Reference card

Tables, columns, and measures

How tables, columns, and measures are referenced in a function

Table references

Refers to the **entire table** within the data model. Used in functions that need to consider the **entire dataset**.

Syntax:

‘Table_name’

Column references

Refers to **specific columns** within a table. Used when we need to perform operations on particular fields, such as creating **calculated columns** or defining criteria in filters.

Syntax:

‘Table_name’[Column_name]

Measure references

Refers to measures that have been **defined** in the model. Allows the **reuse** of **measures** within other DAX formulas, maintaining **consistency** and reducing **redundancy** in calculations.

Syntax:

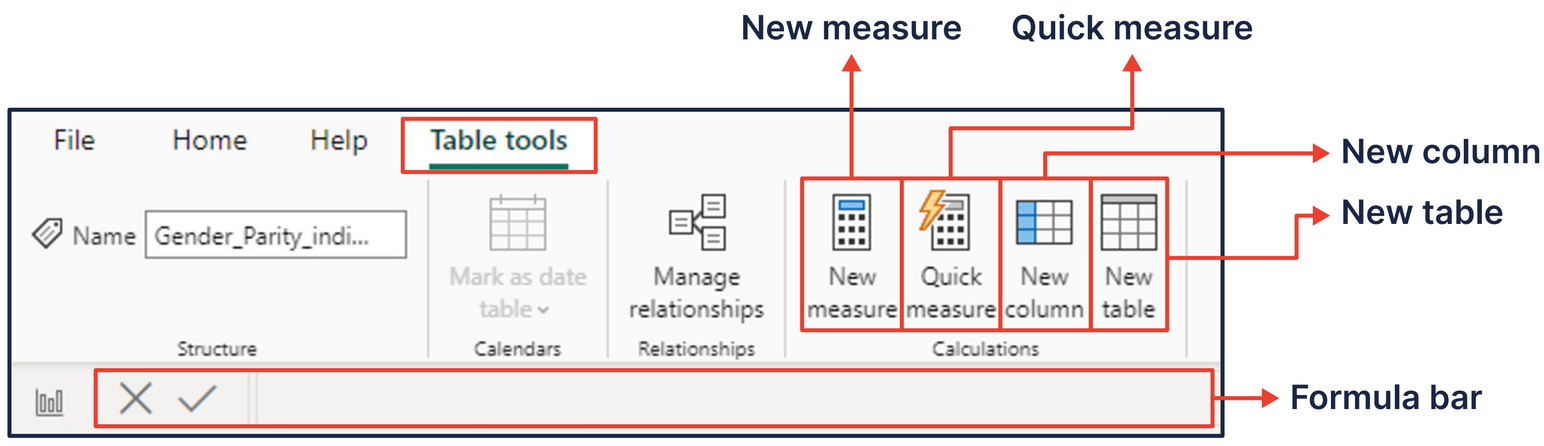
‘Table_name’[Measure_name]

Commonly used table, column, and measure functions

Table and column manipulation functions	
ADDCOLUMNS()	Returns a table with **new columns** specified by the DAX expressions.
SUMMARIZE()	Returns a **summary table** for the requested totals over a set of groups.
SELECTCOLUMNS()	Returns a table with **selected columns** from an **existing** table specified by the DAX expressions.
UNION()	Combines rows **vertically**, creating a **new table** with all unique rows from the combined tables.
MERGE()	Combines columns **horizontally**, creating a new table by **merging columns** based on a related column.
COLUMN()	Stores the **result** of an **expression** as a column in a table.

Filtering functions	
FILTER()	Returns a table that is a **subset** of another **table** or **expression**.
LOOKUPVALUE()	Returns a row based on **criteria specified** in a search condition. There can be multiple search conditions.
CALCULATETABLE()	**Evaluates** a table expression in a modified filter context.
RELATED()	Returns a **related value** from another table.
USERELATIONSHIP()	Specifies a **relationship** to be used in a **specific calculation**.
CALCULATE()	**Evaluates** an **expression** in a modified filter context.
ALL()	Returns **all rows** in a table, ignoring any filters that may have been applied.
GENERATE()	Generates tables based on **specific conditions**.
DISTINCT()	Returns a column table that contains the **distinct** or **unique values** in a column.

Creating tables, columns, and measures using DAX



New measure

A calculation or aggregation of data in a table or across multiple tables to provide **meaningful insights** and **summarise information**.

Simple measure: Basic calculations involving a **single expression or aggregation**.

Compound measure: Measures that are created by **combining multiple measures or queries**. Useful for defining more advanced calculations.

Quick measure

Predefined measures in Power BI that allow us to **quickly create common calculations** without having to manually write the DAX query.

New column

A calculated column that we add to a table that is **computed from other columns**.

New table

Creates a **new table using DAX** to organise data in new ways or summarise it for specific views.

Formula bar

A **formula bar** where we enter the **DAX code** to create tables, measures, and columns.

Row and filter context

	Filter context	Row context
	Filter context is the set of **values** allowed in **each column**, based on filter constraints that were applied to the row or that are defined by **filter expressions** within the formula.	Row context is **"the current row",** and all the **values** in all the columns for that row. It tells DAX which row to use when determining the values for the calculated column.
Calculated columns	Calculated columns **do not have access to the filter context** because they are computed when they are defined or when the dataset is refreshed. Calculated columns are **calculated outside of the filter context** and do not rely on report user involvement.	In the computation of calculated columns **DAX determines which row to work on in a table by default**. This context is essential for performing calculations with the columns of a table providing a simple way to **author math over columns and rows**.
Measures	Measures are **evaluated within the context of the visual filter** to which they are applied. The filters used in the report, such as row selection, column selection, report filters, and slicers, define the filter context.	Row context is **not created automatically with measures**; we must establish it ourselves in order to access the values of a column and execute calculations. As a result, when it comes to measures, we **rely on aggregator methods to manually apply row context**.

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