DAX Language
Quick Reference Guide

Compiled by

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DAX Functions List

This DAX functions quick reference guide has been prepared by Matt Allington from http://exceleratorbi.com.au and contains a list of all current DAX functions in a summarised and easy to use format. You can print the document and/or use the search features for PDF documents to search for the function you are looking for.

This document is a supplement and is not intended to replace the more detailed documentation that is available online.

When looking for online documentation it is best to do a web search from your favourite search engine by specifying the function name followed by the word DAX i.e. “FunctionName DAX”.

Tip: If you are going to search this document for a function name using search, then type the function name followed by a space then an open bracket. E.g. instead of searching for VALUES you should search VALUES (, including the space.

Contents

DAX Aggregation Functions (Aggregators)

DAX Aggregation Functions (called aggregators for short) take a column or a table as the argument and aggregate the values.

Function	Notes
AVERAGE (column)	Returns the average (arithmetic mean) of all the numbers in a column in the current filter context.
AVERAGEA (column)	The AVERAGEA function takes a column and averages the numbers in it, but also handles non-numeric data types according to the following rules: Values that evaluates to TRUE count as 1. Values that evaluate to FALSE count as 0 (zero). Values that contain non-numeric text count as 0 (zero). Empty text ("") counts as 0 (zero).
COUNT (column)	Counts numbers only in the current filter context.
COUNTA (column)	Counts text values as well as numbers in the current filter context.
COUNTBLANK (column)	Counts the number of blank cells in a column in the current filter context.
COUNTROWS (table)	The COUNTROWS function counts the number of rows in the specified table, or in a table defined by an expression in the current filter context.
DISTINCTCOUNT (column)	Counts each value in a column once and only once in the current filter context.
MAX (column)	Returns the largest numeric value in a column in the current filter context.
MAXA (column)	Like MAX, however also considers Dates and Logical values, such as TRUE and FALSE. Rows that evaluate to TRUE count as 1; rows that evaluate to FALSE count as 0 (zero)
MIN (column)	Returns the smallest numeric value in a column. Ignores logical values and text in the current filter context.
MINA (column)	Like MIN, however also considers Dates and Logical Values.
PRODUCT (column)	New in Excel 2016/Power BI Desktop. Multiplies all the values in a column together. Why you would want to? I have no idea.
SUM (column)	Adds all the numbers in a column in the current filter context.
TOPN (n_value, table, orderBy_expression, [order], [orderBy_expression, [order]] …)	Returns a table containing the top N rows. Order by expression is typically a measure that you want to rank on.

DAX Date and Time Functions

DAX Date and Time Functions are similar to the Excel date and time functions.

Function	Notes
CALENDAR (start date, end date)	New in Excel 2016/Power BI Desktop. Returns a table with a single column named “Date” that contains a contiguous set of dates. The range of dates is from the specified start date to the specified end date, inclusive of those two dates.
CALENDARAUTO ([end month of fiscal year])	New in Excel 2016/Power BI Desktop. Returns a table with a single column named “Date” that contains a contiguous set of dates. The range of dates is calculated automatically based on data in the model.
DATE (year, month, day)	Returns the specified date in datetime format.
DATEDIFF (start date, end date, interval)	New in Excel 2016/Power BI Desktop. Returns the count of interval boundaries crossed between two dates.
DATEVALUE (date text)	Returns the specified date in datetime format.
DAY (date)	Returns the day of the month, a number from 1 to 31.
EDATE (start date, months)	Returns a date in datetime format that is a number of months after the start date.
EOMONTH (start date, months)	Returns a date in datetime format that is the last date in the month after adding x months.
HOUR (datetime value)	Returns the hour as a number from 0 (12:00 A.M.) to 23 (11:00 P.M.).
MINUTE (datetime value)	Returns the minute as a number from 0 to 59, given a date and time value.
MONTH (datetime value)	Returns the month as a number from 1 (January) to 12 (December).
NOW ()	Returns a date in datetime format.
SECOND (datetime value)	Returns the seconds of a time value, as a number from 0 to 59.
TIME (hour, minute, second)	Converts hours, minutes, and seconds given as numbers to a time in datetime format.
TIMEVALUE (time text)	Converts a time in text format to a time in datetime format.
TODAY ()	Returns the current date in datetime format.

Function	Notes
WEEKDAY (date, return type)	Returns a number from 1 to 7 identifying the day of the week of a date. By default, return type is 1, and the week begins on Sunday (1) and ends on Saturday (7). If return type is 2, the week begins on Monday (1) and ends on Sunday (7). If return type is 3, the week begins on Monday (0) and ends on Sunday (6).
WEEKNUM (date, return type)	Returns the week number for the given date and year according to the return_type value. The week number indicates where the week falls numerically within a year. If return type is 1, week begins on Sunday. Weekdays are numbered 1 through 7. If return type is 2, week begins on Monday. Weekdays are numbered 1 through 7.
YEAR (datetime value)	Returns the year of a date as a four-digit integer in the range 1900-9999.
YEARFRAC (start_date, end_date, basis)	Calculates the fraction of the year represented by the number of whole days between two dates. Use the YEARFRAC worksheet function to identify the proportion of a whole year's benefits or obligations to assign to a specific term.

