Using Null and Empty in Expressions

Introduction

It is a common misconception that Null values and empty cells are equivalent values. In fact, null and empty represent two distinct ways of communicating that no data is present. Working with these values may be an important aspect of preparing your data.

A survey contains data on customers of a cable company, such their name, city of residence, phone number, subscription package and comments on their customer experience. Some values associated with the Customer's name are Null, while other values concerning their subscription package appear to have no data at all. The Formula tool contains functions to help evaluate and manipulate null and empty values such as these in a workflow.

Replace with Null

Nulls can also be used as values in expressions. The values in the column [Phone Number] vary in length. Phone numbers that do not contain 10 digits are not valid; replace them with Null.

In the Formula tool, create a new expression to edit the column [Phone Number]. Write a conditional statement to apply the following logic: If the Length of the value in the column [Phone Number] is equal to 10, then keep the current value. Otherwise, change the value to Null.

Click the Function Library and expand the Specialized function category. Select Null() from the list to insert it as a value in the Expression Editor.

After running the workflow, phone numbers that do not have ten digits have been converted to Nulls.

Formula Tool Configuration

Create a new string column called [Residence Name] to combine a customer's last name with the word "Residence". If a customer's last name is null, insert "Current Resident" instead.

This logic will be applied with a conditional statement.

First, evaluate whether or not the value in the column [Last Name] is null. A common mistake is to treat null values as strings in an expression. To correctly evaluate if a cell's values is null, use the function “IsNull()”, which is found in the Test category of the function library.

Click the Function Library. Expand the Test function category and select the function "IsNull" to insert it into the Expression Editor.

The IsNull function requires one parameter: a column to test. Substitute the column [Last Name] for the placeholder "v". If a value is Null, insert “Current Resident” into the cell. Otherwise, combine the customer's last name with “space residence”. After running the workflow, the column [Residence Name] contains the values created by the conditional logic.

IsEmpty vs IsNull
Because Null and empty are not equivalent, the IsNull() function will not evaluate blank values. The function library includes separate syntax for working with empty cells.

Construct a statement to evaluate and modify empty cells in the column [Subscription Package]. If a cell is empty, insert the value "Standard". Otherwise, keep the value in the column. Use the function IsEmpty(), which is also found in the Test function category, to evalulate the values in the column [Subscription Package]. While the IsNull function will not evaluate empty cells, the IsEmpty function will test both null and empty values. Empty values should be replaced with the text “Standard”. Otherwise, keep the current value.

After running the workflow, we see that both the empty and Null values in the column [Subscription Package] have been replaced with the value “Standard”.