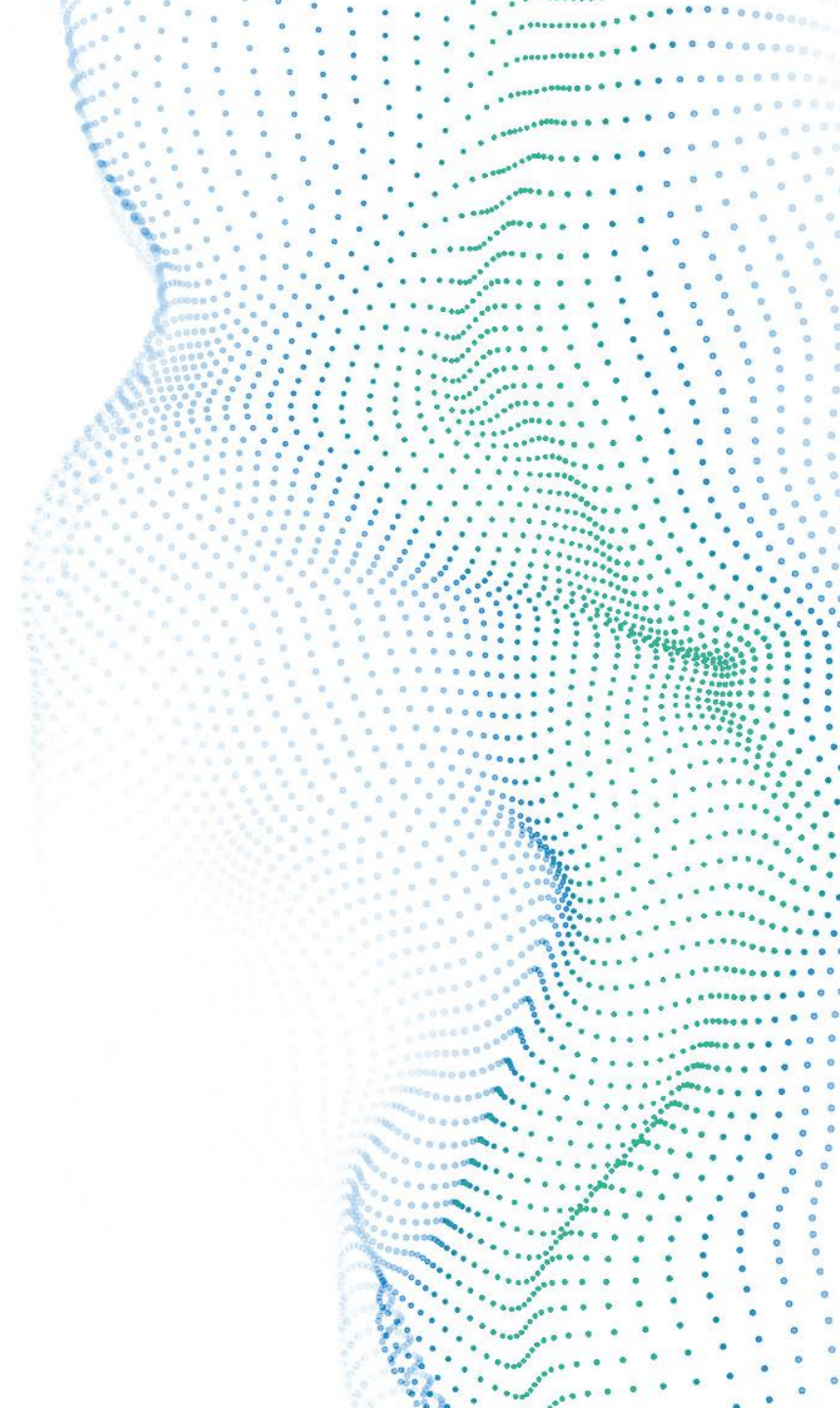




alteryx

# Alteryx Core Certification Training Series



# Training Series by Week

1 Reading and Writing Data

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2 Data Blending and Formatting

---

**3 Data Preparation**

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4 Transforming and Parsing Data

---

5 User Interface (UI), Documentation and Workflow Configuration

---

6 Core Certification Exam Preparation

# Data Preparation



# Overview

## Processes Covered

- Conditional expressions
- Compound expressions
- Calculation basics
- Sorting and sampling

