SAS Visual Analytics: An Introduction to Custom Calculations and Aggregations

Shannon J. Moore
Sr. Systems Engineer

Ask the Expert

SAS Visual Analytics: An Introduction to Custom Calculations and Aggregations

Presenter: Shannon Moore
Senior Systems Engineer
SAS Customer Loyalty Team

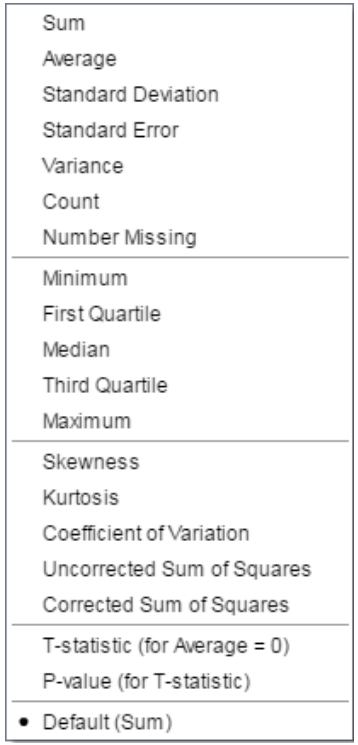
Q&A: Twanda Baker
Senior Associate Systems Engineer
SAS Customer Loyalty Team

Intended Audience for today's WebEx

1. Your site already has SAS Visual Analytics installed and configured, up and running, and you have logged into it
2. You already have at least one data file loaded into the software courtesy of a systems or data administrator - or you loaded it yourself
3. You already know how to maneuver around the different interfaces of Visual Analytics and have at least somewhat of an understanding of their differences - Designer vs. Explorer
4. You have already created at least one exploration or one report
5. You don't need to be an *expert* or even an *intermediate* user of the software to benefit from this presentation

STANDARD AGGREGATIONS

Property	Value
Name	Order Total
Classification	Measure
Format	Comma
Aggregation	Sum
Sort Options	

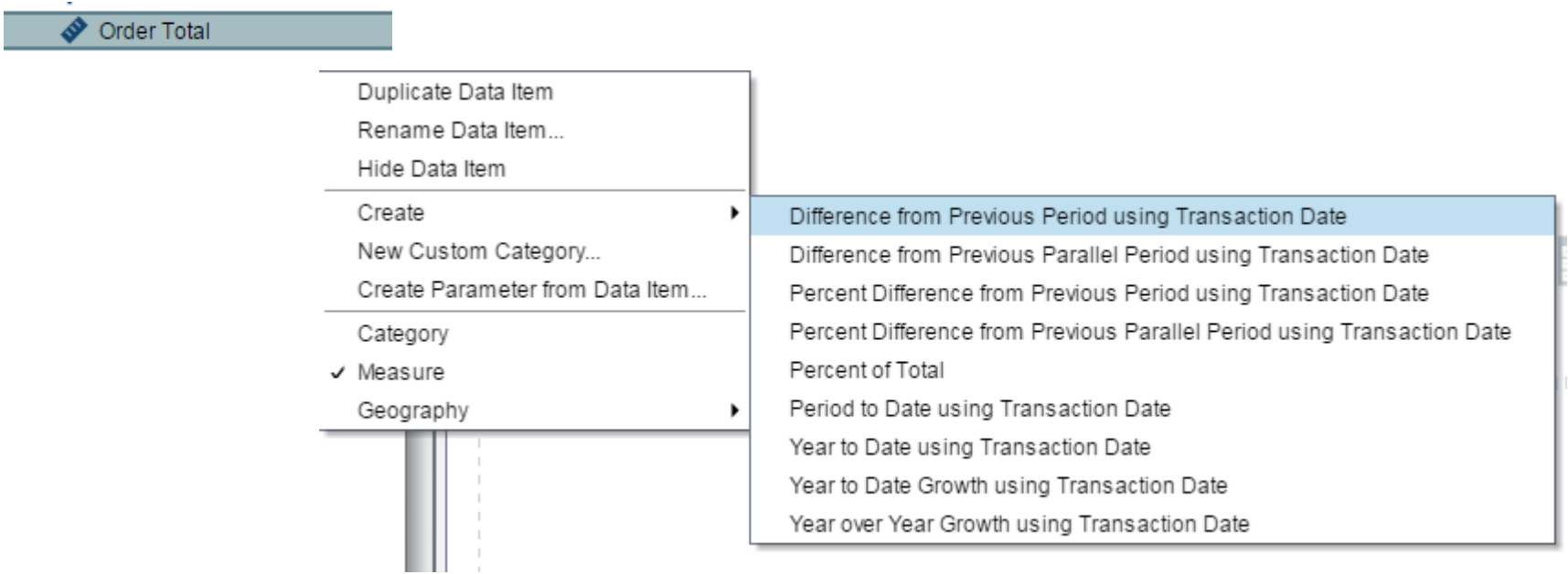


Note: This functionality is available in the Data Pane, List Tables, and Crosstabs

