SAP Lumira Discovery - Calculations and Functions to Enhance Data

Version 1.0
Author-Monika Shetkar
Date: 7th August 2018

Purpose

This document covers the concept of “Calculations and Functions to Enhance Data” in SAP Lumira Discovery. This is high level document assumes resource has basic knowledge of SAP Lumira Discovery concepts.

Calculation

Calculation is a mathematical process in which we can give one or more input values and returns one or more output values. With the help of calculations, we can manipulate data by creating calculated measures and dimensions in SAP Lumira Discovery by using calculation button. For example, running count, running maximum, and running minimum calculations can be performed on numerical measures, or on non-numerical measures such as date. ***Counter*** is performed on a dimension. ***Custom*** calculations are performed on aggregated values. All other calculations are performed on numerical measures only.

Functions

A function is a special relationship where every input value has a single output value. Function receives one or more values and return output based on those values. For example, sum of column will give one output i.e. Total Sum. In SAP Lumira Discovery, functions will help us to create calculated measures and dimensions during the design time.

Why should we use “Calculation and Function” in “SAP Lumira Discovery”?

We can use functions to create formulas for calculated measures, dimensions or for custom.

Types of Function

1.Aggregation- Sum, Min, Max, Count (Distinct), Count (All), Average.

2. Character- Concatenate, Contain, ExceptFirstWord, ExceptLastWord, FirstWord, LastWord Length, Lowercase, Lpad, Replace, Rpad, Substring, ToText, Trim, TrimLeft, TrimRight, ToDate, ToTime, ToDateTime.

3.Date and Time- AddMonthToDate, AddWeekToDate, AddYearToDate, CurrentDate, DateDiffInDays, DateDiffInMonth, Day, DayOfWeek, DayOfYear, Hour, LastDayOfMonth, LastDayOfWeek, MakeDate, MakeDateTime, MakeTime, Minute, Month, Quarter, Second, TimeDiff, ToDate, ToDateTime, ToTime, Week, Year.

4. Miscellaneous – IsNull, IsNotNull, ToNumber, ToText, Contain, GroupValues, if then else.

5. Numeric – Ceil, Floor, Log, Log10, Mod, Power, Round, Sign, ToText, Truncate.

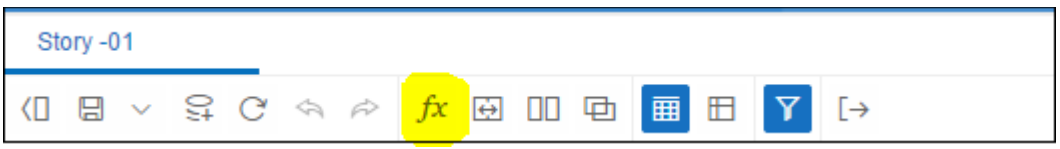
6. Operator- lhs and rhs, lhs or rhs, like, not.

These functions will help us to create **“Calculated Measures and Dimensions”** during design time. For instance, if we want to show “Profit %” and the data source doesn’t have that measure, then there is no need to alter the query, we can create that measure in SAP Lumira Discovery during the design time and after that we will apply function on the result value.

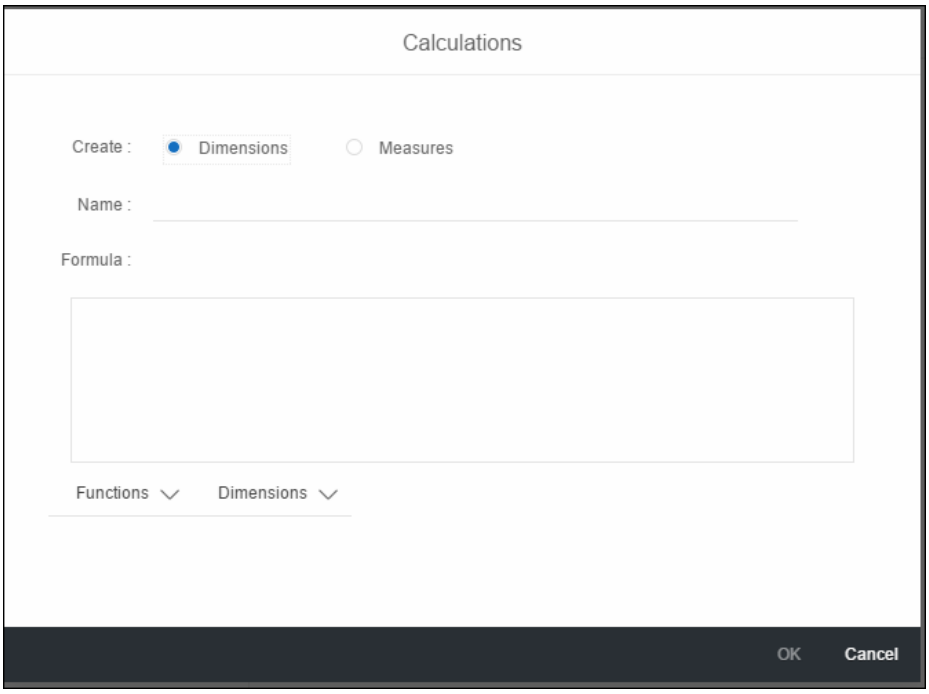
How do we achieve this?