## Tools Covered



**Sort**



**Sample**



**Filter**

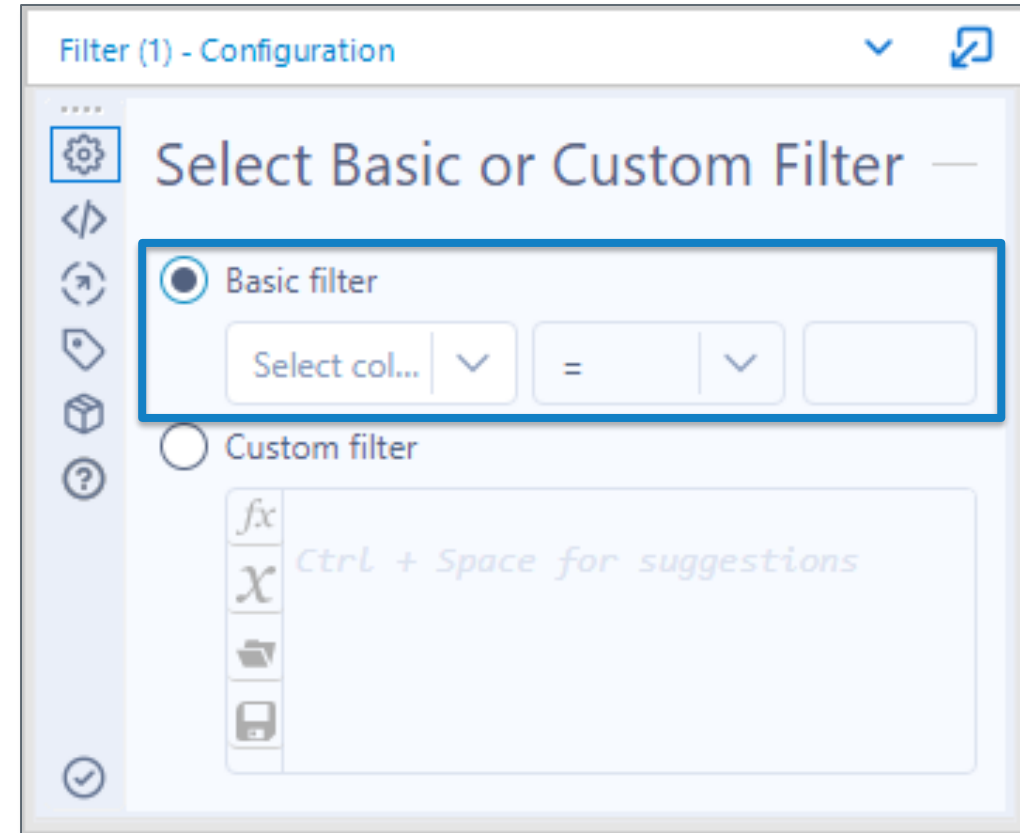


**Formula**

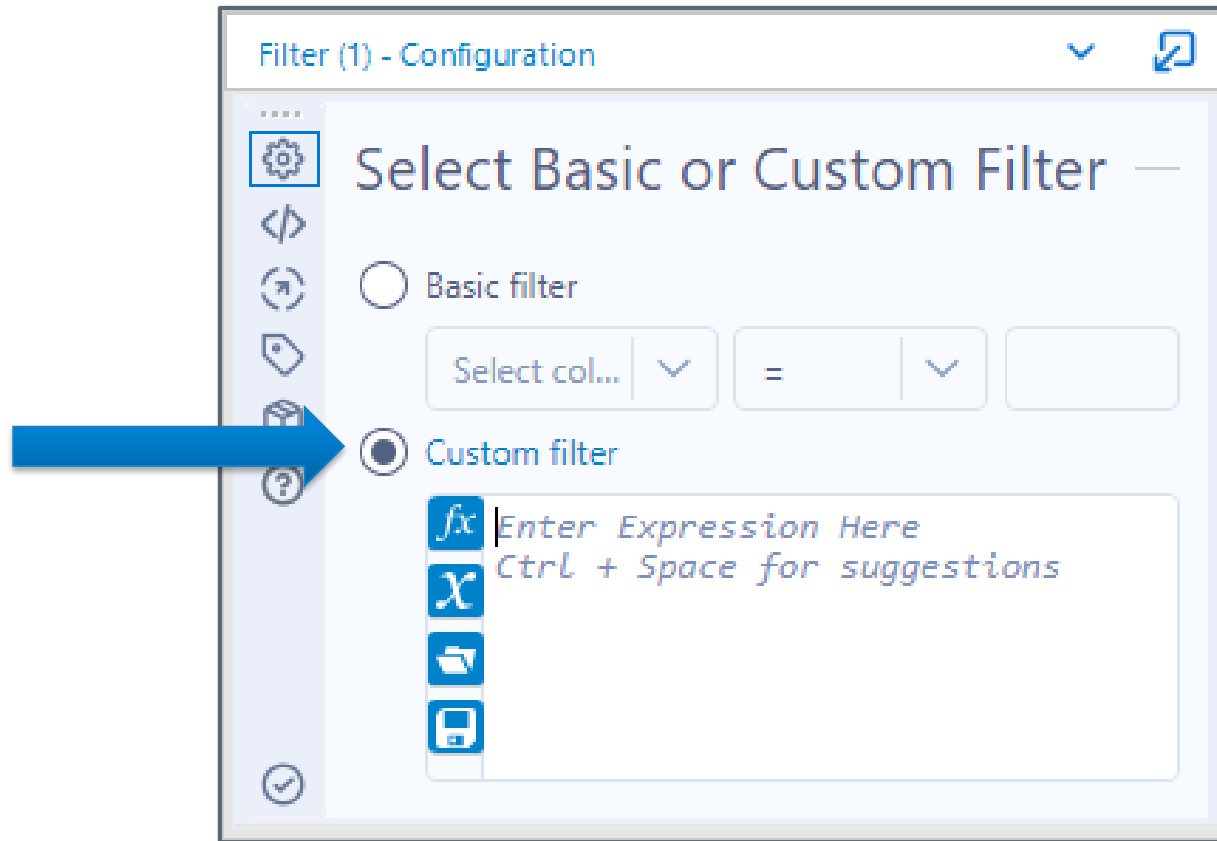
# Filtering - Conditional Expressions

# Filter Tool

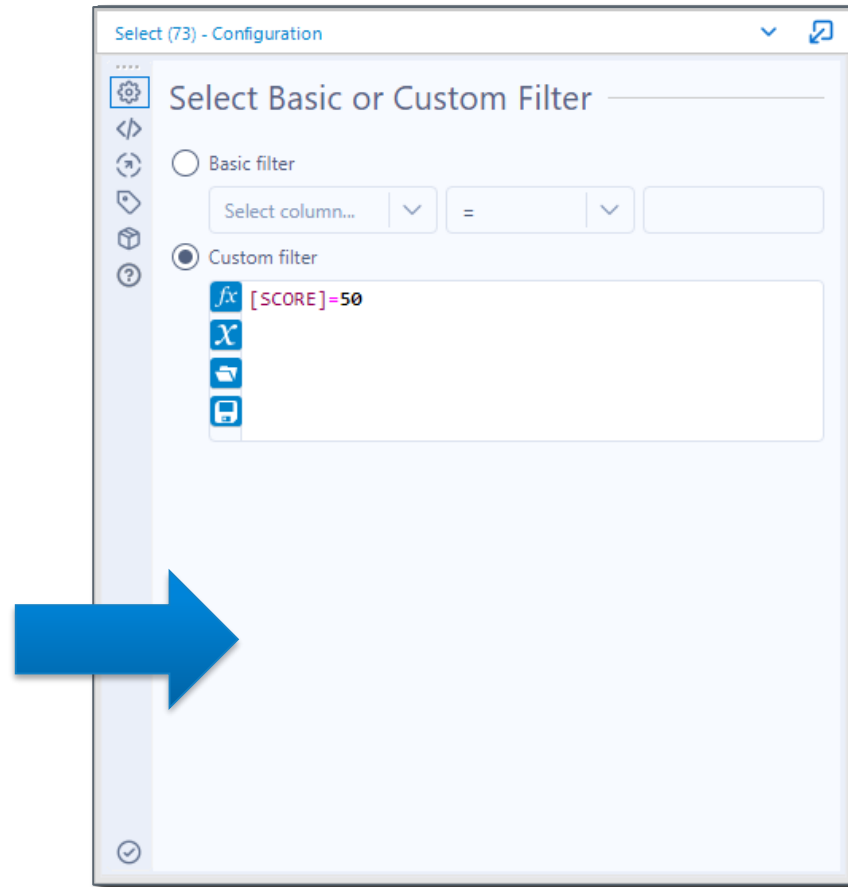
- Basic Filter
  - Tests for a single condition
  - Writes the Expression for you
- Custom Filter
  - Check for more complex conditions
  - Check for multiple conditions



# Creating Custom Filters



# Creating Custom Filters





# Filtering - Compound Expressions

# OR Statements



[COLOR]="BLUE"

~~FALSE~~

OR

[COLOR]="YELLOW"

~~FALSE~~

True



False



# AND Statement



[NUMBER]>=2

AND

[NUMBER]<=5

~~FALSE~~

~~FALSE~~

True



False



# Formula Tool Basics

# Basic Formula Intro

- Output Fields
  - Select 'Add a Column'
  - Select a name
- Tabs
  - Variables
  - Functions
  - Saved Expressions
- Expression
- Data Preview

