

Multi-Field Formulas

The Multi-Field Formula Tool

The standard Formula tool's expression editor limits outputs to one column, so you'll need to create an expression for each column you'd like to apply the function to. This can be cumbersome if you need to apply a formula to many columns of data. Rather than spending time rewriting the same expression, use the Multi-Field Formula tool instead!

A dataset contains the transaction values for each day in the first 2 quarters of the year. Use the Multi-Field Formula to replace any values of "0" with "Null". Drag a Multi-Field Formula tool onto the canvas.

Like the Multi-Row Formula tool, the Multi-Field Formula tool supports only one expression per tool. The expression constructed is applied to only the selected columns. The list of columns to choose from is determined by the datatype selected in the dropdown. Use the dropdown to select "Numeric".

Click "All" to select all the columns returned as numeric datatypes.

Create or Overwrite Columns

By default, the Multi-Field Formula tool will create new columns of data. To replace values in an existing column, uncheck this box.

Variables

In the Variables tab of the expression editor, two menus contain columns. In the "Original Fields" menu, all of the incoming columns are listed. These columns act just like columns in the Formula tool, in that the values in those specific columns can be used in expressions. In the Current Field menu, there are 3 options available. All three options are dynamic, meaning that they reflect the current column being processed by the expression. When the expression shifts to the next column, this value will dynamically update to reflect the current column's value, name or datatype.

The Functions tab contains the same Function Library as the Formula tool. Double clicking a function inserts it into the expression. Use a conditional function to replace 0s with null values instead.

Drag the correct variable into the conditional function.

After running the workflow, the cells with a value 0 have been replaced by nulls in all numeric columns. Create a new column for each month that contains formatted transactions with a dollar sign. Another multi-field formula tool is dragged onto the canvas to apply formatting to these values. Again, All numeric columns are selected.

Begin by typing "open quote dollar sign close quote".

Use the + to "concatenate" string values.

Then insert the function "ToString" from the Conversion section of the Functions tab.

Replace the placeholder "x" with the variable [_CurrentField_].

Changing the Datatype

Since the current columns are numeric and the output of this formula will be string values, the Output type will need to change. After selecting the check box, use the dropdown to select V_WString.

By default, the "Copy Output Fields Add" option is selected. When this option is selected, a prefix or suffix will distinguish that column from the original. Use the dropdown to select Suffix.

Edit the Suffix to place the underscore in front of 'New'.

CurrentFieldName

After running the workflow, 6 new columns containing the formatted values are created. Now edit the expression to reference the Month and day before the formatted values. To reference the Month, use the "[_CurrentFieldName_]" from the Current Field section of the Variables tab.

Insert a "+" and then reference the value in the column [Day].

A space is added between the month and day, and a colon with spaces on either side is inserted between the date and the formatted values. By adding these additional characters to the output, the default Size of 8 characters is no longer sufficient. 16 is more appropriate. After running the workflow, the formatted values appear in the "copy" columns as expected.