Lesson 3

Data Connections Contd..

Capgemini

Day 3

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- Calculations
- Parameters
- Level Of Detail Expressions
- Table Calculations
- Forecasting
- Reference Lines, Bands, Distributions And Boxes
- Publishing and Subscriptions
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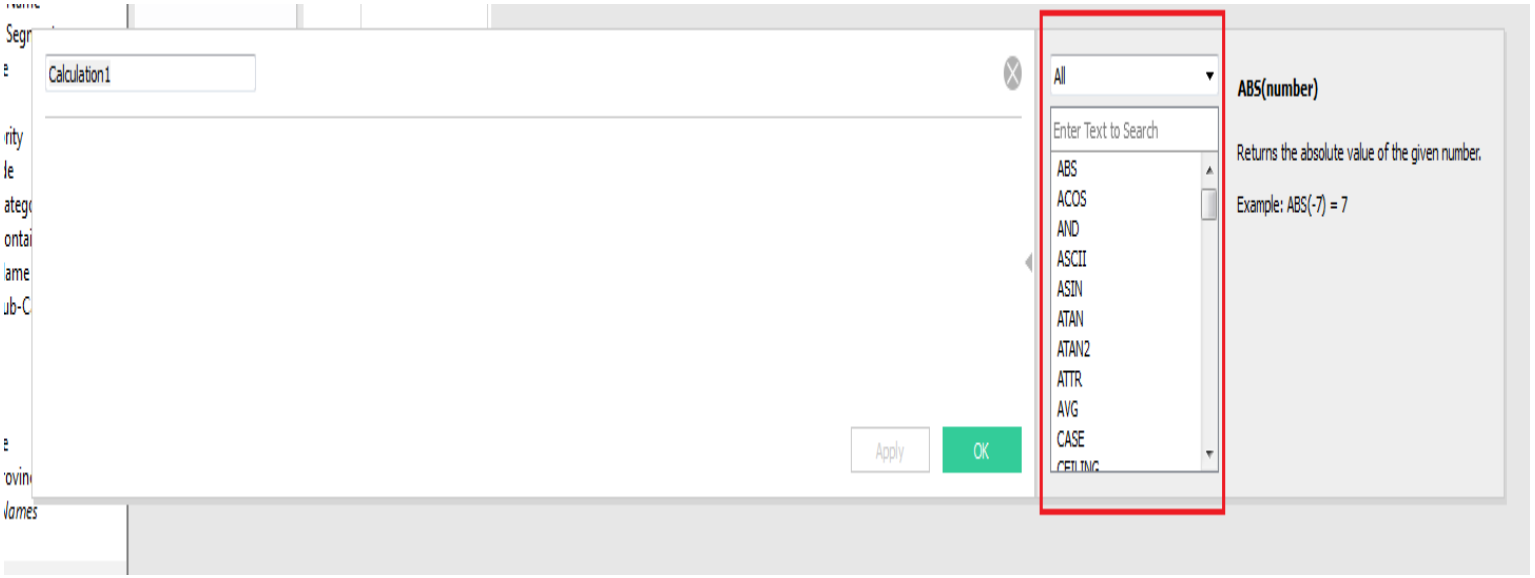
Calculated Fields

Calculation: To extract meaningful results from your data, you might want to perform one or more calculations. Some calculations are predefined in Tableau, while you can customize others to suit your specific needs.

You can create a calculation by either selecting a specific attribute or clicking on “Create Calculation” which will open a new window.



Actions

- **Actions**

  Tableau allows you to add context and interactivity to your data using actions. Link to web pages, files, and other Tableau worksheets directly from your analytical results. Use the data in one view to filter data in another as you create guided analytical stories.

  There are three kinds of actions in Tableau: Filter, Highlight, and URL actions.

- **Filter Actions :** Filter actions are a way to send information between worksheets. Typically a filter action is used to send information from a selected mark to another sheet showing related information.

- **Highlight Actions :** Highlight actions allow you to call attention to marks of interest by coloring select marks and dimming all others.