Formula (9) - Configuration

Output Column	Data Preview
Percent	100

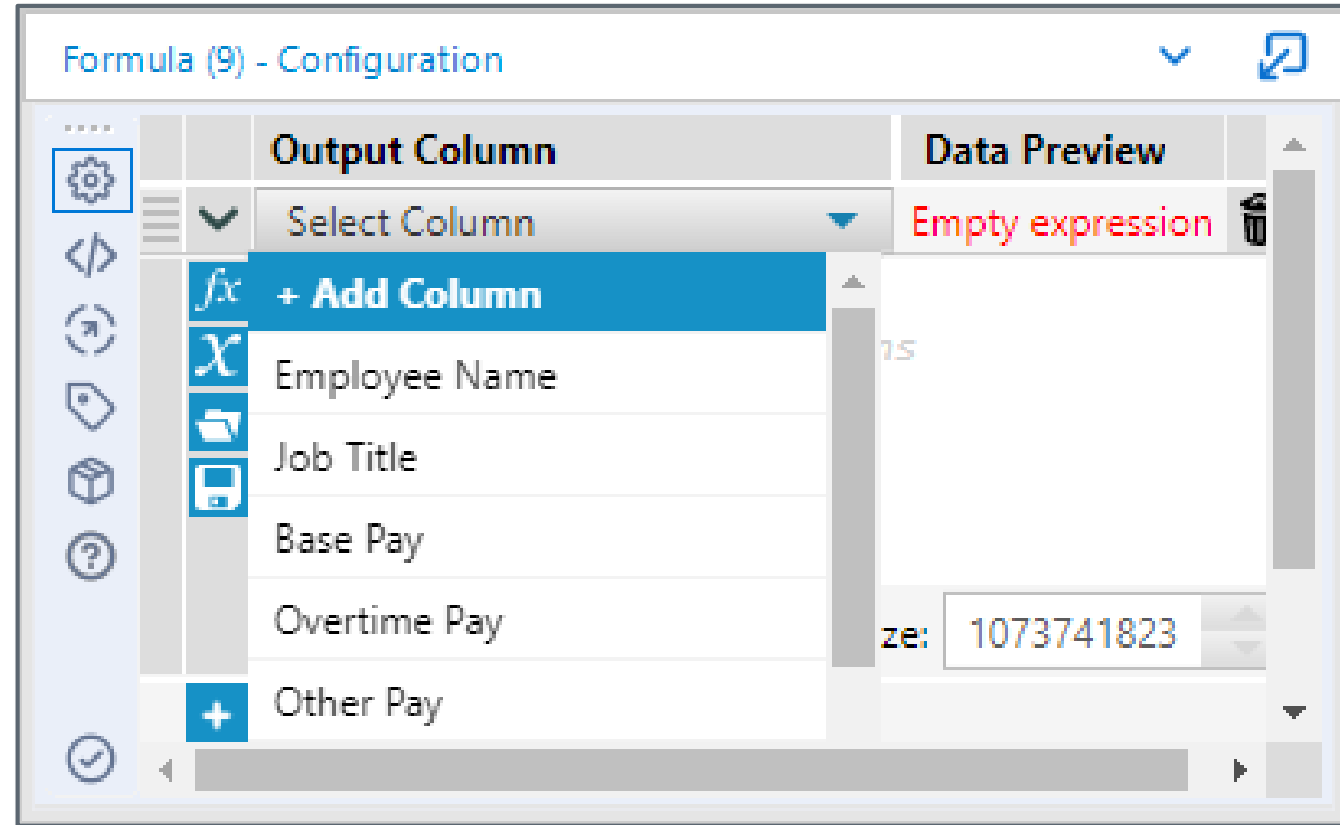
[Total Pay]/[Total Pay & Benefits]\*100

Data type: V\_WString Size: 1073741823



# Selecting and Creating Fields

- Output Field
  - Dropdown Existing Field
  - Select 'Add Column' for new field
  - Type (new only)
  - Size (new only)
- Expressions
  - A formula or function applied to the field



# Functions with Parameters

Identify the *target*

Define the *actions*

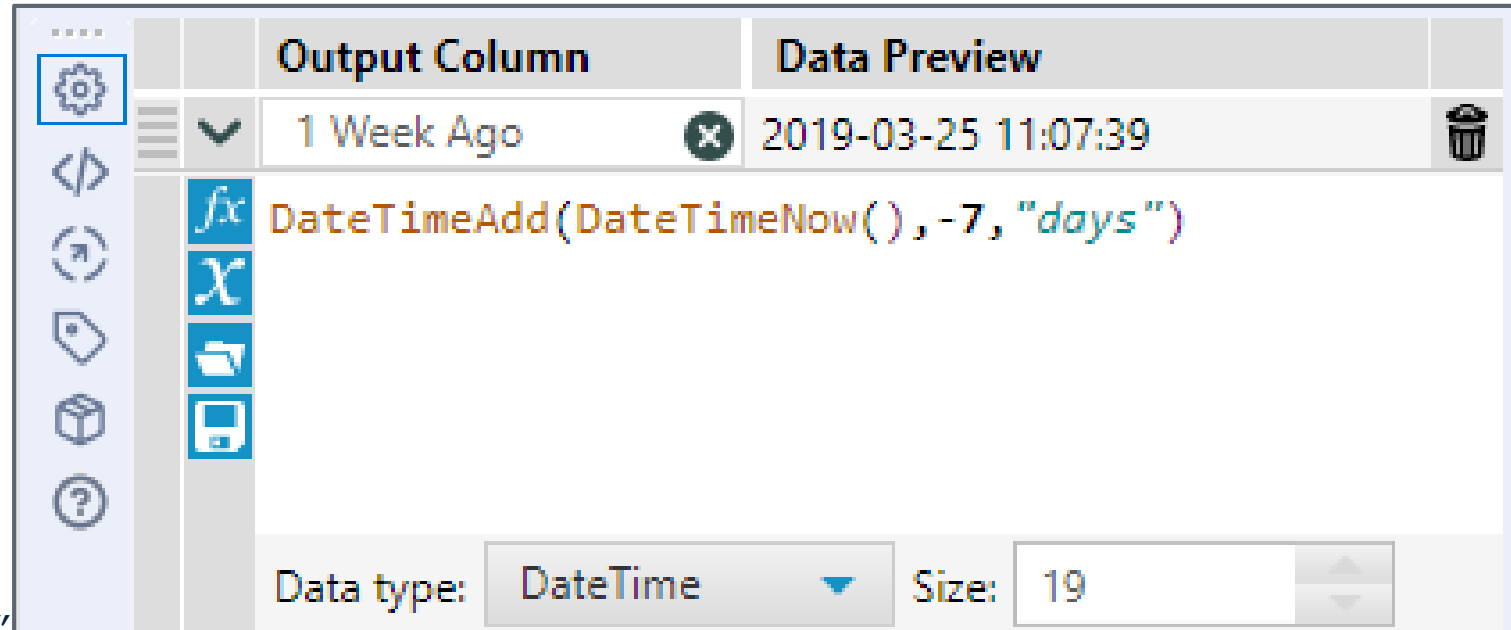
Examples:

