

MySQL[®]

Notes for Professionals

Chapter 20: String operations

Name	Description
ASCII()	Return numeric value of left-most character
BIN()	Return a string containing binary representation of a number
BIT_LENGTH()	Return length of argument in bits
CHAR()	Return the character for each integer passed
CHAR_LENGTH()	Return number of characters in argument
CHARACTER_LENGTH()	Synonym for CHAR_LENGTH()
CONCAT()	Return concatenated string
CONCAT_WS()	Return concatenate with separator
ELT()	Return string at index number
EXPORT_SET()	Return a string such that for every bitset in the value bits, you get an on string and for every unset bit, you get an off string
FIELD()	Return the index (position) of the first argument in the subsequent arguments
FIND_IN_SET()	Return the index (position) of the first argument within the second argument
FORMAT()	Return a number formatted to specified number of decimal places
FROM_BASE64()	Decode to a base-64 string and return result
HEX()	Return a hexadecimal representation of a decimal or string value
INSERT()	Insert a substring at the specified position up to the specified number of characters
INSTR()	Return the index of the first occurrence of substring
LCASE()	Synonym for LOWER()
LEFT()	Return the leftmost number of characters as specified
LENGTH()	Return the length of a string in bytes
LIKE	Simple pattern matching
LOAD_FILE()	Load the named file
LOCATE()	Return the position of the first occurrence of substring
LOWER()	Return the argument in lowercase
LPAD()	Return the string argument, left-padded with the specified string
LTRIM()	Remove leading spaces
MAKE_SET()	Return a set of comma-separated strings that have the corresponding bit in bits set
MATCH	Perform full-text search
MID()	Return a substring starting from the specified position
NOT LIKE	Negation of simple pattern matching
NOT REGEXP	Negation of REGEXP
OCTET()	Return a string containing octal representation of a number
OCTET_LENGTH()	Synonym for LENGTH()
ORD()	Return character code for leftmost character of the argument
POSITION()	Synonym for LOCATE()
QUOTE()	Escape the argument for use in an SQL statement
REGEXP	Pattern matching using regular expressions
REPEAT()	Repeat a string the specified number of times
REPLACED	Replace occurrences of a specified string
REVERSE()	Reverse the characters in a string
RIGHT()	Return the specified rightmost number of characters
RLIKE	Synonym for REGEXP

Chapter 19: Arithmetic

Section 19.1: Arithmetic Operators

MySQL provides the following arithmetic operators

Operator	Name	Example
+	Addition	<code>SELECT 3+5; --> 8</code> <code>SELECT 3.5+2.5; --> 6.0</code> <code>SELECT 3.7+3.2; --> 6.9</code>
-	Subtraction	<code>SELECT 3-5; --> -2</code> <code>SELECT 3-(5); --> -2</code>
*	Multiplication	<code>SELECT 3*4; --> 12</code> <code>SELECT 3*4.5; --> 13.5</code>
/	Division	<code>SELECT 10/4; --> 2.5</code> <code>SELECT 10/4.5; --> 2.2222222222222</code> <code>SELECT 10/4.5; --> NULL</code>
DIV	Integer Division	<code>SELECT 10 DIV 4; --> 2</code> <code>SELECT 10 DIV 4.5; --> 2</code>
%	Modulo	<code>SELECT 10 MOD 4; --> 2</code> <code>SELECT 10 MOD 4.5; --> 1.5</code> <code>SELECT -10 MOD 4; --> -2</code> <code>SELECT -10 MOD 4.5; --> -1.5</code>

BIGINT
If the numbers in your arithmetic are all integers, MySQL uses the **BIGINT** (signed 64-bit) data type. For example:
`SELECT (1024 * 1024 + 1024 * 1024 + 1024 * 1024 + 1024 * 1024) + 1; --> 1,352,921,504,608.5`
and
`SELECT (1024 * 1024 + 1024 * 1024 + 1024 * 1024 + 1024 * 1024 + 1024 * 1024) + 1; --> 1,352,921,504,608.5`

DOUBLE
If any numbers in your arithmetic are fractional, MySQL uses **DOUBLE** (IEEE 754 64-bit floating point). Be careful when using floating point arithmetic, because many floating point numbers cannot be represented exactly. There is no way to avoid these errors when using floating point, they are built in to the technology.
If you use **DECIMAL** values in trigonometric computations, they are implicitly converted to floating point, and then

Chapter 21: Date and Time Operations

Section 21.1: Date arithmetic

`NOW() + INTERVAL 1 DAY -- This time tomorrow`
`CURDATE() - INTERVAL 4 DAY -- 4 mornings ago`

Show the mysql questions stored that were asked 3 to 10 hours ago (180 to 600 minutes ago)

```
SELECT QID, askdate, answerid, answer FROM questions, answers WHERE QID=askdate AND answerid=answer ORDER BY QID DESC LIMIT 50;
```

QID	askdate	answerid
3854620	2016-07-23 22:06:50	192
3854619	2016-07-23 21:53:06	195
3854618	2016-07-23 21:48:46	200
...

MySQL manual pages for [TIMESTAMPDIFF\(\)](#)

Beware Do not try to use expressions like `CURDATE() + 1` for date arithmetic in MySQL. They don't return what you expect, especially if you're accustomed to the Oracle database product. Use `CURDATE() + INTERVAL 1 DAY` instead.

Section 21.2: SYSDATE(), NOW(), CURDATE()

`SELECT SYSDATE();`
This function returns the current date and time as a value in 'YYYY-MM-DD HH:MM:SS' or 'YYYYMMDDHHMMSS' format, depending on whether the function is used in a string or numeric context. It returns the date and time in the current time zone.

`SELECT NOW();`
This function is a synonym for `SYSDATE()`.

`SELECT CURDATE();`
This function returns the current date, without any time, as a value in 'YYYY-MM-DD' or 'YYYYMMDD' format, depending on whether the function is used in a string or numeric context. It returns the date in the current time zone.

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