(/)

SQL - Introduction

SQL MySQL

100%

Novice

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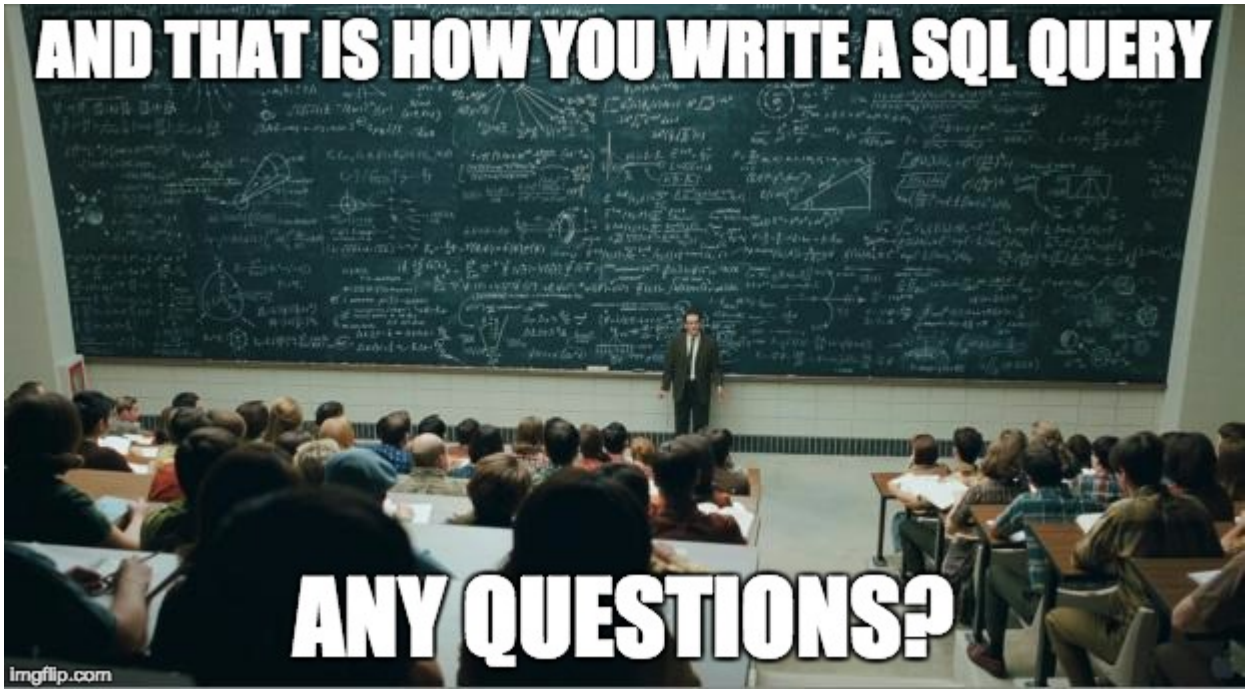
Weight: 1

Your score will be updated once you launch the project review.



Resources

Read or watch:

- What is Database & SQL? (/rltoken/dCN0iehq0dUdzKyb-wnKCA)
- A Basic MySQL Tutorial (/rltoken/qUr_KQ-s_8OxE08wqhWgmQ)
- Basic SQL statements: DDL and DML (/rltoken/UY9xHiwehIV_5pku6uIMWg) (*no need to read the chapter "Privileges"*)
- Basic queries: SQL and RA (/rltoken/ewh71AsRTTIhWyKDZHacBg)

- SQL technique: functions (/rltoken/ULRIbD_pzRs-eeu1M40HBw)
- SQL technique: subqueries (/rltoken/aws8yLyvLOZZES0rFbwG7g)
- What makes the big difference between a backtick and an apostrophe? (/rltoken/sjbco1Ww0XQ-K4fIOtZsOA)
- MySQL Cheat Sheet (/rltoken/_bXox_MWyvWHio4JwFCa3w)
- MySQL 5.7 SQL Statement Syntax (/rltoken/rlDZrVw5HXdC9ltREhs-lw)

Learning Objectives

At the end of this project, you are expected to be able to explain to anyone (/rltoken/aaVsJHb7X2MDV1L01-yMYA), **without the help of Google**:

