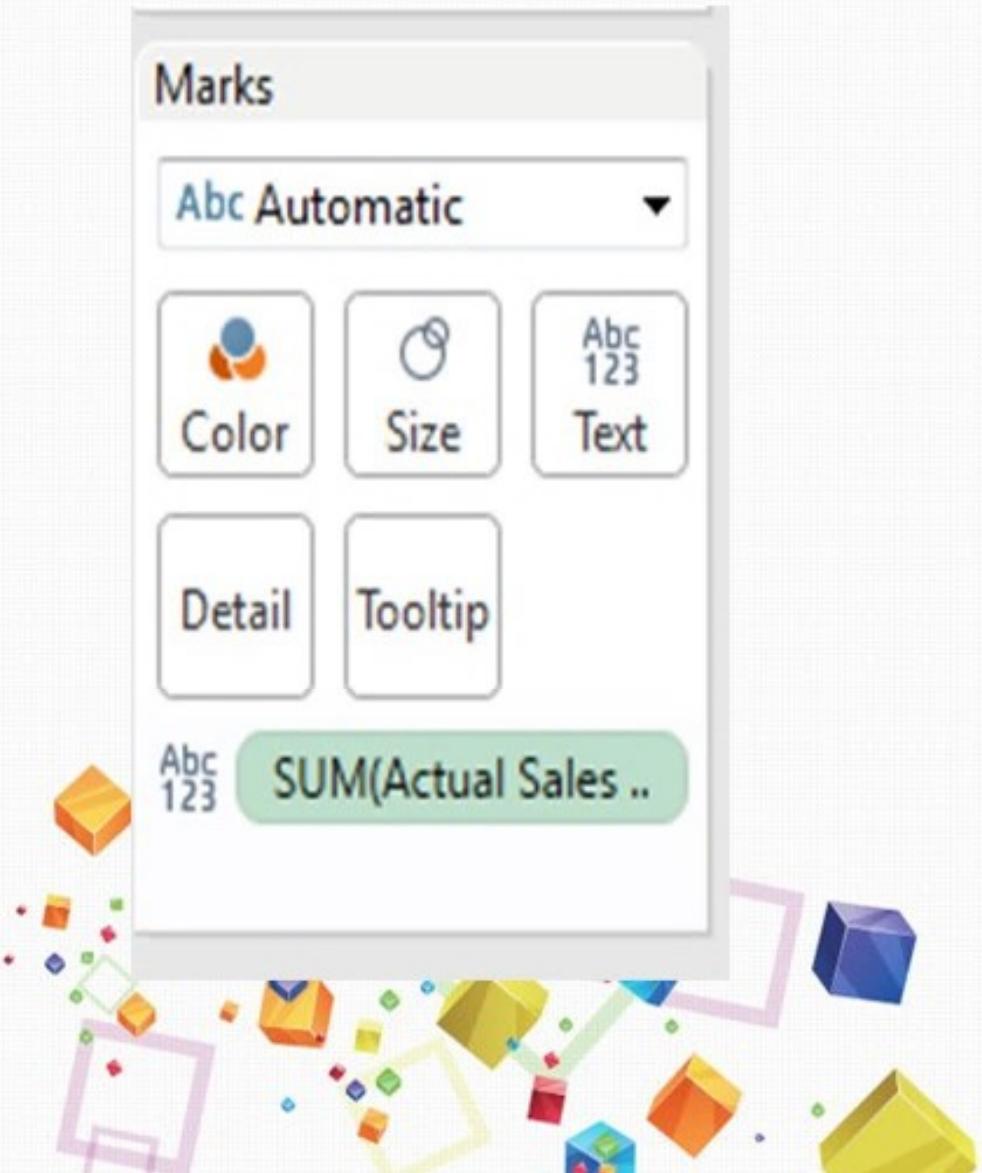
You can build data views by dragging fields from the Data pane to the cards and shelves in the worksheet.



Use the following Cards to format your visualization and make it good to great



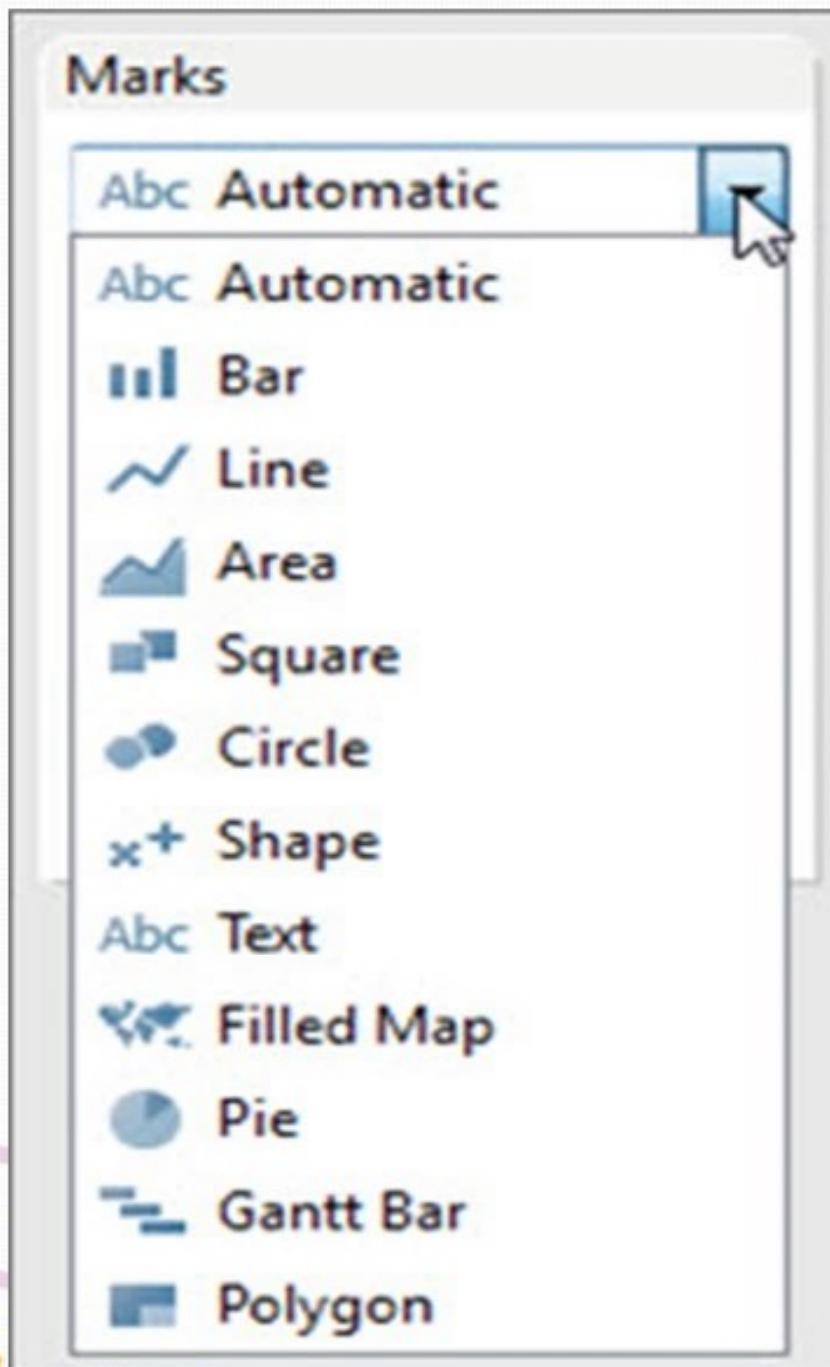
MARKS



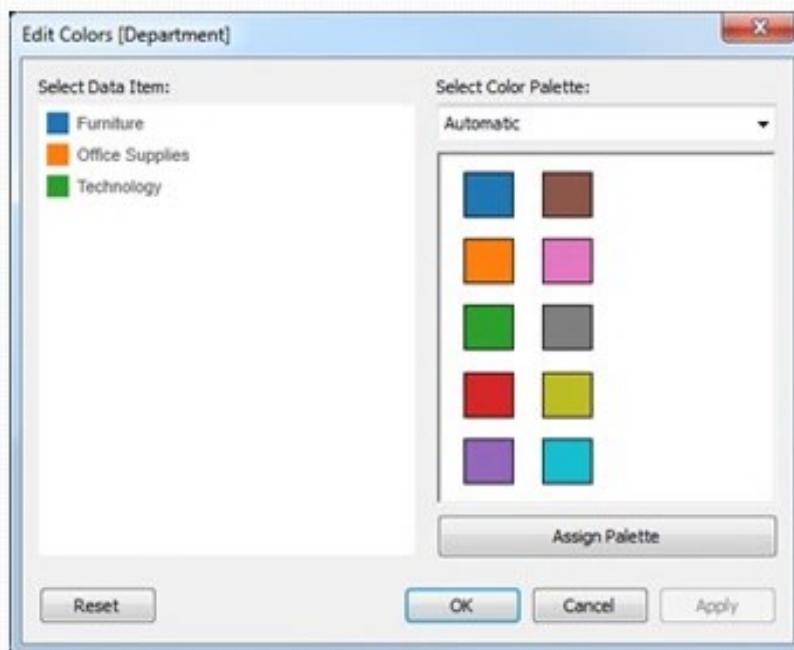
Additional information about the data can be shown by using “Mark” properties such as color, size, labels, and so on.

The type of mark you use and the mark properties are controlled by the Marks card.

MARK TYPES



COLORS

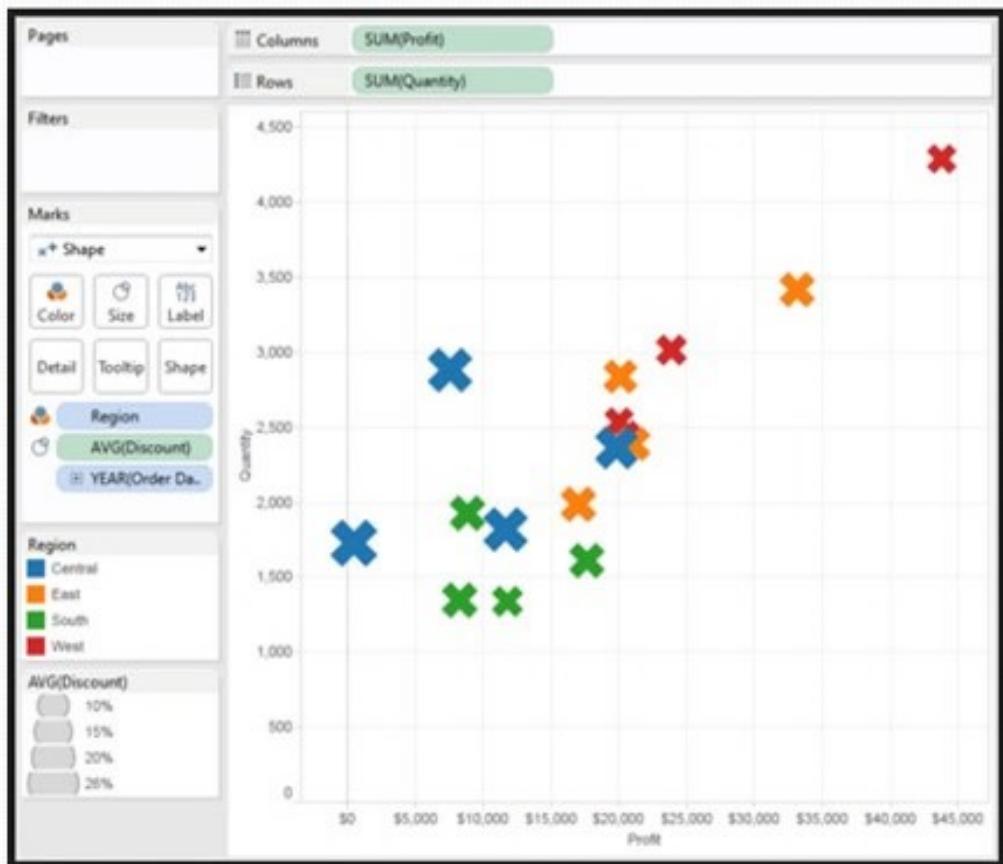


All marks have a default color, even when there are no fields on Color on the Marks card. For most marks, blue is the default color; for text, black is the default color.

When you drop a field on Color on the Marks card, Tableau applies different colors to marks, based on the field's values. The effect of color-encoding your data view depends on whether the field you drop on Color is discrete, or continuous.

Typically, dimensions are discrete and measures are continuous. For discrete fields, Tableau will assign a categorical palette, and for continuous fields, a quantitative palette.

