SQL functions

MySQL contains a lot of built in functions which are grouped into string, numeric and date functions

MySQL string functions

ASCII

Returns the ASCII value for the specific character.

Example

```
SELECT ASCII(CustomerName) AS NumCodeOfFirstChar
FROM Customers;
```

CHAR_LENGTH

Returns the length of a string (in characters)

Example

```
SELECT CHAR_LENGTH("SQL Tutorial") AS LengthOfString;
```

CHARACTER_LENGTH

Return the length of the string

Example

```
SELECT CHARACTER_LENGTH("SQL Tutorial") AS LengthOfString;
```

CONCAT

Add several strings together

Example

```
SELECT CONCAT("SQL ", "Tutorial ", "is ", "fun!") AS ConcatenatedString;
```

CONCAT_WS

Add several expressions together, and add a "-" separator between them

Example

```
SELECT CONCAT_WS("-", "SQL", "Tutorial", "is", "fun!") AS ConcatenatedString;
```

FIELD

Returns the index position of a value in a list of values

Example

```
SELECT FIELD("q", "s", "q", "l");
```

FIND_IN_SET

Search for "q" within the list of strings

Example

```
SELECT FIND_IN_SET("q", "s,q,l");
```

FORMAT

Format the number as "#,###,###.##" (and round with two decimal places)

Example

```
SELECT FORMAT(250500.5634, 2);
```

INSERT

Inserts a string within a string at the specified position and for a certain number of characters

Example

```
SELECT INSERT("darwin", 1, 2, "zi");
```

INSTR

Returns the position of the first occurrence of a string in another string

Example

```
SELECT INSTR("cruz", "u") AS MatchPosition;
```

LCASE

Convert the text to lower-case

Example

```
SELECT LCASE("SQL Tutorial is FUN!");
```

LEFT

Extracts the number of characters from a string (starting from left)

Example

```
SELECT LEFT("SQL Tutorial", 3) AS ExtractString;
```

LENGTH

Returns the length of a string (in bytes)

Example

```
SELECT LENGTH("SQL Tutorial") AS LengthOfString;
```

LOCATE

Returns the position of the first occurrence of a substring in a string

Example

```
SELECT LOCATE("u", "cruz") AS MatchPosition;
```

LOWER

Converts a string to lower-case

Example

```
SELECT LOWER("SQL Tutorial is FUN!");
```

LPAD

Left-pads a string with another string, to a certain length

Example

```
SELECT LPAD("SQL Tutorial", 20, "ABC");
```

LTRIM

Remove leading spaces from a string

Example

```
SELECT LTRIM("     SQL Tutorial") AS LeftTrimmedString;
```

MID

Extracts a substring from a string (starting at any position)

Example

```
SELECT MID("SQL Tutorial", 5, 3) AS ExtractString;
```

POSITION

Returns the position of the first occurrence of a substring in a string

Example

```
SELECT POSITION("u" IN "cruz") AS MatchPosition;
```

REPEAT

Repeats a string as many times as specified

Example

```
SELECT REPEAT("SQL", 3)
```

REPLACE

Replaces all occurrences of a substring within a string, with a new substring

Example

```
SELECT REPLACE("SQL Tutorial", "SQL", "HTML")
```

REVERSE

Reverses a string and returns the result

Example

```
SELECT REVERSE("SQL Tutorial");
```

RIGHT

Extracts a number of characters from a string (starting from right)

Example

```
SELECT RIGHT("SQL Tutorial is cool", 4) AS ExtractString;
```

RPAD

Right-pads a string with another string, to a certain length

Example

```
SELECT RPAD("SQL Tutorial", 20, "ABC");
```

RTRIM

Removes trailing spaces from a string

Example

```
SELECT RTRIM("SQL Tutorial     ") AS RightTrimmedString;
```

SPACE

Returns a string of the specified number of space characters

Example

```
SELECT SPACE(10);
```

STRCMP

Compares two strings

Example

```
SELECT STRCMP("SQL Tutorial", "SQL Tutorial");
```

SUBSTR

Extracts a substring from a string (starting at any position)

Example

```
SELECT SUBSTR("SQL Tutorial", 5, 3) AS ExtractString;
```

SUBSTRING

Extracts a substring from a string (starting at any position)

