

## numeric

<b>TINYINT</b> [(digits)] [unsigned zerofill]	256
<b>BIT,BOOL,BOOLEAN</b>	synonyms for tinyint(1)
<b>SMALLINT</b> [(digits)] [unsigned zerofill]	65,536
<b>MEDIUMINT</b> [(digits)] [unsigned zerofill]	16,777,216
<b>INT,INTEGER</b> [(digits)] [unsigned zerofill]	4,294,967,296
<b>BIGINT</b> [(digits)] [unsigned zerofill]	18,446,744,073,709,551,616
<b>FLOAT</b> [(digits, digits after decimal)] [unsigned zerofill]	23 digits
<b>DOUBLE</b> [(digits, digits after decimal)] [unsigned zerofill]	24...53 digits
<b>DECIMAL</b> [(digits, digits after decimal)] [unsigned zerofill]	a type of DOUBLE stored as a string

## strings

<b>CHAR</b> [(length)]	0...255 – fixed length, right-padded with spaces
<b>VARCHAR</b> [(length)]	0...255 – variable length (trailing spaces removed)
<b>BINARY,VARBINARY</b> [(length)]	0...255 – stores bytes instead of character strings
<b>TINYTEXT TINYBLOB</b>	0...255 – text stores strings, blob stores bytes
<b>TEXT BLOB</b>	0...65,535 – text stores strings, blob stores bytes
<b>MEDIUMTEXT MEDIUMBLOB</b>	0...16,777,215 – text stores strings, blob stores bytes
<b>LONGTEXT LONGBLOB</b>	0...4,294,967,295 – text stores strings, blob stores bytes
<b>ENUM</b> (value1, value2,...)	list of up to 65,535 members, can have only one value
<b>SET</b> (value1, value2,...)	list of up to 64 members, can have zero or more values

**REGEXP** 'expression'

## date & time

<b>DATE</b>	'YYYY-MM-DD'
<b>DATETIME</b>	'YYYY-MM-DD HH:MM:SS'
<b>TIMESTAMP</b> [(display width)]	'YYYY-MM-DD HH:MM:SS' – display widths: 6, 8, 12 or 14
<b>TIME</b>	'HH:MM:SS'
<b>YEAR</b> [(2 4)]	'YYYY' – a year in 2-digit or 4-digit format

## commands

### connecting to a database

# mysql [-h hostname] [-u username] [-ppassword] [dbname]

### importing data

# mysql dbname < dbdumpfile.sql

### backup a database

# mysqldump [-options] dbname [> dumpfile.sql]

## functions

<b>ABS</b> (X)	<b>SIGN</b> (X)
<b>FLOOR</b> (X)	<b>CEILING</b> (X)
<b>ROUND</b> (X[,D])	<b>EXP</b> (X)
<b>DIV</b> (X)	<b>MOD</b> (N,M)
<b>POW</b> (X,Y)	<b>POWER</b> (X,Y)
<b>SQRT</b> (X)	<b>RAND</b> [(seed)]
<b>PI</b> ()	<b>DEGREES</b> (X)
<b>RADIANS</b> (X)	<b>COT</b> (X)
<b>COS</b> (X)	<b>ACOS</b> (X)
<b>SIN</b> (X)	<b>ASIN</b> (X)
<b>TAN</b> (X)	<b>ATAN</b> (X)
<b>LOG</b> (X), <b>LOG2</b> (X), <b>LOG10</b> (X)	<b>LN</b> (X)
<b>TRUNCATE</b> (X, D)	