1. Select data source. Here we are using “Excel” data source “Sales” for which we want to calculate “Profit %”.

2. Click on icon “**Calculations**” as shown in below screenshot.



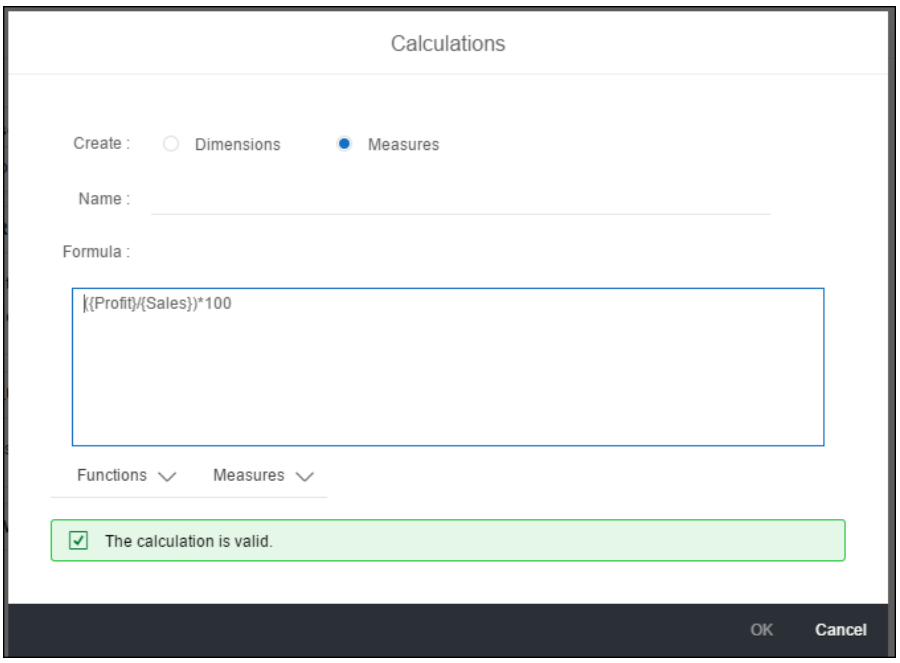
3. “**Calculations**” pop up screen will be displayed and select “**Measures**” or “**Dimension”** as per requirement.



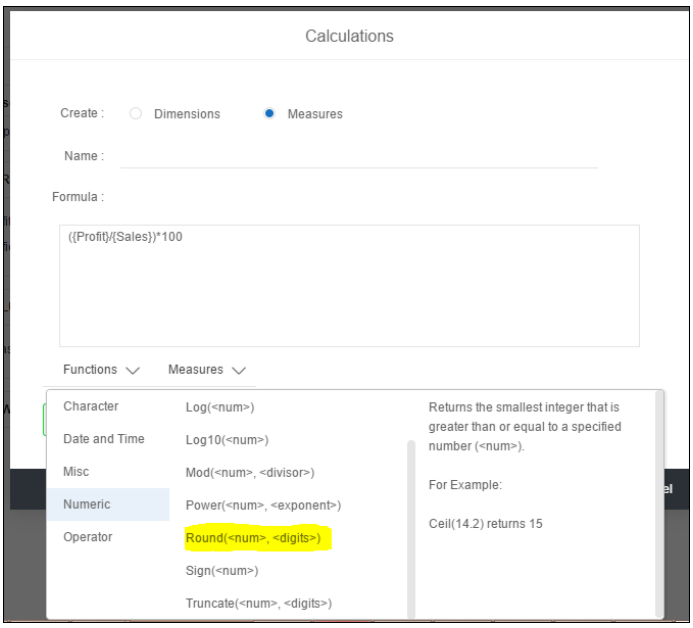
4. Now, we want to calculate the formula so for this, click on “Measures” dropdown, just below the formula area to see the list of measures present in the data source.