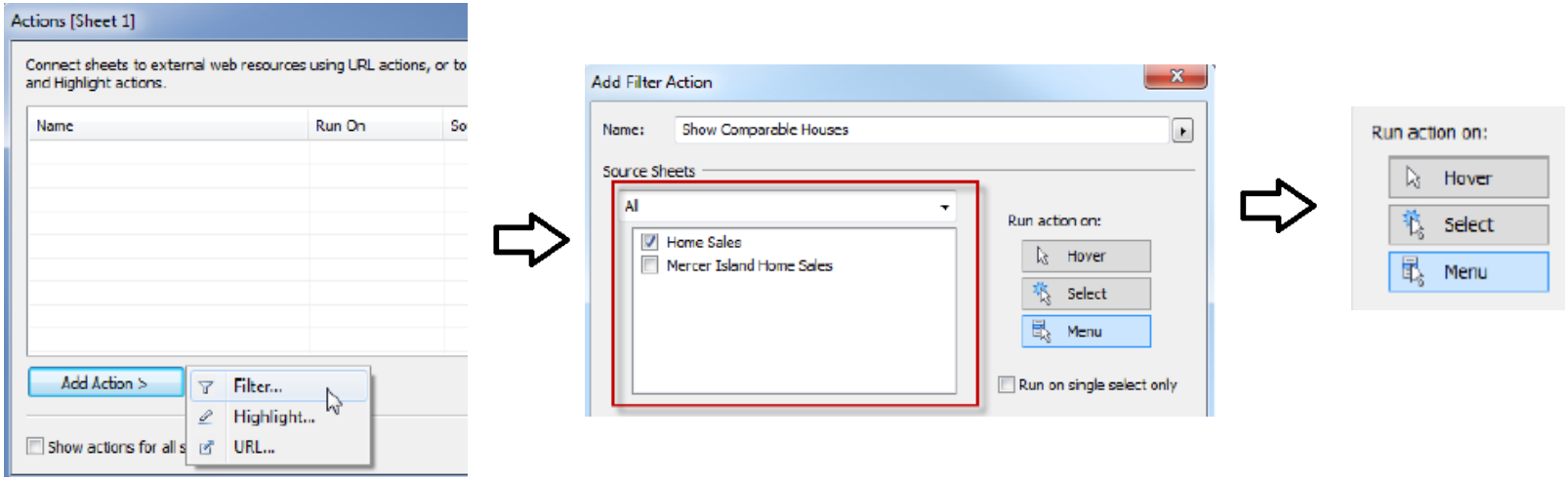
- **URL Actions :** A URL action is a hyperlink that points to a Web page, file, or other web-based resource outside of Tableau.

Actions

Creating a Filter Action :

On a worksheet, select **Worksheet > Actions**. From a dashboard, select **Dashboard >Actions**

Click **Add Action** and then select **Filter**



After entering all the details for the Action, click on “ok” and then the worksheet/dashboard will have interactivity with the action feature.

Parameters

- **Parameters :**

  Parameters are dynamic values that can replace constant values in calculations, filters, and reference lines.

  For example, you may create a calculated field that returns true if Sales is greater than $500,000 and otherwise return false. You can replace the constant value of “500000” in the formula with a parameter. Then using the parameter control you can dynamically change the threshold in your calculation.

  Alternatively, you may have a filter to show the top 10 products by profit. You can replace the fixed value “10” in the filter to by a dynamic parameter so you can quickly look at the top 15, 20, and 30 products.

- **Using Parameters in Calculations**

  Parameters give you a way to dynamically modify values in a calculation. Rather than manually editing the calculation (and all dependent calculations), you can use a parameter. Then when you want to change the value, you open the parameter control, change the value, and all of the calculations that use that parameter are updated.

Parameters

Using Parameters in Filters

Parameters give you a way to dynamically modify values in a TopN filters. Rather than manually setting the number of values you want to show in the filter, you can use a parameter. Then when you want to change the value, you open the parameter control and the filter updates. For example, when creating a filter to show the Top 10 products based on total profit, you may want to use a parameter instead of the fixed “10” value. That way, you can the quickly update the filter to show the top 10, 20, or 30 products.

