

MariaDB and MySQL are open source databases that use Structured Query Language (SQL) for interaction. The commands on this cheat sheet are valid for the interactive prompt and SQL scripts, but much can be extrapolated for use with programming libraries as well.

## Connecting

Connect to local database server	<code>\$ mysql --user=root -p --host localhost</code>
Connect to remote database server	<code>\$ mysql -user=root -p -host example.com</code>
Place credentials in <code>~/.my.cnf</code> and set permissions to <code>0600</code> to enable automatic authentication	<code>[client]</code> <code>user=root</code> <code>password=my_secure_passphrase</code>

## Analyzing data

List databases	<code>&gt; SHOW DATABASES;</code>
Make <b>example</b> the active database	<code>&gt; use example;</code>
List tables in current database	<code>&gt; SHOW TABLES;</code>
List columns in <b>mytable</b> table	<code>&gt; SHOW COLUMNS IN mytable;</code>
Display contents of <b>foo</b> and <b>bar</b> fields from <b>mytable</b>	<code>&gt; SELECT foo,bar FROM mytable;</code> <code>+-----+-----+</code> <code>  foo   bar  </code> <code>+-----+-----+</code> <code>  one   baz  </code> <code>+-----+-----+</code>
Display specified fields in <b>mytable</b> if a field matches a given value	<code>&gt; SELECT user,host,select_priv</code> <code>→ FROM mytable WHERE user='tux';</code>

## User management

Create a new user <b>tux</b> on <b>localhost</b>	> CREATE USER 'tux'@'localhost' → IDENTIFIED BY 'tux_password';
Grant <b>select</b> privileges to user <b>tux</b>	> GRANT SELECT ON *.* → TO 'tux'@'localhost';

## Manipulating data

Create database	> CREATE DATABASE;
Create table and define fields	> CREATE table IF NOT EXISTS mytable ( → id INT auto_increment PRIMARY KEY, → foo varchar(64) NOT NULL);
Insert data into a table	> INSERT INTO mytable (foo) → VALUES ('aaa'), ('bbb'),('ccc'); Query OK, 3 rows affected (0.1 sec)
Add a new column to <b>mytable</b>	> ALTER TABLE mytable ADD COLUMN ( → bar INT);
Update data in a table	> UPDATE mytable SET foo='aaa' → WHERE id=1;

## Joins

Display an inner join	> SELECT * FROM mytable → JOIN othertable → ON mytable.id=othertable.foo;
Display a right (or left) join	> SELECT * FROM mytable RIGHT JOIN → ON mytable.id=othertable.foo;
Display a full join	> SELECT foo,bar,baz FROM mytable → FULL JOIN othertable → ON mytable.id=othertable.quux;