Example

```
SELECT SUBSTRING("SQL Tutorial", 5, 3) AS ExtractString;
```

SUBSTRING_INDEX

Returns a substring of a string before a specified number of delimiter occurs

Example

```
SELECT SUBSTRING_INDEX("meat,fish,egg", ",", 1)
```

TRIM

Removes leading and trailing spaces from a string

Example

```
SELECT TRIM('   SQL Tutorial   ') AS TrimmedString;
```

UCASE

Converts a string to upper-case

Example

```
SELECT UCASE("SQL Tutorial is FUN!");
```

UPPER

Converts a string to upper-case

Example

```
SELECT UPPER("SQL Tutorial is FUN!");
```

MySQL Numeric functions

ABS

Returns the absolute value of a number

Example

```
SELECT ABS(-243.5);
```

ACOS

Returns the arc cosine of a number

Example

```
SELECT ACOS(0.25);
```

ASIN

Returns the arc sine of a number

Example

```
SELECT ASIN(0.25);
```

ATAN

Returns the arc tangent of one or two numbers

Example

```
SELECT ATAN(2.5);
```

ATAN2

Returns the arc tangent of two numbers

Example

```
SELECT ATAN2(0.50, 1);
```

AVG

Returns the average value of an expression

Example

```
SELECT AVG(Price) AS AveragePrice FROM Products;
```

CEIL

Returns the smallest integer value that is >= to a number

Example

```
SELECT CEIL(25.75);
```

CEILING

Returns the smallest integer value that is >= to a number

Example

```
SELECT CEILING(25.75);
```

COS

Returns the cosine of a number

Example

```
SELECT COS(2);
```

COT

Returns the cotangent of a number

Example

```
SELECT COT(6);
```

COUNT

Returns the number of records returned by a select query

Example

```
SELECT COUNT(ProductID) AS NumberOfProducts FROM Products;
```

DEGREES

Converts a value in radians to degrees

Example

```
SELECT DEGREES(1.5);
```

DIV

Used for integer division

Example

```
SELECT 10 DIV 5;
```

EXP

Returns e raised to the power of a specified number

Example

```
SELECT EXP(1);
```

FLOOR

Returns the largest integer value that is <= to a number

Example

```
SELECT FLOOR(25.75);
```

GREATEST

Returns the greatest value of the list of arguments

Example

```
SELECT GREATEST(3, 12, 34, 8, 25);
```

LEAST

Returns the smallest value of the list of arguments

Example

```
SELECT LEAST(3, 12, 34, 8, 25);
```

LN

Returns the natural logarithm of a number

Example

```
SELECT LN(2);
```

LOG

Returns the natural logarithm of a number, or the logarithm of a number to a specified base