- Change the value to all uppercase:

```
UPPERCASE ( [Name] )
```

- Add 30 seconds:

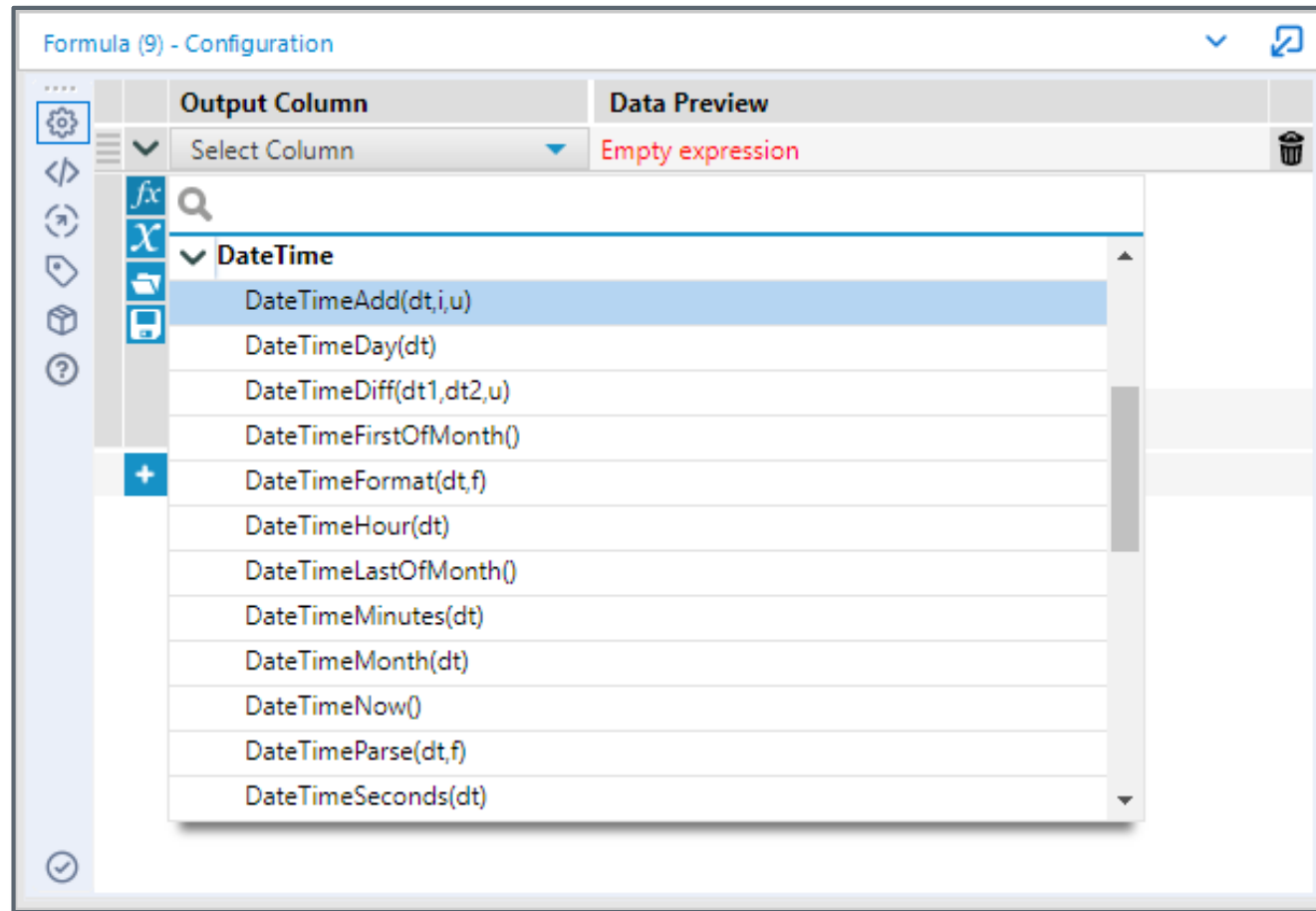
```
DateTimeAdd ( [Time] , 30 , "secs" )
```



The screenshot shows the Alteryx configuration window for a '1 Week Ago' action. The window is divided into two main sections: 'Output Column' and 'Data Preview'. The 'Output Column' section shows the function name '1 Week Ago' with a close button (X) and a trash icon. The 'Data Preview' section shows the output value '2019-03-25 11:07:39'. Below these sections, the function code is displayed: `DateTimeAdd(DateTimeNow(), -7, "days")`. At the bottom, the 'Data type' is set to 'DateTime' and the 'Size' is set to '19'. A vertical toolbar on the left contains various icons for configuration, code, and help.



