

Date Formulas

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Date functions are useful when you want to compare data collected between two date periods. Date formulas allow you to apply date related functions to your formulas.

Date Formulas

The date formulas include:

Function	Description	Examples
<code>add_days</code>	Returns the result of adding the specified number of days to the given date.	<code>add_days (01/30/2015, 5) = 02/04/2015</code> <code>add_days (invoiced, 30)</code>
<code>add_minutes</code>	Returns the result of adding the specified number of minutes to the given date/datetime/time.	<code>add_minutes (01/30/2015 00:10:20 , 5) = 01/30/2015 00:15:20</code> <code>add_minutes (invoiced , 30)</code>
<code>add_months</code>	Returns the result of adding the specified number of months to the given date.	<code>add_months (01/30/2015, 5) = 06/30/2015</code> <code>add_months (invoiced_date , 5)</code>
<code>add_seconds</code>	Returns the result of adding the specified number of seconds to the given date/ datetime/ time.	<code>add_seconds (01/30/2015 00:00:00, 5) = 06/30/2015 00:00:05</code> <code>add_seconds (invoiced_date , 5)</code>
<code>add_weeks</code>	Returns the result of adding the specified number of weeks to the given date.	<code>add_weeks (01/30/2015, 2) = 02/13/2015</code> <code>add_weeks (invoiced_date , 2)</code>
<code>add_years</code>	Returns the result of adding the specified number of years to the given date.	<code>add_years (01/30/2015, 5) = 01/30/2020</code> <code>add_years (invoiced_date , 5)</code>
<code>date</code>	Returns the date portion of a given date.	<code>date (home visit)</code>

Function	Description	Examples
<code>day</code>	Returns the number (1-31) of the day of the month for the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>day (01/15/2014) = 15</code> <code>day (date ordered)</code> In the following example, the 15th of the month is the start of the fiscal month. <code>day (01/17/2019, fiscal) = 3</code>
<code>day_number_of_quarter</code>	Returns the number of the day in a quarter for a given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>day_number_of_quarter (01/30/2015) = 30</code> In the following example, May 1st is the start of the fiscal year. <code>day_number_of_quarter (01/30/2015, fiscal) = 91</code>
<code>day_number_of_week</code>	Returns the number (1-7) of the day in a week for a given date. Monday is 1, and Sunday is 7. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>day_number_of_week(01/15/2014) = 3</code> <code>day_number_of_week (shipped)</code> In the following example, Wednesday is the start of the fiscal week. <code>day_number_of_week(04/28/2022, fiscal) = 2</code>
<code>day_number_of_year</code>	Returns the number (1-366) of the day in a year from a given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>day_number_of_year (01/30/2015) = 30</code> In the following example, May 1st is the start of the fiscal year. <code>day_number_of_year (01/30/2015, fiscal) = 275</code> <code>day_number_of_year (invoiced)</code>
<code>day_of_week</code>	Returns the day of the week for the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>day_of week (01/30/2015) = Friday</code> <code>day_of_week (serviced)</code> In the following example, the days of the week are in French in the fiscal calendar. <code>day_of_week(04/28/2022, fiscal) = jeudi</code>

Function	Description	Examples
<code>diff_days</code>	Subtracts the second date from the first date and returns the result in number of days.	<code>diff_days (01/15/2014, 01/17/2014)</code> <code>= -2</code> <code>diff_days (01/15/2014 01:00:00, 01/14/2014 23:00:00) = 1</code> <code>diff_days (purchased, shipped)</code>
<code>diff_hours</code>	Subtracts the hour of the second date from the hour of the first date and returns the result in number of hours.	<code>diff_hours (01/15/2014 01:59:59, 01/15/2014 02:00:00) = -1</code> <code>diff_hours (01/15/2014 01:00:00, 01/15/2014 01:59:59) = 0</code> <code>diff_hours (clicked, submitted)</code>
<code>diff_minutes</code>	Subtracts the minute of the second date from the minute of the first date and returns the result in number of minutes.	<code>diff_minutes (01/15/2014 01:59:59, 01/15/2014 02:00:00) = -1</code> <code>diff_minutes (01/15/2014 01:00:00, 01/15/2014 01:00:59) = 0</code> <code>diff_minutes (clicked, submitted)</code>
<code>diff_months</code>	Subtracts the month of the second date from the month of the first date and returns the result in number of months. The optional third parameter specifies the custom calendar the formula uses to calculate the result.	<code>diff_months (12/25/2013, 01/01/2014) = -1</code> <code>diff_months (01/01/2014, 01/25/2014) = 0</code> <code>diff_months (purchased, shipped)</code> <code>diff_months (purchased, shipped, fiscal)</code>
<code>diff_quarters</code>	Subtracts the quarter of the second date from the quarter of the first date and returns the result in number of quarters. The optional third parameter specifies the custom calendar the formula uses to calculate the result.	<code>diff_quarters (12/31/2013, 01/01/2014) = -1</code> <code>diff_quarters (01/01/2014, 03/31/2014) = 0</code> <code>diff_quarters (purchased, shipped)</code> <code>diff_quarters (purchased, shipped, fiscal)</code>
<code>diff_time</code>	Subtracts the second date from the first date and returns the result in number of seconds.	<code>diff_time (01/30/2014, 01/31/2014) = -86,400</code> <code>diff_time (clicked, submitted)</code>