DAX Filter Functions

DAX Filter Functions are very different to Excel functions. They are used to (typically) return filtered tables that can be used in your data model. These new "virtual" tables retain lineage with the physical data model and hence they can "filter" the physical data model on the fly. Lookup functions work by using tables and relationships between them. Filtering functions let you manipulate data context to create dynamic calculations.

Function	Notes
1. ADDMISSINGITEMS (showAllColumn, [showAllColumn] …, table, groupingColumn, [groupingColumn] …, [filterTable] …) 2. ADDMISSINGITEMS(<showAllColumn>[, <showAllColumn>]…, <table>, [ROLLUPISSUBTOTAL()<groupingColumn>[, <isSubtotal_columnName>][, <groupingColumn>][, <isSubtotal_columnName>]…[])], [, filterTable] …)	New in Excel 2016/Power BI Desktop. Adds combinations of items from multiple columns to a table if they do not already exist. The determination of which item combinations to add is based on referencing source columns which contain all the possible values for the columns. To determine the combinations of items from different columns to evaluate: AutoExist is applied for columns within the same table while CrossJoin is applied across different tables. The ADDMISSINGITEMS function will return BLANK values for the IsSubtotal columns of blank rows it adds.
ALL (TableOrColumn, [TableOrColumn], …)	Returns the table or column with filters removed.
ALLEXCEPT (table, column, [column], …)	Returns the table with all filters removed except for the filters on the specified columns.
ALLNOBLANKROW (table | column)	Returns a table, when the passed parameter was a table, or a column of values, when the passed parameter was a column.
ALLSELECTED ([tableName | columnName])	Keeps filters on Rows and Columns in a pivot table while keeping the filters on slicers and other explicit filters.
CALCULATE (expression, [filter1], [filter2], …)	Modifies the filter context prior to calculating the expression.
CALCULATETABLE (expression, filter1, filter2, …)	Modifies the filter context prior to returning a table of values.
CROSSFILTER (columnName1, columnName2, direction)	Allows you to change the filtering direction for a single measure. Place the CROSSFILTER inside a CALCULATE
DISTINCT (column)	Returns a 1 column table of all the distinct values in the current filter context. If there are BLANKS then they will be ignored. If you want to return a BLANK as well, then use VALUES instead.
EARLIER (column, [number])	Used to access a previous row context when more than 1 row context exists in the function.

Function	Notes
EARLIEST (column)	As above, but returns the absolute first row context.
FILTER (table, filter)	Returns a table containing only the filtered rows.
FILTERS (columnName)	Returns a table containing the list of values that are directly filtered.
HASONEFILTER (columnName)	Used to check if there is one and only one filter on a column in the current filter context.
HASONEVALUE (columnName)	Used to check if there is one and only one value visible in a column in the current filter context.
SELECTEDVALUE(ColumnName)	This is new in Power BI Desktop. It can be used as a substitute for IF(HASONEVALUE()) and will return a scalar value if there is one and only 1 value selected in the current filter context.
ISCROSSFILTERED (columnName)	Used to check if there is an indirect filter on a column in the current filter context.
ISFILTERED (columnName)	Used to check if there the column is filtered at all in the current filter context.
KEEPFILTERS (expression)	CALCULATE will replace a filter on the same column. If you use KEEPFILTERS, it will add the new filter to the column rather than replace it.
RELATED (column)	Forces a row context to follow the relationship to a related table and return that value. Can only be used on the many side of the relationship.
RELATEDTABLE (tableName)	Forces a row context to follow the relationship to a related table and return that value. Can only be used on the one side of the relationship. Returns a table of values from the many side of the relationship.
SUBSTITUTEWITHINDEX (table, indexColumnName, indexColumnsTable, orderBy_expression, [order], [orderBy_expression, [order]] …)	New in Excel 2016/Power BI Desktop Returns a table which represents a left semijoin of the two tables supplied as arguments. The semijoin is performed by using common columns, determined by common column names and common data type. The columns being joined on are replaced with a single column in the returned table which is of type integer and contains an index. The index is a reference into the right join table given a specified sort order. Columns in the right/second table supplied which do not exist in the left/first table supplied are not included in the returned table and are not used to join on.

Function	Notes
	The index starts at 0 (0-based) and is incremented by one for each additional row in the right/second join table supplied. The index is based on the sort order specified for the right/second join table.
USERELATIONSHIP (columnName1, columnName2)	You can have more than 1 relationship between 2 tables in DAX, but only 1 can be active at a time. Use this function inside CALCULATE to use the inactive relationship instead of the active one.
VALUES (TableNameOrColumnName)	Returns a table consisting of a single column of unique values in the current filter context. If there are blanks in the list a blank will be returned. If you want to exclude the blank then use DISTINCT instead.

DAX Information Functions

DAX Information Functions provide required information based on the given argument.