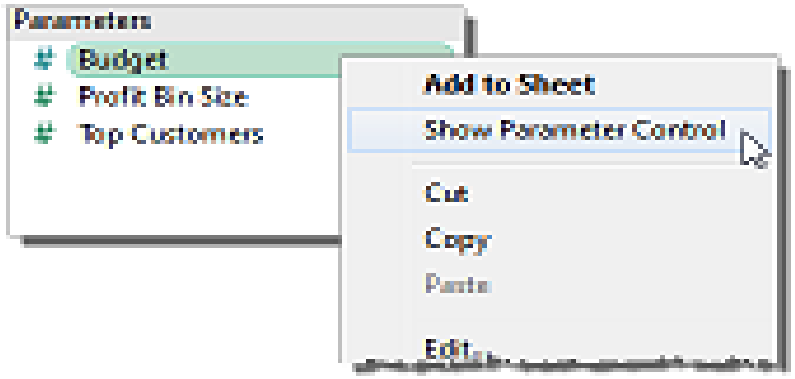
Using Parameters in Reference Lines

Parameters give you a way to dynamically modify a reference line, band, or box. For example instead of showing a reference line at a fixed location on the axis, you can reference a parameter. Then you

Parameters

Parameter Controls

The parameter control is a worksheet card that lets you modify the parameter value. Parameter controls are very similar to quick filter cards in that they contain controls that modify the view. You can open parameter controls on worksheets ai included when you save to th erver.



To open the (Control-click) the paramete select Show Parameter Co...

Level Of Detail Expressions

- **Level of Detail Expressions**

  Level of detail expressions support aggregation at dimensionalities other than the view level. With level of detail expressions, you can attach one or more dimensions to any aggregate expression.

  Unlike table calculations, totals, or reference lines, level of detail expressions are computed in the data source.

  A level of detail expression has the following structure:

  {[FIXED | INCLUDE | EXCLUDE] <*dimension declaration* > **:** <*aggregate expression*>}

- **FIXED**

  FIXED level of detail expressions compute values using the specified dimensions without reference to the view level of detail—that is, without reference to any other dimensions in the view.

- **INCLUDE**

  INCLUDE level of detail expressions compute values using the specified dimensions in addition to whatever dimensions are in the view.

- **EXCLUDE**

  EXCLUDE level of detail expressions explicitly remove dimensions from the expression—that is, they subtract dimensions from the view level of detail.

Table Calculations

- Table Calculations are computations that are applied to the values in the entire table and are often dependent on the table structure itself

Types Of Table Calculations :

Difference From - show absolute change.

Percent Difference From - show rate of change.

Percent From - show as % of other specified value.

Percent of Total - show values as % of the total.

Rank - rank values numerically

Percentile - compute percentile values

Running Total - show a cumulative total.

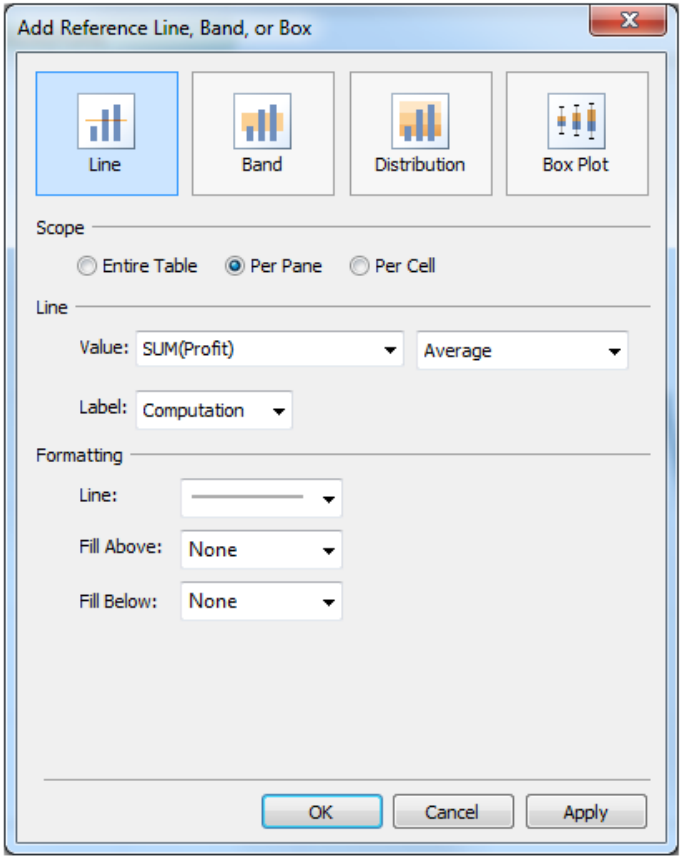
Moving Calculation - smooth short fluctuations to identify long term trends.

