

# DATEDIF Function

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Calculates the difference between two valid date values for the specified units of measure.

- Inputs must be column references.
- The first value is used as the baseline to compare the date values.
- Results are calculated to the integer value that is closest to and lower than the exact total; remaining decimal values are dropped.

## Basic Usage

```
derive type:single value:DATEDIF(StartDate, EndDate, month)
```

**Output:** Generates a column of values calculating the number of full months that have elapsed between `StartDate` and `EndDate`.

## Syntax and Arguments

```
derive type:single value:DATEDIF(date1,date2,date_units )
```

Argument	Required?	Data Type	Description
date1	Y	datetime	Starting date to compare
date2	Y	datetime	Ending date to compare
date_units	Y	string	String literal representing the date units to use in the comparison

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

## date1, date2

Date values to compare using the `date_units` units. If `date2 > date1`, then results are positive.

- Date values must be column references.
- If `date1` and `date2` have a specified time zone offset, `DATEDIF` calculates the difference including the timezone offsets.
- If `date1` does not have a specified time zone but `date2` does, `DATEDIF` uses the local time in the same time zone as `date2` to calculate the difference. `DATEDIF` returns the difference without the time zone offset.

## Usage Notes:

Required?	Data Type	Example Value
Yes	String (Date column reference)	LastContactDate

### date\_units

Unit of date measurement to calculate between the two valid dates.

#### Usage Notes:

Required?	Data Type	Example Value
Yes	String	year

#### Accepted Value for date units:

- year
- quarter
- month
- dayofyear
- week
- day
- hour
- minute
- second
- millisecond

### Examples

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

#### Example - aged orders

This example illustrates how to use the `DATEDIF` function to calculate the number of days that have elapsed between the order date and today for purposes of informing the customer.

#### Source:

For the orders in the following set, you want to charge interest for those ones that are older than 90 days.

OrderId	OrderDate	Amount
1001	1/31/16	1000
1002	11/15/15	1000
1003	12/18/15	1000
1004	1/15/16	1000

#### Transform:

The first step is to create a column containing today's (3/16/16) date value:

```
derive type:single value:TODAY() as:'Today'
```

You can now use this value as the basis for computing the number of elapsed days for each invoice:

```
derive type:single value:DATEDIF(OrderDate, Today, day)
```

The age of each invoice in days is displayed in the new column. Now, you want to add a little bit of information to this comparison. Instead of just calculating the number of days, you could write out the action to undertake.

Replace the above with the following:

```
derive type:single value:IF((DATEDIF(OrderDate, Today, day) > 90),'Charge interest','no action') as:'TakeAction'
```

To be fair to your customers, you might want to issue a notice at 45 days that the invoice is outstanding. You can replace the above with the following:

```
derive type:single value:IF(DATEDIF(OrderDate, Today, day) > 90,'Charge interest',IF(DATEDIF(OrderDate, Today, day) > 45),'Send letter','no action')) as: 'TakeAction'
```

By using nested instances of the IF function, you can generate multiple results in the TakeAction column.

For the items that are over 90 days old, you want to charge 5% interest. You can do the following:

```
set col:Amount value:IF(TakeAction == 'Charge interest',Amount * 1.05,Amount)
```

The above sets the value in the Amount column based on the conditional of whether the TakeAction column value is Charge interest. If so, apply 5% interest to the value in the Amount column.

## Results:

OrderId	OrderDate	Amount	Today	TakeAction
1001	1/31/16	1000	03/03/16	no action
1002	11/15/15	1050	03/03/16	Charge interest
1003	12/18/15	1000	03/03/16	Send letter
1004	1/15/16	1000	03/03/16	Send letter

## Example - dayofyear Calculations

This example demonstrates how dayofyear is calculated using the DATEDIF function, specifically how leap years and leap days are handled. Below, you can see some example dates. The year 2012 was a leap year.

## Source:

dateId	d1	d2	Notes
1	1/1/10	10/10/10	Same year; no leap year
2	1/1/10	10/10/11	Different years; no leap year
3	10/10/11	1/1/10	Reverse dates of previous row
4	2/28/11	4/1/11	Same year; no leap year;
5	2/28/12	4/1/12	Same year; leap year; spans leap day
6	2/29/12	4/1/12	Same year; leap year; d1 = leap day
7	2/28/11	2/29/12	Diff years; d2 = leap day; converted to March 1 in d1 year

## Transform:

In this case, the transform is simple:

```
derive type:single value:DATEDIF(d1,d2,dayofyear) as:'datedifs'
```

## Results:

dateId	d1	d2	datedifs	Notes
1	1/1/10	10/10/10	282	Same year; no leap year
2	1/1/10	10/10/11	282	Different years; no leap year
3	10/10/11	1/1/10	-282	Reverse dates of previous row
4	2/28/11	4/1/11	32	Same year; no leap year;
5	2/28/12	4/1/12	33	Same year; leap year; spans leap day
6	2/29/12	4/1/12	32	Same year; leap year; d1 = leap day
7	2/28/11	2/29/12	1	Diff years; d2 = leap day; converted to March 1 in d1 year

### Rows 1 - 3:

- Row 1 provides the baseline calc.
- In Row 2, the same days of the year are used, but the year is different by a count of 1. However, since we are computing `dayofyear` the result is the same as for Row 1.

**NOTE:** When computing `dayofyear`, the year value for `d2` is converted to the year of `d1`. The difference is then computed.

- Row 3 represents the reversal of dates in Row 2.

**NOTE:** Negative values for a `dayofyear` calculation indicate that `d2` occurs earlier in the calendar than `d1`, ignoring year.

### Rows 4 - 7: Leap years

- Row 4 provides a baseline calculation for a non-leap year.
- Row 5 uses the same days of year as Row 4, but the year (2012) is a leap year. Dates span a leap date (February 29). Note that the `DATEDIF` result is 1 more than the value in the previous row.

**NOTE:** When the two dates span a leap date and the year for `d1` is a leap year, then February 29 is included as part of the calculated result.

- Row 6 moves date 1 forward by one day, so it is now on a leap day date. Result is one less than the previous row, which also spanned leap date.
- Row 7 switches the leap date to `d2`. In this case, `d2` is converted to the year of `d1`. However, since it was a leap day originally, in the year of `d1`, this value is March 1. Thus, the difference between the two dates is 1.

**NOTE:** If `d2` is a leap date and the year for `d1` is not a leap year, the date used in for `d2` is March 1 in the year of `d1`.