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# On-Demand Training: Parameters Transcript

Welcome to the Tableau Parameters Training tutorial. Today we will be going over how to create parameters within Tableau. So, parameters allow us to provide inputs, things that don't exist in the data, or options that don't exist. They're great for jumping in there and altering the different visualizations within Tableau see and drive insight of the different "what if" scenarios.

So we'll just quickly highlight the different exercises that we will be going through today and we'll jump right into them. The first one is a simple example to see what if sales grew by a different growth rate and what that trend would look like. Or you can go in and just adjust the growth rate and see what that historical trend would have been. Moving on from that, we'll go over how to create a parameter filter. So, if I wanted to filter down a list the top selling products, what that would look like by being able to just go in and alter the input to show a different list of top-ranking products. Moving on from that, is just a simple example to create a target or budget or goal line within a Tableau visual so we can track perhaps, who has met quota or which products are selling and meeting the target we have set.

And then lastly, here, is a more creative example of how to use parameters to allow the people we share these reports with to just go in and swap fields entirely to pretty dramatically change the visualization but just by a simple change of a parameter. So, changing the category, very simply. So, maybe I want to see sales over time broken down by category as opposed to region, or by ship mode. Now, if we knew this were a common choice to jump between for the people we're sharing this report with, that makes for a great use case to use a parameter rather than having to recreate the report with a different field altogether each time.

So, let's go ahead and jump into it here and we'll get going on that first example, which was a scenario where we were looking at a sales trend over time, month by month, and just do a simple right-click drag of our date field to jump down to that month level. And the first step we'll do is actually create a calculated field. Now, again, this is a simple calculation we'll be doing, so no need to worry, but for those of you looking to learn more and buff up your calculated field skills, there is a video dedicated entirely to that. The one here today, we'll just be creating that "what if" sales growth calculation to compare to our original sales trend that we're looking at now.

By creating a calculated field first, that's opposed to the parameter, that also allows us to skip a few steps and create the entire process with the parameter a little bit faster, as we can create the parameter within the calculation itself. so, "What if Sales Growth". It's important to note that when we're creating that parameter we need it attached to the calculated field, because it has to affect the view in some way, and the parameter by itself would not.

So in this case, we're looking at the sum of sales over time. So, type that in, and we want to see what if that grew by some potential percentage. That's where we'll create the parameter. We'll call this our "Sales Growth". Now, to go over the different options here, we can change the data type for the input so that the parameter that we're creating would use a float, which is any old number, an integer which are those whole numbers, string which would perhaps be a text on a list like that last example we showcased, Boolean is true/false, and then date, and date and time.

So in this case we're just going to use Float, we can jump back and forth between the different options, maybe even set this from a particular field, but here we're actually just going to choose a set range. Just going to be choosing between zero and one. So again, these will be growth percentages. So, if sales grew by anywhere from zero percent up to one hundred percent, would be a common scenario. We'll set the step sizes, maybe .05. And we'll select OK. I'll use that Sales Growth parameter, and I'll just need to add a one plus, as we want to show the sales growing, and if we didn't add in the one plus to make it 1.1 or 1.2, whatever we choose for the parameter, we'd actually be getting a

smaller number than the original since it is just multiplied by a decimal. So this should do it for us. We can select OK.

Now come down to that what-if sales growth and drag it over so we see them on the same view as the original trend. Now, we're not seeing anything right now for two reasons. One, because I haven't adjusted the parameter, which I can show here by just right-clicking on the sales growth parameter and choosing Show Parameter Control. But even as we adjust this, you see the only thing changing is actually the second axis as opposed to the line over time, which is probably what we want to see. We're just going to synchronize this axis. So now we can see that line moving. We can even hide it altogether once we've synchronized it, since it will be the same as the one on the left. And now we see that nice what-if scenario, to understand maybe if sales grew by 30% over the last several years, what that trend would have looked like. It can help us forecast, going forward. So we'll just call this sample our "What if Sales" and move on.

So, next, here we're going to be just looking at a top list of the top selling products. I'll bring my product name out. And sales as well. What we use to compute a ranking within Tableau is actually an index calculation. So it's pretty simple, I already have it created here today. There is another video on calculations that will be going more in depth on index. It's just that index function and it works to rank each individual row, based on a certain computation that you define. So, we'll go ahead and do that right now. So we'll drag Index out onto the view. You can see it's just going down in an order from top to bottom of the way the rows are set up already.