SIZE



The Size property allows you to encode data by assigning different sizes to the marks in a data view.

Depending on whether you use a discrete or continuous field you will add either categorical or quantitative size encodings.



LABEL



The Label property allows you to encode data by assigning text labels to the marks.

The effect of text-encoding your data view depends on whether you use a dimension or a measure.

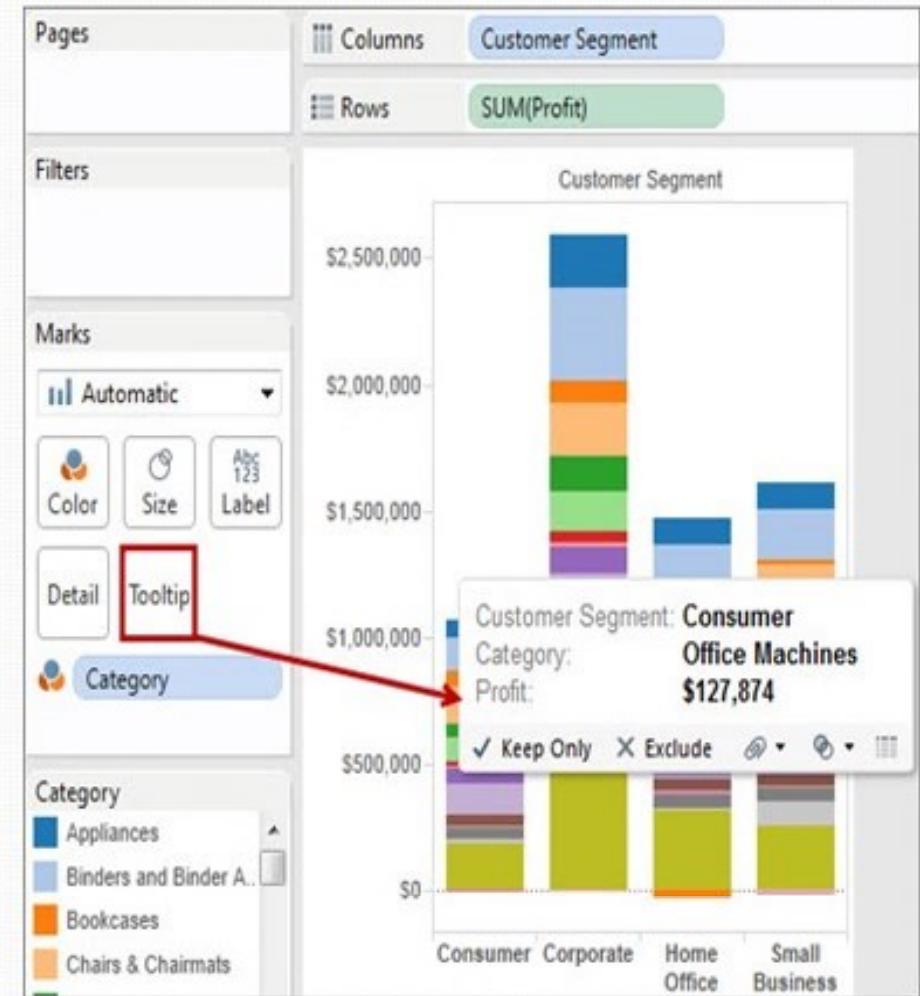


TOOLTIP

Tooltips are additional data details that display when you rest the pointer over one or more marks in the view.

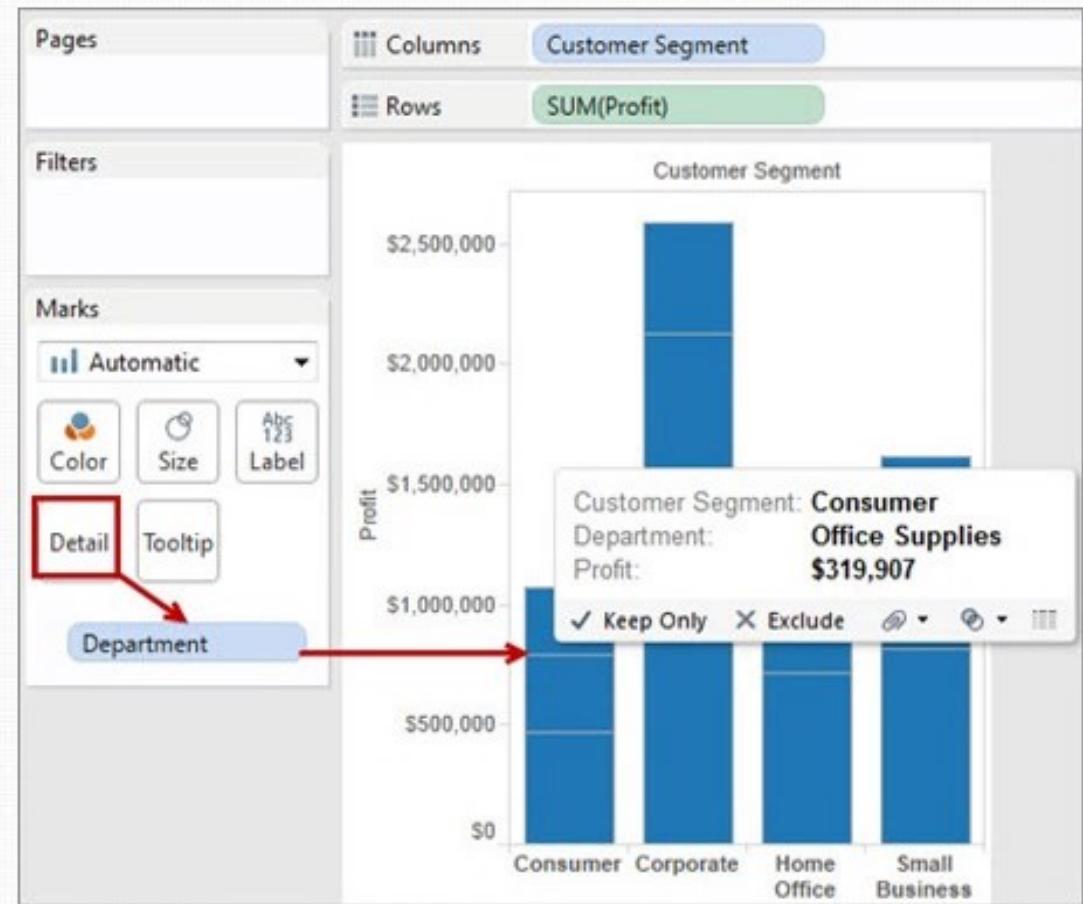
The body of a tooltip contains details about a specific mark or a selection of multiple marks.

You can edit the tooltip to include both static and dynamic text.



DETAIL

The Detail property also allows you to separate the marks in a data view according to the members (levels of detail) of a dimension.



Create views automatically

Rather than building views by dragging and dropping fields, you can use “Show Me” to create views automatically.

Show Me looks at the combination of the selected measures and dimensions and interprets what chart types display the data most effectively.



Show Me

The Show Me interface is a window titled "Show Me" containing a 4x6 grid of small icons representing different chart types. The icons include various combinations of bar charts, line graphs, pie charts, and scatter plots in different colors and styles.

For **lines** (discrete) try

- 1 date
- 0 or more dimensions
- 1 or more measures

Let's connect to Superstore data and start creating Basic visualizations in Tableau



Text tables (crosstabs)

Text Tables look like grid of numbers in a spreadsheet.

-	123	123
-	123	123
-	123	123

Crosstabs are useful for looking at values.

To create a Crosstab you need **1 or more dimension & 1 or more measure.**



Text Table - Hands On

- Exercise 1* Create a Text Table showing the Sales of Product Sub- category.
- Exercise 2* - Show the Regional Sales For Different Sub category.



Text Table - Hands On

- Exercise 3* - Show the Sales For Different Sub category For Each Quarter in different Year (Continuous / Green Timeline)
- Exercise 4* (Assignment) - Repeat the Above Exercise for "Profit".



Text Table - Hands On

Text Table showing the Sales of Product Sub- Category for different Year.

Pages

Columns + YEAR(Order Date)

Rows + Sub-Category

Filters

Order Date

Sub-Category	2011	2012	2013	2014
Accessories	\$25,014	\$40,524	\$41,896	\$59,946
Appliances	\$15,314	\$23,241	\$26,050	\$42,927
Art	\$6,058	\$6,237	\$5,910	\$8,914
Binders	\$43,488	\$37,453	\$49,485	\$72,986
Bookcases	\$20,037	\$38,544	\$26,275	\$30,024
Chairs	\$77,242	\$71,735	\$83,919	\$95,554
Copiers	\$10,850	\$26,179	\$49,599	\$62,899
Envelopes	\$3,856	\$4,512	\$4,730	\$3,379
Fasteners	\$661	\$545	\$960	\$858
Furnishings	\$13,826	\$21,090	\$27,874	\$28,915
Labels	\$2,841	\$2,956	\$2,827	\$3,861
Machines	\$62,023	\$27,764	\$55,907	\$43,545
Paper	\$14,835	\$15,288	\$20,638	\$27,718
Phones	\$77,391	\$68,314	\$78,660	\$105,643
Storage	\$50,329	\$45,048	\$58,632	\$69,834
Supplies	\$14,394	\$1,952	\$14,278	\$16,049
Tables	\$46,088	\$39,150	\$60,833	\$60,894

Marks

Sub-Category

Abc Automatic

Color

Size

Text

2011

Detail

Tooltip

2012

Abc 123

SUM(Sales)

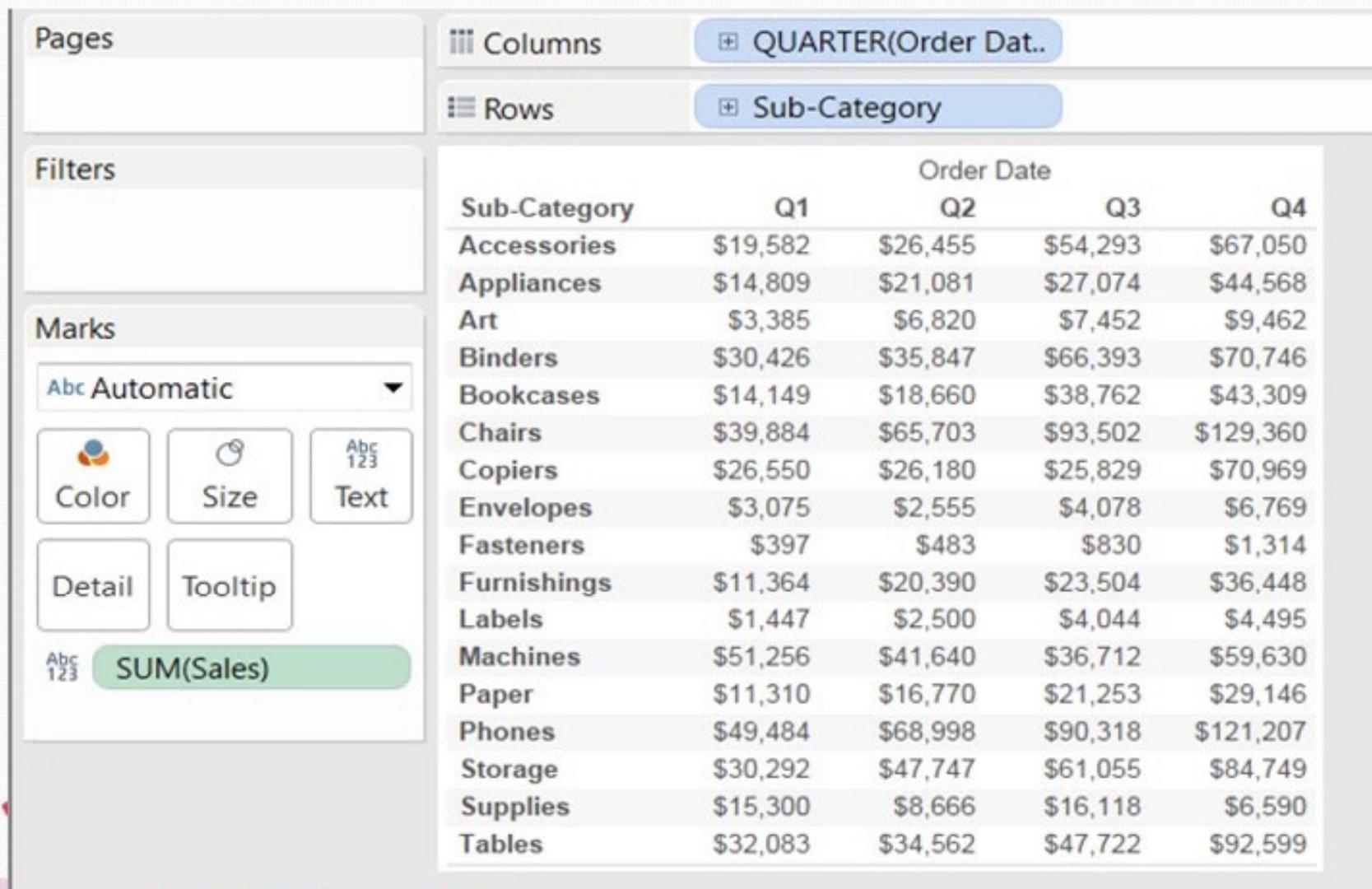
2013

Abc 123

2014

Text Table - Hands On

The Sales For Different Sub Category For Each Quarter clubbed for all the Year (Discrete / Blue Timeline)



Text Table - Hands On

The Sales For Different Sub Category For Each Quarter in different Year (Continuous / Green Timeline)

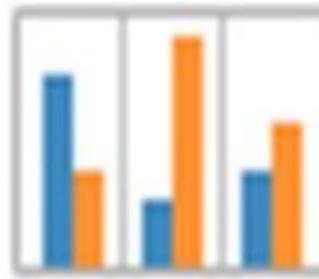
#Note the difference – how Discrete / Blue Time add together all the Quarter of different Year, while Continuous / Green Time Line shows for Each Quarter of the year individually

Bar charts



- Bar Charts are the most effective way to compare values across dimensions.
- 0 or more dimensions & 1 or more measures are used for this.

