Free Training Transcript: Creating Sets

Welcome to this video on Creating Sets. You can download the Exercises workbook to follow along in your own copy of Tableau.

Sets are a powerful analytical tool in visual analysis. Let's say I'm a local manager focused on our Corporate customers in the Latin American Market. In this viz I have the number of orders the entire organization has gotten over several years. I want to see if my customers follow this trend. I've created a set of Corporate customers in the Latin American. By bringing the set to color, I can immediately see that we didn't have the same dramatic upswing in orders as the company overall. I should look into why that might be.

Sets

Sets in Tableau can be thought of as combinations of data, like filter results. Here, it's the combination of only Corporate customers, only the LATAM Market. Sets can be created by the user in Tableau Desktop from specific data in the view or created via a calculation. They will appear in the data pan at the bottom, labeled with the set icon of two overlapping circles.

Sets can have slightly different icons depending on how they're created. Some data sources may already contain sets when they're brought into Tableau, these will be indicated with a database icon together with the circles. Additionally, certain actions, such as filter actions on a dashboard, may create sets. As a rule, you as an author won't need to interact with these action sets. Tableau creates them automatically to ensure proper filtering across views. Last, User Filters, for published workbooks, have a user filter set icon.

Creating Sets from Marks

Now let's build some sets! First, we can simply select marks in the view, say, high discount orders, and with those marks selected, click the set icon in the tooltip. This is similar to creating a group. We'll name the set, "High Discount Orders", and that's all there is to it! Sets made from marks are called "constant". Constant sets are quick and easy, though as the name suggests they are not dynamic.

Let's create another that set and look what options we have with constant sets. Because

we're creating this set the same way as High Discount Orders, we could choose to add or remove these marks from that set. But let's just create a new one.

One option we have here is to exclude. This will make a set of all the marks we did not select. Sometimes it's much easier to select the members we don't want in the set. We can also X out any of these dimensions here that are currently being used to define the set. Remember, sets are like filter results. If we remove a dimension here, we're removing it from the requirements to be in the set. If we X out everything but month, we'll get a set of all orders in the months that held the points we originally selected.

If we take Order Priority off color, making it a Detail instead so we don't lose that information, and bring this new set to color, we can see what's in that set. Note that the month was a discrete date part, so despite the fact we only selected marks from 2012 and 2013, we have members in this set across all 4 years in the viz.

Creating Sets from a Computation

If the analysis requires a set whose members are dynamic and update as the underlying data changes, the set needs to be computed rather than constant. For example, if a set is defined as Customers whose names start with A, or orders whose average Discount is over 8%, we likely want this to update as we get new customers or new orders come in.

To create a calculated set, right click on the desired dimension in the data pane, we'll use Order ID and then we'll select Create > Set. We'll name this, "Discount >8%".

First, we can select specific members of that dimension from the list, or if we tick "Use All", changes to the list will always be considered (such as new orders coming in).

Next, we need to determine the condition for the set. The Condition tab can set rules such as: The discount field averaging over 0.08 which is 8%. If we wanted to enter a formula like customer name starts with A, we could put that down here.

If we bring this set to Color, we see that yes, profit for these orders is a bit lower than the overall trend of the data.

Combining Sets

Sometimes our questions can't be answered easily with a single set. Combining sets brings additional value and power to the analysis.

Sets based on the same dimension can be easily combined. In the data pane, we'll right

click one of the sets, and select "Create Combined Set". We'll name it, very creatively, "Combined Set". Select the second set from the dropdown. Note that not all our sets are listed: If the second set we want to combine is not available in the dropdown, the sets may not be based on the same dimensions. For example, our set A, negative profit orders, can only be combined with other sets based on Order IDs, not something like a set based on Customer Name, or a set made from marks in the view.

If we have two sets, A and B, the possible combinations are: All Members in Both Sets (known as A union B). Here, any orders that are EITHER negative Profit OR high Shipping Cost will be in the combined set. Shared Members in Both Sets (known as A intersection B). Here, any orders that are BOTH negative Profit AND high Shipping Cost will be in the combined set. Except Shared Members is direction specific, so has it two options. Any negative Profit order that is NOT high Shipping Cost OR any high Shipping Cost order that is NOT negative Profit. We'll go with this one, and select OK.

Once made, Combined Sets function just like any other set. Combined Sets built off of dynamic sets continue to be dynamic.

Conclusion

Thank you for watching the Creating Sets training video. There's more information on Sets in the Working with Sets video later in this section.