We're actually going to have to go in and choose Edit that Table Calculation, and we'll choose the Advanced option for this. We're just going to sort this based on the sum of sales, and add descending order. Once we've applied that, now see we have the appropriate rankings there in the index field. And see, perhaps the top ten, the top fifteen, or top twenty selling products. Now the next step is creating a filter for this list that is tied to a parameter. So anyone could come in and just type in a number of the top list they wish to see and this will filter down to exactly that. They can focus just on those products. So we're actually going to create a calculated field again, this time off an index, and call this our "Top Rank Filter". It's just going to read something like, if the index is less than or equal to the parameter we create, this would be "Top N Rank", it could be any old rank. Let's just do a range again, a minimum of 1 and a maximum of 20. And we'll use that. If the index on the view is less than or equal to that, then it will return us only that list of rankings.

We can actually show that parameter again. Maybe set it to "Top Ten". Right now it's not affecting the view because the last step is to drag that Top Rank filter out onto the filter shelf, and set it to return only the values where the true condition for that calculation we just created happens. And then we can see exactly that. So everywhere where the top ranked products are less than or equal to ten, that will return us the list of the top ten ranked products. We see exactly that, now. Go in and change this to a different number and see the list change. And lastly, is to highlight how we could potentially change the way this looks and feels. Maybe a type-in list would be nicer to see in this case. We can just type in a number and return exactly that list of top products. Call this our "Top Products" and move along.

So the next example is using parameters to set some sort of sales target. Perhaps for sales people or in this case, we'll use different product category groups. So we'll just look at our sales again based on that product subcategory. Make this a little bit easier to see, here. And to add in that target line that we'd be looking at to spot check each of these product categories, all the individual bars met that target goal. We would just come in and quickly add a

reference line. And for everyone out there who is quite savvy with statistics, this provides a lot of different options you can do within Tableau to view those distributions or perhaps different reference lines within the view.

But for us, we're just going to be interested in changing this to an actual parameter, here. So we'll call this our "Sales Target", and we will display this again as a range. And we'll define that range based on the potential sales in this view, which range sounds good is maybe 800,000 to two million. We'll let people go in and input that for every one hundred thousand. So we'll set that as the step size. We'll apply that. You can see here now, you can change that sales target, and spot check which of those bars are meeting the target and which ones aren't. So maybe the last step, here, is to create a quick KPI to drop onto the color shelf, so that each of those bars will be colored by whether or not they're meeting that target.

So, to do that, we can actually create another calculated field based on that sales target. We call this our "Sales KPI". Let's say, for each of those bars that is a sum of sales mark. So if sum of sales is greater than or equal to that target we're setting, we'll say that, in that scenario, that's GREAT, else if NOT MEETING TARGET. It will run that logic statement there. Now we can just take that Sales KPI and drop that onto the Color shelf, and just like that, quickly those bars are labeled orange for the ones that are not meeting the target goal. And we can see the blue ones are where we have met that sales target. And this is dynamic, so if we change this, the color of those bars change since it is tied to that parameter, so on and so forth. We'll call this our "Sales Target".

We'll finish up with the last example of using a parameter to swap out dimensions on a view. We'll be using that parameter option to pretty creatively allow us to swap fields in and out of a view seamlessly just by toggling the different options within that parameter we set. So, in the example I showed, it was sales over time, we look at that maybe on a quarterly basis. And the example worked as if one of those fields was on our color shelf and we could view the breakdown based on perhaps region over time. But be able to simply toggle in and out and see what that looks like when we use different dimensions instead. And instead of dragging out those field each time, the parameter will allow us to just quickly adjust that. So if we take this off we can create that.

Now, in most cases, I recommend creating the calculated field first. In this case, I'm going to create parameter just so it's a little easier to follow along. I'll call this my "Choose Breakdown" for adjusting the different ways we might break this view down over time, and it's just going to be a simple string list. So we have those different choices of the dimensions I'd like to toggle between. And I'll use Region, excuse my typing, and Category, and finally Ship Mode. So we can see sales broken down by all those different dimensions, by just simply toggling this parameter. So hit OK and see what that looks like.

Now you see we have that simple drop-down to change. For the last step, is again attaching that to a calculated field, so it does affect the view. Call this "Choose Color", it's going to be dropped onto that Color shelf on the Marks card. And we're just going to use any simple case statement which work very similar to that if-then logic. So when the input for that parameter returned is Region, then in that case, we want to use the actual region dimension. When the value returned is Category, then we want the Category field. And finally, when input chosen is Ship Mode, then want to use the Ship Mode dimension. And that should do it. We see that calculation is valid. We can just take that now, for the

Choose Color option for that field and drop on the Color shelf, and now you see if we change this, the view completely changes to reflect that breakdown based on that field we choose in the parameter. So, pretty creative example there, of how to use parameters to swap out different dimensions onto a view rather quickly and intuitively.

That concludes the Parameters Training, thank you for watching this video, and I encourage you to check out some of the other training tutorials on Tableau's web site. Thank you.