Side-by-side bars

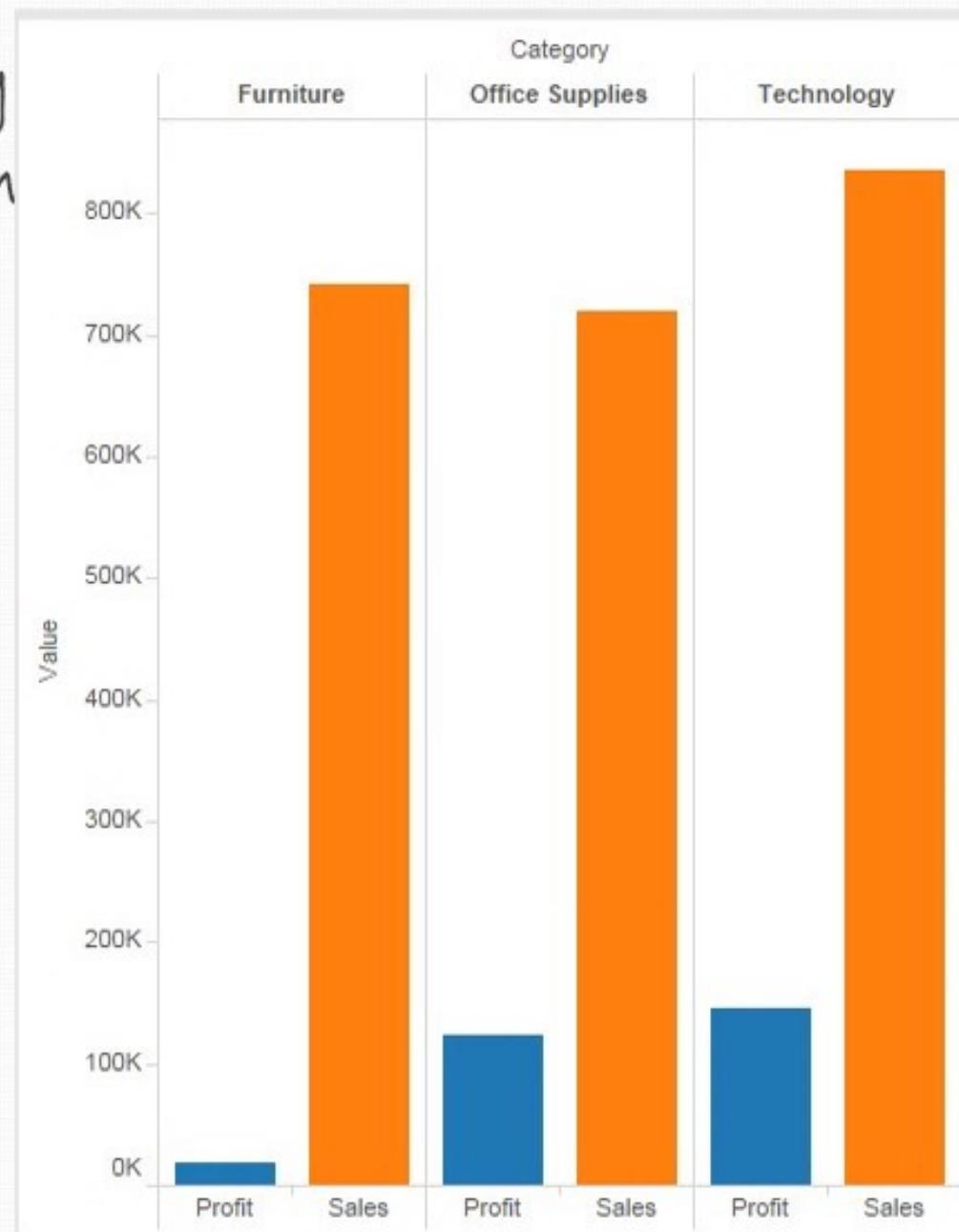


- Side-By-Side Bars provide another way to compare measures and dimensions on a single axis.
- 1 or more dimension & 1 or more measures are used for this

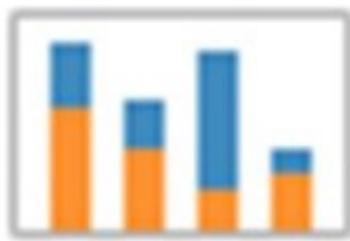


Bar Chart - Hands On

- Which Product category is making the max/min sales, show using bar graph.
 - Show the profit and sales of each Product category.



Stacked bars



- The stacked bar chart is great for adding another level of detail inside of a horizontal bar chart.
- You can do this by adding another dimension to your horizontal bar chart that will further divide the measure into sub-groups.
- The sub-groups are then color-coded on each bar. Stacked Bars are used to compare 1 measure against a goal or display one measure against another.
- **1 or more dimension & 1 or more measures are used for this.**



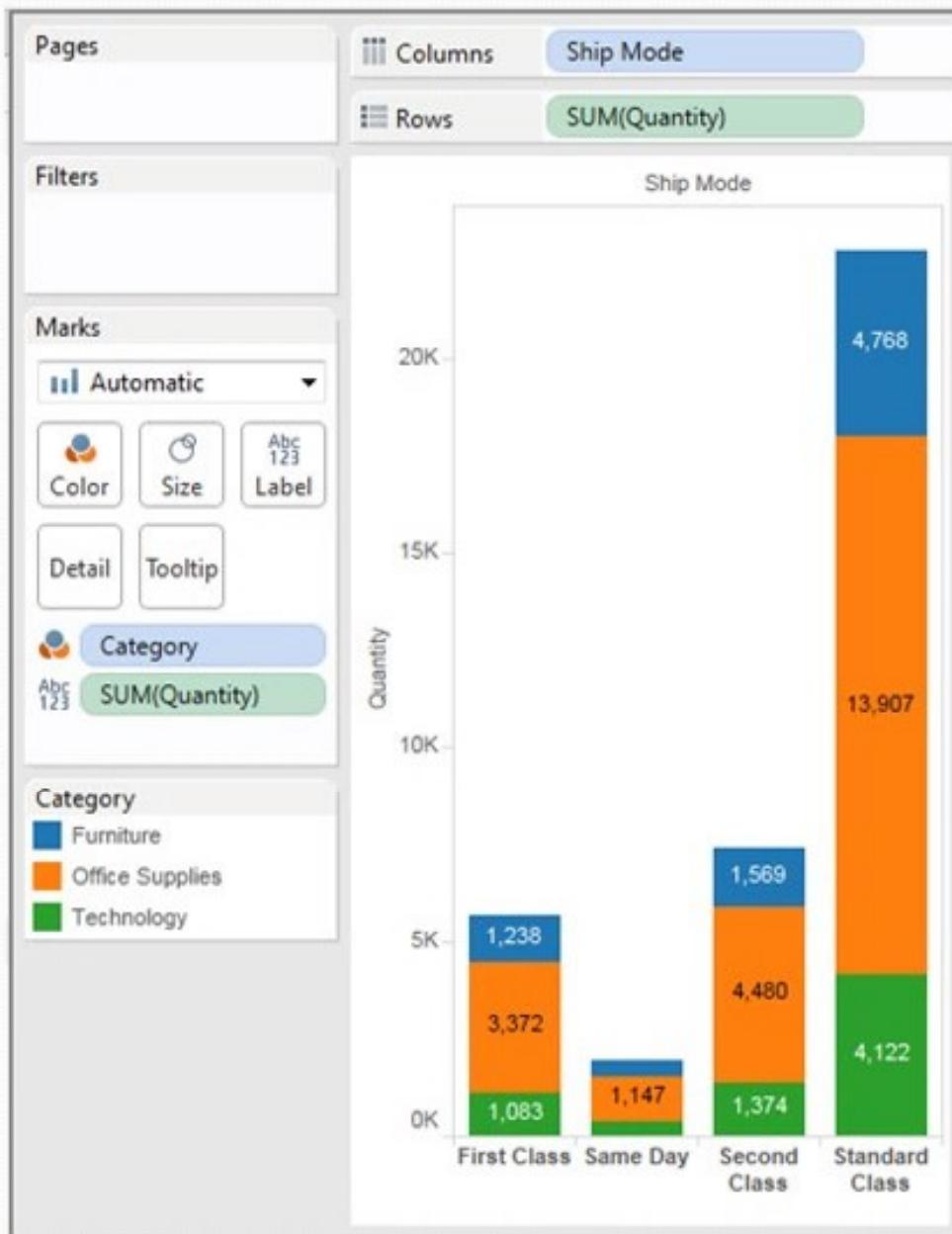
Stacked Bars - Hands On

Show the Quantities Shipped for each category of Product, using Stacked Bar.

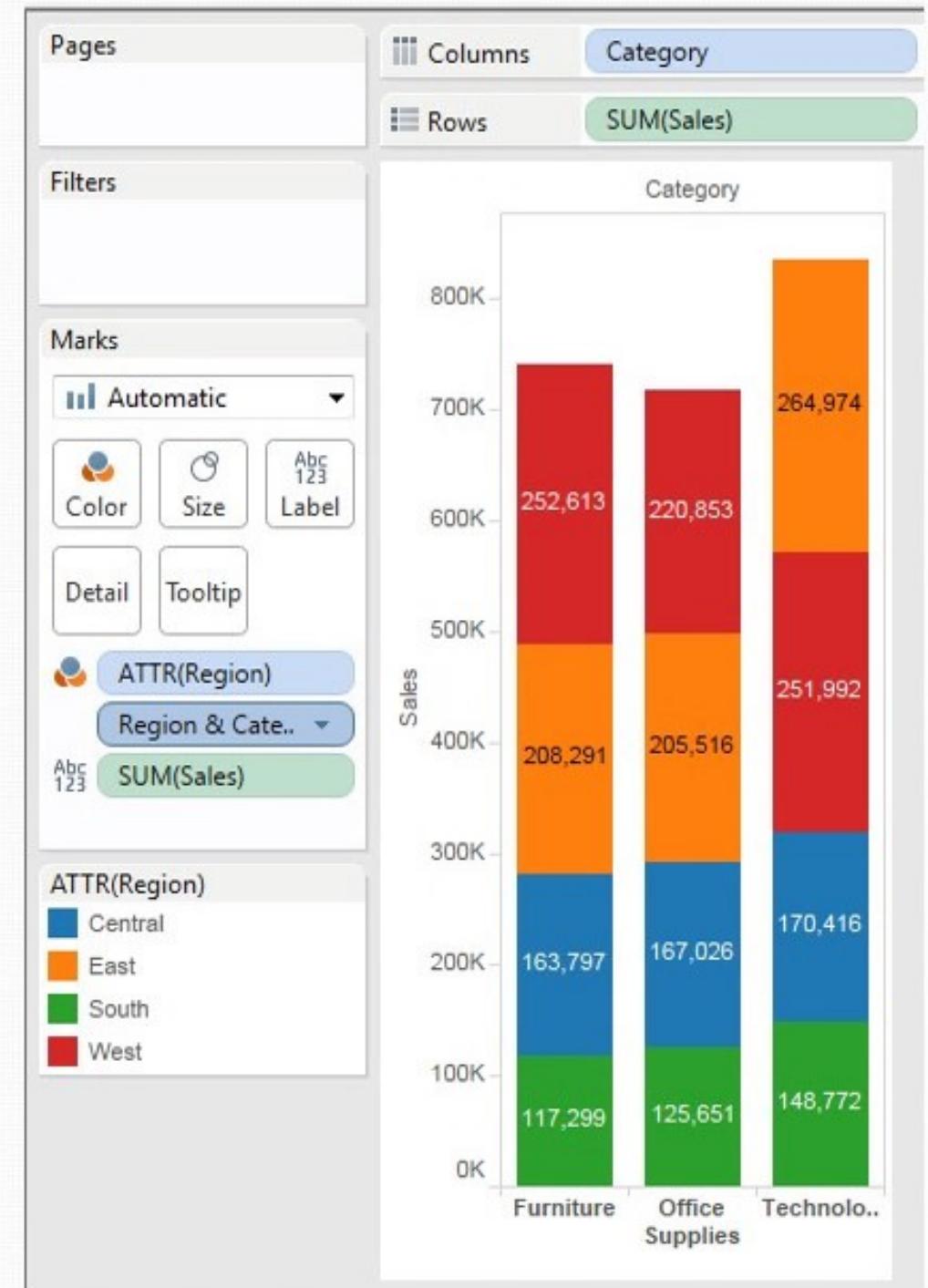


Stacked Bars - Hands On

- The Shipping Modes of each category of Product, using Stacked Bar.



