

EXAMPLE - Conditional Calculations Functions

This example illustrates how you can use the following conditional calculation functions to analyze weather data:

- **AVERAGEIF** - Average of a set of values by group that meet a specified condition. See *AVERAGEIF Function*.
- **MINIF** - Minimum of a set of values by group that meet a specified condition. See *MINIF Function*.
- **MAXIF** - Maximum of a set of values by group that meet a specified condition. See *MAXIF Function*.
- **VARIF** - Variance of a set of values by group that meet a specified condition. See *VARIF Function*.
- **STDEVIF** - Standard deviation of a set of values by group that meet a specified condition. See *STDEVIF Function*.

Source:

Here is some example weather data:

date	city	rain	temp	wind
1/23/17	Valleyville	0.00	12.8	6.7
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:

The following computes average temperature for rainy days by city:

```
derive type:single value:AVERAGEIF(temp, rain > 0) group:city as:'avgTempWRain'
```

The following computes maximum wind for sub-zero days by city:

```
derive type:single value:MAXIF(wind,temp < 0) group:city as:'maxWindSubZero'
```

This step calculates the minimum temp when the wind is less than 5 mph by city:

```
derive type:single value:MINIF(temp,wind<5) group:city as:'minTempWind5'
```

This step computes the variance in temperature for rainy days by city:

```
derive type:single value:VARIF(temp,rain >0) group:city as:'varTempWRain'
```

The following computes the standard deviation in rainfall for Center Town:

```
derive type:single value:STDEVIF(rain,city=='Center Town') as:'stDevRainCT'
```

You can use the following transforms to format the generated output. Note the \$col placeholder value for the multi-column transforms:

```
set col:stDevRainCenterTown,maxWindSubZero value:numformat($col,'##.##')
```

Since the following rely on data that has only one significant digit, you should format them differently:

```
set col:varTempWRain,avgTempWRain,minTempWind5 value:numformat($col,'##.#')
```

Results:

date	city	rain	temp	wind	avgTempWRain	maxWindSubZero	minTempWind5	varTempWRain	stDevRain
1/23/17	Valleyville	0.00	12.8	6.7	8.3	5.1	7.2	63.8	0.37
1/23/17	Center Town	0.31	9.4	5.3	7.3		5	32.6	0.37
1/23/17	Magic Mountain	0.00	0.0	7.3	1.6	6.43	-3.9	12	0.37
1/24/17	Valleyville	0.25	17.2	3.3	8.3	5.1	7.2	63.8	0.37
1/24/17	Center Town	0.54	1.1	7.6	7.3		5	32.6	0.37
1/24/17	Magic Mountain	0.32	5.0	8.8	1.6	6.43	-3.9	12	0.37
1/25/17	Valleyville	0.02	3.3	6.8	8.3	5.1	7.2	63.8	0.37
1/25/17	Center Town	0.83	3.3	5.1	7.3		5	32.6	0.37
1/25/17	Magic Mountain	0.59	-1.7	6.4	1.6	6.43	-3.9	12	0.37
1/26/17	Valleyville	1.08	15.0	4.2	8.3	5.1	7.2	63.8	0.37
1/26/17	Center Town	0.96	6.1	7.6	7.3		5	32.6	0.37

1/26 /17	Magic Mount ain	0.77	-3.9	3.0	1.6	6.43	-3.9	12	0.37
1/27 /17	Valley ville	1.00	7.2	2.8	8.3	5.1	7.2	63.8	0.37
1/27 /17	Cente r Town	1.32	20.0	0.2	7.3		5	32.6	0.37
1/27 /17	Magic Mount ain	0.77	5.6	5.2	1.6	6.43	-3.9	12	0.37
1/28 /17	Valley ville	0.12	-6.1	5.1	8.3	5.1	7.2	63.8	0.37
1/28 /17	Cente r Town	0.14	5.0	4.9	7.3		5	32.6	0.37
1/28 /17	Magic Mount ain	1.50	1.1	0.4	1.6	6.43	-3.9	12	0.37
1/29 /17	Valley ville	0.36	13.3	7.3	8.3	5.1	7.2	63.8	0.37
1/29 /17	Cente r Town	0.75	6.1	9.0	7.3		5	32.6	0.37
1/29 /17	Magic Mount ain	0.60	3.3	6.0	1.6	6.43	-3.9	12	0.37