

Function	What It Does
AVG(col)	Returns the average of the values in the named column
COUNT(col)	Returns a count of the number of non-NULL records in the named column
MIN(col)	Returns the minimum value in the named column
MAX(col)	Returns the maximum value in the named column
SUM(col)	Returns the total of the values in the named column
STD(col) aka STDDEV(col)	Returns the standard deviation of the values in the named column
VARIANCE(col)	Returns the statistical variance of the values in the named columns
GROUP_CONCAT(col)	Returns a concatenated set of column values belonging to a group

TABLE 7-2 MySQL Aggregate Functions

Function	What It Does
ASCII(char)	Returns the ASCII value of char
BIT_LENGTH(str)	Returns the length of str in bits
CHAR(x1, x2, . . . , xn)	Returns a string containing ASCII characters corresponding to x1, x2, . . . , xn
CONCAT(s1, s2, . . . , sn)	Concatenates s1, s2, . . . , sn into a single string
CONCAT_WS(sep, s1, s2, . . . , sn)	Concatenates s1, s2, . . . , sn into a single string, separated with sep

TABLE 7-3 MySQL String Functions

Function	What It Does
INSERT(str,x,y,instr)	Returns the result of inserting instr into str at position x with length y
FIELD(str,s1,s2,...,sn)	Parses the list s1,s2,...,sn for str and returns the index of the matching element, if any
FIND_IN_SET(str,list)	Parses the comma-separated list list for str and returns the position of the matching index, if any
LCASE(str) aka LOWER(str)	Returns str with all characters lowercase
LEFT(str,x)	Returns the first x characters of str from the left
LENGTH(s)	Returns the number of characters in str
LPAD(str,n,pad)	Pads str from the left with pad until it contains n characters
LTRIM(str)	Trims leading white space from str
ORD(char)	Returns a multibyte-safe representation of char
POSITION(substr,str)	Returns the position of the first occurrence of substr in str
QUOTE(str)	Escapes single quotes in str with backslashes
REPEAT(str,x)	Returns the result of repeating str x times
REPLACE(str,srchstr,rplcstr)	Replace all occurrences of srchstr in str with rplcstr
REVERSE(str)	Returns the result of reversing str
RIGHT(str,x)	Returns the first x characters of str from the right
RPAD(str,x,pad)	Pads str from the left with pad until it contains n characters
RTRIM(str)	Trims trailing white space from str
STRCMP(s1,s2)	Compares string s1 with string s2
SUBSTRING(str,x,y) aka MID(str,x,y)	Returns a substring of length y characters, starting from position x in str
TRIM(str)	Trim leading and trailing white space from str
UCASE(str) aka UPPER(str)	Returns str with all characters uppercase

TABLE 7-3 MySQL String Functions (continued)

Function	What It Does
CURDATE() aka CURRENT_DATE()	Returns the current date
CURTIME() aka CURRENT_TIME()	Returns the current time
DATE_ADD(date, INTERVAL int keyword)	Returns the result of adding the duration int to date (int must be formatted as per the rules for keyword)
DATE_FORMAT(date,fmt)	Formats date as per format specified in fmt
DATE_SUB(date, INTERVAL int keyword)	Returns the result of subtracting the duration int from date (int must be formatted as per the rules for keyword)
DAYOFWEEK(date)	Returns a number (1 to 7) representing the day of the week for date
DAYOFMONTH	Returns the day component (1 to 31) of date

TABLE 7-4 MySQL Date and Time Functions

Function	What It Does
DAYOFYEAR(date)	Returns a number (1 to 366) representing the day of the year for date
DAYNAME(date)	Returns the weekday name for date
EXTRACT(keyword FROM date)	Returns a specific component of date, as per keyword
FROM_DAYS(x)	Returns a date created by adding x days to year 0
FROM_UNIXTIME(ts, fmt)	Formats UNIX timestamp ts as per format specified in fmt
HOUR(time)	Returns the hour component (0–23) of time
MINUTE(time)	Returns the minute component (0–59) of time
MONTH(date)	Returns the month component (1–12) for date
MONTHNAME(date)	Returns the month name for date
NOW()	Returns the current date and time
QUARTER(date)	Returns the quarter (1–4) in which date falls
PERIOD_ADD(date, mon)	Returns the result of adding mon months to date
PERIOD_DIFF(date1, date2)	Returns the difference, in months, between date1 and date2
SECOND(time)	Returns the second component (0–59) of time
SEC_TO_TIME(x)	Converts x seconds into a readable time value
TIME_FORMAT(time, fmt)	Formats time as per format specified in fmt
TIME_TO_SEC(time)	Converts time into seconds
TO_DAYS(date)	Returns the number of days between year 0 and date
UNIX_TIMESTAMP(date)	Returns a UNIX timestamp representation of date
WEEK(date)	Returns the week number (0–53) for date
YEAR(date)	Returns the year component (1000–9999) of date

TABLE 7-4 MySQL Date and Time Functions (continued)

TABLE 7-5

Keywords and Formats for Use with DATE_ADD() and DATE_SUB()