- Create a sorted Stacked Bar showing Sales of various categories across different Region.



Highlight tables

=	172	1232
=	1841	1148
=	2982	621

- Highlight Tables helps to analyze the range of values in a text table by using a color scheme along with detailed value.
- 1 or more dimension & 1 measure.

Heat maps



- Heat Maps are an extension of Highlight tables.
- It helps to visualize measures against dimensions with the help of colors and size to compare 1 or more dimension & up to 2 measures.



High Light Table & Heat Map - Hands On

- Show which Product category is having the maximum sales in Eastern Region, using **Highlight Table**.
- Show the least profit making Product category, using a **Heat map**.



High Light Table - Hands On

Product category having the maximum sales in Eastern Region, using Highlight Table.

The screenshot shows the Tableau interface with a visualization titled "Highlight Table - Hands On".

Pages: Columns

Filters: Category

Marks: Square

Color: SUM(Sales)

Size: SUM(Sales)

Label: SUM(Sales)

Detail: SUM(Sales)

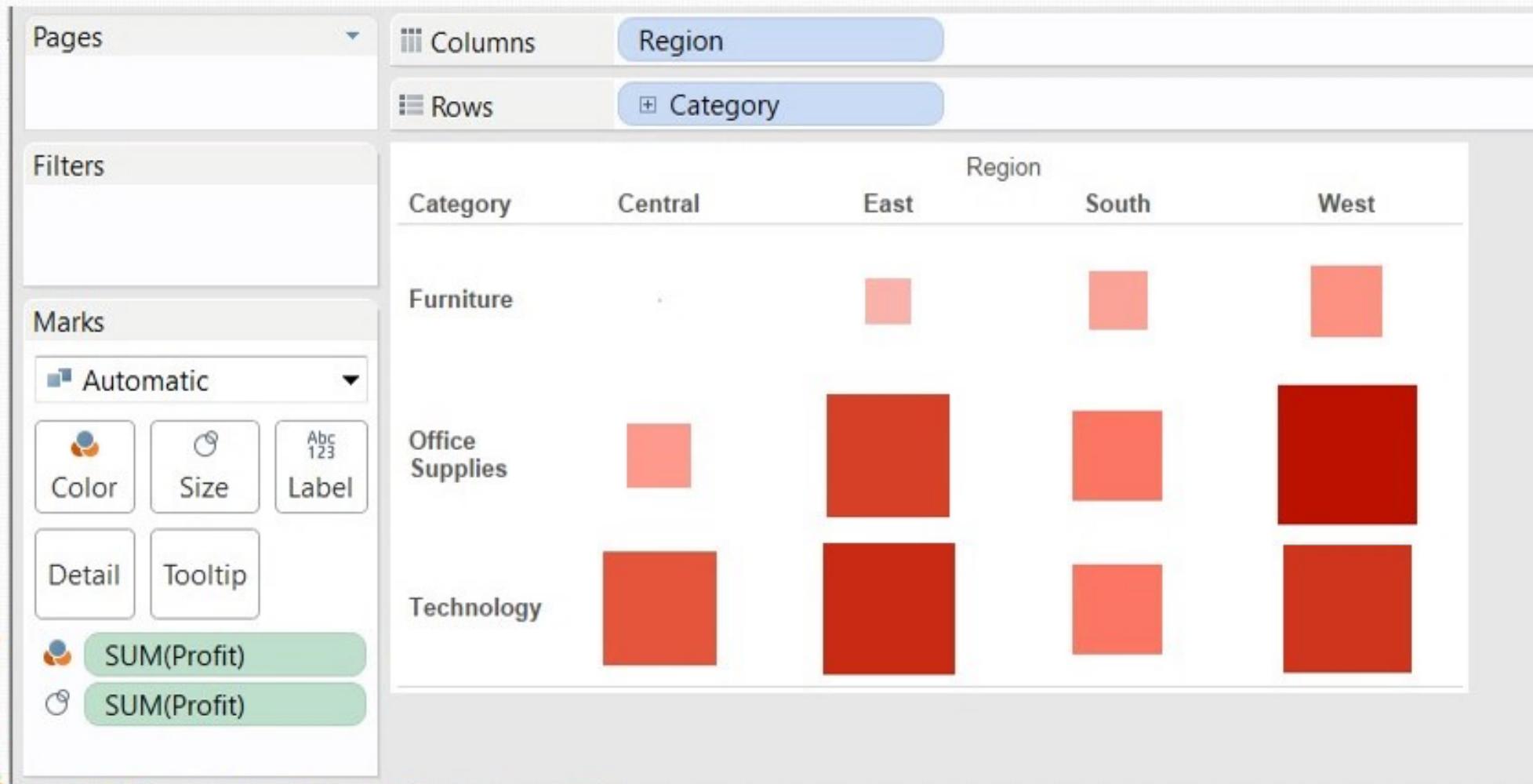
Tooltip: SUM(Sales)

Region:

Category	Region			
	Central	East	South	West
Furniture	\$163,797	\$208,291	\$117,299	\$252,613
Office Supplies	\$167,026	\$205,516	\$125,651	\$220,853
Technology	\$170,416	\$264,974	\$148,772	\$251,992

Heat Map - Hands On

- The least profit making Product category, using a Heat map.



Tree maps - chart type that displays hierarchical or part-to-whole relationships via rectangles.



- The space in the view is divided into rectangles that are sized and ordered by a measure.
- The rectangles in the tree map range in size from the top left corner of the chart to the bottom right corner, with the largest rectangle positioned in the top left corner and the smallest rectangle in the bottom right corner.
- 1 or more dimensions & up to 2 measures are used for this.

