

### 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);`

return only 1 row matching query  
`... LIMIT = 1`

amend the values of a column  
`UPDATE table SET column1="val1" WHERE ...`

### Creating and modifying (cont)

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")
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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