**Tableau First Steps**

**Getting started building compelling visualizations**

### Useful Links:

* Download Tableau Desktop:
  + <https://www.tableau.com/support/releases>
* Connecting to Data Sources:
  + <https://help.tableau.com/current/pro/desktop/en-us/datasource_prepare.htm>
* Understanding Table Joins:
  + <https://www.w3schools.com/sql/sql_join.asp>
* Create a custom Tableau color palette:
  + <https://help.tableau.com/current/pro/desktop/en-us/formatting_create_custom_colors.htm>
* No Coffee Chrome extension:
  + <https://chrome.google.com/webstore/detail/nocoffee/jjeeggmbnhckmgdhmgdckeigabjfbddl?hl=en-US>

### Class Exercises and Solutions:

#### Exercise I - Find the sum of sales for the furniture product category in 2012. Was it higher or lower than 2011?

1. Order Date needs to be added to the visualization to see both 2011 and 2012. It is not necessary to filter, as there are only a few dates in the data set. Drag Order Date to the Columns shelf. The screen will show dates across the top of the visualization.
2. The question asks about Sales. Drag Sales to the Rows shelf. The visualization now shows a column chart of sales by year.
3. The question is specific to a certain Product Category - Furniture. Add Product Category to the Rows shelf to split the chart into the 4 Product Categories.
4. The exact value of sales is available in the tooltip for the visualization. Hover over the Sales bars for Furniture in 2011 and 2012 to answer the question.
5. *Alternate approaches*
   1. Place Sales on the labels instead of Rows to create a crosstab.
   2. Product Category and Order Date can be placed in any combination on Rows and Columns, so long as the furniture Product Category and 2012 can be distinguished in the visualization.
   3. Order Date and Product Category can be placed in the Filters card and filtered to the appropriate choices.

**Solution: Sales for Furniture in 2012 were $936,603, and were higher than 2011 ($681,647).**

#### Exercise II - Management is concerned with how much profit is being made in the Product Sub-Category of Telephones and Communication. Create a map to help them identify which part of the country to address to improve profit numbers.

1. Drag State or Province to Details on the Marks card. This will automatically generate a symbol map. Utilize the Show Me menu to convert the chart to an area map.
2. Once the map is created, drag Profit to the Color card. This will color the chart by state (the lowest level of detail) based on the profit.
3. The question is focused on the Product Sub-Category of Telephones and Communication. Drag the Product Sub-Category pill to the Filters card and narrow the results to only show Telephones and Communication.
4. Click on the Color Marks card and choose Edit Colors. This will bring up the Edit Colors dialog box.
   1. Enable Stepped Color and adjust the steps to only two. If necessary, adjust the midpoint to 0. This will ensure that one color will represent positive profits while the other will be negative. Click OK once this is complete.

**Solution: The map indicates that the Southeast section of the country is losing profit in this Product Sub-Category.**

#### Exercise III - After showing management your map, they are now wondering what percentage of profit Telephones and Communication represented in 2013. Create a table calculation on profit to determine what this value is.

1. Drag Product Sub-Category to the Rows shelf. Placing any discrete dimension on the rows shelf will generate a vertical list in the visualization of all values in that dimension.
2. Drag Order Year to the Columns shelf. This will display the years across the top of the chart.
3. Drag Profit to the Text Marks card. This will populate the crosstab with the numerical values for profit for each Product Sub-Category by Year.
   1. Once the Profit pill is on the Text Marks card, right click on it (or use the menu pull down), and select Add Table Calculation.
   2. In the Table Calculation dialog box, we need to indicate to Tableau what we want to calculate and by what. In this case, we want a calculation type of *Percent of Total* and we want it calculated over all the Product Sub-Categories, ignoring the year. Select *Percent of Total* in the top option and choose *Specific Dimensions*  below. For the specific dimensions, unselect Order Date and select Product Sub-Category.

**Solution: The table calculation should display all Sub-Categories within each year and what percentage of the total profits each Sub-Category earned. In this Exercise, we want Telephones and Communications for the year 2013, which should be 24.44%.**

#### Exercise IV - The managers now want to see what would happen to overall profit in 2014 if they were able to increase all areas by 15%. Create a calculation that adds 15% to the 2013 profit values and show it, along with the actual values on a crosstab.

1. First, we need to calculate the Profit if 15% was added.
   1. Right click on or select the Profit pill’s menu and select Create-Calculated Field
   2. We need to add 15% to the current value of the Profit. To do this, we need the original 100% plus an additional 15%, so we multiply Profit by 1.15. The calculation should read [Profit]\*1.15.
   3. Name the Calculated Field appropriately and select OK to close the window.
2. Drag Order Date to the Columns shelf to display the order years across the top of the visualization.
3. Now we need to see what the Profit of 2013 as well as the increased by 15% value we calculated. Drag Profit to the Text Marks card.
4. Drag your recently created Calculated field to the Text Marks card.The crosstab should display both numbers. Since the original Profit is positive, adding 15% should make the newly calculated value higher. Looking at the crosstab, the lowest value is the current Profit in 2013. The higher value is the original Profit +15%.

**Solution: The crosstab should indicate that the current 2013 profit is $447,197. It should also show that value with an additional 15%, which should be $514,276.**