SAS Visual Analytics

SOFTWARE PROVIDED CUSTOM AGGREGATIONS

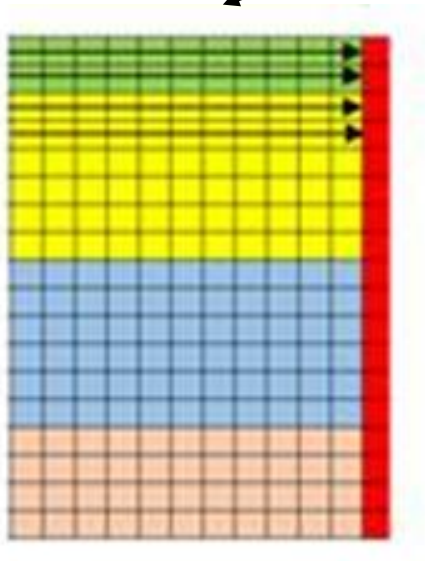
Documentation and training materials call these -> DERIVED ITEMS



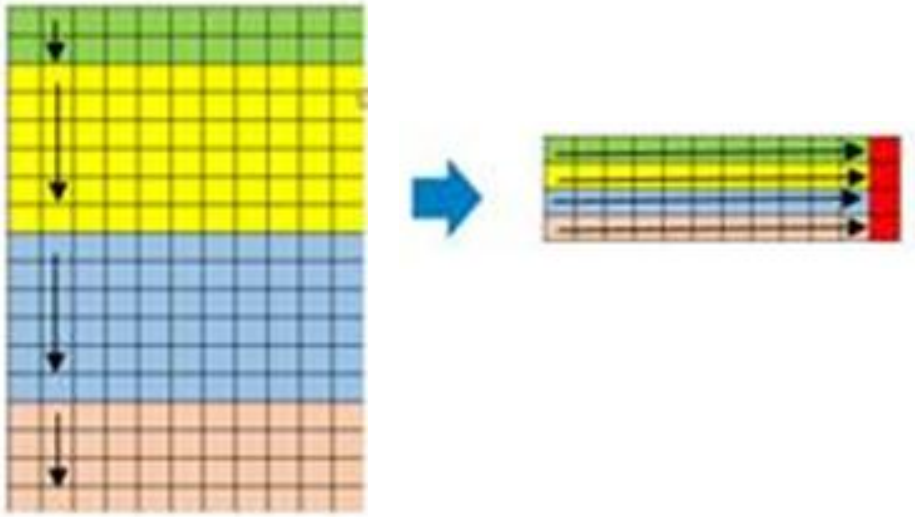
Note … this functionality is available in the Data Pane, List Tables, and Crosstabs.

Today's specific focus

CALCULATED ITEMs vs. AGGREGATED MEASUREs



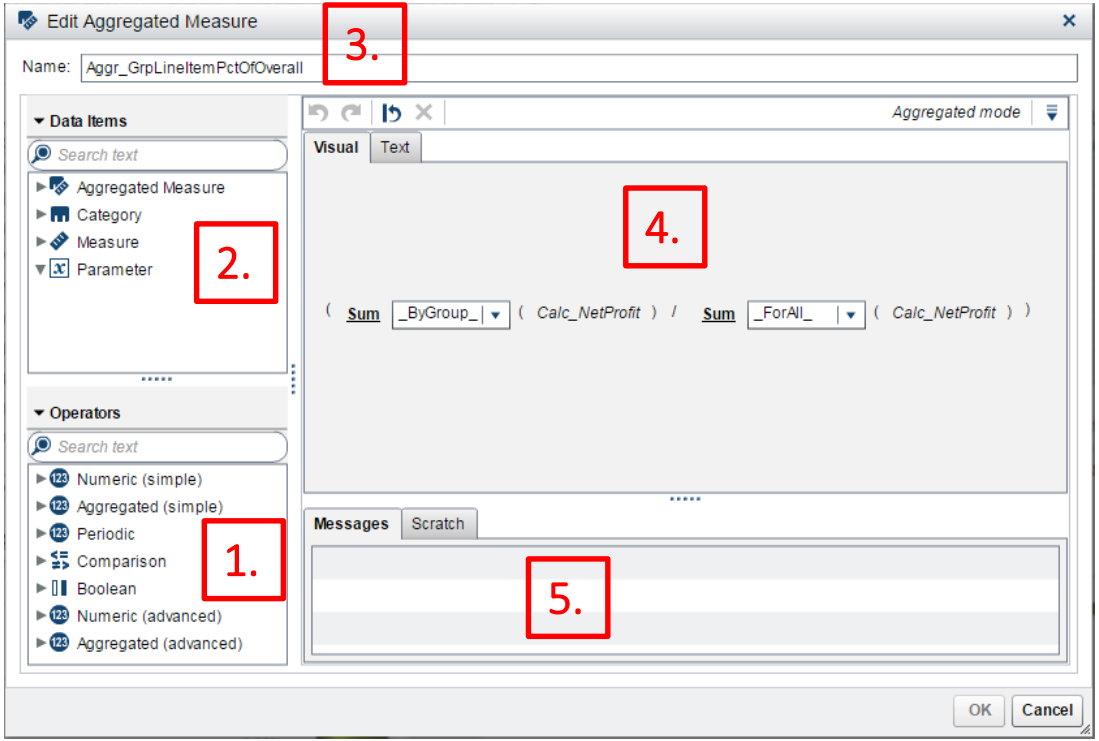
vs.