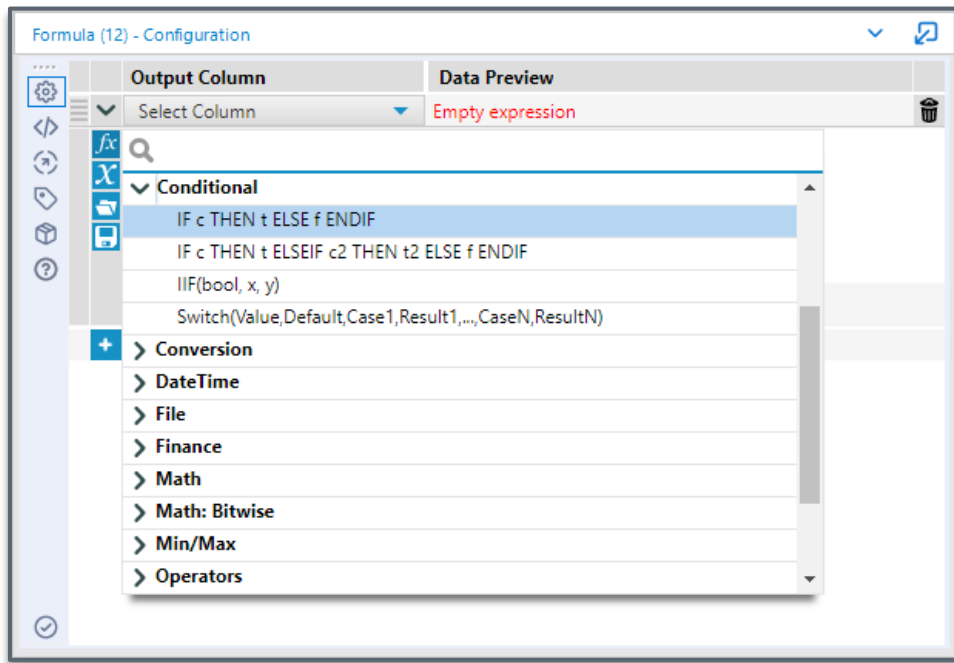
# Syntax Hinting and Validation





# Formula Tool - Conditional Expressions

# Using Conditional Expressions in Formulas



**Example:** Using the shirts table insert a price field. **Blue** shirts are **\$5.00** and all other shirts are **\$2.50**

```
IF [COLOR]= "blue"  
THEN 5.00  
ELSE 2.50  
ENDIF
```

Record	Color	Number	Image	Price
1	blue	1	blue1	5.00
2	green	2	green2	2.50
3	blue	3	blue3	5.00
4	yellow	4	yellow4	2.50
5	orange	5	orange5	2.50
6	yellow	6	yellow6	2.50

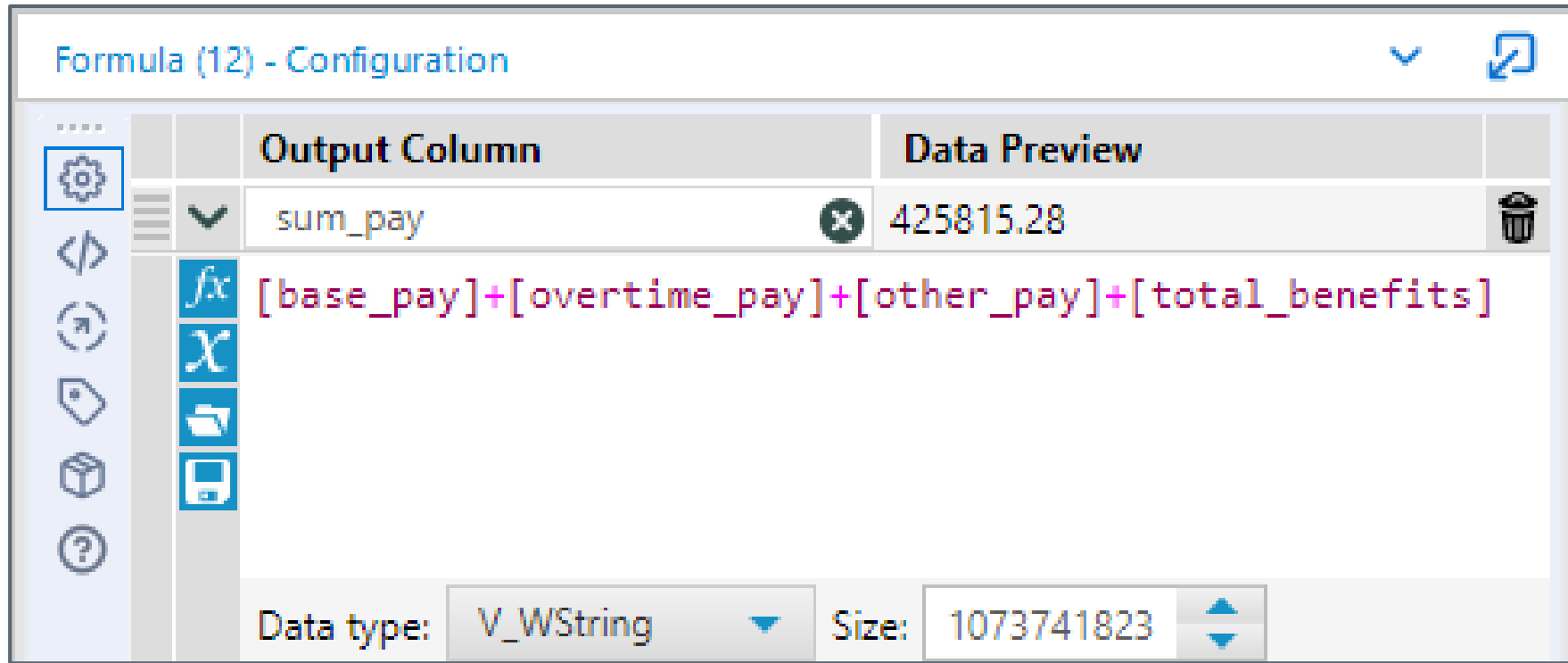
**IF** **c** // conditional statement  
**THEN** **t** // action for true  
**ELSE** **f** // action for everything not true  
**ENDIF**



