

MySQL Data Types

| | |
|-------------|---|
| CHAR | String (0 - 255) |
| VARCHAR | String (0 - 255) |
| TINYTEXT | String (0 - 255) |
| TEXT | String (0 - 65535) |
| BLOB | String (0 - 65535) |
| MEDIUMTEXT | String (0 - 16777215) |
| MEDIUMBLOB | String (0 - 16777215) |
| LONGTEXT | String (0 - 4294967295) |
| LOBLOB | String (0 - 4294967295) |
| TINYINT x | Integer (-128 to 127) |
| SMALLINT x | Integer (-32768 to 32767) |
| MEDIUMINT x | Integer (-8388608 to 8388607) |
| INT x | Integer (-2147483648 to 2147483647) |
| BIGINT x | Integer (-9223372036854775808 to 9223372036854775807) |
| FLOAT | Decimal (precise to 23 digits) |
| DOUBLE | Decimal (24 to 53 digits) |
| DECIMAL | "DOUBLE" stored as string |
| DATE | YYYY-MM-DD |
| DATETIME | YYYY-MM-DD HH:MM:SS |
| TIMESTAMP | YYYYMMDDHHMMSS |
| TIME | HH:MM:SS |
| ENUM | One of preset options |
| SET | Selection of preset options |

Integers (marked x) that are "UNSIGNED" have the same range of values but start from 0 (i.e., an UNSIGNED TINYINT can have any value from 0 to 255).

Select queries

select all columns

```
SELECT * FROM tbl;
```

select some columns

```
SELECT col1, col2 FROM tbl;
```

select only unique records

```
SELECT DISTINCT FROM tbl WHERE condition;
```

column alias with AS

```
SELECT col FROM tbl AS newname;
```

order results

```
SELECT * FROM tbl ORDER BY col [ASC | DESC];
```

group results

```
SELECT col1, SUM(col2) FROM tbl GROUP BY col1;
```

Creating and modifying

create a database

```
CREATE DATABASE db_name;
```

select a database

```
USE db_name;
```

list the databases on the server

```
SHOW DATABASES;
```

show a table's fields

```
DESCRIBE tbl;
```

create a new table

```
CREATE TABLE tbl (field1, field2);
```

insert data into a table

```
INSERT INTO tbl VALUES ("val1", "val2");
```

delete a row

```
DELETE * FROM tbl WHERE condition;
```

add a column from a table

```
ALTER TABLE tbl ADD COLUMN col;
```

remove a column from a table

```
ALTER TABLE tbl DROP COLUMN col;
```

make a column a primary key

```
ALTER TABLE tbl ADD PRIMARY KEY (col);
```

Creating and modifying (cont)

return only 1 row matching query

```
... LIMIT = 1
```

amend the values of a column

```
UPDATE table SET column1="val1" WHERE ...
```

clear all the values, leaving the table structure

```
TRUNCATE TABLE tbl;
```

delete the table

```
DROP TABLE tbl;
```

delete the database

```
DROP DATABASE db_name;
```

Matching data

matching data using LIKE

```
SELECT * FROM tbl1 WHERE col LIKE '%value%'
```

matching data using REGEX

```
SELECT * FROM tbl1 WHERE col RLIKE 'regular_expression'
```

Joins

INNER JOIN returns only where match in both tables

OUTER JOIN also returns non-matching records from both tables

LEFT JOIN also returns non-matching records from left table

RIGHT JOIN also returns non-matching records in right table

JOIN syntax:

```
SELECT * FROM tbl1 INNER JOIN tbl2 ON tbl1.id = tbl2.id;
```

String functions mySQL

Compare strings STRCMP("str1", "str2")

Convert to lower case LOWER("str")

Convert to upper case UPPER("str")

Left trim LTRIM("str")



String functions MySQL (cont)

| | |
|-----------------------|--------------------------------|
| Substring of a string | SUBSTRING("str","inx1","inx2") |
| Concatenate | CONCAT("str1","str2") |

MySQL calculation functions

| | |
|---------------|------------|
| Count rows | COUNT(col) |
| Average | AVG(col) |
| Minimum value | MIN(col) |
| Maximum value | MAX(col) |
| Sum of values | SUM(col) |

Create table with auto-incrementing primary key

```
CREATE TABLE table_name (  
id INT AUTO_INCREMENT,  
column VARCHAR(2),  
column VARCHAR(32),  
PRIMARY KEY (id)  
);
```



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Published 13th August, 2012.
Last updated 29th June, 2014.
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