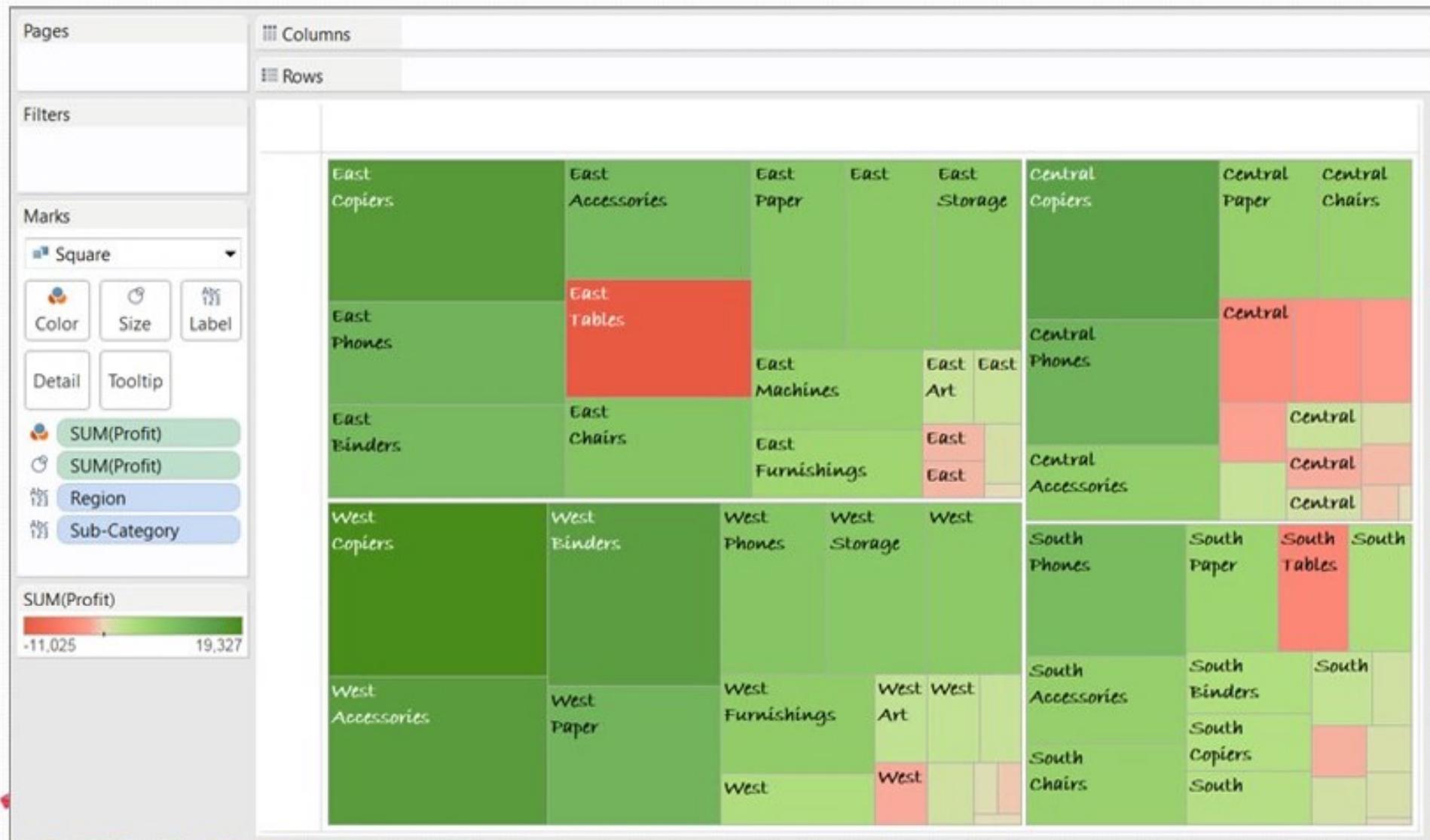


Tree Map - Hands On

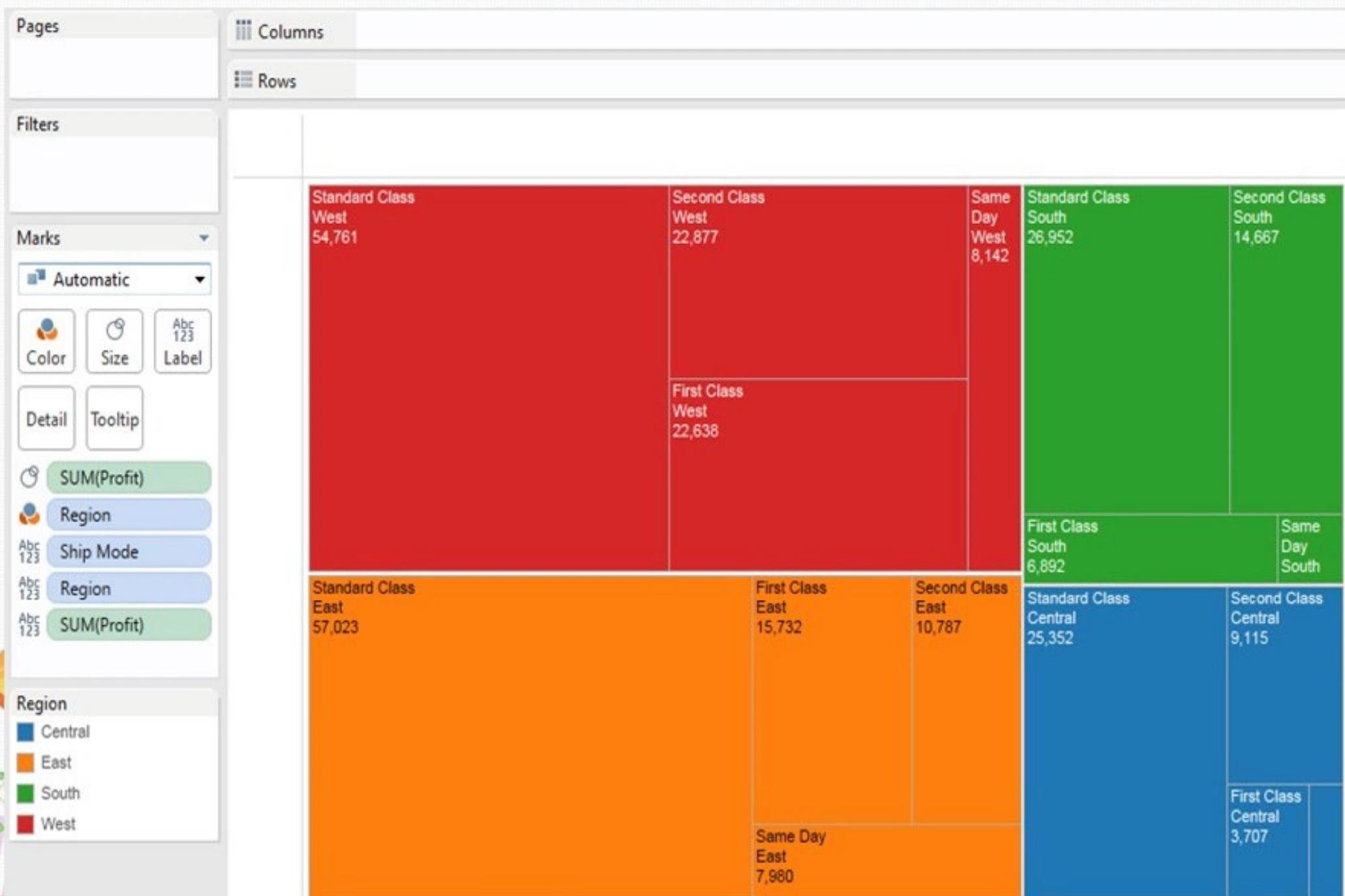
- Name the Sub-Category and the Region making a loss, using a tree map.
- What is the value of loss?



Sub-Category and the Region making a loss, using a treemap. - Hands On



- Show the ship mode making the maximum profit across various Regions.



Line charts



Discrete Line Chart

Line charts provide a simple way to visualize a sequence of values and are useful when you want to see trends over time.

Tableau presents two options for line charts in the Show Me menu – **Lines (continuous)** and **Lines (discrete)**.



Continuous Line Chart

Continuous fields can have an infinite number of values.

Discrete fields, on the other hand, contain a finite amount of values.



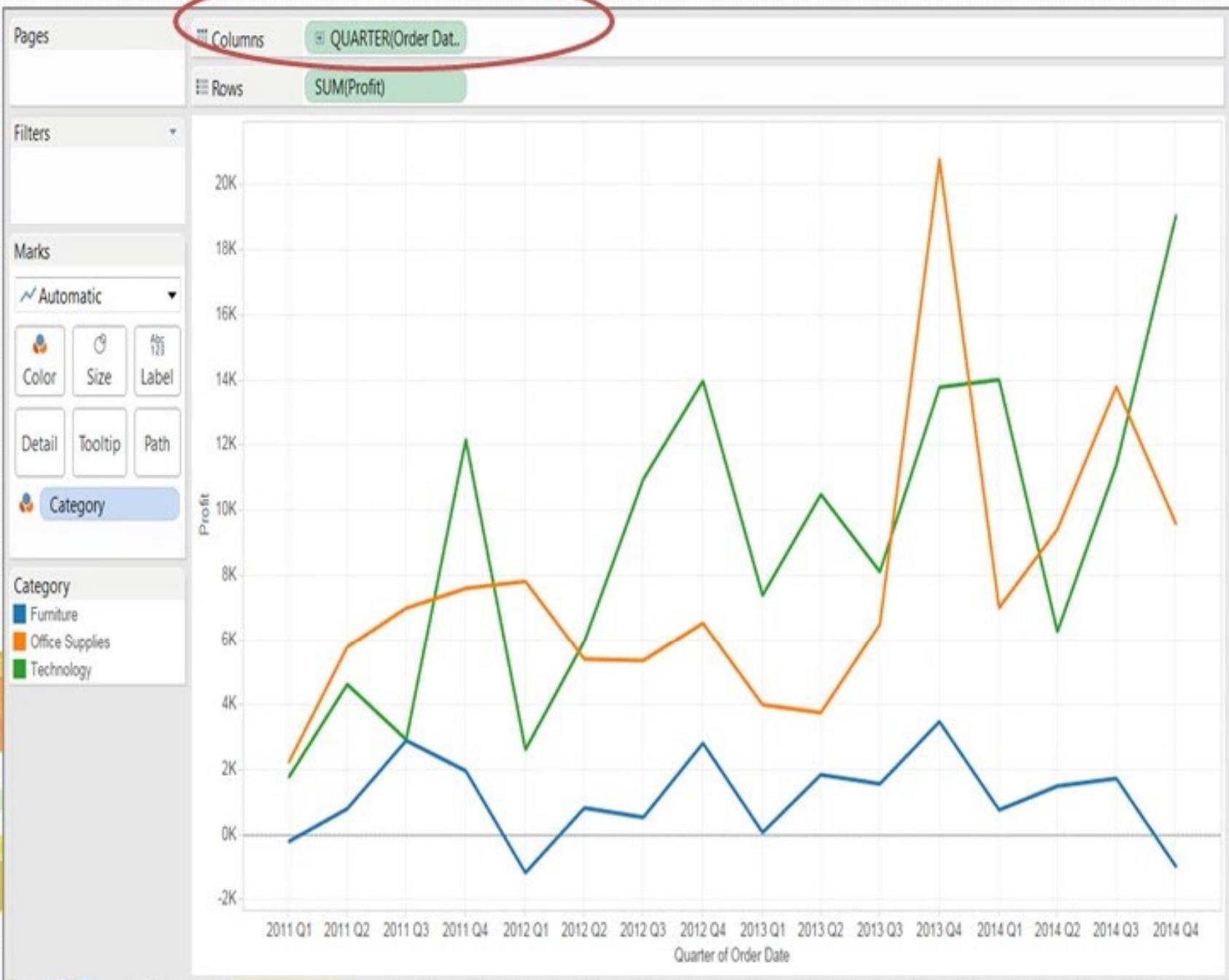
Line Chart - Hands On

- Show using Line Chart, For which Product category the highest profit was made?
- Which is the Quarter & Year of when the highest profit was made by a product category? (Continuous)
- Which Product Category makes 2nd Maximum Profit based on the Quarterly Sum for all the Year. (Discrete)



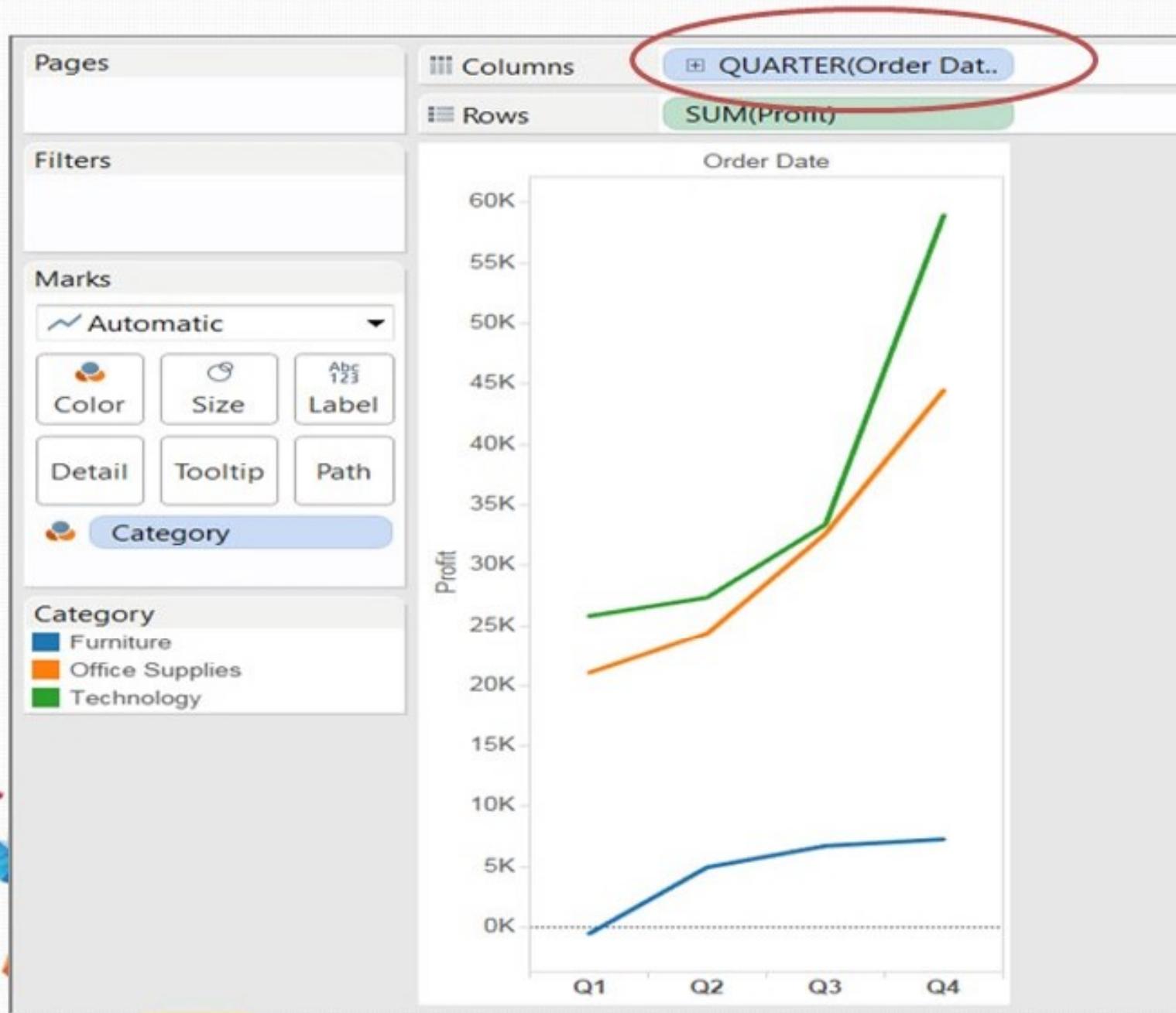
Line chart Continuous-showing Product category making the highest profit

Note the Quarter selected here is Continuous “Green” i.e. Q1, Q2 , Q3, Q4 for each years are shown independently