## functions

<b>ASCII</b> ('str')	<b>CONV</b> (number,from_base,to_base)	<b>BIN</b> (num), <b>OCT</b> (num), <b>HEX</b> (num)
<b>ORD</b> ('str')	<b>CHAR</b> (number[ USING charset],...)	<b>CONCAT</b> ('str1','str1',...)
<b>LENGTH</b> ('str')	<b>CHAR_LENGTH</b> ('str')	<b>CONCAT_WS</b> ('separator','str1','str2')
<b>BIT_LENGTH</b> ('str')	<b>REVERSE</b> ('str')	<b>SOUNDEX</b> ('str')
<b>LCASE</b> ('str')	<b>UCASE</b> ('str')	<b>QUOTE</b> ('str')
<b>LPAD</b> ('str',len,'padstr')	<b>RPAD</b> ('str',len,'padstr')	<b>ELT</b> (number,'str1','str2','str3',...)
<b>LEFT</b> ('str',length)	<b>RIGHT</b> ('str',length)	<b>FIELD</b> ('str','str1','str2','str3',...)
<b>LTRIM</b> ('str')	<b>RTRIM</b> ('str')	<b>LOAD_FILE</b> ('filename')
<b>SPACE</b> (count)	<b>TRIM</b> ('str')	<b>SUBSTRING</b> ('str',pos[,length])
<b>REPLACE</b> ('str','from','to')	<b>REPEAT</b> ('str',count)	<b>SUBSTRING_INDEX</b> ('str','del',count)
<b>INSTR</b> ('str','substr')	<b>INSERT</b> ('str',pos,length,'newstr')	<b>STRCMP</b> ('str1','str2')
	<b>LOCATE</b> ('substr','str'[ ,pos])	

## functions

<b>WEEK</b> ('date'[ , mode])	<b>WEEKDAY</b> ('date')	<b>DAYOFWEEK</b> ('date')
<b>DAYOFYEAR</b> ('date')	<b>MONTH</b> ('date')	<b>MONTHNAME</b> ('date')
<b>QUARTER</b> ('date')	<b>YEAR</b> ('date')	<b>YEARWEEK</b> ('date'[ , mode])
<b>HOURL</b> ('date')	<b>MINUTE</b> ('date')	<b>SECOND</b> ('date')
<b>TO_DAYS</b> ('date')	<b>FROM_DAYS</b> (number)	<b>LAST_DAY</b> ('date')
<b>SEC_TO_TIME</b> (seconds)	<b>TIME_TO_SEC</b> ('time')	<b>SYSDATE</b> ()
<b>CURTIME</b> () , <b>CURRENT_TIME</b> () , <b>CURRENT_TIME</b>	<b>TIME_FORMAT</b> ('date','format')	
<b>CURDATE</b> () , <b>CURRENT_DATE</b> () , <b>CURRENT_DATE</b>	<b>DATE_FORMAT</b> ('date','format')	
<b>NOW</b> () , <b>CURRENT_TIMESTAMP</b> () , <b>CURRENT_TIMESTAMP</b> , <b>LOCALTIME</b> () , <b>LOCALTIME</b>		
<b>UNIX_TIMESTAMP</b> (['date'])	<b>FROM_UNIXTIME</b> ('unix_timestamp'[ , 'format'])	
<b>PERIOD_ADD</b> ('period',num)	<b>PERIOD_DIFF</b> ('period',num)	<b>EXTRACT</b> (unit FROM 'date')
<b>ADDDATE</b> ('date',days)   <b>ADDDATE</b> ('date',INTERVAL expr unit)	<b>DATE_ADD</b> ('date',INTERVAL expr unit)	
<b>SUBDATE</b> ('date',days)   <b>SUBDATE</b> ('date',INTERVAL expr unit)	<b>DATE_SUB</b> ('date',INTERVAL expr unit)	

# syntax & examples

## Create a database

```
mysql> CREATE DATABASE dbname;
```

## Select a database

```
mysql> USE dbname;
```

## Delete a database

```
mysql> DROP DATABASE dbname;
```

## Add a user to a database

```
mysql> GRANT ALL [PRIVILEGES] ON database.* TO [username]@[hostname] [IDENTIFIED BY 'password'];
```