Keyword	Format for Interval Value
DAY	DAYS
DAY_HOUR	"DAYS HOURS"
DAY_MINUTE	"DAYS HOURS:MINUTES"
DAY_SECOND	"DAYS HOURS:MINUTES:SECONDS"
HOUR	HOURS
HOUR_MINUTE	"HOURS:MINUTES"
HOUR_SECOND	"HOURS:MINUTES:SECONDS"
MINUTE	MINUTES
MINUTE_SECOND	"MINUTES:SECONDS"
MONTH	MONTHS
SECOND	SECONDS
YEAR	YEARS
YEAR_MONTH	"YEARS-MONTHS"

Function	What It Does
AES_ENCRYPT(str, key)	Returns an Advanced Encryption Standard (AES)-encrypted version of str using secret key key
AES_DECRYPT(str, key)	Decrypts an AES-encrypted string str using secret key key
DECODE(str, key)	Decodes encrypted string str with key
ENCRYPT(str, salt)	Returns an encrypted version of str with salt using the UNIX crypt() function
ENCODE(str, key)	Encodes str with key
MD5()	Returns an MD5 checksum for str
PASSWORD(str)	Returns an encrypted version of str
SHA()	Returns a Secure Hash Algorithm (SHA) checksum for str

TABLE 7-6 MySQL Encryption Functions

Function

What It Does

CASE WHEN [test1] THEN [result1] ...
ELSE [default] END

Returns resultN if testN evaluates as true,
else returns default

CASE [test] WHEN [val1] THEN
[result1] ...
ELSE [default] END

Returns resultN if test evaluates to valN,
else returns default

IF(test, t, f)

Returns t if test evaluates as true;
else returns f

IFNULL(arg1, arg2)

Returns arg1 if arg1 is not NULL; else
returns arg2

NULLIF(arg1, arg2)

Returns NULL if arg1 equals arg2; else
returns arg2

TABLE 7-7 MySQL Control Flow Functions

Function	What It Does
DATE_FORMAT(date, fmt)	Formats date as per format specified in fmt
FORMAT(x, y)	Formats x as a comma-separated number sequence, rounded off to y decimal places
INET_ATON(ip)	Returns a numeric representation of IP address ip
INET_NTOA(num)	Returns the IP address representation of num
TIME_FORMAT(time, fmt)	Formats time as per format specified in fmt

TABLE 7-8 MySQL Formatting Functions

TABLE 7-9
MySQL Date/Time
Formatting Codes

Symbol	What It Means
%a	Short weekday name (Sun, Mon...)
%b	Short month name (Jan, Feb...)
%d	Day of the month
%H	Hour (01, 02...)
%I	Minute (00, 01...)
%j	Day of the year (001, 002...)
%m	Two-digit month (00, 01...)
%M	Long month name (January, February...)
%p	AM/PM
%r	Time in 12-hour format
%S	Second (00, 01...)
%T	Time in 24-hour format
%w	Day of the week (0,1...)
%W	Long weekday name (Sunday, Monday...)
%Y	Four-digit year

Function	What It Does
DATABASE()	Returns name of currently selected database
BENCHMARK(count,expr)	Evaluates expr count times
CONNECTION_ID()	Returns client connection ID
FOUND_ROWS()	Returns the number of rows returned by the last SELECT query (exempt of the effect of LIMIT)
GET_LOCK(str,dur)	Obtains a lock named str for dur seconds
IS_FREE_LOCK(str)	Checks to see whether lock named str is free
LAST_INSERT_ID()	Returns the last AUTOINCREMENT ID automatically generated by the system
MASTER_POS_WAIT(log, pos, dur)	Locks the master server for dur seconds until the slave has synchronized itself to the events in log up to position pos
RELEASE_LOCK(str)	Releases lock named str
USER() aka SYSTEM_USER()	Returns name of currently logged-in user
VERSION()	Returns MySQL server version

TABLE 7-10 MySQL System Information Functions

Function	What It Does
ABS (x)	Returns absolute value of x
ACOS (x)	Returns the arc cosine of x (radians)
ASIN (x)	Returns the arc sine of x (radians)
ATAN (x)	Returns the arc tangent of x (radians)
CEILING (x)	Returns the closest integer value greater than x
COS (x)	Returns cosine of x (radians)
COT (x)	Returns the cotangent of x (radians)
DEGREES (x)	Returns the result of converting x radians to degrees
EXP (x)	Returns e^x
FLOOR (x)	Returns the closest integer value less than x
GREATEST (x ₁ , x ₂ , . . . , x _n)	Returns the largest value in a number set
LEAST (x ₁ , x ₂ , . . . , x _n)	Returns the smallest value in a number set
LN (x)	Returns $\log_e x$
LOG (x, y)	Returns $\log_y x$
MOD (x, y)	Returns the modulo (remainder) of x / y
PI ()	Returns the value of pi
POW (x, y) aka POWER (x, y)	Returns x^y
RAND ()	Returns a random number between 0 and 1
RADIANS (x)	Returns the result of converting x degrees to radians
ROUND (x, y)	Returns x rounded off to the closest integer, with y decimal places
SIGN (x)	Returns number representing the sign of x
SQRT (x)	Returns $x^{1/2}$
SIN (x)	Returns the sine of x (radians)
TAN (x)	Returns the tangent of x (radians)
TRUNCATE (x, y)	Returns the result of truncating x to y decimal places