

# KTHLARGESTIF Function

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Extracts the ranked value from the values in a column, where  $k=1$  returns the maximum value, when a specified condition is met. The value for  $k$  must be between 1 and 1000, inclusive.

KTHLARGESTIF calculations are filtered by a conditional applied to the group.

For purposes of this calculation, two instances of the same value are treated as separate values. So, if your dataset contains three rows with column values 10, 9, and 9, then KTHLARGEST returns 9 for  $k=2$  and  $k=3$ .

Input column can be of Integer or Decimal type. Non-numeric data in the column is ignored. If a row contains a missing or null value, it is not factored into the calculation.

**NOTE:** When added to a transform, this function is applied to the current sample. If you change your sample or run the job, the computed values for this function are updated. Transforms that change the number of rows in subsequent recipe steps do not affect the values computed for this step.

To perform a simple  $k$ th largest calculation without conditionals, use the KTHLARGEST function. See *KTHLARGEST Function*.

## Basic Usage

```
pivot value: KTHLARGESTIF(POS_Sales, 1, DayOfWeek == 'Saturday') group:storeNbr limit:1
```

**Output:** Generates a two-column table containing the unique values for `storeNbr` and the top value ( $\text{rank}=1$ ) from the `POS_Sales` column for each `storeNbr` when the `DayOfWeek` value is `Saturday`. The `limit` parameter defines the maximum number of output columns.

## Syntax and Arguments

```
pivot value:LISTIF(col_ref, limit, test_expression) [group:group_col_ref] [limit:limit_count]
```

Argument	Required?	Data Type	Description
col_ref	Y	string	Reference to the column you wish to evaluate.
k_integer	Y	integer	The ranking of the value to extract from the source column
test_expression	Y	string	Expression that is evaluated. Must resolve to <code>true</code> or <code>false</code>

For more information on syntax standards, see *Language Documentation Syntax Notes*.

For more information on the `group` and `limit` parameter, see *Pivot Transform*.

## col\_ref

Name of the column whose values you wish to use in the calculation. Column must be a numeric (Integer or Decimal) type.

### Usage Notes:

Required?	Data Type	Example Value
Yes	String that corresponds to the name of the column	myValues

## k\_integer

Integer representing the ranking of the value to extract from the source column.

**NOTE:** The value for `k` must be an integer between 1 and 1,000 inclusive.

- `k=1` represents the maximum value in the column.
- If `k` is greater than or equal to the number of values in the column, the minimum value is returned.
- Missing and null values are not factored into the ranking of `k`.

## test\_expression

This parameter contains the expression to evaluate. This expression must resolve to a Boolean (`true` or `false`) value.

### Usage Notes:

Required?	Data Type	Example Value
Yes	String expression that evaluates to <code>true</code> or <code>false</code>	<code>(LastName == 'Mouse' &amp;&amp; FirstName == 'Mickey')</code>

## Examples

**Tip:** For additional examples, see *Common Tasks*.

### Example - Second-most measurements for a specific city

This example illustrates how to use the conditional ranking functions `KTHLARGESTIF` and `KTHLARGESTUNIQUEIF` in your recipes.

### Source:

Here is some example weather data:

date	city	rain_cm	temp_C	wind_mph
1/23/17	Valleyville	0.00	12.8	8.8
1/23/17	Center Town	0.31	9.4	5.3
1/23/17	Magic Mountain	0.00	0.0	7.3

1/24/17	Valleyville	0.25	17.2	3.3
1/24/17	Center Town	0.54	1.1	7.6
1/24/17	Magic Mountain	0.32	5.0	8.8
1/25/17	Valleyville	0.02	3.3	6.8
1/25/17	Center Town	0.83	3.3	5.1
1/25/17	Magic Mountain	0.59	-1.7	6.4
1/26/17	Valleyville	1.08	15.0	4.2
1/26/17	Center Town	0.96	6.1	7.6
1/26/17	Magic Mountain	0.77	-3.9	3.0
1/27/17	Valleyville	1.00	7.2	2.8
1/27/17	Center Town	1.32	20.0	0.2
1/27/17	Magic Mountain	0.77	5.6	5.2
1/28/17	Valleyville	0.12	-6.1	5.1
1/28/17	Center Town	0.14	5.0	4.9
1/28/17	Magic Mountain	1.50	1.1	0.4
1/29/17	Valleyville	0.36	13.3	7.3
1/29/17	Center Town	0.75	6.1	9.0
1/29/17	Magic Mountain	0.60	3.3	6.0

**Transform:**

In this case, you want to find out the second-most measures for rain, temperature, and wind in Center Town for the week.

```

pivot value:KTHLARGESTIF(rain_cm,2,city == 'Center Town') limit:1

```

You can see in the preview that the value is 1.32. Before adding it to your recipe, you change the step to the following:

```

pivot value:KTHLARGESTIF(temp_C,2,city == 'Center Town') limit:1

```

The value is 20.

For wind, you modify it to be the following, capturing the third-ranked value:

```

pivot value:KTHLARGESTIF(wind_mph,3,city == 'Center Town') limit:1

```

In the results, you notice that there are two values for 8.8. So you change the function to use the KTHLARGESTUNIQUEIF function instead:

```

pivot value:KTHLARGESTUNIQUEIF(wind_mph,3,city == 'Center Town') limit:1

```

The result value is 7.6. Note that this value appears twice, so if you change the rank parameter in the above transformation to 4, the results would return a different unique ranked value (7.3).

**Results:**

You can choose to add any of these steps to generate an aggregated result. As an alternative, you can use a derive transform to insert these calculated results into new columns.