Function	Notes
CONTAINS (table, columnName, value, [columnName, value] …)	Returns TRUE if each specified value is contained in the corresponding columnName. Otherwise, the function returns FALSE.
CUSTOMDATA ()	Returns the content of the CustomData property in the connection string. Returns Blank, if CustomData property was not defined at connection time.
ISBLANK (value)	Returns True if the value is blank. Otherwise, returns FALSE.
ISEMPTY (table_expression)	New in Excel 2016/Power BI Desktop. Returns True if the table is empty (has no rows), Returns False otherwise.
ISERROR (value)	Returns True if the value is an Error. Otherwise, returns FALSE.
ISEVEN (number)	Returns TRUE if number is even, Returns FALSE if number is odd. If number is nonnumeric, ISEVEN returns the #VALUE! error value.
ISLOGICAL (value)	Returns TRUE if the value is a logical value (TRUE OR FALSE). Otherwise, returns FALSE.
ISNONTEXT (value)	Returns TRUE if the value is not text or blank Returns FALSE if the value is text. An empty string is considered text.
ISNUMBER (value)	Returns TRUE if the value is numeric. Otherwise, returns FALSE.
ISODD (number)	Returns TRUE if number is odd. Returns FALSE if number is even. If number is nonnumeric, ISODD returns the #VALUE! error value.
ISONORAFTER (scalar expression, scalar expression, [sort order], [scalar expression, scalar expression, [sort order]], …)	New in Excel 2016/Power BI Desktop. This function takes a variable number of triples, the first two parameters in a triple are the expressions to be compared

Function	Notes
	and the third is the sort order - ascending (default) or descending. Based on the sort order, the first parameter is compared with the second parameter. If the sort order is ascending, the comparison to be done is first parameter greater than or equal to second parameter. If the sort order is descending, the comparison to be done is first parameter less than or equal to second parameter
ISTEXT (value)	Returns TRUE if the value is text Otherwise, returns FALSE. Empty string is text. Blank is not text.
LOOKUPVALUE (result_columnName, search_columnName, search_value, [search_columnName, search_value], …)	The value of result_column at the row where all pairs of search_column and search_value have a match. If only some of the criteria match, a BLANK is returned. If multiple rows match the search values and in all cases result_column values are identical, then that value is returned. Otherwise, an error is returned.
USERNAME ()	Returns the username from the credentials given to the system at connection time.

DAX Logical Functions

DAX Logical Functions return values based on the conditional results.

Function	Notes
AND (logical_value, logical_value)	Checks whether both arguments are TRUE, and returns TRUE if both arguments are TRUE. Otherwise returns false. If you have more than two arguments, use && (double ampersand) as an alternative and you can have as many "and" as you like.
FALSE ()	Returns the logical value FALSE.
IF (logical test, value_if_true, [value_if_false])	Checks if a condition provided as the first argument is met. Returns one value if the condition is TRUE, and returns another value if the condition is FALSE. Returns blank, if the condition is FALSE and value_if_false is omitted.
IFERROR (value, value_if_error)	Evaluates an expression and returns a specified value if the expression returns an error. Otherwise, returns the value of the expression itself.
NOT (logical_value)	Changes FALSE to TRUE, or TRUE to FALSE.
OR (logical_value, logical_value)	Checks whether one of the arguments is TRUE to return TRUE. The function returns FALSE if both arguments are FALSE. If you have more than two arguments, use use || (double pipe) as an alternative and you can have as many "or" as you like.
SWITCH (Expression, value1, expression1, [value2, expression2], …. [else, expression])	Expression is evaluated and the result is matched with the given values. If a match is found, the corresponding expression is evaluated. If the result is not matched with any of the given values, and else is given, the corresponding expression is evaluated. All expressions must be of the same data type.
TRUE ()	Returns the logical value TRUE.

DAX Math and Trig Functions

DAX Math and Trig Functions are similar to Excel mathematical and trigonometric functions.

Function	Notes
ABS (number)	Removes the negative sign if it exists.
ACOS (number)	New in Excel 2016/Power BI Desktop. Returns the arccosine, or inverse cosine, of a number. The arccosine is the angle whose cosine is *number*. The returned angle is given in radians in the range 0 (zero) to pi.
ACOSH (number)	New in Excel 2016/Power BI Desktop. Returns the inverse hyperbolic cosine of a number. The number must be greater than or equal to 1. The inverse hyperbolic cosine is the value whose hyperbolic cosine is *number*, so ACOSH(COSH(number)) equals number.
ASIN (number)	New in Excel 2016/Power BI Desktop. Returns the arcsine, or inverse sine, of a number. The arcsine is the angle whose sine is *number*. The returned angle is given in radians in the range -pi/2 to pi/2.
ASINH (number)	New in Excel 2016/Power BI Desktop. Returns the inverse hyperbolic sine of a number. The inverse hyperbolic sine is the value whose hyperbolic sine is *number*, so ASINH(SINH(number)) equals *number*.
ATAN (number)	New in Excel 2016/Power BI Desktop. Returns the arctangent, or inverse tangent, of a number. The arctangent is the angle whose tangent is *number*. The returned angle is given in radians in the range -pi/2 to pi/2.
ATANH (number)	New in Excel 2016/Power BI Desktop. Returns the inverse hyperbolic tangent of a number. Number must be between -1 and 1 (excluding -1 and 1). The inverse hyperbolic tangent is the value whose hyperbolic tangent is *number*, so ATANH(TANH(number)) equals *number*.
CEILING (number, significance)	Rounds a number up, to the nearest integer or to the nearest multiple of significance.
COMBIN (number, number_chosen)	New in Excel 2016/Power BI Desktop. Returns the number of combinations for a given number of items. Numeric arguments are truncated to integers. If either argument is nonnumeric, COMBIN returns the #VALUE! error value.