Note: This applies to Visual Analytics Explorer as well as Visual Analytics Designer

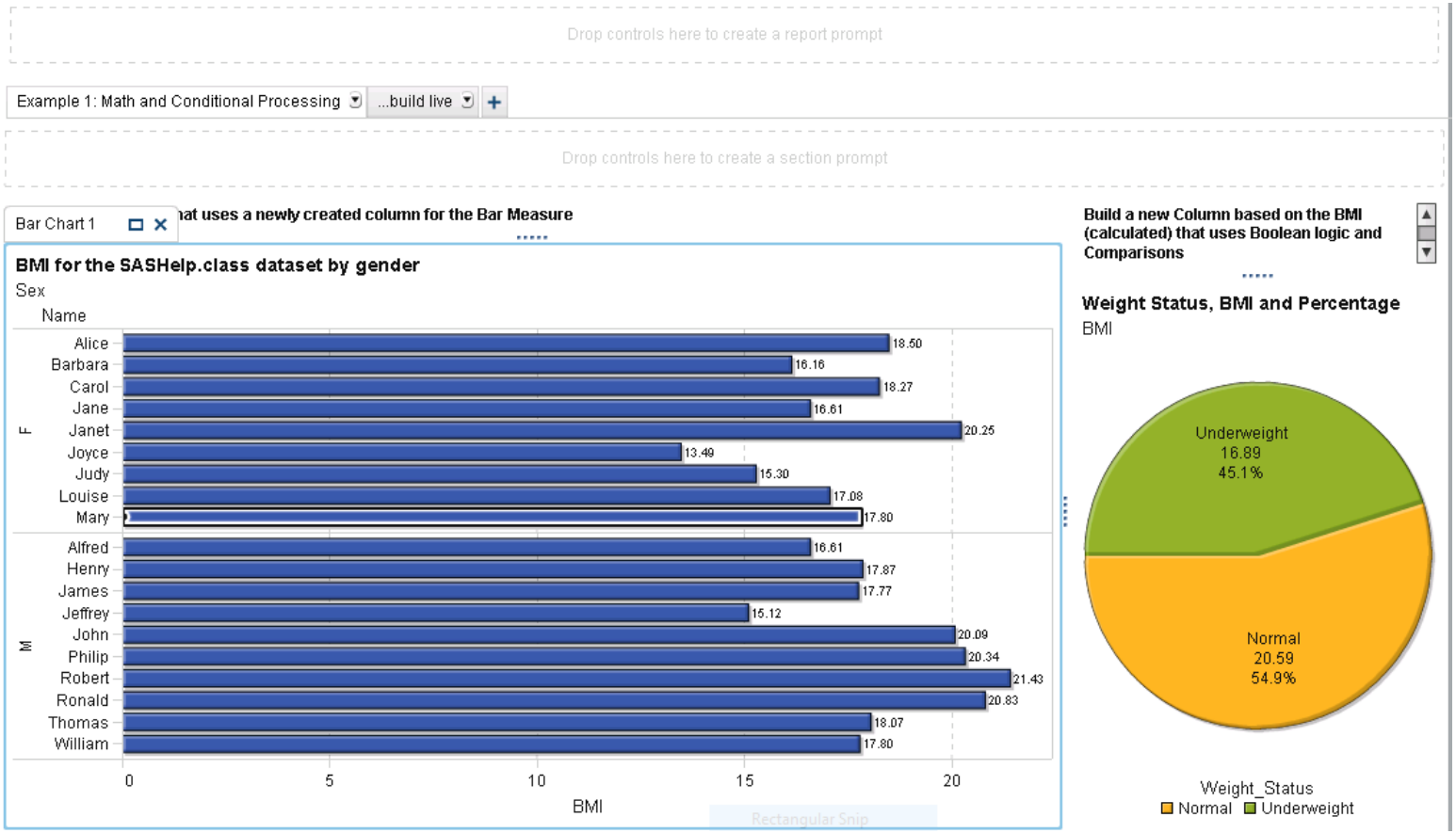
Formula builder

This applies to both Calculated Items as well as Aggregated Measures



Example 1

'BMI' as a Custom Calculated Item
'Weight Status' as a C Custom Calculated Item



Example 2

‘Revenue minus Costs’ as a Custom Calculated Item versus ‘Revenue (or Costs) / Overall Revenue (or Costs)’ as a Custom Aggregated Measure

Completed Example 1. Simple Financial Math | ... and then build Example 1 mostly from scratch | +

Drop controls here to create a section prompt

Custom Calculations on a daily transaction by transaction basis example below:

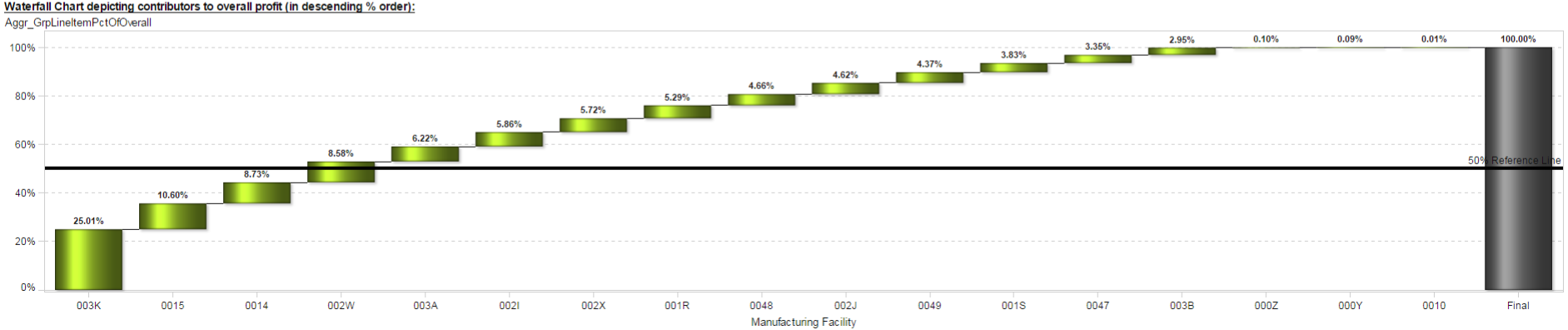
Transact..	Sales Rep Actual	Order Distributio..	Order Product ...	Order Sales Cos	Order Marketin...	Calc_NetProfit
01/01/2013	1,329,384	1,446.69	86,010	1,178.02	9,247.34	1,231,502.30
01/02/2013	1,316,575	1,781.74	118,096	1,602.75	12,716.92	1,182,378.07
01/03/2013	1,059,046	1,418.83	93,799	1,362.50	10,072.08	952,393.58
