Advanced Functions

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Overview

Advanced Functions are used to transform results by applying post processing calculations to the initial query results. These functions are database independant as they are performed by Java code, rather than being part of the SQL query.

Available Functions

Yellowfin comes with a set of pre-defined functions. However, your administrator may add in additional functions specifically for your organisation or reporting needs. Expand the following to see the lists of functions available:

Accumulative Percentage	Will print a running percentage for the values returned. A maximum of 100% will be displayed.	
Accumulative Total	Will print out a running total for the data returned.	
Ascending Rank	The highest value returned will be displayed as a 1. Used where the preferable result is a higher value. Eg. Profit.	
Bottom 10 Rank	The bottom 10 values (lowest) are returned.	
Bottom N Rank	The bottom N values (lowest) are returned– user is prompted to define number to return.	
Delta from Last	Calculate change between consecutive rows	
Delta from Last N	Calculate change between the current row and row - N	
Descending Rank	The lowest value returned will be displayed as a 1. Used where the preferable result is a lower value. Eg. Expenses.	
Difference of Columns	Returns difference of two selected columns	
Multiplication of Columns	Returns multiplication of two selected columns	
Natural Logarithm	Gives the base e logarithm of the values of a given field.	
Natural Logarithm	Gives the base e logarithm of the values in the field.	
Percentage Against Absolute Maximum	Returns percentage of selected field according to an absolute maximum value.	
Percentage Against Column	Creates a percentage ration of values in the selected column compared to another column.	
Percentage Against Maximum	Returns the % of the attribute when compared to the maximum value of the attribute within the dataset.	
Percentage of Total	Returns the % of the attribute when compared to the total summed value of the attribute for the entire dataset.	
Sum of Columns	Returns the sum of two selected columns.	
Top 10 Rank	The top 10 values (highest) are returned.	
Top N Rank	The top N values (highest) are returned – user is prompted to define number to return.	
Top N With Ties	Returns top values for the selected field with provision for tied values. This means that if there are multiple records per ranking it will restrict it to N total rankings.	

Days Between Date	The days between the date selected and another date column on the report.	
Days to Now	The days between the date selected and the current date. (age in days)	
Months Between Date	The months between the date selected and another date column on the report.	
Months to Now	The months between the date selected and the current date. (age in months)	

Weeks Days Between The week days between the date selected and another date column on the	
Years Between Date	The years between the date selected and another date column on the report.
Years to Now	The years between the date selected and the current date. (age in years)

Deviat ion The number of deviations from the mean. In a linear trendline is a best-fit straight line that is used with simple linear data sets. Your data is linear if the pattern in its data points resen a line. A linear trendline usually shows that something is increasing or decreasing at a steady rate. A linear trendline is a best-fit straight line that is used with simple linear data sets. Your data is linear if the pattern in its data points resen a line. A linear trendline usually shows that something is increasing or decreasing at a steady rate. The arithmetic mean (or simply the mean) of a list of numbers is the sum of all the members of the list divided by the number of items in the median is described as the number separating the higher half of a sample, a population, or a probability distribution, from the lower in the median is described as the number separating the higher half of a sample, a population, or a probability distribution, from the lower in the moving average uses a specific number of data points (set by the Period option), averages them, and uses the average value as a point fall increase. A moving average uses a specific number of data points (set by the Period option), averages them, and uses the average value as a point fall increase. The total over the last N periods. A naive forecasting model is a special case of the moving average forecasting model where the number of periods used for smoothing is Therefore, the forecast for a period, I, is simply the observed value for the previous period, I-1. Due to the simplistic nature of the naive forecasting model, it can only be used to forecast up to one period in the future. It is not at all use as a medium-long range forecasting tool. A polynomial trendline is a curved line that is used when data fluctuates. It is useful, for example, for analysing gains and losses over a lead that the provious period is the forecast for a	rears to	NOW	The years between the date selected and the current date. (age in years)		
Linear Ferretion of the Common	Decile	Decile divides the rows returned into 10 equal parts, and assigns a value of 1 to 10, based upon its rank to the highest value. Deciles are used as a measure of dispersion.			
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Median The median is described as the number separating the higher half of a sample, a population, or a probability distribution, from the lower in Mode The mode is the value that occurs the most frequently in a data set Movin Brown A moving average trendline smoothes out fluctuations in data to show a pattern or trend more clearly. A moving average uses a specific number of data points (set by the Period option), averages them, and uses the average value as a point to line. If Period is set to 2, for example, then the average of the first two data points is used as the first point in the moving average trendline. The average of the second and third data points is used as the second point in the trendline, and so on. Movin Protect A naive forecasting model is a special case of the moving average forecasting model where the number of periods used for smoothing is Therefore, the forecast for a period, it, is simply the observed value for the previous period, t-1. Polyn Charles A polynomial trendline is a curved line that is used when data fluctuates. It is useful, for example, for analysing gains and losses over a ladata set. The order of the polynomial can be determined by the number of fluctuations in the data or by how many bends (fillis and valley Order 4 generally has up to three. Quartile Quartile divides the rows returned into 4 equal parts, and assigns a value of 1 to 4, based upon its rank to the highest value. Quartiles are used as a measure of dispersion. Stand and Deviation or a multiset. Period is secured to the polynomial can be determined by the number of fluctuations in the data or by how many bends (fillis and valley Order 4 generally has up to three. Returns the difference between the dispersion of a set of values. It can apply to a probability distribution, a random variable, a population or a multiset. Period is the value divides the rows returned into 4 equal parts, and assigns a value of 1 to 4, based upon its rank to the highest value. Quartiles are used as a measure of dispersion.	Regre	A linear trendline is a best-fit straight line that is used with simple linear data sets. Your data is linear if the pattern in its data points resembles a line. A linear trendline usually shows that something is increasing or decreasing at a steady rate.			
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Concatenate Joins two columns into one text string.