Function	Notes
	If number< 0, number_chosen< 0, or number< number_chosen, COMBIN returns the #NUM! error value.
COMBINA (number, number_chosen)	New in Excel 2016/Power BI Desktop. Returns the number of combinations (with repetitions) for a given number of items. • number must be greater than or equal to 0, and greater than or equal to number_chosen. • number_chosen must be greater than or equal to 0. If the value of either argument is outside of it's constraints, COMBINA returns the #NUM! error value. If either argument is a non-numeric value, COMBINA returns the #VALUE! error value. Non-integer values are truncated.
COS (number)	New in Excel 2016/Power BI Desktop. Returns the cosine of the given angle.
COSH (number)	New in Excel 2016/Power BI Desktop. Returns the hyperbolic cosine of a number.
CURRENCY (value)	The value of the expression evaluated and returned as a currency type value.
DEGREES (angle)	New in Excel 2016/Power BI Desktop. Converts radians into degrees.
DIVIDE (numerator, denominator, [alternate-result]).	Safe divide function that gracefully handles a divide by zero error. Performs division and returns alternate result or BLANK() on division by 0.
EVEN (number)	New in Excel 2016/Power BI Desktop. Returns number rounded up to the nearest even integer.
EXP (number)	New in Excel 2016/Power BI Desktop. Returns e raised to the power of a given number. The constant e equals 2.71828182845904, the base of the natural logarithm.
FACT (number)	Returns the factorial of a number, equal to the series 1*2*3*...* , ending in the given number.
FLOOR (number, significance)	Rounds a number down, toward zero, to the nearest multiple of significance.

Function	Notes
GCD (number1, [number2], ...)	New in Excel 2016/Power BI Desktop. Returns the greatest common divisor of two or more integers. The greatest common divisor is the largest integer that divides both number1 and number2 without a remainder.
INT (number)	Rounds a number down to the nearest integer.
ISO.CEILING (number, [significance])	New in Excel 2016/Power BI Desktop. Rounds number up, to the nearest multiple of significance. Rounds number up, to the nearest integer if significance is omitted.
LCM (number1, [number2], ...)	New in Excel 2016/Power BI Desktop. Returns the least common multiple of integers. The least common multiple is the smallest positive integer that is a multiple of all integer arguments number1, number2, and so on.
LN (number)	Natural Log
LOG (number, base)	You might receive an error if the value is too large to be displayed.
LOG10 (number)	Returns the base-10 logarithm of a number.
MOD (number, divisor)	If the divisor is 0 (zero), MOD returns an error. You cannot divide by 0.
MROUND (number, multiple)	New in Excel 2016/Power BI Desktop. Returns a number rounded to the desired multiple.
ODD (number)	New in Excel 2016/Power BI Desktop. Returns number rounded up to the nearest odd integer.
PERMUT (number, number_chosen)	Returns the number of permutations for a given number of objects that can be selected from number objects. A permutation is any set or subset of objects or events where internal order is significant.
PI ()	New in Excel 2016/Power BI Desktop. Returns the value of Pi, 3.14159265358979, accurate to 15 digits.
POWER (number, power)	Returns the result of a number raised to a power.

Function	Notes
QUOTIENT (numerator, denominator)	New in Excel 2016/Power BI Desktop. Performs division and returns only the integer portion of the division result. Use this function when you want to discard the remainder of division.
RADIANS (angle)	New in Excel 2016/Power BI Desktop. Converts degrees to radians.
RAND ()	Returns a random number greater than or equal to 0 and less than 1, evenly distributed. The number that is returned changes each time the cell containing this function is recalculated.
RANDBETWEEN (bottom, top)	Returns a random number in the range between two numbers you specify.
ROUND (number, num_digits)	Rounds a number to the specified number of digits.
ROUNDDOWN (number, num_digits)	Rounds a number down, toward zero.
ROUNDUP (number, num_digits)	Rounds a number up, away from 0 (zero).
SIGN (number)	Determines the sign of a number, the result of a calculation, or a value in a column. The function returns 1 if the number is positive, 0 (zero) if the number is zero, or -1 if the number is negative.
SIN (number)	New in Excel 2016/Power BI Desktop. Returns the sine of the given angle.
SINH (number)	New in Excel 2016/Power BI Desktop. Returns the hyperbolic sine of a number.
SQRT (number)	Returns the square root of a number. If the number is negative, the SQRT function returns an error.
SQRTPI(number)	New in Excel 2016/Power BI Desktop. Returns the square root of (number * pi).
TAN (number)	New in Excel 2016/Power BI Desktop. Returns the tangent of the given angle.
TANH (number)	New in Excel 2016/Power BI Desktop. Returns the hyperbolic tangent of a number.
TRUNC (number, num_digits)	Truncates a number to an integer by removing the decimal, or fractional, part of the number. num_digits specifies the precision of the truncation; if omitted, 0 (zero) .