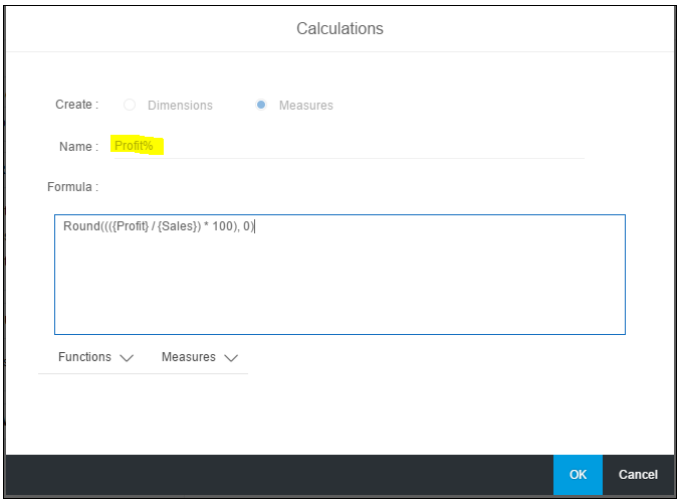
5. Double click on the measure which are required in our formula.

6. Here formula to calculate Profit % is, ***Profit%=(Profit/Sales) *100,*** use the same in formula area.

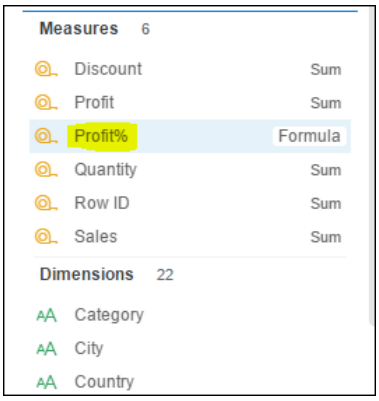


7. Now we can use suitable function as per requirement. Here we are using the **“Round”** numeric function to show **“Profit%”** with 0 decimal place.





