

### 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	YYMMDDHHMMSS
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)
);
```



By **guslong**  
[cheatography.com/guslong/](http://cheatography.com/guslong/)

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