DAX Other Functions

These functions perform unique actions that cannot be defined by any of the categories.

Function	Notes
DATATABLE (ColumnName1, DataType1, ColumnName2, DataType2 ..., {{Value1, Value2 …}, {Value1, Value2 …}, … {Value1, Value2 …} })	New in Excel 2016/Power BI Desktop Returns a table declaring an inline set of values. Each of the columns is given a name and the data type of the column is provided. Then, the set of values is given – {{Row 1 values}, {Row 2 values}, … }
EXCEPT (table_expression1, table_expression2)	Returns a table that contains the rows of one table minus all the rows of another table.
GROUPBY (table, [groupBy_columnName1], [name, expression], …)	New in Excel 2016/Power BI Desktop. The GROUPBY function is similar to the SUMMARIZE function. However, GROUPBY does not do an implicit CALCULATE for any extension columns that it adds. GROUPBY permits a new function, CURRENTGROUP (), to be used inside aggregation functions in the extension columns that it adds. GROUPBY attempts to reuse the data that has been grouped making it highly performant. The expression used in GroupBy may include any of the “X” aggregation functions.
INTERSECT (table_expression1, table_expression2)	New in Excel 2016/Power BI Desktop. Returns the row intersection of two tables, retaining duplicates.
NATURALINNERJOIN (leftJoinTable, rightJoinTable)	New in Excel 2016/Power BI Desktop. Performs an inner join of a table with another table. The tables are joined on common columns (by name) in the two tables. If the two tables have no common column names, an error is returned.
NATURALLEFTOUTERJOIN (leftJoinTable, rightJoinTable)	New in Excel 2016/Power BI Desktop. Performs an inner join of a table with another table. The tables are joined on common columns (by name) in the two tables. If the two tables have no common column names, an error is returned.

Function	Notes
UNION (table_expression1, table_expression2)	New in Excel 2016/Power BI Desktop. Creates a union (join) table from a pair of tables. Returns a table that contains all the rows from each of the two table expressions. The two tables must have the same number of columns. Columns are combined by position in their respective tables. The column names in the return table will match the column names in table_expression1. Duplicate rows are retained. The returned table has lineage where possible. When data types differ, the resulting data type is determined based on the rules for data type coercion. The returned table will not contain columns from related tables.
GENERATE (table1, table2)	Returns a table with the Cartesian product between each row in table1 and the table that results from evaluating table2 in the context of the current row from table1.
GENERATEALL (table1, table2)	Returns a table with the Cartesian product between each row in table1 and the table that results from evaluating table2 in the context of the current row from table1.
GENERATESERIES (StartValue, EndValue, [IncrementValue])	Generates a table of values using the parameters provided
VAR VarName = Expression	New in Excel 2016/Power BI Desktop. Stores the result of an expression as a named variable, which can then be passed as an argument to other measure expressions. Once resultant values have been calculated for a variable expression, those values do not change, even if the variable is referenced in another expression. VarName is the name of the variable (identifier). • Supported character set: a-z, A-Z, 0-9. • 0-9 are not valid as first character. • __ (double underscore) is allowed as a prefix. No other special characters are supported. • Delimiters are not supported. For example, 'VarName' or [VarName] will result in an error. • Reserved keywords not allowed. • Names of existing tables are not allowed. • Empty spaces are not allowed.

Function	Notes
	Expression is a DAX expression which returns a scalar or table value. • Expression can contain another VAR declaration. When referencing a variable: • Measures cannot refer to variables defined outside the measure expression, but can refer to functional scope variables defined within the expression. • Variables can refer to measures. • Variables can refer to previously defined variables. • Columns in table variables cannot be referenced via TableName[ColumnName] syntax.

DAX Other Special Functions (X-Functions)

These functions perform specific actions that complement the other DAX functions.

DAX Iterator Functions, called iterators for short, take a column or a table as the argument and aggregate the values just as aggregation functions—but using a different approach. These are “X-functions" (i.e., any function that has an X on the end of the name). The iterators given below also include statistical iterator functions.

DAX also has two financial functions that got added in Excel 2016.

Function	Notes
AVERAGEX (table, expression)	Calculates the average (arithmetic mean) of a set of expressions evaluated over a table.
CONCATENATEX (table, expression, [delimiter])	New in Excel 2016/Power BI Desktop. Concatenates the result of an expression evaluated for each row in a table.
COUNTAX (table, expression)	The COUNTAX function counts nonblank results when evaluating the result of an expression over a table. That is, it works just like the COUNTA function, but is used to iterate through the rows in a table and count rows where the specified expressions result in a nonblank result.
COUNTX (table, expression)	Counts the number of rows that contain a number or an expression that evaluates to a number, when evaluating an expression over a table.
GEOMEANX (table, expression)	New in Excel 2016/Power BI Desktop. Returns the geometric mean of an expression evaluated for each row in a table.
MAXX (table, expression)	Evaluates an expression for each row of a table and returns the largest numeric value.
MEDIANX (table, expression)	New in Excel 2016/Power BI Desktop.