8. We can see our calculated measure in the “**Measures**” list.

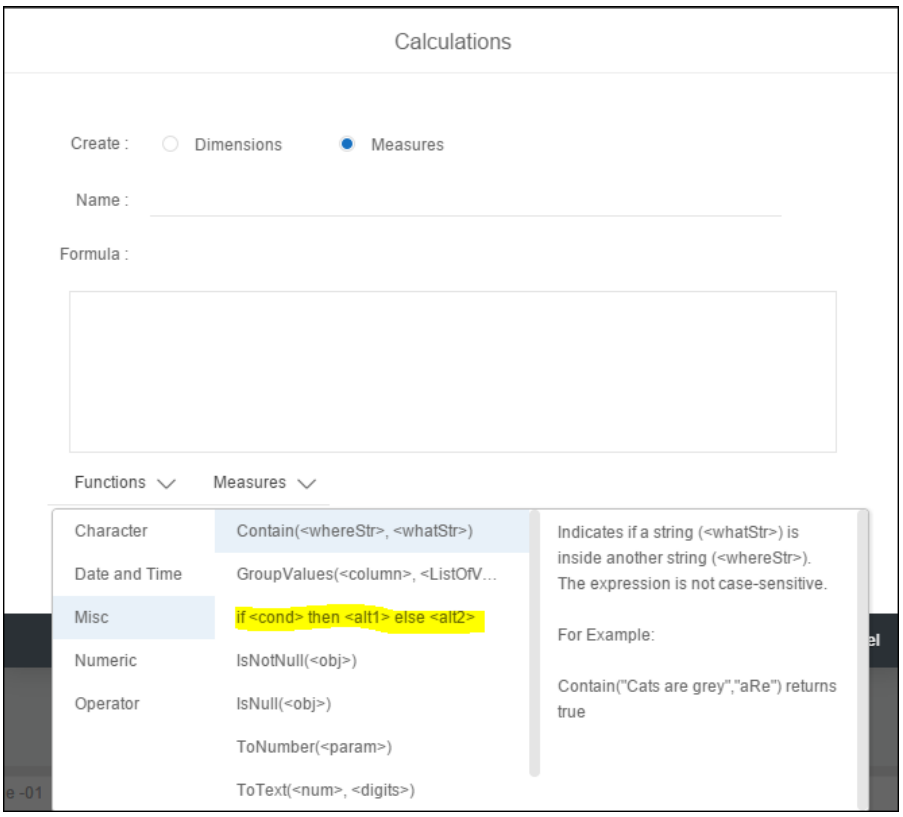


9. We can use this calculated measure in any type of visuals as shown below

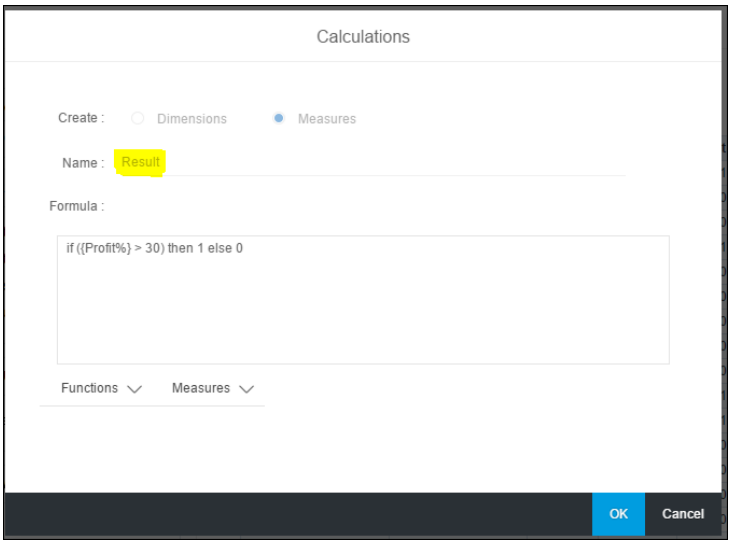
Profit%, Sales and Profit by City

City	Profit	Sales	Profit%
Aberdeen	6.63	25.50	26
Abilene	-3.76	1.39	-270
Akron	-186.64	2,729.99	-7
Albuquerque	634.09	2,220.16	29
Alexandria	318.62	5,519.57	6
Allen	-39.88	290.21	-14
Allentown	-226.45	853.25	-27
Altoona	-1.18	20.45	-6
Amarillo	-387.97	3,773.06	-10
Anaheim	1,234.00	7,986.87	15
Andover	124.19	435.85	28
Ann Arbor	228.92	889.27	26
Antioch	9.33	19.44	48
Apopka	54.36	904.55	6
Apple Valley	292.59	2,053.02	14
Appleton	554.77	1,671.31	33
Arlington	4,169.70	20,214.53	21
Arlington Heights	1.23	14.11	9

10. Below is another example for "**if else**" statement of "**Miscellaneous**" function.



11. Here, we want to display “1” in the visualization for the “City” having profit greater than 30 else it displays “0”. To achieve this, we will use formula ***if(Profit%>30)then 1 else 0***



12. Now, we can clearly see the result of “**if else**” statement function in our visualization.

Profit%, Sales, Profit and Result by City

City	Profit%	Profit	Sales	Result
Antioch	48	9.33	19.44	1
Apopka	6	54.36	904.55	0
Apple Valley	14	292.59	2,053.02	0
Appleton	33	554.77	1,671.31	1
Arlington	21	4,169.70	20,214.53	0
Arlington Heights	9	1.23	14.11	0
Arvada	12	59.86	503.40	0
Asheville	5	77.51	1,475.38	0
Athens	28	479.32	1,720.81	0
Atlanta	41	6,993.66	17,197.84	1
Atlantic City	50	11.68	23.36	1
Auburn	23	734.92	3,155.17	0
Aurora	-23	-2,691…	11,656.48	0
Austin	0	-20.39	6,057.98	0
Avondale	8	76.17	946.81	0
Bakersfield	14	187.92	1,377.29	0
Baltimore	27	1,676.20	6,156.84	0
Bangor	36	422.22	1,164.45	1
Bartlett	11	10.01	88.96	0