Example

```
SELECT LOG(2);
```

LOG10

Returns the natural logarithm of a number to base 10

Example

```
SELECT LOG10(2);
```

LOG2

Returns the natural logarithm of a number to base 2

Example

```
SELECT LOG2(6);
```

MAX

Returns the maximum value in a set of values

Example

```
SELECT MAX(Price) AS LargestPrice FROM Products;
```

MIN

Returns the minimum value in a set of values

Example

```
SELECT MIN(Price) AS SmallestPrice FROM Products;
```

MOD

Returns the remainder of a number divided by another number

Example

```
SELECT MOD(18, 4);
```

PI

Returns the value of PI

Example

```
SELECT PI();
```

POW

Returns the value of a number raised to the power of another number

Example

```
SELECT POW(4, 2);
```

POWER

Returns the value of a number raised to the power of another number

Example

```
SELECT POWER(4, 2);
```

RADIANS

Converts a degree value into radians

Example

```
SELECT RADIANS(180);
```

RAND

Returns a random number

Example

```
SELECT RAND();
```

ROUND

Rounds a number to a specified number of decimal places

Example

```
SELECT ROUND(135.375, 2);
```

SIGN

Returns the sign of a number

Example

```
SELECT SIGN(255.5);
```

SIN

Returns the sine of a number

Example

```
SELECT SIN(2);
```

SQRT

Returns the square root of a number

Example

```
SELECT SQRT(64);
```

SUM

Calculates the sum of a set of values

Example

```
SELECT SUM(Quantity) AS TotalItemsOrdered FROM OrderDetails;
```

TAN

Returns the tangent of a number

Example

```
SELECT TAN(1.75);
```

TRUNCATE

Truncates a number to the specified number of decimal places

Example

```
SELECT TRUNCATE(135.375, 2);
```

MySQL Date functions

ADDDATE

Adds a time/date interval to a date and then returns the date

Example

```
SELECT ADDDATE("2017-06-15", INTERVAL 10 DAY);
```

ADDTIME

Adds a time interval to a time/datetime and then returns the time/datetime

Example

```
SELECT ADDTIME("2017-06-15 09:34:21", "2");
```

CURDATE

Returns the current date

Example

```
SELECT CURDATE();
```

CURRENT_DATE

Returns the current date

Example

```
SELECT CURRENT_DATE();
```

CURRENT_TIME

Returns the current time

Example

```
SELECT CURRENT_TIME();
```

CURRENT_TIMESTAMP

Returns the current date and time

Example

```
SELECT CURRENT_TIMESTAMP();
```

CURTIME

Returns the current time

Example

```
SELECT CURTIME();
```

DATE

Extracts the date part from a datetime expression

Example

```
SELECT DATE("2017-06-15");
```

DATEDIFF

Returns the number of days between two date values

Example

```
SELECT DATEDIFF("2017-06-25", "2017-06-15");
```

DATE_ADD

Adds a time/date interval to a date and then returns the date

Example

```
SELECT DATE_ADD("2017-06-15", INTERVAL 10 DAY);
```

DATE_FORMAT

Formats a date

Example

```
SELECT DATE_FORMAT("2017-06-15", "%Y");
```

DATE_SUB

Subtracts a time/date interval from a date and then returns the date

Example

```
SELECT DATE_SUB("2017-06-15", INTERVAL 10 DAY);
```

DAY

Returns the day of the month for a given date

Example

```
SELECT DAY("2017-06-15");
```

DAYNAME

Returns the weekday name for a given date

Example

```
SELECT DAYNAME("2017-06-15");
```

DAYOFMONTH

Returns the day of the month for a given date

Example

```
SELECT DAYOFMONTH("2017-06-15");
```

DAYOFWEEK

Returns the weekday index for a given date

Example

```
SELECT DAYOFWEEK("2017-06-15");
```

DAYOFYEAR

Returns the day of the year for a given date

Example

```
SELECT DAYOFYEAR("2017-06-15");
```

EXTRACT

Extracts a part from a given date

Example

```
SELECT EXTRACT(MONTH FROM "2017-06-15");
```

FROM_DAYS

Returns a date from a numeric datevalue

Example

```
SELECT FROM_DAYS(685467);
```

HOUR

Returns the hour part for a given date

Example

```
SELECT HOUR("2017-06-20 09:34:00");
```

LAST_DAY

Extracts the last day of the month for a given date

Example

```
SELECT LAST_DAY("2017-06-20");
```

LOCALTIME

Returns the current date and time

Example

```
SELECT LOCALTIME();
```

LOCALTIMESTAMP

Returns the current date and time

Example

```
SELECT LOCALTIMESTAMP();
```

MAKEDATE

Creates and returns a date based on a year and a number of days value

Example

```
SELECT MAKEDATE(2017, 3);
```

MAKETIME

Creates and returns a time based on an hour, minute, and second value

Example

```
SELECT MAKETIME(11, 35, 4);
```

MICROSECOND

Returns the microsecond part of a time/datetime

Example

```
SELECT MICROSECOND("2017-06-20 09:34:00.000023");
```

MINUTE

Returns the minute part of a time/datetime

Example

```
SELECT MINUTE("2017-06-20 09:34:00");
```

MONTH

Returns the month part for a given date

Example

```
SELECT MONTH("2017-06-15");
```

MONTHNAME

Returns the name of the month for a given date

Example

```
SELECT MONTHNAME("2017-06-15");
```

NOW

Returns the current date and time

Example

```
SELECT NOW();
```

PERIOD_ADD

Adds a specified number of months to a period

Example

```
SELECT PERIOD_ADD(201703, 5);
```

PERIOD_DIFF

Returns the difference between two periods

Example

```
SELECT PERIOD_DIFF(201710, 201703);
```

QUARTER

Returns the quarter of the year for a given date value

Example

```
SELECT QUARTER("2017-06-15");
```

SECOND

Returns the seconds part of a time/datetime

Example

```
SELECT SECOND("2017-06-20 09:34:00.000023");
```

SEC_TO_TIME

Returns a time value based on the specified seconds

Example

```
SELECT SEC_TO_TIME(1);
```

STR_TO_DATE

Returns a date based on a string and a format

Example

```
SELECT STR_TO_DATE("August 10 2017", "%M %d %Y");
```

SUBDATE

Subtracts a time/date interval from a date and then returns the date

Example

```
SELECT SUBDATE("2017-06-15", INTERVAL 10 DAY);
```

SUBTIME

Subtracts a time interval from a datetime and then returns the time/datetime

Example

```
SELECT SUBTIME("2017-06-15 10:24:21.000004", "5.000001");
```

SYSDATE

Returns the current date and time

Example

```
SELECT SYSDATE();
```

TIME
Extracts the time part from a given time/datetime

Example

```
SELECT TIME("19:30:10");
```

TIME_FORMAT

Formats a time by a specified format

Example

```
SELECT TIME_FORMAT("19:30:10", "%H %i %s");
```

TIME_TO_SEC

Converts a time value into seconds

Example

```
SELECT TIME_TO_SEC("19:30:10");
```

TIMEDIFF

Returns the difference between two time/datetime expressions

Example

```
SELECT TIMEDIFF("13:10:11", "13:10:10");
```

TIMESTAMP

Returns a datetime value based on a date or datetime value

Example

```
SELECT TIMESTAMP("2017-07-23",  "13:10:11");
```

TO_DAYS

Returns the number of days between a date and date "0000-00-00"

Example

```
SELECT TO_DAYS("2017-06-20");
```

WEEK

Returns the week number for a given date

Example

```
SELECT WEEK("2017-06-15");
```

WEEKDAY

Returns the weekday number for a given date

Example

```
SELECT WEEKDAY("2017-06-15");
```

WEEKOFYEAR

Returns the week number for a given date

Example

```
SELECT WEEKOFYEAR("2017-06-15");
```

YEAR

Returns the year part for a given date

Example

```
SELECT YEAR("2017-06-15");
```

YEARWEEK

Returns the year and week number for a given date

Example

```
SELECT YEARWEEK("2017-06-15");
```