Function	Notes
	Returns the median of an expression evaluated for each row in a table.
MINX (table, expression)	Returns the smallest numeric value that results from evaluating an expression for each row of a table.
PERCENTILEX.EXC (table, expression, k)	New in Excel 2016/Power BI Desktop. Returns the percentile number of an expression evaluated for each row in a table.
PERCENTILEX.INC (table, expression, k)	New in Excel 2016/Power BI Desktop. Returns the percentile number of an expression evaluated for each row in a table.
PRODUCTX (table, expression)	New in Excel 2016/Power BI Desktop. Returns the product of an expression evaluated for each row in a table.
RANKX (table, expression, [value], [order], [ties])	Returns the ranking of a number in a list of numbers for each row in the table argument.
STDEVX.P (table, expression)	expression is any DAX expression that returns a single scalar value, where the expression is to be evaluated multiple times (for each row/context).
SUMX (table, expression)	Returns the sum of an expression evaluated for each row in a table.
VARX.P (table, expression)	Returns the variance of the entire population.
VARX.S (table, expression)	Returns the variance of a sample population.
XIRR (table, values, dates, [guess])	New in Excel 2016/Power BI Desktop. Returns the internal rate of return for a schedule of cash flows that is not necessarily periodic.
XNPV (table, values, dates, rate)	New in Excel 2016/Power BI Desktop. Returns the present value for a schedule of cash flows that is not necessarily periodic.

In DAX, there are also some special functions that have a very specific purpose of usability in other DAX functions only.

Function	Notes
IGNORE (expression)	IGNORE function does not return a value. IGNORE can be used as an expression argument to SUMMARIZECOLUMNS function.
ROLLUPADDISSUBTOTAL (groupBy_columnName, isSubtotal_columnName, [groupBy_columnName, isSubtotal_columnName] …)	ROLLUPADDISSUBTOTAL function does not return a value. It only specifies the set of columns to be subtotalled. ROLLUPADDISSUBTOTAL can be used with SUMMARIZECOLUMNS function.
ROLLUPGROUP (groupBy_columnName, groupBy_columnName)	ROLLUPGROUP can only be used as a groupBy_columnName argument to the ROLLUPADDISSUBTOTAL and / or the SUMMARIZE functions.

DAX Parent and Child Functions

DAX Parent and Child functions help to manage data that is presented as a parent/child hierarchy in the data model.

For more information read Understanding Functions for Parent-Child Hierarchies in DAX.

Function	Notes
PATH (ID_columnName, parent_columnName)	Returns a delimited text string with the identifiers of all the parents of the current identifier, starting with the oldest and continuing until current.
PATHCONTAINS (path, item)	Returns **TRUE** if the specified *item* exists within the specified *path*.
PATHITEM (path, position, [type])	Returns the item at the specified *position* from a string resulting from evaluation of a PATH function. Positions are counted from left to right.
PATHITEMREVERSE (path, position, [type])	Returns the item at the specified *position* from a string resulting from evaluation of a PATH function. Positions are counted backwards from right to left.
PATHLENGTH (path)	Returns the number of parents to the specified item in a given PATH result, including self.

DAX Query Functions

These DAX functions are helpful in writing queries in DAX. Read about DAX Studio here as a tool to query your data model. http://exceleratorbi.com.au/getting-started-dax-studio/

Function	Notes
ADDCOLUMNS (table, name, expression, [name, expression] …)	Adds calculated columns to the given table or table expression.
CROSSJOIN (table, table, [table] …)	Returns a table that contains the Cartesian product of all rows from all tables in the arguments. The columns in the new table are all the columns in all the argument tables.
ROW (name, expression, [name, expression], …)	Returns a table with a single row containing values that result from the expressions given to each column.
SELECTCOLUMNS (table, name, scalar_expression, [name, scalar_expression], …)	New in Excel 2016/Power BI Desktop. Adds calculated columns to the given table or table expression. SELECTCOLUMNS starts with an empty table and that is the only difference between ADDCOLUMNS and SELECTCOLUMNS.
SUMMARIZE (table, groupBy_columnName, [groupBy_columnName] …, name, expression, [name, expression] …)	Returns a table of values for use in a query or inside a formula that uses a table. If there are relationships between tables, always specify the table on the many side of the relationship as the table parameter. This function is semantically similar to “group by” in SQL.
SUMMARIZECOLUMNS (groupBy_columnName, [groupBy_columnName] …, filterTable, name, expression, [filterTable], [name, expression], …)	New in Excel 2016/Power BI Desktop. Returns a summary table over a set of groups. A column cannot be specified more than once in the groupBy_columnName.

