

# EXAMPLE - Date Functions - Min Max and Mode

This example shows how you can apply statistical functions on Datetime columns.

## Functions:

| Item              | Description   |
|-------------------|---|
| MINDATE Function  | Computes the minimum value found in all row values in a Datetime column.              |
| MAXDATE Function  | Computes the maximum value found in all row values in a Datetime column.              |
| MODEDATE Function | Computes the most frequent (mode) value found in all row values in a Datetime column. |

## Source:

The following dataset contains a set of three available dates for a set of classes:

| classId | Date1      | Date2      | Date3      |
|---------|------------|------------|------------|
| c001    | 2020-03-09 | 2020-03-13 | 2020-03-17 |
| c002    | 2020-03-09 | 2020-03-06 | 2020-03-21 |
| c003    | 2020-03-09 | 2020-03-16 | 2020-03-23 |
| c004    | 2020-03-09 | 2020-03-23 | 2020-04-06 |
| c005    | 2020-03-09 | 2020-04-09 | 2020-05-09 |
| c006    | 2020-03-09 | 2020-08-09 | 2021-01-09 |

## Transformation:

To compare dates across multiple columns, you must consolidate the values into a single column. You can use the following transformation to do so:

|                              |                     |
|------------------------------|---------------------|
| <b>Transformation Name</b>   | Unpivot columns     |
| <b>Parameter: Columns</b>    | Date1, Date2, Date3 |
| <b>Parameter: Group size</b> | 1                   |

The dataset is now contained in three columns, with descriptions listed below:

| classId           | key                     | value                                      |
|-------------------|-------------------------|--|
| Same as previous. | DateX column identifier | Corresponding value from the DateX column. |

You can use the following to rename the `value` column to `eventDates`:

|                                   |                |
|-----------------------------------|----------------|
| <b>Transformation Name</b>        | Rename columns |
| <b>Parameter: Option</b>          | Manual rename  |
| <b>Parameter: Column</b>          | value          |
| <b>Parameter: New column name</b> | eventDates     |

Using the following transformations, you can create new columns containing the min, max, and mode values for the Datetime values in `eventDates`:

|                                   |                     |
|-----------------------------------|---------------------|
| <b>Transformation Name</b>        | New formula         |
| <b>Parameter: Formula type</b>    | Single row formula  |
| <b>Parameter: Formula</b>         | MINDATE(eventDates) |
| <b>Parameter: New column name</b> | earliestDate        |

|                                   |                     |
|-----------------------------------|---------------------|
| <b>Transformation Name</b>        | New formula         |
| <b>Parameter: Formula type</b>    | Single row formula  |
| <b>Parameter: Formula</b>         | MAXDATE(eventDates) |
| <b>Parameter: New column name</b> | latestDate          |

|                                   |                      |
|-----------------------------------|----------------------|
| <b>Transformation Name</b>        | New formula          |
| <b>Parameter: Formula type</b>    | Single row formula   |
| <b>Parameter: Formula</b>         | MODEDATE(eventDates) |
| <b>Parameter: New column name</b> | mostFrequentDate     |

## Results:

| classId | key   | eventDates | mostFrequentDate | latestDate | earliestDate |
|---------|-------|------------|------------------|------------|--------------|
| c001    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c001    | Date2 | 2020-03-13 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c001    | Date3 | 2020-03-17 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c002    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c002    | Date2 | 2020-03-06 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c002    | Date3 | 2020-03-21 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c003    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c003    | Date2 | 2020-03-16 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c003    | Date3 | 2020-03-23 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c004    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c004    | Date2 | 2020-03-23 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c004    | Date3 | 2020-04-06 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c005    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c005    | Date2 | 2020-04-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c005    | Date3 | 2020-05-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c006    | Date1 | 2020-03-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c006    | Date2 | 2020-08-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |
| c006    | Date3 | 2021-01-09 | 2020-03-09       | 2021-01-09 | 2020-03-06   |