Function	Description	Examples
<code>diff_weeks</code>	Subtracts the week of the second date from the week of the first date and returns the result in number of weeks. The optional third parameter specifies the custom calendar the formula uses to calculate the result.	<pre>diff_weeks (01/05/2014, 01/06/2014) = -1 diff_weeks (01/06/2014, 01/12/2014) = 0 diff_weeks (purchased, shipped) diff_weeks (purchased, shipped, fiscal)</pre>
<code>diff_years</code>	Subtracts the year of the second date from the year of the first date and returns the result in number of years. The optional third parameter specifies the custom calendar the formula uses to calculate the result.	<pre>diff_years (12/25/2013, 01/01/2014) = -1 diff_years (01/01/2014, 12/25/2014) = 0 diff_years (purchased, shipped) diff_years (purchased, shipped, fiscal)</pre>
<code>hour_of_day</code>	Returns the hour of the day for the given date.	<code>hour_of_day (received)</code>
<code>is_weekend</code>	Returns true if the given date falls on a Saturday or Sunday. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<pre>is_weekend (01/31/2015) = true is_weekend (emailed)</pre> In the following example, Wednesday and Thursday are the days of the weekend in the fiscal week. <pre>is_weekend (04/28/2022, fiscal) = true</pre>
<code>month</code>	Returns the month from the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<pre>month (01/15/2014) = January month (date ordered)</pre> In the following example, the months of the year are in Spanish in the fiscal calendar. <pre>month (08/20/2014, fiscal) = agosto</pre>

Function	Description	Examples
<code>month_number</code>	Returns the number (1-12) of the month from a given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>month_number (09/20/2014) = 9</code> <code>month_number (purchased)</code> In the following example, May 1st is the start of the fiscal year. <code>month_number (09/20/2014, fiscal) = 5</code>
<code>month_number_of_quarter</code>	Returns the month (1-3) number for the given date in a quarter. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>month_number_of_quarter (02/20/2018) = 2</code> In the following example, May 1st is the start of the fiscal year. <code>month_number_of_quarter (02/20/2018,fiscal) = 1</code>
<code>now</code>	Returns the current date and time in your locale's standard date and time format. For example, if your locale is English (United States), it returns <code>MM/dd/yyyy hh:mm:ss</code> (04/27/2022 12:34:00).	<code>now ()</code>
<code>quarter_number</code>	Returns the number (1-4) of the quarter associated with the given date. You can add an optional second parameter to specify fiscal or calendar dates. The default is calendar.	<code>quarter_number (04/14/2014) = 2</code> In the following example, May 1st is the start of the fiscal year. <code>quarter_number (04/14/2014, fiscal) = 4</code> <code>quarter_number (shipped)</code>
<code>start_of_month</code>	Returns <code>MMM yyyy</code> for the first day of the month. Your installation configuration can override this setting so that it returns a different format such as <code>MM/dd/yyyy</code> . You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>start_of_month (01/31/2015) = Jan 2015</code> <code>start_of_month (shipped)</code> In the following example, the 15th is the start of the fiscal month. <code>start_of_month (01/14/2022, fiscal) = Dec 2021</code>