General

- What's a database
- What's a relational database
- What does SQL stand for
- What's MySQL
- How to create a database in MySQL
- What does `DDL` and `DML` stand for
- How to `CREATE` or `ALTER` a table
- How to `SELECT` data from a table
- How to `INSERT`, `UPDATE` or `DELETE` data
- What are `subqueries`
- How to use MySQL functions

Requirements

General

- Recommended editors: `Visual studio code`
- All your files will be executed on Ubuntu 20.04 LTS using `MySQL 5.7` (version 5.7.8-rc)
- All your files should end with a new line
- All your SQL queries should have a comment just before (i.e. syntax above)
- All your files should start by a comment describing the task
- All SQL keywords should be in uppercase (`SELECT`, `WHERE` ...)
- A `README.md` file, at the root of the folder of the project, is mandatory
- The length of your files will be tested using `wc`

More Info

Comments for your SQL file:

```
$ cat my_script.sql
-- 3 first students in the Batch ID=3
-- because Batch 3 is the best!
SELECT id, name FROM students WHERE batch_id = 3 ORDER BY created_at DESC LIMIT 3;
$
```

How to Install MySQL on Windows

Check out this comprehensive step by step guide to set up MySQL if you are using Windows: Installing MySQL on Windows: A Step-by-Step Guide (/rltoken/niQiQ-eL-bLuliLNQChZsQ)

If you using the a Ubuntu instead then follow the guide below to install MySQL.

Install MySQL 5.7 on Ubuntu 20.04 LTS

```
$ echo 'deb http://repo.mysql.com/apt/ubuntu/ trusty mysql-5.7-dmr' | sudo tee -a /etc/apt/
sources.list
$ sudo apt-get update
$ sudo apt-get install mysql-server-5.7
...
$ mysql --version
mysql  Ver 14.14 Distrib 5.7.8-rc, for Linux (x86_64) using  EditLine wrapper
$
```

Don't forget your `root` password

Connect to your MySQL server:

(7)

```
$ mysql -hlocalhost -uroot -p
Password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 5.7.8-rc MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
mysql> quit
Bye
$
```

If you have some issues to upgrade to 5.7, don't hesitate to cleanup your server of any MySQL packages:
`sudo apt-get remove --purge mysql-server mysql-client mysql-common`

Use "container-on-demand" to run MySQL

- Ask for container `Ubuntu 20.04 - Python 3.4`
- Connect via SSH
- OR connect via the Web terminal
- In the container, you should start MySQL before playing with it:

```
$ service mysql start
 * MySQL Community Server 5.7.8-rc is started
$
$ cat 0-list_databases.sql | mysql -uroot -p my_database
Enter password:
Database
information_schema
mysql
performance_schema
sys
$
```

In the container, credentials are `root/root`

Quiz questions

Great! You've completed the quiz successfully! Keep going! (Show quiz)

Tasks

0. List databases

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that lists all databases of your MySQL server.

```
guillaume@ubuntu:~/$ cat 0-list_databases.sql | mysql -hlocalhost -uroot -p
Enter password:
Database
information_schema
mysql
performance_schema
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `0-list_databases.sql`

Help | Check your code | >_ Get a sandbox

6/6 pts

1. Create a database

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that creates the database `hbtn_0c_0` in your MySQL server.

- If the database `hbtn_0c_0` already exists, your script should not fail
- You are not allowed to use the `SELECT` or `SHOW` statements

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```
guillaume@ubuntu:~/$ cat 1-create_database_if_missing.sql | mysql -hlocalhost -uroot -p
Enter password:
guillaume@ubuntu:~/$ cat 0-list_databases.sql | mysql -hlocalhost -uroot -p
Enter password:
Database
information_schema
hbtn_0c_0
mysql
performance_schema
guillaume@ubuntu:~/$ cat 1-create_database_if_missing.sql | mysql -hlocalhost -uroot -p
Enter password:
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `1-create_database_if_missing.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

2. Delete a database

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that deletes the database `hbtn_0c_0` in your MySQL server.

- If the database `hbtn_0c_0` doesn't exist, your script should not fail
- You are not allowed to use the `SELECT` or `SHOW` statements

