

Logical Functions

Tableau Desktop Reference Guide

Use logical functions to evaluate conditions and return values based on the result. Logical functions are useful to create specific views by categorizing, filtering/excluding, or combining records. Logical functions using comparison operators can be used to create dynamic labels, spotlight formatting, or create virtual bins to categorize data, similar to how KPIs (Key Performance Indicators) are evaluated.

The **IF/THEN/ELSE/END** function is used for evaluating test conditions and returning values based on the results. **IF** statements can also be extended using **ELSEIF** tests. The **IIF** function is a shortcut way of writing an **IF** function.

The **CASE** function can be useful when searching for a match to an expression, but also useful when an **IF** statement would be very complex, due to many test conditions.

The **ISDATE** function can be used to test if a string is a valid date.

Testing for Null

There are several functions that test for null results, **IFNULL**, **ISNULL**, and **ZN** that are useful when your data has unknown or no values for some fields. **ZN** returns a value of zero (0) if the expression is null.

Examples

These are examples of how logical functions can be used:

Function Syntax	Purpose	Example
IF test THEN value1 [ELSE value2] END ELSEIF can also be used IIF is similar	Evaluates a sequence of test conditions and returns the first value for the condition that is true.	IF [Cost] > [Budget] THEN "Over" ELSE "Under" END This returns the string "Over" if the value of [Cost] is \$7 and [Budget] is equal to \$5, but will return the string "Under" if the value of [Cost] is \$7 and the [Budget] is equal to \$9.
CASE expression WHEN value1 THEN return1 WHEN value2 THEN return2 [ELSE else value] END	Search for a match to an expression and return a value based on the match. If there is no match, the optional else value is returned. If there is no default, then null is returned.	CASE [Country] WHEN "United States" THEN "USA" WHEN "Canada" THEN "CAN" ELSE "Other" END This returns "Other" if Country is "Mexico".

IFNULL(expression1, expression2)
ISNULL and **ZN** are similar

Returns the first expression if it is not null,
otherwise it returns the second expression.

IFNULL(**[Grade]**, “not tested”) returns “A” if the
value of **[Grade]** is equal to “A”, and returns “not
tested” if the value of **[Grade]** is null.

