

How to use MySQL Database

Download MySQL Workbench

<https://dev.mysql.com/downloads/workbench/>

Setup Server Connection

VPN connection is required.

Manage Server Connections

MySQL Connections

- Local
- Server

Connection Name: Server

Connection: Remote Management System Profile

Connection Method: Standard TCP/IP over SSH Method to use to connect to the RDBMS

Parameters SSL Advanced

SSH Hostname: 10.173.72.20:22 SSH server hostname, with optional port number.

SSH Username: n4user Name of the SSH user to connect with.

SSH Password: Store in Vault ... Clear SSH user password to connect to the SSH tunnel.

SSH Key File: ... Path to SSH private key file.

MySQL Hostname: 127.0.0.1 MySQL server host relative to the SSH server.

MySQL Server Port: 3306 TCP/IP port of the MySQL server.

Username: root Name of the user to connect with.

Password: Store in Vault ... Clear The MySQL user's password. Will be requested later if not set.

Default Schema: The schema to use as default schema. Leave blank to select it later.

New Delete Duplicate Move Up Move Down Test Connection Close

Connection Method: Standard TCP/IP over SSH

SSH Hostname: 10.173.72.20:22

SSH Username: n4user

SSH Password: Wh0leE@rthBo0k597

MySQL Hostname: 127.0.0.1

MySQL Server Port: 3306

Username: root

Password: root

Schema Information

Schema name is webc.

Tables tag010 - tag949 represent information in MARC tag 10 - 949 respectively.

Column names in tables contain id and \$subfield codes. For example, tag 10 contains subfield codes a, b, and z so table tag010 will contain id, \$a, \$b, and \$z.

> Column name cannot be a single character in MySQL so \$ is added.

SQL Tutorial

<https://www.w3schools.com/sql/default.asp>

SQL Examples

Create a new SQL query with the first button in picture below.



SELECT Statement

```
SELECT [Columns]
FROM [Tables]
WHERE [Conditions]
;
```

This statement will fetch information in column [Columns] from table [Tables] that satisfy condition [Conditions].

> * can be used as [Columns] to represent all columns.

> WHERE [Conditions] can be omitted if there is no condition.

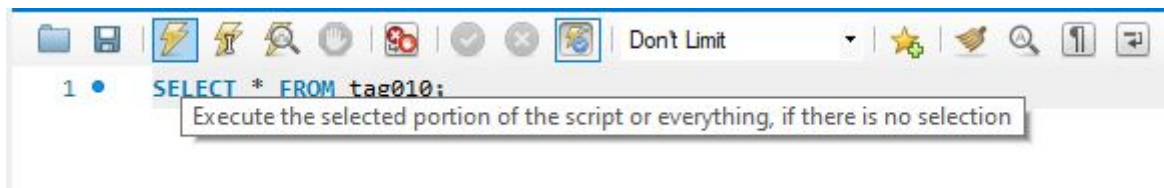
> [Columns] LIKE '%[Word]%' can be used as [Conditions] to find records that their [Columns] contain [Word].

Example 1

Get all columns in table tag 010.

```
SELECT * FROM tag010;
```

Push execute button (lighting symbol) to run command.



Result.

The screenshot shows the 'Result Grid' of the SQL editor. It displays the results of the query `SELECT * FROM tag010;`. The grid has four columns: `id`, `$a`, `$b`, and `$z`. The first column (`id`) contains 20 numeric values. The second column (`$a`) contains 20 alphanumeric values. The third and fourth columns (`$b` and `$z`) are empty. The first row is highlighted with a blue background.