## List tables in a database

```
mysql> SHOW TABLES;
```

## Show table format

```
mysql> DESCRIBE table;
```

## Delete records in a table

```
mysql> DELETE FROM TABLE table [WHERE conditions];
```

## Create a table

```
mysql> CREATE TABLE table (column definition,...) [options...];
```

## Change a column definition in a table

```
mysql> ALTER TABLE table CHANGE column definition;
```

## Change auto\_increment value

```
mysql> ALTER TABLE table AUTO_INCREMENT=value;
```

## Add a new record

```
mysql> INSERT table (column1, column2,...) VALUES (expr1, expr2...);
```

## Update a record in a single table

```
mysql> UPDATE table SET column=expr[, column=expr...] [WHERE conditions] [ORDER BY ...] [LIMIT count]
```

## Retrieve information from a table

```
mysql> SELECT {*[expr|column,...]} [FROM table,...] [WHERE conditions] [GROUP BY ...] [HAVING conditions] [ORDER BY ...] [LIMIT count]
```

## Show create table syntax

```
mysql> SHOW CREATE TABLE table;
```

## Add a column to a table

```
mysql> ALTER TABLE table ADD column definition [AFTER col];
```

## Alter table syntax

```
mysql> ALTER TABLE table change specs[, change specs...];
```

## or Add a new record

```
mysql> INSERT table SET column=expr[, column=expr...];
```

## operators

AND, &&	Logical AND
, OR	Logical OR
XOR	Logical XOR
BINARY	Cast a string to binary string
&	Bitwise AND
	Bitwise OR
^	Bitwise XOR
<<	Left shift
>>	Right shift
-	Invert bits
-	Change sign of value
-	Minus
+	Addition
*	Multiplication
%	Modulo
DIV, /	Integer division, division
<=>	NULL-safe equal to
=	Equal operator
>=	Greater than or equal to
>	Greater than
<=	Less than or equal to
<	Less than
IS	Boolean test
LIKE	Simple pattern matching
!=, <>	Not equal to
NOT LIKE	Negative simple match
NOT REGEXP	Negative regular expression
NOT, !	Negates value
REGEXP	Match on regular expression
RLIKE	Synonym for REGEXP
SOUNDS LIKE	Compare sounds

## miscellaneous functions

DATABASE()	VERSION()	CONNECTION_ID()
USER()	CURRENT_USER()	PASSWORD('string')
FOUND_ROWS()	ROW_COUNT()	LAST_INSERT_ID([expr])
BIT_COUNT(number)	FORMAT(number,digits)	BENCHMARK(count, expr)
CAST(expr AS type)	CONVERT(expr, type)	CHARSET('str')
INET_NTOA(expr)	INET_ATON(expr)	LEAST(val1,val2,...)
GET_LOCK('lock',timeout)	RELEASE_LOCK('lock')	GREATEST(val1,val2,...)
ENCRYPT('str','salt')	DECODE('crypt','pass')	ENCODE('str','password')
MD5('string')	SHA1('string')	AES_ENCRYPT('str','key')
COMPRESS('string')	UNCOMPRESS('string')	AES_DECRYPT('str','key')
DES_ENCRYPT('str',{keynum keystr})		DES_DECRYPT('string','key')

## grouping functions

AVG(expr)	SUM(expr)
MIN(expr)	MAX(expr)
VARIANCE(expr)	STD(expr)
BIT_AND(expr)	BIT_OR(expr)
COUNT(expr)	
COUNT(DISTINCT expr[, expr...])	
GROUP_CONCAT(expr)	
GROUP_CONCAT([DISTINCT] expr[, expr...] [ORDER BY {int column}expr] [ASC DESC] [, column ...] [SEPARATOR 'string'])	

## control flow

```
IF(expression,true_result,false_result)
IFNULL(expression,result)
NULLIF(expression1,expression2)
CASE [value] WHEN [comparison] THEN [result]
    [WHEN [comparison] THEN result...]
    [ELSE result] END
```