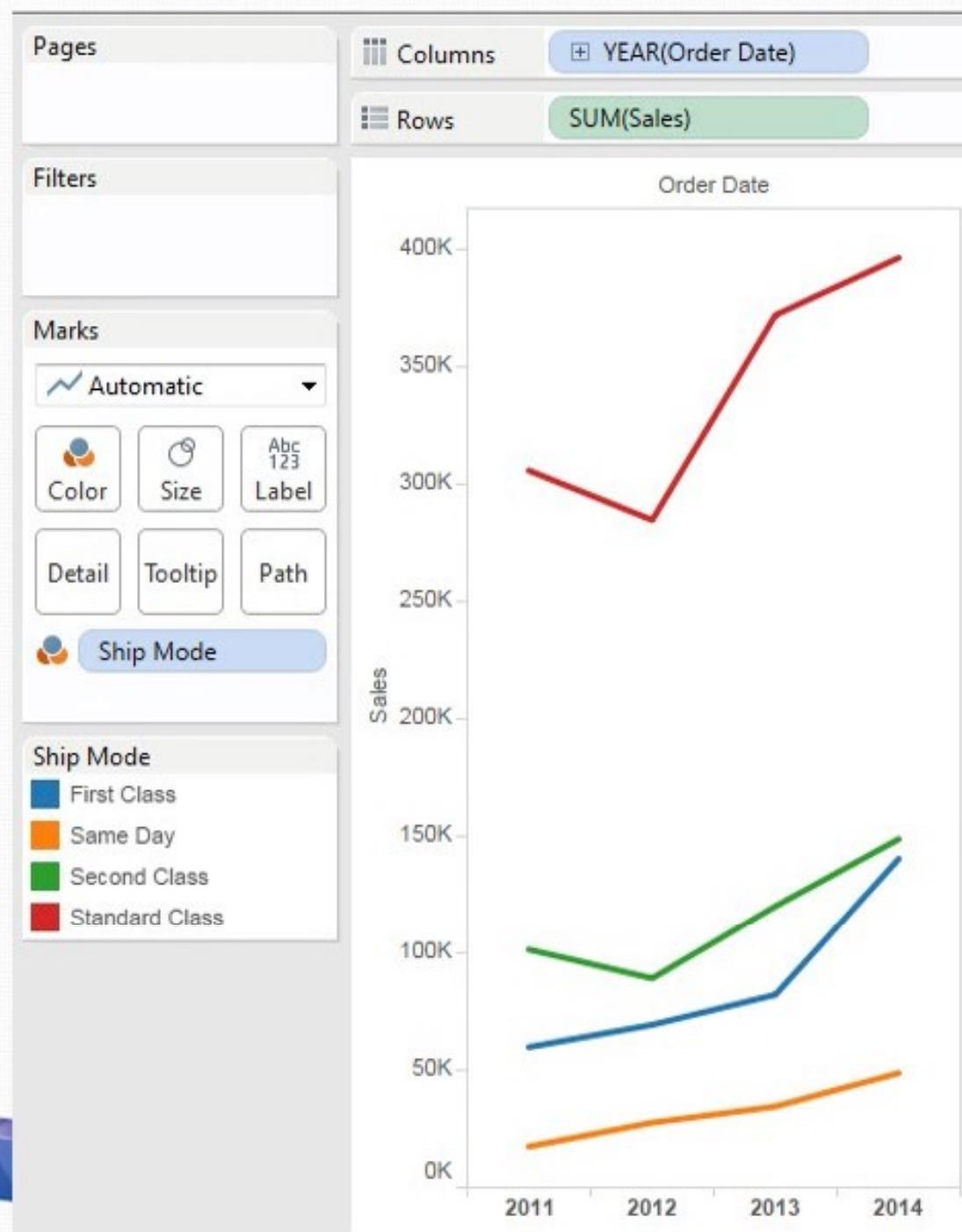


Line chart Discrete-showing Product category sum for all Quarters summing to highest profit

Note the Quarter selected here is Discrete "Blue" i.e. Q1, Q2 , Q3, Q4 for all different years has been summed up



- Show the variation of sales for different ship modes.



Area fill charts



Area Fill Chart (continuous)

- The Area chart is a combination between a line graph and a stacked bar chart.
- It shows relative proportions of totals or percentage relationships.
- **By stacking the volume beneath the line, the chart shows the total of the fields as well as their relative size to each other.**
- These are best used for plotting single dimensions as misinterpretation of top band having highest value can rise. 1 date, 0 or more dimension & 1 or more measures.



Area Fill Chart (discrete)

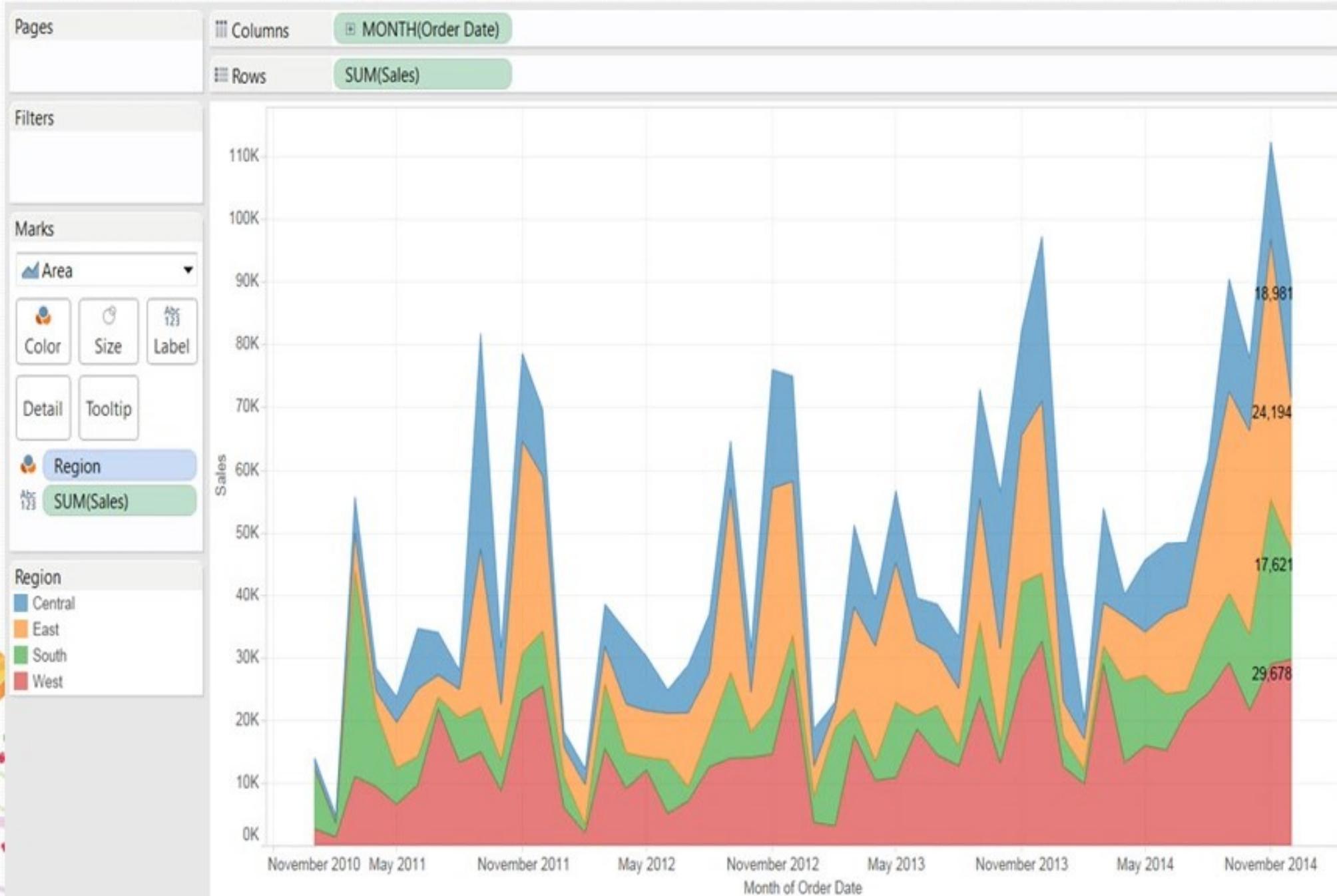


Area Fill chart - Hands On

Area Fill Chart - Plot Sales for Different Region as an Area Fill Chart



Area Fill Chart - Sales for Different Regions as an Area Fill Chart

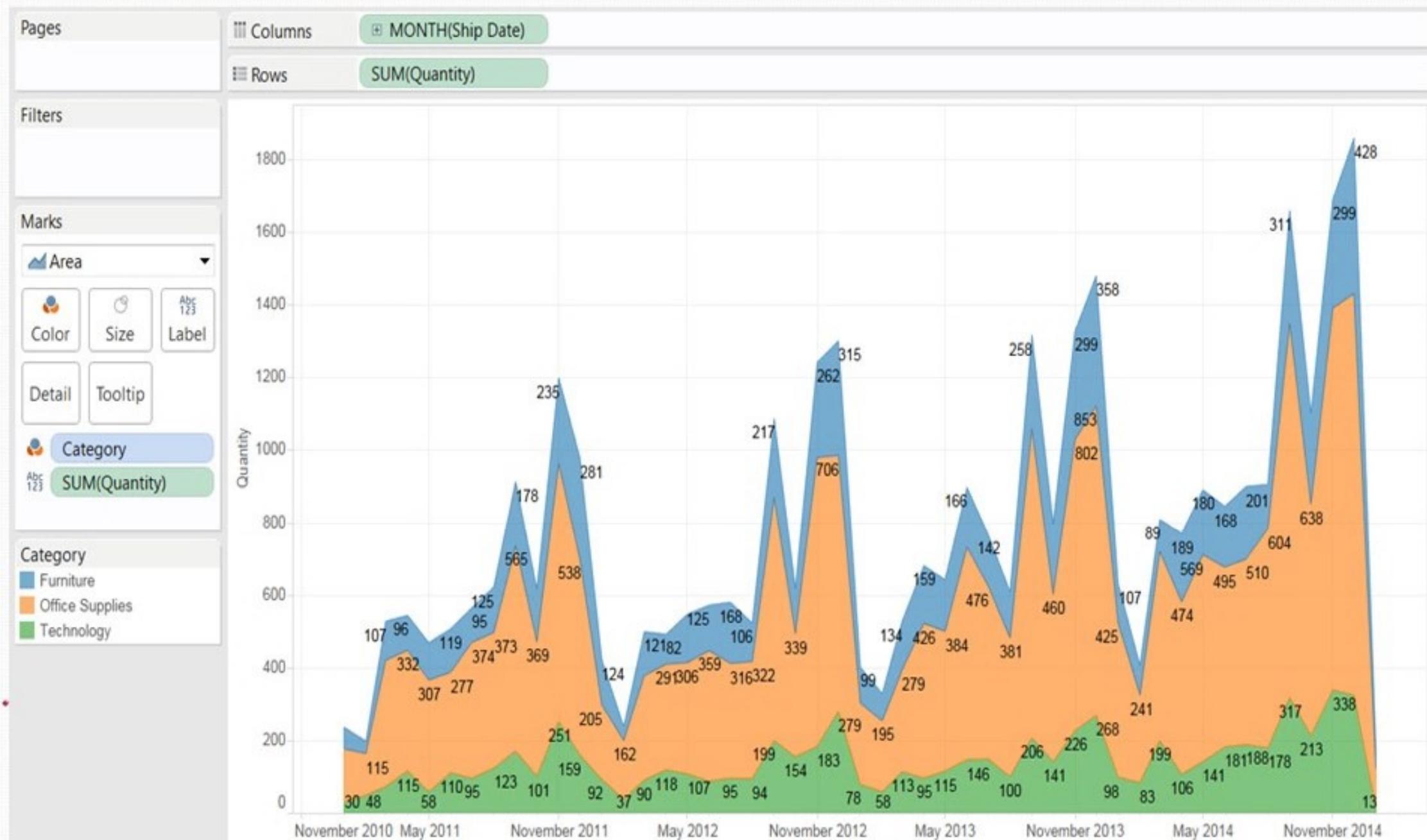


Area Fill Chart - Hands On

- Show the quantity shipped per month for product category, using Area Fill chart.
- Why is there a change in visualization if month is changed from Discrete month May to Continuous Month - May 2015?
- Change the chart type to Area Fill discrete to mark the changes.



