Free Training Transcript: Parameter Actions

Introduction

Welcome to this video on Parameter Actions. You can download the exercise workbook to follow along in our own copy of Tableau Desktop. This video builds on the concepts presented in the Parameters video.

Parameter Actions enable us to change a parameter's value by interacting with marks on a viz. The parameter's value could be a dimension or a measure. Parameter Actions can drive reference lines, calculations, filters, and SQL queries. This makes Tableau vizzes more playful and interactive and extends Tableau's analytical capabilities. Let's build a few examples.

Process Overview

To use parameter actions, we define a parameter, apply the parameter to an object, and then define a parameter action that will impact the value of the parameter.

Interactive Reference Line

For our first example, we will create a grid with multiple panes where clicking on a mark will define the reference line value for the entire table.

First, we create the grid by placing Region and continuous MONTH(Order Date) on the Columns. We place Category and SUM(Profit) on the Rows. Name the sheet "Interactive Reference Line".

We would like a parameter to capture the Profit value of the mark we click on. From the Dimensions dropdown, select Create Parameter. Name the parameter "Threshold Parameter". We leave the data type as "Float" and leave the Allowable values set to "All". Click OK.

Next, we define the parameter action. From the Worksheet toolbar menu, we select Actions. Click on Add Action and then Change Parameter. Ensure that the source sheet selected is "Interactive Reference Line". Run action on "Select" makes the marks on the viz clickable. We set the Target Parameter to the "Threshold Parameter" we defined earlier. We set the Field to "SUM (Profit)" with Aggregation set to "Sum" to cause the profit value of the mark that is selected to be assigned to the threshold parameter. Click OK twice.

Lastly, we define the reference line that will intersect the y-axis at the profit value of the threshold parameter. From the Analytics pane, drag a Reference Line to add it to the table. Ensure that the scope is the "Entire Table". Set the value to "Threshold Parameter". Set the label to "Value". Click OK.

To test the parameter action, we click on a mark of the viz. The parameter action causes the mark's profit value to be applied to the "Threshold Parameter" which, in turn, affects the position of the reference line throughout the entire table.

Drilling Down on a Crosstab

For our next example, we'll create a crosstab that drills down to the subcategory level based on the category that is selected.

First, we drag Category to the rows and then right-click and drag AVG(Sales) to Text. Name the sheet "Drilling Down on a Crosstab".

We would like a parameter that captures the Category we click on. From the Dimensions dropdown, we select Create Parameter. We name our parameter "Selected Category", set the data type as String, set the current value as "None", and leave the Allowable values set to "All". Click OK.

Next, we define a calculated field that will become our Subcategory Drill Down dimension. From the Dimension dropdown, select Create Calculated Field. Name the field "Subcategory Drill Down" and enter the following formula that will return the subcategory values for the selected category only:

if [Selected Category]=[Category] then [Sub-Category] else "" END

Click OK and drag the dimension to the right of the Category field on the rows.

Next, we define the parameter action. From the Worksheet toolbar menu, select Actions. Click on Add Action and then Change Parameter. Ensure that the source sheet selected is "Drilling Down a Crosstab". Run action on "Select". We set the target parameter to "Selected Category". We set the Field to "Category" so that the category we click on will be assigned to the "Selected Category" parameter. Leave the Aggregation set to None and click OK twice.

To test the parameter action, we click on any row of our viz. The parameter action assigns the corresponding category to the "Selected Category" parameter. The parameter value is then used by the Subcategory Drill Down calculated field to displays the subcategories of the selected category.

Retrieving a Selection's Average Sales Value

Parameter Actions also enable us to aggregate the values of multiple marks we select within a viz. In this example, a reference line will display the average sales value of the multiple subcategory marks that we select.

First, we drag SUM(Sales) to the rows, SUM(Profit) to the columns, and Sub-Category to Detail. Name the sheet "Retrieving a Selection's Average Sales Value".

We want a parameter to capture the average sales value. From the Dimension dropdown, select Create Parameter. Name the parameter "Selection's Average Sales Value". We leave the data type as "Float", set the Display Format as "Currency (Standard)", and leave Allowable values set to "All". Click OK.

Next, we define the parameter action. From the Worksheet toolbar menu, select Actions. Click on Add Action and then Change Parameter. Ensure that the source sheet selected is "Retrieving a Selection's Average Sales Value". Run action on "Select". We set the Target Parameter to "Selection's Average Sales Value". We set the Field to "SUM (Sales)" with Aggregation set to "Average" to cause the average value of the selected marks to be assigned to the target parameter. Click OK twice.

Lastly, we define the reference line that will intersect the y-axis at the average sales value of the target parameter. From the Analytics pane, drag a Reference Line to SUM(Sales) for the entire table. Set the value to "Selection's Average Sales Value". Set the label to "Value". Click OK.

To test the parameter action, we drag the mouse across the viz to select multiple marks. The parameter action then averages the sales values of the selected marks and assigns the average to the parameter. The parameter then drives the position and label of the reference line.

Additional Help

For additional help on the use of Parameter Actions, please visit onlinehelp.tableau.com.

Conclusion

Thank you for watching this video on Parameter Actions. We invite you to continue with the Free Training Videos to learn more about using Tableau.