

## Formula Help - SQL Server

Formulas are expressions made up of data columns, constants, functions, and operators.

Columns are values that come from the data. Their names are enclosed in square brackets, like [ShippedDate]. Depending on their data type, they may be used as text strings, numbers, and date/time values.

Constants are simply specific fixed values that you enter into a Formula.

Functions return values, usually computations based on columns and constants.

Operators do arithmetic and logical comparisons. Logical comparisons must be used with Case statements.

Here are some examples:

[UnitPrice] \* [Quantity]

Multiply two data columns, UnitPrice and Quantity, to make an ExtendedPrice column.

[UnitPrice] \* .04

Multiply a data column by an constant value to calculate the tax applied to the price.

DateDiff( d, [OrderDate], [ShippedDate] )

Get the number of days from the order to the shipment.

DateDiff( w, [ShippedDate], Now )

Get the number of weekdays since the shipment date.

DateName( dw, ShippedDate )

Return the name of the day of the week of the shipment date.

[LastName] + ', ' + [FirstName]

Concatenate columns and strings together. This might return: Smith, John

Upper( [LastName] + ', ' + [FirstName] )

Convert to upper case. This might return: SMITH, JOHN

## Functions

Functions accept some number of values and return a single value.

Function Name	Description	Syntax	Notes
Abs	Returns the absolute value of a number.	Abs(number)	The absolute value of -5 is 5.
Case	Returns one value or another, depending on if the expression is evaluates to True or False.	Case variable When value Then returnvalue Else othervalue End	variable has a values that will be compared. value is something that may be matched in the variable. returnvalue is returned when the variable

Function Name	Description	Syntax	Notes
			and value match. othervalue is returned when there are no matches.  For example, Case [Color] When 'pink' Then 'red' When 'amber' Then 'yellow' Else 'gray' End
Date	Returns the current date.	Getdate()	
DateAdd	Adds or subtracts some interval of time from a date or time.	DateAdd(interval, number, date)	Interval must be one of the following unquoted values: yyyy=year q=quarter m=month y=day of year d=day w=weekday ww=week of year hh=hour n=minute s=second
DateDiff	Computes the difference between two dates.	DateDiff(interval, date1, date2)	Interval must be one of the following unquoted values: yyyy=year q=quarter m=month y=day of year d=day w=weekday ww=week of year hh=hour n=minute s=second
DatePart	Returns part of a date.	DatePart(interval, date)	

Function Name	Description	Syntax	Notes
			Interval must be one of the following unquoted values: yyyy=year q=quarter m=month y=day of year d=day w=weekday ww=week of year hh=hour n=minute s=second
DateSerial	Combines date parts together to make a date.	Cast(Cast(year AS varchar) + '-' + Cast(month AS varchar) + '-' + Cast(day AS varchar) AS DATETIME)	
DateValue	Returns a date from a date string. The function can convert dates from many different formats.	Convert(DATETIME, date_string)	date_string is a string value which represents a date or date/time.
Day	Returns the day of the month. Possible return values are from 1-31.	Day(date)	
FormatCurrency	Format a number value into currency.	'\$' + Convert(varchar(12), NumericValue, 1)	
FormatDateTime	Formats a date.	Convert(varchar, date, 120)	"120" is the code that dictates the date format. More codes are available for different formats.
FormatNumber	Formats a number.	Convert(varchar(12), NumericValue, 1)	
FormatPercent	Formats a number as a percentage.	Convert(varchar, Convert(Decimal(6,2), number)) + '%'	
Hour	Returns the hour of the day. Possible return values are 0-23.	DatePart(hh, date)	
Case	Returns one value or another, depending on if the expression is evaluates to True or False.	Case When Expression Then True Else False End	Expression is a formula that returns True or False. For example, this would

Function Name	Description	Syntax	Notes
			return "Blue", because 1 does not equal 2. Case When 1=2 Then "Red" Else "Blue" End
InString	Returns the character location where one string is found within another string.	CharIndex (expressionToFind ,expressionToSearch [,start_location])	Returns the index value if the string is found, else returns 0.
Int	Returns the integer portion of a number, removing any decimal places.	Round(Floatvalue,0,1)	ex. ROUND (150.75, 0) = 151.00 ROUND (150.75, 0, 1) = 150.00
IsDate	Returns True if the text is a date.	IsDate(text)	Return 1 if True, else returns False
IsNumeric	Returns True if the text is a number.	IsNumeric(text)	Return 1 if True, else returns False
Lower	Converts all characters to lower case.	Lower(text)	
Left	Returns the "length" number of characters from the left side of the input text.	Left(character_expression, integer_expression)	
Len	Returns the number of characters in the text.	Len(text)	
LTrim	Removes the space characters from the left side of the text.	LTrim(text)	
Mid	Returns characters from the middle of the text.	Substring(text,start,length)	"start" is the first character to be returned. The first character is at position 1.  "length" is the number of

Function Name	Description	Syntax	Notes
			characters to be returned.
Minute	Returns the minute of the hour. Possible return values are 0-59.	DatePart(mi,date)	
Month	Returns the month of the year. Possible return values are 1-12.	Month(date)	
MonthName	Returns the name of the month.	DateName(month,date)	
Now	Returns the current date and time.	Getdate()	
Replace	Searches textSearch for textFind, replacing it with the textReplaceWith value.	Replace(string1,string_to_replace, [replacement_string])	
Right	Returns the "length" number of characters from the right side of the input text.	Right(str,len)	
Rand	Returns a random number between 0 and 1.	Rand([seed])	Seed is an integer expression (tinyint, smallint, or int) that gives the seed value. This parameter is Optional.
Round	Returns a number rounded to a specified number of decimal places.	Round(number,length )	ex. ROUND (150.75, 0) = 151.00 ROUND (150.75, 0, 1) = 150.00
RTrim	Removes any space characters from the right side of the text.	RTrim(text)	
Second	Returns the second of the minute. Possible values are 0-59.	DatePart(ss,date)	
Sign	Returns -1 if the number is negative. Returns 1 if the number is positive. Returns 0 if the number is 0.	Sign(number)	
Space	Returns text consisting of the number of spaces.	Space (number)	
Square	Returns the square of a number.	Square(number)	
String		Replicate(text,count)	

Function Name	Description	Syntax	Notes
	Returns text consisting of the character duplicated the number of times.		
Reverse	Returns the text with the characters in reverse order.	Reverse(text)	
TimeValue	Returns a time value from a time string. The function can convert dates from many different formats.	Convert(varchar(8),Convert(datetime,text),108)	
Trim	Removes space characters from both the left and rights sides of the text.	LTrim(RTrim(text))	
Upper	Converts all characters to upper case.	Upper(text)	
Weekday	Returns the number of the day of the week. Possible return values are 1-7.	DatePart(wk,date)	
WeekdayName	Returns the name of the day corresponding to the weekday number.	DateName(dw,date)	
Year	Returns the number of the year of the specified date.	Year(date)	

In the Syntax column, parameters in square brackets are optional.

## Operators

Operators do arithmetic and logical comparisons.

Operator	Description
-	Negation
^	Exponentiation: Power( m, n ). Function returns m raised to the nth power.
*	Multiplication
/	Division
%	Modulus: m%n.
+	Addition
-	Subtraction
+	String Concatenation

## Other Notes of Interest

You may represent true and false values as True and False.