DAX Statistical Functions

Following are the DAX Statistical Functions:

Function	Notes
BETA.DIST (x, alpha, beta, cumulative, [A], [B])	New in Excel 2016/Power BI Desktop. Returns the beta distribution. The beta distribution is commonly used to study variation in the percentage of something across samples, such as the fraction of the day people spend watching television.
BETA.INV (probability, alpha, beta, [A], [B]	New in Excel 2016/Power BI Desktop. Returns the inverse of the beta cumulative probability density function (BETA.DIST). If probability = BETA.DIST(x,...TRUE), then BETA.INV(probability,...) = x.
CHISQ.INV (probability, deg_freedom)	New in Excel 2016/Power BI Desktop. Returns the inverse of the left-tailed probability of the chi-squared distribution. The chi-squared distribution is commonly used to study variation in the percentage of something across samples.
CHISQ.INV.RT (probability, deg_freedom)	New in Excel 2016/Power BI Desktop. Returns the inverse of the right-tailed probability of the chi-squared distribution. If probability = CHISQ.DIST.RT(x,...), then CHISQ.INV.RT(probability,...) = x. Use this function to compare observed results with expected ones in order to decide whether your original hypothesis is valid.
CONFIDENCE.NORM (alpha, standard_dev, size)	New in Excel 2016/Power BI Desktop. The confidence interval is a range of values. Your sample mean, x, is at the center of this range and the range is x ± CONFIDENCE.NORM.
CONFIDENCE.T (alpha, standard_dev, size)	New in Excel 2016/Power BI Desktop. Returns the confidence interval for a population mean, using a Student's t distribution.
EXPON.DIST (x, lambda, cumulative)	New in Excel 2016/Power BI Desktop. Returns the exponential distribution. Use EXPON.DIST to model the time between events.
GEOMEAN (column)	New in Excel 2016/Power BI Desktop. Returns the geometric mean of the numbers in a column.
MEDIAN (column)	New in Excel 2016/Power BI Desktop. Returns the median of numbers in a column.

Function	Notes
PERCENTILE.EXC (column, k)	New in Excel 2016/Power BI Desktop. Returns the k-th percentile of values in a range, where k is in the range 0..1, exclusive.
PERCENTILE.INC (column, k)	New in Excel 2016/Power BI Desktop. Returns the k-th percentile of values in a range, where k is in the range 0..1, inclusive.
POISSON.DIST (x, mean, cumulative)	Returns the Poisson distribution. A common application of the Poisson distribution is predicting the number of events over a specific time.
RANK.EQ (value, columnName, [order])	Returns the ranking of a number in a list of numbers.
SAMPLE (n_value, table, [orderBy_expression], [order], [orderBy_expression], [order], …)	Returns a sample of N rows from the specified table.
STDEV.P (ColumnName)	Returns the standard deviation of the entire population.
STDEV.S (ColumnName)	Returns the standard deviation of a sample population.
VAR.P (columnName)	Returns the variance of the entire population.
VAR.S (columnName)	Returns the variance of a sample population.

DAX Text Functions

DAX Text Functions are based on the Excel string functions, but have been modified to work with tables and columns.

Function	Notes
BLANK ()	Returns a blank. Blanks are not equivalent to nulls. DAX uses blanks for both database nulls and for blank cells in Excel.
CODE (text)	Returns a numeric code for the first character in a text string. The returned code corresponds to the character set used by your computer.
CONCATENATE (text1, text2)	Joins two text strings into one text string. If you need to add more than two arguments, use the AND (&) operator.
EXACT (text1, text2)	Compares two text strings and returns TRUE if they are exactly the same, FALSE otherwise. EXACT is case-sensitive but ignores formatting differences.
FIND (find_text, within_text, [start_num], [NotFoundValue])	Returns the starting position of one text string within another text string. FIND is case-sensitive.
FIXED (number, decimals, no_commas)	Rounds a number to the specified number of decimals and returns the result as text. You can specify that the result be returned with or without commas.
FORMAT (value, format_string)	Converts a value to text according to the specified format.
LEFT (text, num_chars)	Returns the specified number of characters from the start of a text string.
LEN (text)	Returns the number of characters in a text string.
LOWER (text)	Converts all letters in a text string to lowercase.
MID (text, start_num, num_chars)	Returns a string of characters from the middle of a text string, given a starting position and length.
REPLACE (old_text, start_num, num_chars, new_text)	REPLACE replaces part of a text string, based on the number of characters you specify, with a different text string.
REPT (text, num_times)	Repeats text a given number of times. Use REPT to fill a cell with a number of instances of a text string.
RIGHT (text, num_chars)	RIGHT returns the last character or characters in a text string, based on the number of characters you specify.
SEARCH (find_text, within_text, [start_num], [NotFoundValue])	Returns the number of the character at which a specific character or text string is first found, reading left to right. Search function is case insensitive and accent sensitive.
SUBSTITUTE (text, old_text, new_text, instance_num)	Replaces existing text with new text in a text string.