Area Fill Chart - quantity shipped per month for product category, using Area Fill chart



Changing it to Area chart (Discrete) from show me



Pie charts



- Pie is a circular graph divided into segments for making comparison.
- Pie Charts should be used for getting a general sense of magnitude and not for precise comparison.
- The pie charts can be used to show proportions. **1 or more dimension & up to 2 measures.**

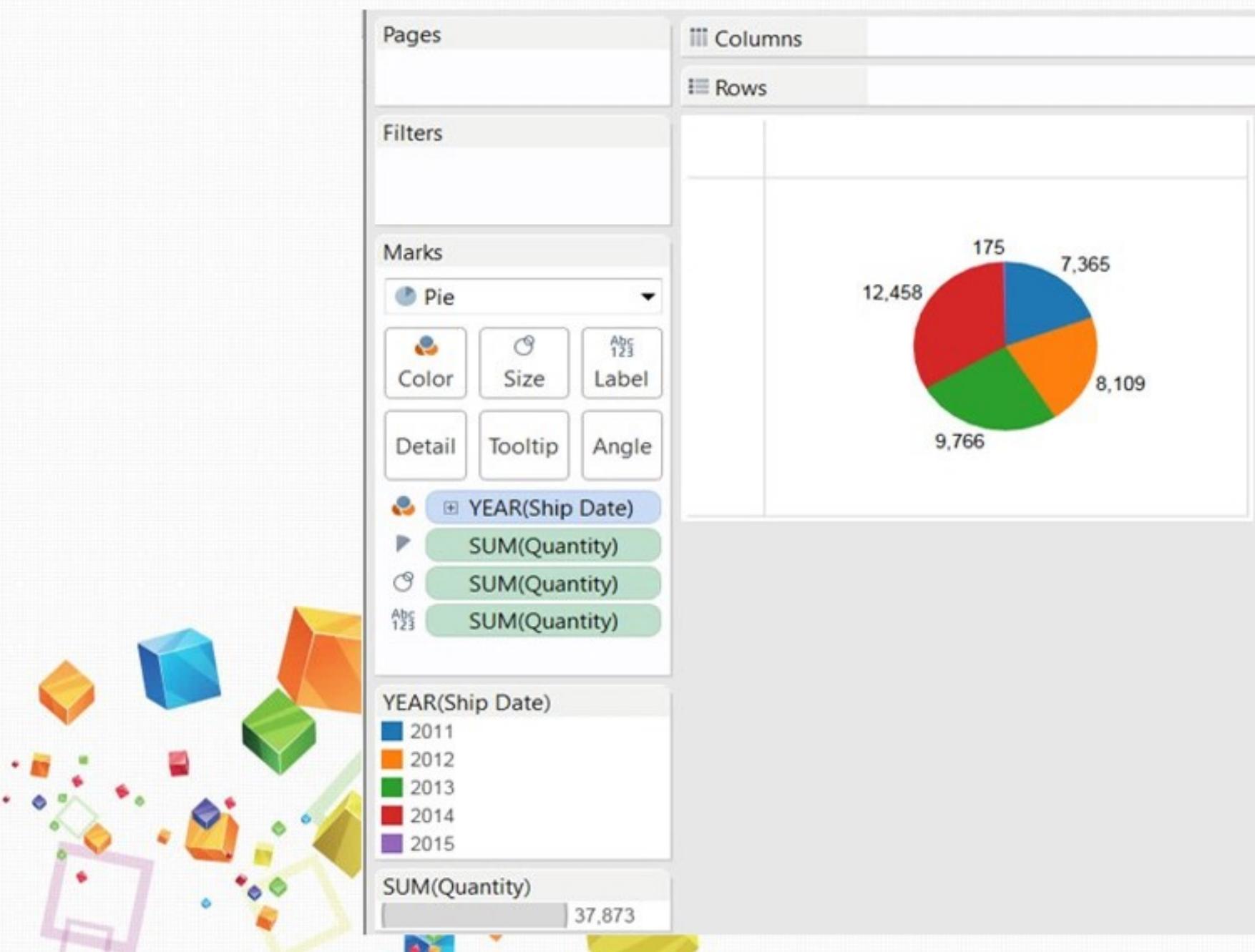


Pie Chart- Hands on

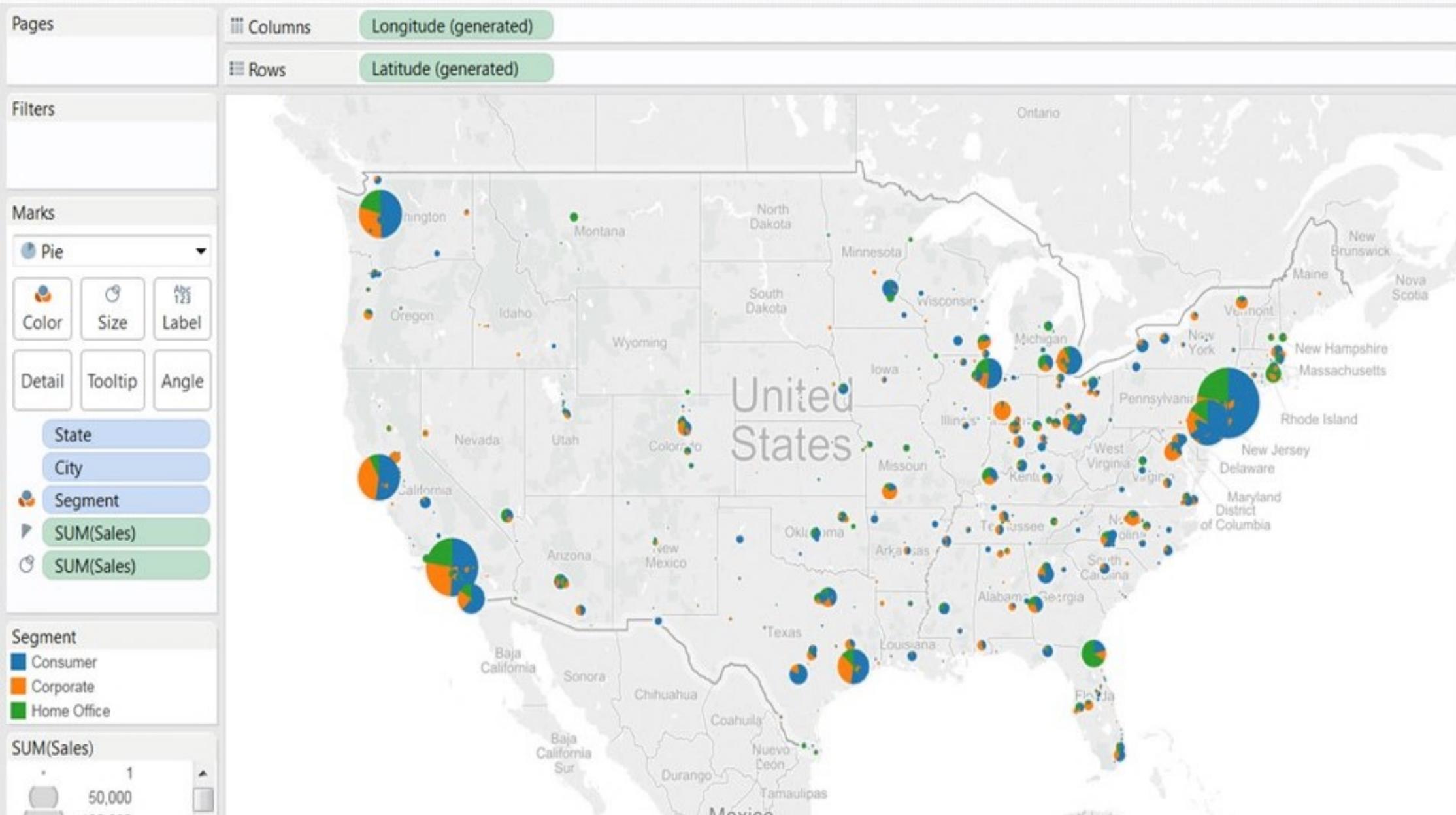
- What is the quantity of Product Shipped per year, show using a Pie chart.
- Create A visualization to show a Pie chart on World Map to show the sales of various Product Segment across various States.



Pie Chart: Quantity of Product Shipped per year, show using a Pie Chart.



Pie chart on the Map to show the sales of various Product Segment across various States.



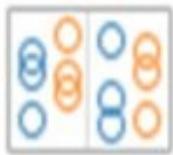
Circle views



Circle Views are used to identify outliers.

The details are depicted by the color and the size of various circle. **1 or more dimension & 1 or more measures.**

Side-by-side circle views

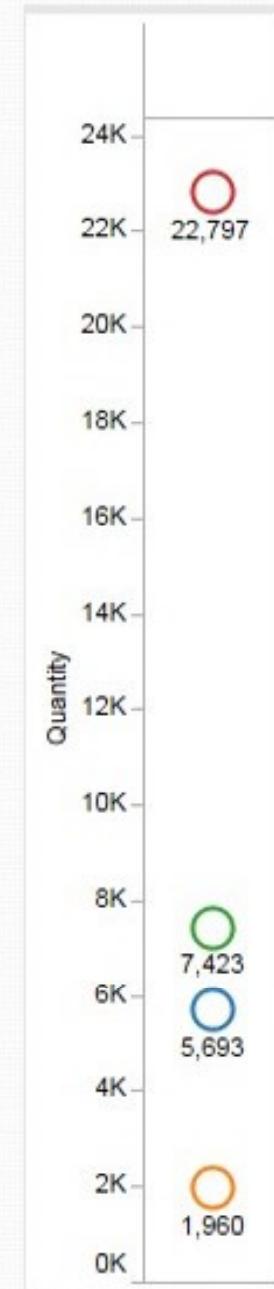


The side-by-side circle view is a variant of the circle view. The side-by-side circle allows you to add more measures to be compared next to each other for a richer analysis. **1 or more dimension & 1 or more measures.**



Circle view & Side-by-Side view- Hands on

- What quantity of Product is Shipped by each shipping mode, show using circle chart.
- Exercise 1*- What quantity of Product is Shipped by each shipping mode each year, show using Side-by-Side Circle chart.



Scatterplots

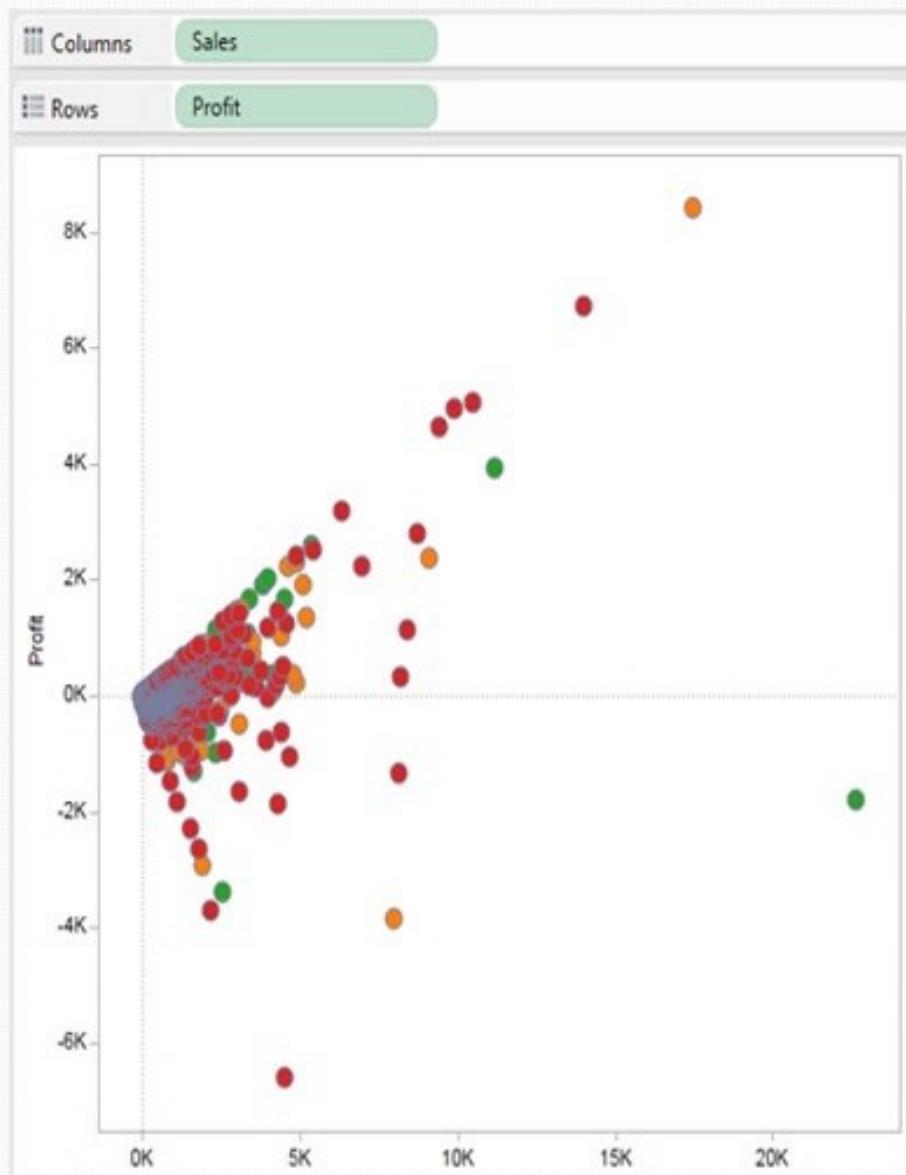


Scatter plots provide an easy way to visualize relationships between numerical variables. They are effective way to give a sense of trends and outliers that will help to take decision on the focused area. Shape mark type is used by default in Tableau.0 or **more dimension & 2 to 4 measures** is used to create this.



Scatter Plot- Hands On

- Analyze the sales and profit of each segment using a scatter plot.