Forecasting

- You can forecast quantitative time-series data using exponential smoothing models in Tableau Desktop. With exponential smoothing, recent observations are given relatively more weight than older observations. These models capture the evolving trend or seasonality of your data and extrapolate them into the future. Forecasting is fully automatic, yet configurable. Many forecast results can become fields in your visualizations.
- To turn forecasting on, there must be at least one date and one measure in the view. Choose Analysis > Forecast > Show Forecast.
- The forecasted future values for the measure are now shown in the view next to the actual historical values.
- Tableau provides several types of forecast results. To view these result types in the view, right-click (control-click on Mac) on the measure field, choose **Forecast Result**, and then choose one of the options.

Reference Lines, Bands, Distributions and Boxes

- Add a reference line, band, distribution or box to mark a specific value or region on an axis. For example, if you are analyzing the monthly sales for several products, you may want to include a reference line at the average sales mark so you can see how each product performed against the average. Alternatively



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Publish Workbooks to the Server

Publishing Workbooks

Publish views of your data to Tableau Server by publishing a workbook. When you publish a workbook you can add it to a server project, hide some of the sheets, add tags to enhance searchability, specify permissions to regulate access to the workbook on the server, and choose to embed database passwords for automatic authentication on the web.

After you create a workbook, you can publish to Tableau Server or Tableau Online by following the steps below.

1.Select **Server** > **Publish Workbook**.

If you are not already signed in to Tableau Server, you will see the Tableau Server Sign In dialog box.

In the Publish Workbook to Tableau Server dialog box, specify the following:

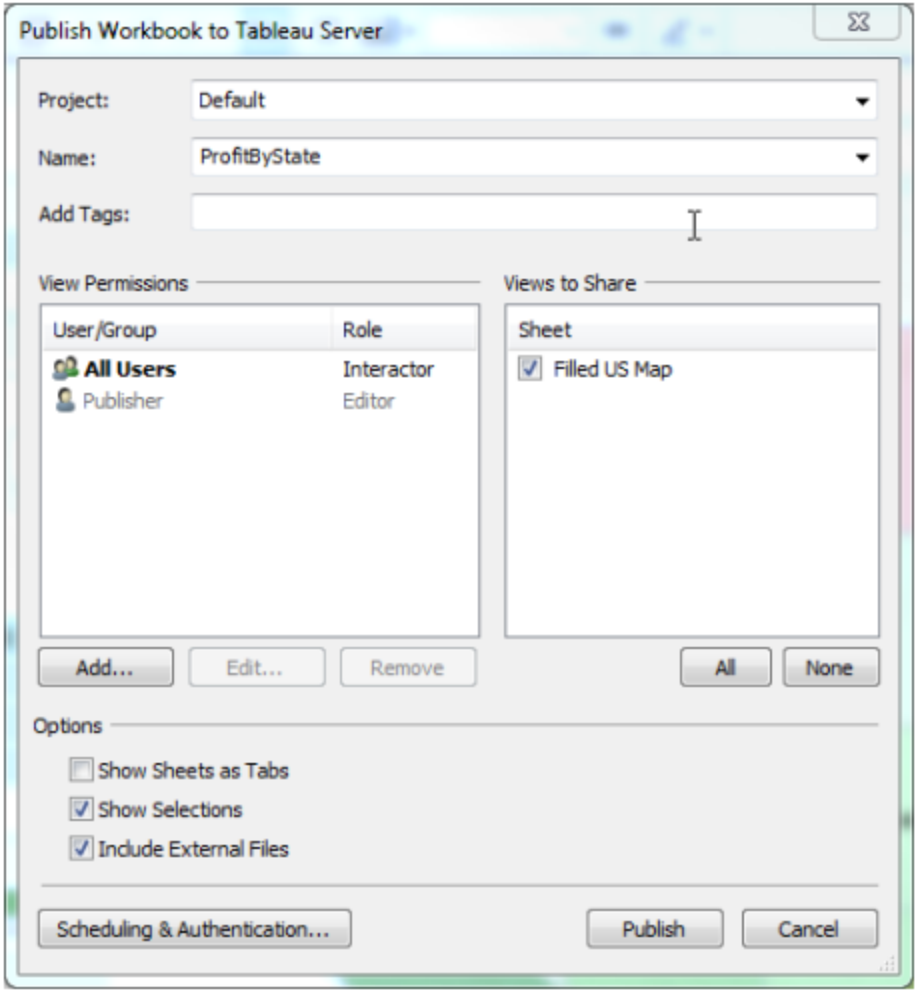
Project: A project is like a folder that can contain workbooks and data sources. The default project on Tableau Server is named Default. All workbooks must be published into a project.