01/04/2013	2,222,781	1,841.67	116,397	1,639.66	12,518.87	2,090,383.40
01/07/2013	1,374,760	1,665.35	104,464	1,756.64	11,172.29	1,255,702.28
01/08/2013	1,238,047	1,861.56	111,276	1,794.74	11,915.52	1,111,199.06
01/09/2013	1,094,807	1,600.67	102,636	1,605.85	10,989.09	977,975.87
01/10/2013	1,461,445	1,857.85	108,331	1,799.37	11,619.93	1,337,836.07
01/11/2013	1,017,387	1,485.56	91,380	1,420.88	9,814.17	913,285.99
01/14/2013	1,261,450	1,793.63	109,408	1,691.56	11,728.17	1,136,829.28
	Sum: 188,311,757	Sum: 276,566.78	Sum: 13,905,471	Sum: 350,375.57	Sum: 1,467,694.11	Sum: 172,311,649.33

Summarize Custom Calculations from the left-hand side display (using standard aggregations):

Manufacturing Facility	Calc_NetProfit
Total	172,311,649.33
003K	43,089,277.96
0015	18,273,205.61
0014	15,038,709.21
002W	14,775,873.35
003A	10,720,616.02
002I	10,096,423.71

But what if you needed to know how each line item above compares to the overall grand total #? That can be accomplished with a Custom Aggregated Measure (as depicted below) ...