Function	Description	Examples
<code>start_of_quarter</code>	Returns the date for the first day of the quarter for the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>start_of_quarter (04/30/2014) = Apr 2014</code> In the following example, May 1st is the start of the fiscal year. <code>start_of_quarter (04/30/2014, fiscal) = Feb 2014</code> <code>start_of_quarter (sold)</code>
<code>start_of_week</code>	Returns the date for the first day of the week for the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>start_of_week (01/31/2020) = 01/27/2020</code> <code>start_of_week (emailed)</code> In the following example, Wednesday is the start of the fiscal week. <code>start_of_week (04/28/2022, fiscal) = 04/27/2022</code>
<code>start_of_year</code>	Returns the date for the first day of the year for the given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>start_of_year (04/30/2014) returns Jan 2014</code> In the following example, May 1st is the start of the fiscal year. <code>start_of_year (04/30/2014, fiscal) returns May 2013</code> <code>start_of_year (joined)</code>
<code>start_of_hour</code>	Returns the time to the closest hour.	<code>start_of_hour (04:18:23am) returns 04am</code>
<code>start_of_min</code>	Returns the time to the closest minute.	<code>start_of_min (04:18:23am) returns 04:18am</code>
<code>time</code>	Returns the time portion of a given date.	<code>time (1/31/2002 10:32) = 10:32</code> <code>time (call began)</code>
<code>today</code>	Returns the current date in your locale's standard date format. For example, if your locale is English (United States), it returns <code>MM/dd/yyyy</code> (04/27/2022).	<code>today ()</code>

Function	Description	Examples
<code>week_number_of_month</code>	Returns the week number for the given date in a month. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>week_number_of_month(03/23/2017)</code> <code>= 3</code> In the following example, the 15th is the start of the fiscal month. <code>week_number_of_month</code> <code>(05/31/2020, fiscal) = 3</code>
<code>week_number_of_quarter</code>	Returns the week number for the given date in a quarter. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>week_number_of_quarter</code> <code>(01/31/2020) = 5</code> In the following example, May 1st is the start of the fiscal year. <code>week_number_of_quarter</code> <code>(05/31/2020, fiscal) = 5</code>
<code>week_number_of_year</code>	Returns the week number for the given date in a year. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>week_number_of_year (01/17/2014)</code> <code>= 3</code> In the following example, May 1st is the start of the fiscal year. <code>week_number_of_year (01/17/2014,</code> <code>fiscal) = 38</code>
<code>year</code>	Returns the year in integer format for a given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>year (01/15/2014) = 2014</code> In the following example, May 1st is the start of the fiscal year. Per standard convention, the fiscal year is defined by the year-end date. <code>year (12/15/2013, fiscal) = 2014</code> <code>year (date ordered)</code>

Function	Description	Examples
<code>year_name</code>	Returns the year in string format for a given date. You can add an optional second parameter to specify whether a fiscal or calendar year is used to calculate the result. The default is calendar.	<code>year (01/15/2014) = "2014"</code> <code>year (date ordered)</code> In the following example, May 1st is the start of the fiscal year. Per standard convention, the fiscal year is defined by the year-end date. <code>year (12/15/2013, fiscal) = "FY_2014"</code>

Calculate Date Formulas

Calculating date formulas is useful when you want to compare data from different date periods. Here are some examples of using date formulas:

Example 1

The following example shows you how to create formulas that you can use to compare data from this week to last week.

- The formula for this week is: `week ( today () ) - week (date)`
- The formula for last week is: `diff_days ( week ( today () ) , week ( date ) )`

Example 2

The following example shows you how to calculate the percent increase from the last date period to this period in terms of revenue.

1. Create the formula: `this week revenue = sum ( if ( this week ) then revenue else 0 )`
2. Then create the formula: `last week revenue = sum ( if (last week ) then revenue else 0 )`
3. Use [nested formulas](#) to calculate the percent increase by creating a parent formula: `percent increase = ( ( this week revenue - last week revenue ) / last week revenue ) * 100`

Fiscal and Gregorian calendars

For the following date formulas, you can further specify either `fiscal`, Gregorian `calendar`, or any other [custom calendar](#) on which to base date calculations. (If you do not specify a calendar type, the formula defaults to the default cluster calendar.)

- `day`
- `day_number_of_quarter`
- `day_number_of_week`
- `day_number_of_year`

- `day_of_week`
- `diff_months`
- `diff_quarters`
- `diff_weeks`
- `diff_years`
- `is_weekend`
- `month`
- `month_number`
- `month_number_of_quarter`
- `quarter_number`
- `start_of_month`
- `start_of_quarter`
- `start_of_week`
- `start_of_year`
- `week_number_of_month`
- `week_number_of_quarter`
- `week_number_of_year`
- `year`

Your Alchemer Dashboard administrator and [Alchemer Support](#) can create a custom calendar to start on any month. If the `fiscal` year is not explicitly configured in the system, `fiscal` defaults to January, the same as the Gregorian `calendar`.

For example, the formula `month_number_of_quarter (05/31/2014)` would return `2` based on the default Gregorian calendar, whereas the formula `month_number_of_quarter (05/31/2014, 'fiscal')` would return `1` if your administrator has configured the fiscal calendar to start in May.

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