| | id | \$a | \$b | \$z |
|---|------------|------------|-----|-----|
| ▶ | 1016241482 | 16024772 | | |
| | 1016330582 | 04005524 | | |
| | 1016416613 | 10025769 | | |
| | 1016426414 | 12017865 | | |
| | 10223678 | 00526117 | | |
| | 10241047 | 05008604 | | |
| | 1026560087 | 70213080 | | |
| | 1026715616 | 05028692 | | |
| | 1026744579 | 03002282 | | |
| | 1026748638 | 21001985 | | |
| | 1012037568 | 03009087 | | |
| | 1013231057 | 26019639 | | |
| | 1026996886 | 01001395 | | |
| | 1027226797 | 15001158 | | |
| | 1029908372 | 61056646 | | |
| | 1029910423 | nur8783... | | |

tag010 1 x

Example 2

Get columns id and \$a (title name) from table tag245 if the title name contains Right or right.

```
1 • SELECT tag245.id, tag245.$a
2 FROM tag245
3 WHERE tag245.$a LIKE '%Right%' OR tag245.$a LIKE '%right%';
```

Result.

| id | \$a |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1015495132 | A supplement to the Commentary on the Book of common-prayer, &c. Containing, I.A Commentary on all the Occasional Offices, viz. the Form of Prayer |
| 1016035210 | The copie of a letter to the Right Honourable the Earle of Leycester, Lieutenant generall of all her Maiesties forces in the vniited Prouinces of the lowe C |
| 1016228612 | The right of the House of Stewart to the crown of Scotland consider'd. |
| 1013359515 | Fruitfull sermons preached by the right reuerend father and constant martyr of Iesus Christ, M[aster] Hvg[h] Latimer; |
| 1015456324 | A perswasive to peace and vnity. A sermon preached before the Right Honourable the Lord-Mayor and the aldermen of the city of London ; at the Chu |
| 1015470580 | The rights of the Church of England asserted and prov'd: in an answer to a late pamphlet, intit'd, The rights of the Protestant dissenters, in a review o |
| 1026996886 | A vindication of the rights of woman : |
| 1001532601 | A sermon preach'd before the Right Honourable the Ld Mayor, the aldermen, sheriffs, and governours of the several hospitals of the city of London : |
| 1011990994 | To the Right Honorable, the Commons of England in Parliament assembled : |
| 1049090864 | Christ set forth in his death, resurrection, ascension, sitting at Gods right hand, intercession. As the cause of justification. Object of justifying faith : |
| 1049149346 | The citizens vindication against the down right countrey-man. (alias Boobee) ... |
| 1049273519 | A parallel (in the manner of Plutarch) between the case of the late Honourable Admiral John Byng and that of the Right Honourable Lord George Sackvi |
| 1058803172 | The presentment of a schismaticke. By the right reverend father in God, Thomas, Lord Bishop of Durham. In his sermon preached at the cathedrall chur |
| 1058934528 | To the right worshipfull the high sheriff and justices of the peace, for the county of Cornwall, met and assembled at Truro in the said county, the 27th. |
| 1063023767 | Droit le Roy, or, a Digest of the rights and prerogatives of the Imperial Crown of Great Britain. By a Member of the Society of Lincoln's-Inn [i.e. T. Bred |

MySQL Setup Problems

1. Can't use database migration wizard (Clone database).
Reason: Version compatibility problem.
Status: Unsolved.
2. MySQL can't load or save files.
Reason: Secure file priv setting.
Status: Solved.
Edit my.cnf by adding
secure-file-priv = ""
my.cnf is a read-only file. To write the file uses
:w !sudo tee %
3. MySQL can't see any directory.
Reason: AppArmor blocks MySQL access to directories.
Status: Solved.
Edit AppArmor setting for MySQL using
sudo vim /etc/apparmor.d/usr.sbin.mysqld
Then reload AppArmor with
sudo /etc/init.d/apparmor reload
4. MySQL authorization problem.
Reason: auth_socket is used by default.
Status: Solved.
Update setting with following commands
\$ sudo mysql -u root -p
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH
mysql_native_password BY 'root';
mysql> FLUSH PRIVILEGES;
mysql> exit;
\$ service mysql restart
5. Can't fetch a result from joining tables.
Reason: Performance issues. Stable version of MySQL on Ubuntu is 5.7. It has a fetching performance issue which has been fixed after version 6. The newest version is 8.
Status: Unsolved.