Packed bubbles charts



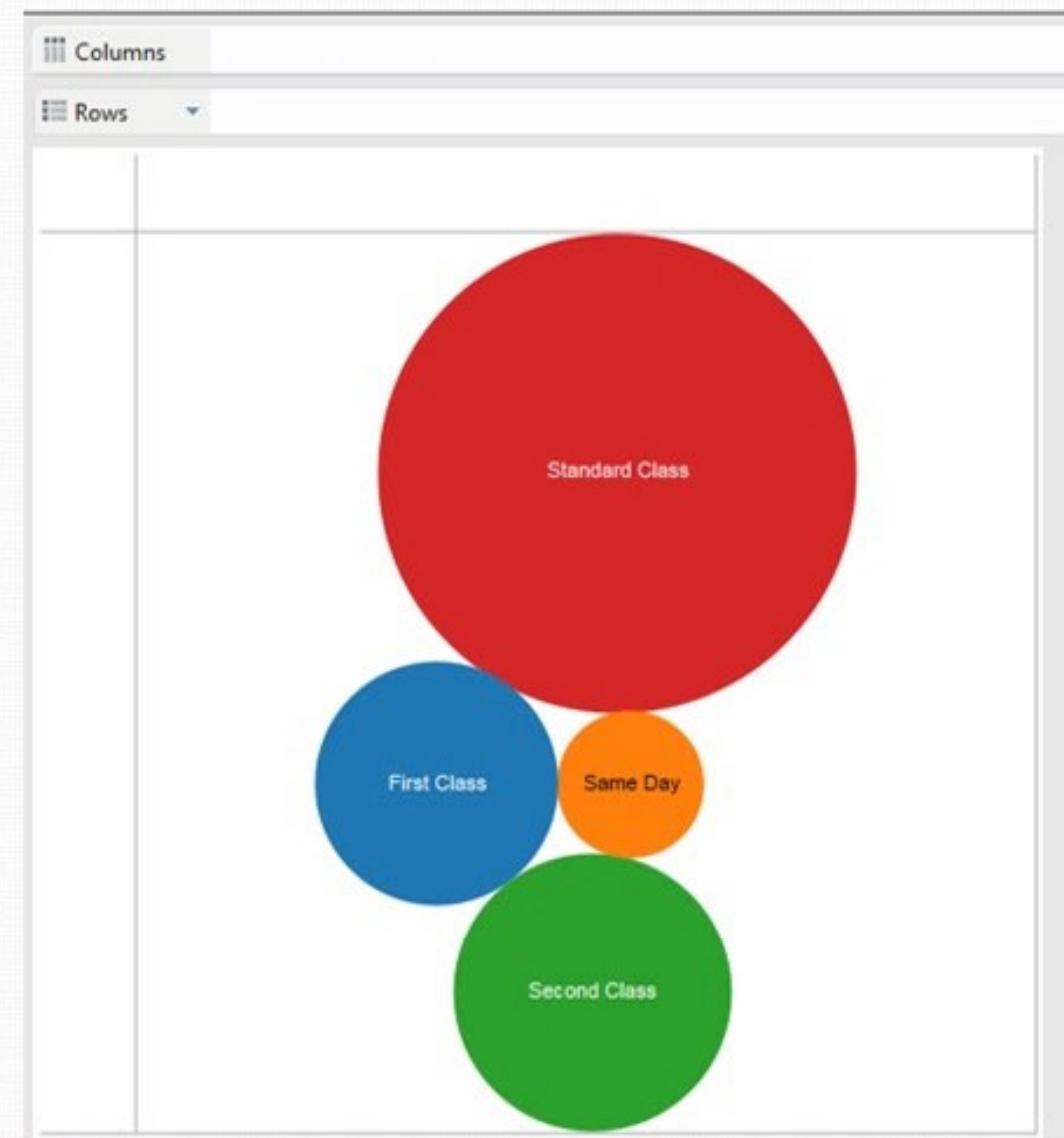
Packed Bubble charts displays data in a cluster of circles. You use dimensions to define the individual bubbles, and measures to define the size and/or color of the individual circles.

Packed bubble chart are created by placing **1 or more dimensions** on the Columns shelf and **up to 2 measures** on the Rows shelf.



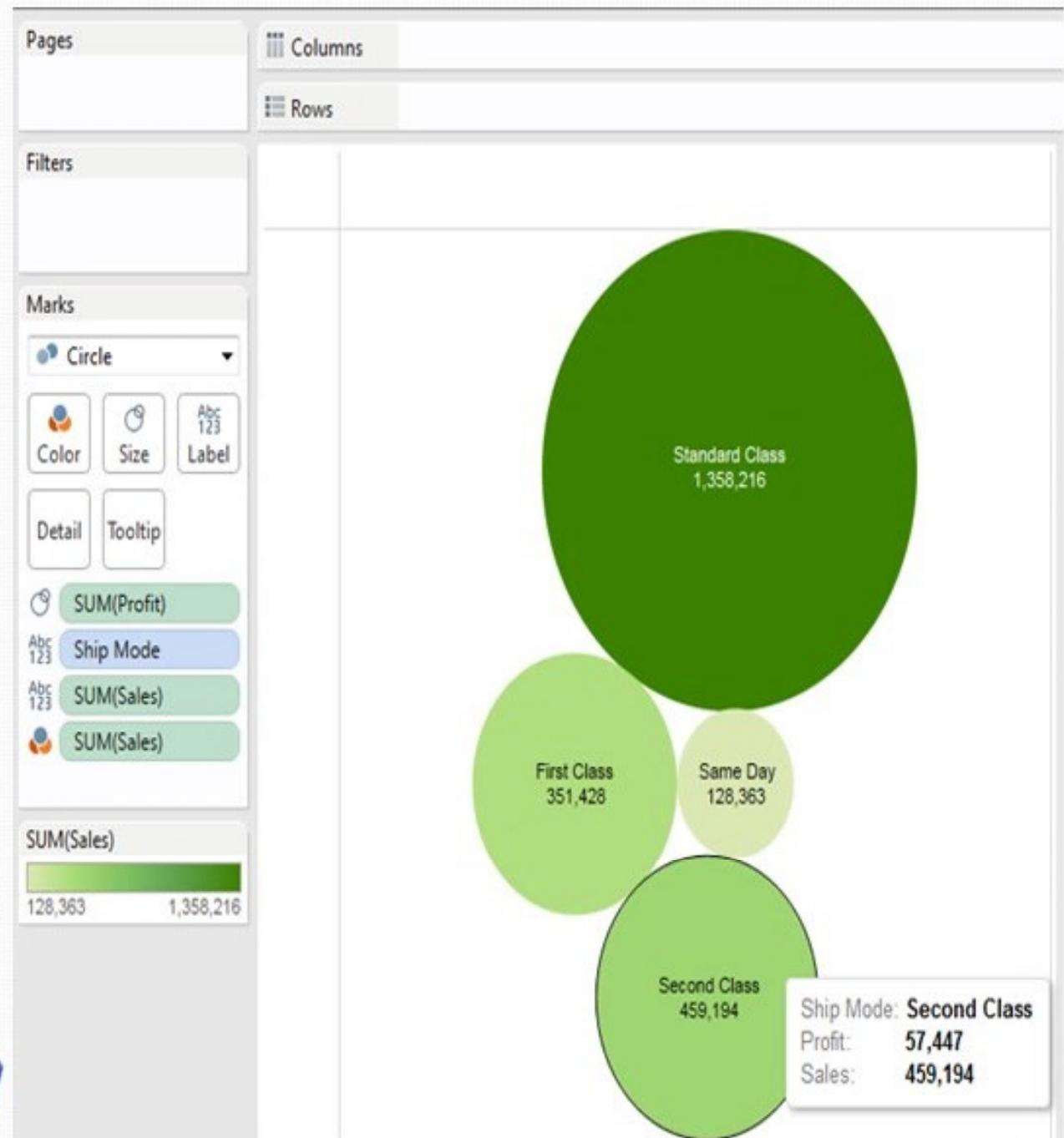
Packed Bubble- Hands On

- Which shipping mode is being used to ship the maximum product quantity, show using packed bubble chart.



- Exercise 1*- What is the Sales & Profit made by each Ship Mode, show using Packed Bubble.

- Exercise 2*- Instead of coloring each circle with a different color, we can use a single color with different shades.



SYMBOL MAPS

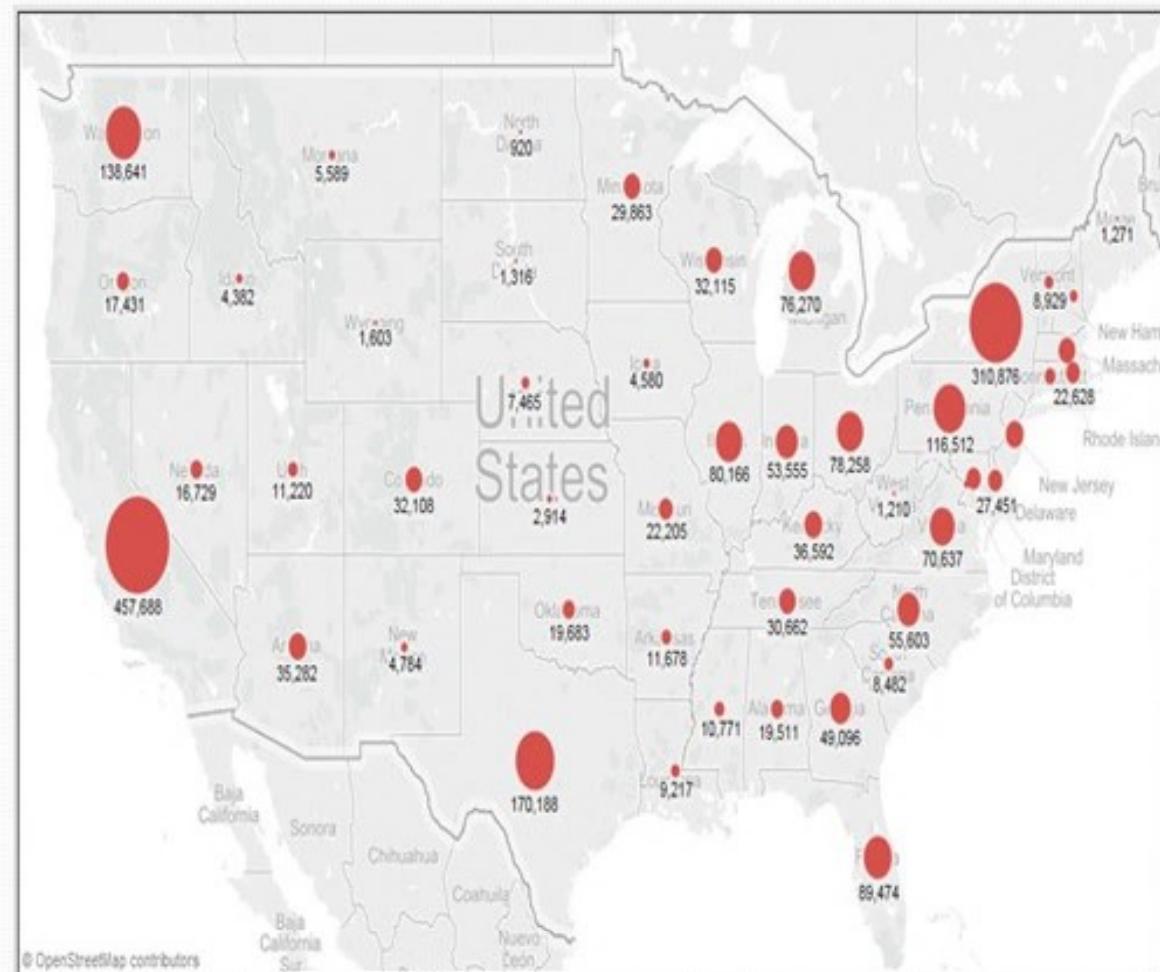


Symbol Maps are simply maps that have a mark displayed over a given Longitude and Latitude. These are effective for displaying very granular details or if you need to show multiple members of small dimension sets.



Symbol Map- Hands On

- Analyze the Sales across various States using symbol maps.
- Exercise 1*- Analyze the Sales of various segment across various States (using Piemark) in a symbol maps.



FILLED MAPS



Filled Maps are maps that have polygon shapes defined and then they can be filled with colors dependant on the data. Filled Maps display a single measure using color within a geographic shape.



Filled Map- Hands on

- Which States have Max and Min Profit, show using Filled Map.
- Exercise 1*- which Loss making State is surrounded by Profit making States only?
- Exercise 2*- Which is the third loss making States?