Function	Notes
TRIM (text)	Removes all spaces from text except for single spaces between words.
UPPER (text)	Converts a text string to all uppercase letters
VALUE (text)	You need not use the VALUE function in a formula because Power Pivot implicitly converts text to numbers. The argument text can be a constant or in one of the formats - number, date or time format. Otherwise, an error is returned. You can use a column reference as argument to VALUE function. E.g., if you have a column that contains mixed number types, VALUE can be used to convert all values to a single numeric data type. However, if you use the VALUE function with a column that contains mixed numbers and text, the entire column is flagged with an error, because not all values in all rows can be converted to numbers.

DAX Time Intelligence Functions

DAX Time Intelligence Functions support the needs of Business Intelligence analysis by enabling you to manipulate data using time periods, including days, months, quarters and years, and then build and compare calculations over those periods.

Function	Notes
CLOSINGBALANCEMONTH (expression, dates, [filter])	Evaluates the expression at the last date of the month in the current context.
CLOSINGBALANCEQUARTER (expression, dates, [filter])	Evaluates the expression at the last date of the quarter in the current context.
CLOSINGBALANCEYEAR (expression, dates, [filter], [year_end_date])	Evaluates the expression at the last date of the year in the current context.
DATEADD (dates, number_of_intervals, interval)	Returns a table that contains a column of dates, shifted either forward or backward in time by the specified number of intervals from the dates in the current context.
DATESBETWEEN (dates, start_date, end_date)	Returns a table that contains a column of dates that begins with the **start_date** and continues until the **end_date**.
DATESINPERIOD (dates, start_date, number_of_intervals, interval)	Returns a table that contains a column of dates that begins with the **start_date** and continues for the specified **number_of_intervals**.
DATESMTD (dates)	Returns a table that contains a column of the dates for the month to date, in the current context.
DATESQTD (dates)	Returns a table that contains a column of the dates for the quarter to date, in the current context.
DATESYTD (dates, [year_end_date])	Returns a table that contains a column of the dates for the year to date, in the current context.
ENDOFMONTH (dates)	Returns the last date of the month in the current context for the specified column of dates.
ENDOFQUARTER (dates)	Returns the last date of the quarter in the current context for the specified column of dates.
ENDOFYEAR (dates, [year_end_date])	Returns the last date of the year in the current context for the specified column of dates.

Function	Notes
FIRSTDATE (dates)	Returns the first date in the current context for the specified column of dates.
FIRSTNONBLANK (column, expression)	Returns the first value in the column, **column**, filtered by the current context, where the expression is not blank.
LASTDATE (dates)	Returns the last date in the current context for the specified column of dates.
LASTNONBLANK (column, expression)	Returns the last value in the column, **column**, filtered by the current context, where the expression is not blank.
NEXTDAY (dates)	Returns a table that contains a column of all dates from the next day, based on the first date specified in the **dates** column in the current context.
NEXTMONTH (dates)	Returns a table that contains a column of all dates from the next month, based on the first date in the **dates** column in the current context.
NEXTQUARTER (dates)	Returns a table that contains a column of all dates in the next quarter, based on the first date specified in the **dates** column, in the current context.
NEXTYEAR (dates, [year_end_date])	Returns a table that contains a column of all dates in the next year, based on the first date in the **dates** column, in the current context.
OPENINGBALANCEMONTH (expression, dates, [filter])	Evaluates the expression at the first date of the month in the current context.
OPENINGBALANCEQUARTER (expression, dates, [filter])	Evaluates the expression at the first date of the quarter in the current context.
OPENINGBALANCEYEAR (expression, dates, [filter], [year_end_date])	Evaluates the expression at the first date of the year in the current context.
PARALLELPERIOD (dates, number_of_intervals, interval)	Returns a table that contains a column of dates that represents a period parallel to the dates in the specified **dates** column, in the current context, with the dates

Function	Notes
	shifted a number of intervals either forward in time or back in time.
PREVIOUSDAY (dates)	Returns a table that contains a column of all dates representing the day that is previous to the first date in the **dates** column, in the current context.
PREVIOUSMONTH (dates)	Returns a table that contains a column of all dates from the previous month, based on the first date in the **dates** column, in the current context.
PREVIOUSQUARTER (dates)	Returns a table that contains a column of all dates from the previous quarter, based on the first date in the **dates** column, in the current context.
PREVIOUSYEAR (dates, [year_end_date])	Returns a table that contains a column of all dates from the previous year, given the last date in the **dates** column, in the current context.
SAMEPERIODLASTYEAR (dates)	Returns a table that contains a column of dates shifted one year back in time from the dates in the specified **dates** column, in the current context.
STARTOFMONTH (dates)	Returns the first date of the month in the current context for the specified column of dates.
STARTOFQUARTER (dates)	Returns the first date of the quarter in the current context for the specified column of dates.
STARTOFYEAR (dates)	Returns the first date of the year in the current context for the specified column of dates.
TOTALMTD (expression, dates, [filter])	Evaluates the value of the expression for the month to date, in the current context.
TOTALQTD (expression, dates, [filter])	Evaluates the value of the expression for the quarter to date, in the current context.
TOTALYTD (expression, dates, [filter], [year_end_date])	Evaluates the value of the expression for the year to date, in the current context.