# Introductions to Calculations

# Addition Across Rows

- Select the fields by name
- Use the plus operator “+” to add the field together



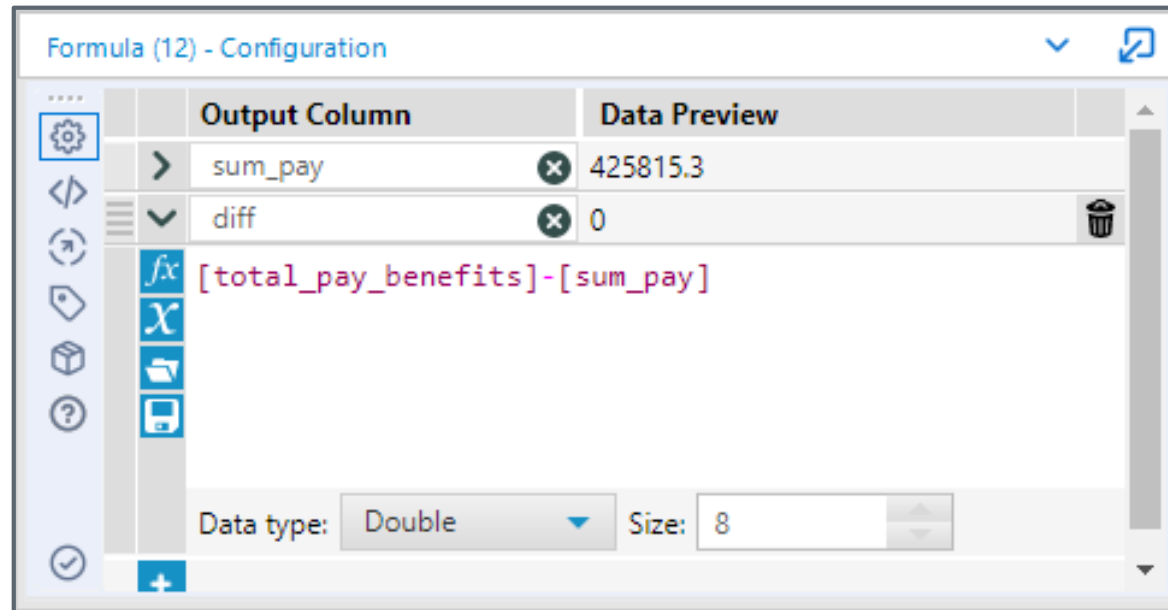
The screenshot shows the configuration window for a Formula tool in Alteryx, titled "Formula (12) - Configuration". The window is divided into two main sections: "Output Column" and "Data Preview".

Output Column	Data Preview
sum_pay	425815.28

Below the table, the formula is displayed: `[base_pay]+[overtime_pay]+[other_pay]+[total_benefits]`. The formula is written in a pinkish-red font. To the left of the formula, there are several icons: a gear (settings), a double-headed arrow (toggle), a circular arrow (refresh), a tag (filter), a cube (group), and a question mark (help). Below the formula, there are two dropdown menus: "Data type: V\_WString" and "Size: 1073741823".

# Subtraction Across Rows

- Select the field by name
- Use the minus operator "-" to subtract and find the difference
- Even though we are subtracting doubles make a field type of Int32 to get a whole number, zero



# String Functions

# Understanding Strings and Position



# Understanding Strings and Position

- String Functions: Position

- `GetWord([field],3)` Result: “Alteryx”

Word Position	0	1	2	3
	D a t a	B l e n d i n g	w i t h	A l t e r y x

- `FindString([field], “l”)` Result: 6

Character Position	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	D	a	t	a		B	l	e	n	d	i	n	g		w	i	t	h		A	l	t	e	r	y	x



# Understanding Strings and Length



Word Length

WELCOME TO CLASS

1

2

3

Letter Length

WELCOME TO CLASS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

# Understanding Strings and Length

- String Functions: Length

- Left([Field], 4)

Result: “Data”

Character Position	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Character Length	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	D	a	t	a		B	l	e	n	d	i	n	g		w	i	t	h		A	l	t	e	r	y	x

- Right([Field], 2)

Result: “yx”

Character Position	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Character Length	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	D	a	t	a		B	l	e	n	d	i	n	g		w	i	t	h		A	l	t	e	r	y	x