Waterfall Chart depicting contributors to overall profit (in descending % order):



Example 3

Custom Calculations (or Aggregated Measures) used as run-time parameters

Completed Example 2. Run-time Prompts & Params | ... and then build Example 2 mostly from scratch | +

0 3,000 2,500

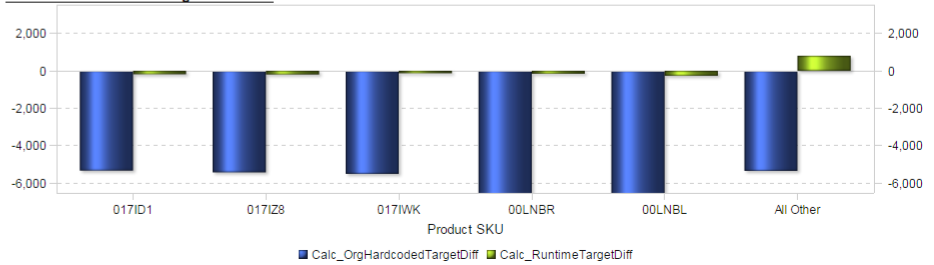
Report Viewer / Report Consumer run-time paramaters can not only filter/brush visuals but can also populate custom formulas behind the scenes

Product SKU	Actual	Target	Calc_OrgHardcoded TargetDiff	Calc_RuntimeTarget Diff
00LNBK	2,468	9,296	-6,827.87	-31.93
00LNBL	2,238	9,397	-7,159.52	-262.12
00LNBM	2,438	9,545	-7,106.57	-61.52
00LNBN	2,561	9,249	-6,688.39	60.51
00LNBO	2,440	9,238	-6,798.15	-60.45
00LNBP	2,579	9,358	-6,778.81	79.43
00LNBQ	2,511	9,504	-6,993.52	10.59
00LNBR	2,335	9,465	-7,130.26	-165.07
00LNBS	2,460	9,612	-7,152.14	-39.93
00LNBT	2,567	9,437	-6,869.81	67.27
00LNBU	2,629	9,636	-7,007.16	129.10
00LNEC	2,429	9,397	-6,968.16	-71.28
00LNED	2,646	9,674	-7,027.53	146.47
00LNEE	2,652	9,317	-6,664.89	151.95
00LNEF	2,604	9,585	-6,981.89	103.57
00LNEG	2,546	9,428	-6,882.68	45.78
00LNEH	2,471	9,364	-6,893.39	-28.97
00LNEI	2,426	9,332	-6,905.65	-73.77
00LNEJ	2,732	9,353	-6,620.47	232.33
00LNEK	2,611	9,655	-7,043.62	111.24
00LNEL	2,571	9,468	-6,896.87	71.44
00LNEM	2,475	9,578	-7,102.83	-24.82
00LNH4	2,640	9,358	-6,718.66	139.65
00LNH5	2,652	9,058	-6,406.05	151.57
00LNH6	2,652	9,566	-6,913.88	151.97
00LNH7	2,879	9,519	-6,639.11	379.48

Move above slider to left to decrease target, or move above slider to right to increase target, or enter amount above to generate a what-if analysis of target differential. All visuals on page will update to reflect parameterized value.

Top 5 Parameterized Target Differential

Bottom 5 ParameterizedTarget Differential



Get Connected with SAS

Follow us on Twitter
@SASSoftware

Like SAS on Facebook
SAS Software, SASUsersgroup

Subscribe to SAS on YouTube
SASSoftware

Join on LinkedIn
SAS, SAS Users Group

Join SAS Communities
communities.sas.com

Read SAS Blogs
blogs.sas.com/content

SAVE THE DATE

ANALYTICS EXPERIENCE 2017

Sept. 18 – 20 | Gaylord National Resort, Washington, DC

sas.com/analyticsx

#AnalyticsX

Learn SAS with SAS Education

SAS Education will support you in continual learning to grow your career.

- SAS Training Courses
  support.sas.com/training
- Get SAS Certified
  support.sas.com/certify
- SAS Books
  support.sas.com/books

Contact SAS Training Customer Service
(800) 727-0025 or training@sas.com

THANK YOU FOR YOUR TIME AND FOR BEING SAS *VISUAL ANALYTICS* CUSTOMERS

sas.com