Name: Provide a name for the workbook in the Name text box.

You can use the drop-down list to select an existing workbook on the server. In this case, the workbook on the server is overwritten. To do this, you must have the Write permission for the workbook on the server.

Add Tags: You can enter one or more keywords that describe the workbook into the Tags text box. Tags help users find related workbooks when browsing the server.

Publish Workbooks to the Server



Performance Tips

Following are few performance tips applicable for relational data sources.
Context filters – If you are setting filters that significantly reduce the data set size, and that will be used for more than several data views, you should set those filters as context filters.

Aggregate measures – If the views you create are slow, make sure you are working with aggregated measures rather than disaggregated measures. When views are slow it usually means you are trying to view many rows of data at once. You can reduce the number of rows by aggregating the data. In other words, make sure the Aggregate Measures option on the Analysis menu is selected.

Sets – If you want to filter a dimension to remove members based on a range of measure values, you should create a set rather than using a quantitative filter. For instance, you can create a set that only returns the Top 50 items in a dimension, rather than all of the items in a

Performance Tips

Extract Large Text and Excel Files – If your data source is large text or Excel file, you should create a Tableau Extract to improve performance and gain new functionality. Note that if you connect Tableau to a large text file, you will be prompted to extract the data if the file is considered to be too large to perform well.

Use a database server – You should consider storing your data in a database server like Microsoft SQL Server. The Professional Edition of Tableau can connect to these larger database servers.

Create indexes for tables – Index the tables in your relational database. To successfully index your data set, you should identify the fields that you frequently filter on and add them to the index. If you have a field that you use as a context filter often, consider setting it as your primary index. If you are working with Access tables that have more than 200,000 rows of data, consider setting indexes on the tables. You can learn how to do this by searching for "index" in the Access online help. Access allows you to store 2 GB of data (approximately 1-2 million rows) in a database, but it

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Tableau Reader

Tableau Reader is a free desktop application that you can use to open, view and interact with visualizations that have already been created in Tableau Desktop.

How it works:
A colleague or co-worker creates a visualization using Tableau Desktop.

When they are done, they save it as a Tableau Packaged Workbook, or ".twbx" file
They share that file with you. You can open it with Tableau Reader to see what they've made.

Tableau Reader is completely free and available to anyone. You can install it on either Windows or MacOS machines in less than a minute.

Creating A Story

A **story** is a sheet that contains a sequence of worksheets or dashboards that work together to convey information. You can create stories to show how facts are connected, provide context, demonstrate how decisions relate to outcomes, or simply make a compelling case.

A story is a sheet, so the methods you use to create, name, and otherwise manage worksheets and dashboards apply to stories. At the same time, a story is also a collection of sheets, arranged in a sequence. Each individual sheet in a story is called a **story point**.

There are many different ways to use stories.

For example:

Use stories for collaborative analysis: You can use stories to assemble a sequenced analysis, for yourself or for collaboration with your colleagues. Visualize the effects of data changes over time, or perform what-if analysis.

Use stories as presentation tools: You can use stories to present a narrative to an audience. Just as dashboards provide spatial arrangements of views that work together, stories present sequential arrangements of views or dashboards that create a narrative flow for your audience.

Tableau Public

Tableau Public is a free service that lets anyone publish interactive data visualizations to the web. ... Visualizations are created in the accompanying app **Tableau** Desktop **Public** Edition (or another Edition of **Tableau** Desktop) - no programming skills are required.

The Tableau Public is mainly used for publishing interactive data in online, which can be accessible by everyone. Tableau Public is not secured one and anyone can access the data and download.

Does Tableau server/online versions need Tableau Desktop?

No, Tableau Server and Tableau online versions do not need Tableau Desktop.

Tableau desktop Version 10

Tableau Desktop Version 10 Features :

- Answers through Analytics
- Data Breakthroughs
- Beautiful By Design
- Delightfully Mobile
- Do More on the Web
- Improved Browser Performance

Q&A