# Working with Words

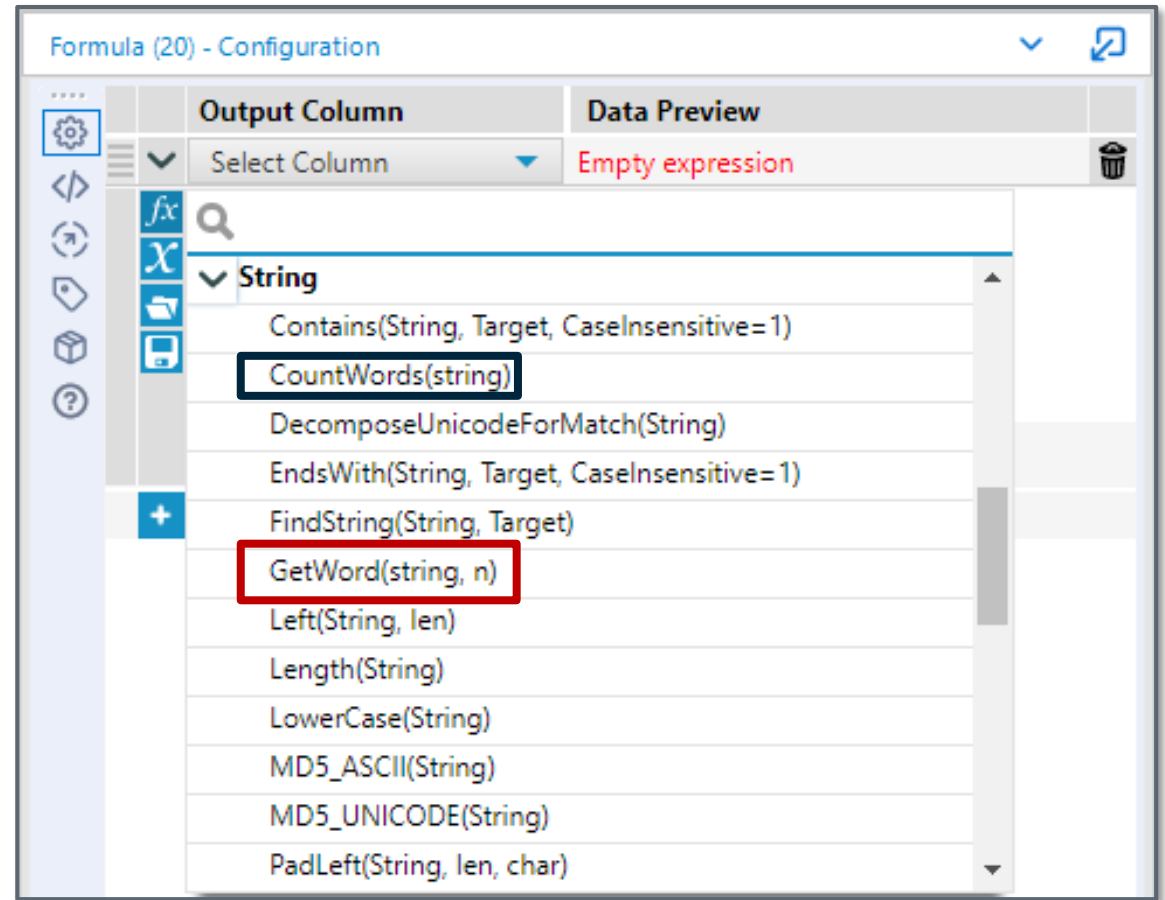
# Writing Formulas that Get Words

## What is a word?

- Group of letters and/or numbers that may include a hyphen (-)
- Separated by a period, a colon or semi-colon, or any other symbol except hyphen

## How many words in a field?

Words by position (zero is the first word)



# Selecting the Top 10

# SELECTING THE TOP 10



# Sort and Sample Tools

Sort (41) - Configuration

Use Dictionary Order English (United States)

Fields

	Name	Order
<input checked="" type="checkbox"/>	Total Pay & Benefits	Descending
<input type="checkbox"/>	*	

Sample (42) - Configuration

Select Sample Type

- First N rows
- Last N rows
- Skip 1st N rows
- 1 of every N rows
- 1 in N chance to include each row
- First N% of rows

N = 10

Group by column (optional)

Select all

- Employee Name
- Job Title
- Total Pay & Benefits
- County





# Data Blending and Formatting: Alteryx Designer Training



# Additional Resources

# Tool Mastery Series

## Take a deeper dive into the tools on the Alteryx Community

This is a series of articles meant to give you a deeper mastery of each tool, with a write-up of its functions, options and working examples for download.

<b>Select</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Select/ta-p/29783">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Select/ta-p/29783</a>
<b>Auto Field</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Auto-Field/ta-p/49731">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Auto-Field/ta-p/49731</a>
<b>Filter</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Filter/ta-p/85764">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Filter/ta-p/85764</a>
<b>Formula</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Formula/ta-p/32675">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Formula/ta-p/32675</a>
<b>Sort</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Sort/ta-p/36862">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Sort/ta-p/36862</a>
<b>Sample</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Sample/ta-p/36758">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Sample/ta-p/36758</a>
<b>Data Cleansing</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Data-Cleansing/ta-p/31753">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Data-Cleansing/ta-p/31753</a>
<b>Unique</b>	<a href="https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Unique/ta-p/30484">https://community.alteryx.com/t5/Alteryx-Designer-Knowledge-Base/Tool-Mastery-Unique/ta-p/30484</a>



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Thank you

[alteryx.com](https://alteryx.com)