Data Conversion allows you to adjust results once they've returned from the database. For example you may wish to convert a currency value which is stored in the database from a full currency value to a ('000) where the value is divided by 1000. This transformation can be achieved using the data conversion.

Applying a Function

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Report Builder - Data Step

To apply and advanced function first you will need to ensure the field you wish to apply it to has been added to your table. Often, when applying functions, you may find you need two copies of the field in your table; one to display the original values (such as sales figures) and the second to have a function applied to it (for example, displaying the top 10 rank of sales figures).

To apply a function to a field in your table from the Data step of the report builder, complete the following:

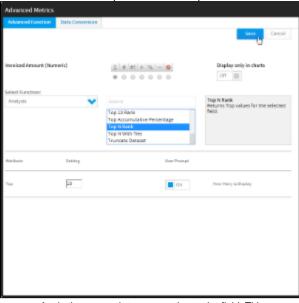
- 1. Open the field's drop down menu, in either of these locations:
 - a. Through the Columns/Rows list



b. Through the Table Preview

Year	÷	Invoiced Amount
2007		\$3,349
2007		\$3,525
2007		\$5,122
2007		\$5,360
2007		\$5,392
2007		\$5,580
2007		\$6,628

- 2. Now select the Advanced Function option from the list, opening the Advanced Function display.
- 3. You will now need to complete the function options:

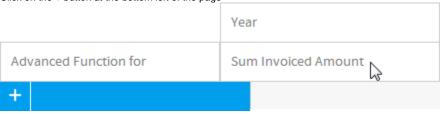


- a. Apply the appropriate aggregation to the field. This ensures the function is applied on top of any aggregations necessary.
- b. Select which function type you wish to use, from Analysis, Statistical, and Text
- c. Select the name of the function you wish to use from the list. Once selected, you will see a description of the function displayed next to it. Some functions require extra parameters, which will need to be defined once the function has been selected.
- d. You also have the option to set the function to only display on the Charts page. This allows you to create additional copies of a field to apply functions to for graphical purposes, without cluttering your table with extra fields.
- 4. When defined, click Save to apply the function.

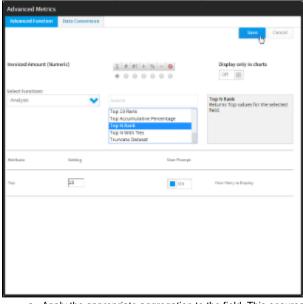
Report Builder - Charts Step

To apply a function to a field in your table from the Charts step of the report builder, complete the following:

1. Click on the + button at the bottom left of the page



- 2. Select Advanced Function for and choose the field you wish to use from the list, opening the Advanced Function display.
- 3. You will now need to complete the function options:



- a. Apply the appropriate aggregation to the field. This ensures the function is applied on top of any aggregations necessary.
- b. Select which function type you wish to use, from Analysis, Statistical, and Text
- c. Select the name of the function you wish to use from the list. Once selected, you will see a description of the function displayed next to it. Some functions require extra parameters, which will need to be defined once the function has been selected.
- d. You also have the option to set the function to only display on the Charts page. This allows you to create additional copies of a field to apply functions to for graphical purposes, without cluttering your table with extra fields.
- 4. When defined, click Save to apply the function.

Report Builder - Output Step

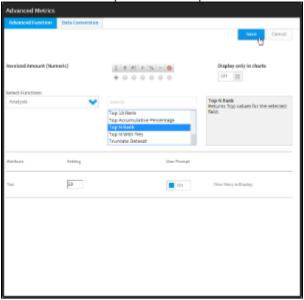
To apply a function to a field in your table from the Output step of the report builder, complete the following:

1. Open the field's drop down menu

Year	•	Invoiced Amount
2007		\$3,349
2007		\$3,525
2007		\$5,122
2007		\$5,360
2007		\$5,392
2007		\$5,580
2007		\$6,628

2. Now select the Advanced Function option from the list, opening the Advanced Function display.

3. You will now need to complete the function options:



- a. Apply the appropriate aggregation to the field. This ensures the function is applied on top of any aggregations necessary.
- b. Select which function type you wish to use, from Analysis, Statistical, and Text
- c. Select the name of the function you wish to use from the list. Once selected, you will see a description of the function displayed next to it. Some functions require extra parameters, which will need to be defined once the function has been selected.
- d. You also have the option to set the function to only display on the Charts page. This allows you to create additional copies of a field to apply functions to for graphical purposes, without cluttering your table with extra fields.
- 4. When defined, click Save to apply the function.

Applying Data Conversion

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Data in a field can be converted by completing the following:

- 1. Open the Advanced Function display, as outlined in the sections above.
- 2. Choose the 'Data Conversion' tab. This will provide you with the interface to use to select the conversion you wish to apply.
- 3. Choose the aggregation appropriate for you conversion.
- 4. Click Add button to select and apply a conversion this will present you with a list of possible conversions for the data type you have selected. By default there is a java date converter and a Numeric divide converter (This lets you divide a value by 1000's etc).
- 5. Follow the on screen instructions for the converter and click Save.
- 6. Note that you can add multiple converters to a data type if required by clicking the add link and creating a new type.