```
guillaume@ubuntu:~/$ cat 0-list_databases.sql | mysql -hlocalhost -uroot -p
Enter password:
Database
information_schema
hbtn_0c_0
mysql
performance_schema
guillaume@ubuntu:~/$ cat 2-remove_database.sql | mysql -hlocalhost -uroot -p
Enter password:
guillaume@ubuntu:~/$ cat 0-list_databases.sql | mysql -hlocalhost -uroot -p
Enter password:
Database
information_schema
mysql
performance_schema
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `2-remove_database.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

3. List tables

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that lists all the tables of a database in your MySQL server.

- The database name will be passed as argument of `mysql` command (in the following example: `mysql` is the name of the database)

```
guillaume@ubuntu:~/$ cat 3-list_tables.sql | mysql -hlocalhost -uroot -p mysql
Enter password:
Tables_in_mysql
columns_priv
db
event
func
general_log
help_category
help_keyword
help_relation
help_topic
host
ndb_binlog_index
plugin
proc
procs_priv
proxies_priv
servers
slow_log
tables_priv
time_zone
time_zone_leap_second
time_zone_name
time_zone_transition
time_zone_transition_type
user
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `3-list_tables.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

4. First table

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that creates a table called `first_table` in the current database in your MySQL server.

- `first_table` description:
  - `id` INT
  - `name` VARCHAR(256)
- The database name will be passed as an argument of the `mysql` command
- If the table `first_table` already exists, your script should not fail
- You are not allowed to use the `SELECT` or `SHOW` statements

```
guillaume@ubuntu:~/$ cat 4-first_table.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$ cat 3-list_tables.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
Tables_in_hbtn_0c_0
first_table
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `4-first_table.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

5. Full description

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that prints the full description of the table `first_table` from the database `hbtn_0c_0` in your MySQL server.

- The database name will be passed as an argument of the `mysql` command

- You are not allowed to use the `DESCRIBE` or `EXPLAIN` statements

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```
guillaume@ubuntu:~/$ cat 5-full_table.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
Table   Create Table
first_table CREATE TABLE `first_table` (\n  `id` int(11) DEFAULT NULL,\n  `name` varchar(25
6) DEFAULT NULL\n) ENGINE=InnoDB DEFAULT CHARSET=latin1
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `5-full_table.sql`

Help | Check your code | >_ Get a sandbox

6/6 pts

6. List all in table

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that lists all rows of the table `first_table` from the database `hbtn_0c_0` in your MySQL server.

- All fields should be printed
- The database name will be passed as an argument of the `mysql` command

```
guillaume@ubuntu:~/$ cat 6-list_values.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `6-list_values.sql`

Help | Check your code | >_ Get a sandbox

6/6 pts

7. First add

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that inserts a new row in the table `first_table` (database `hbtn_0c_0`) in your MySQL server.
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- New row:
  - `id = 89`
  - `name = Holberton School`
- The database name will be passed as an argument of the `mysql` command

```
guillaume@ubuntu:~/$ cat 7-insert_value.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$ cat 6-list_values.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
id  name
89  Holberton School
guillaume@ubuntu:~/$ cat 7-insert_value.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$ cat 7-insert_value.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$ cat 6-list_values.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
id  name
89  Holberton School
89  Holberton School
89  Holberton School
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `7-insert_value.sql`

Help | Check your code | >_ Get a sandbox

6/6 pts

8. Count 89

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that displays the number of records with `id = 89` in the table `first_table` of the database `hbtn_0c_0` in your MySQL server.

- The database name will be passed as an argument of the `mysql` command

```
guillaume@ubuntu:~/$ cat 8-count_89.sql | mysql -hlocalhost -uroot -p hbtn_0c_0 | tail -1
Enter password:
3
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `8-count_89.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

9. Full creation

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a script that creates a table `second_table` in the database `hbtn_0c_0` in your MySQL server and add multiples rows.

- `second_table` description:
  - `id` INT
  - `name` VARCHAR(256)
  - `score` INT
- The database name will be passed as an argument to the `mysql` command
- If the table `second_table` already exists, your script should not fail
- You are not allowed to use the `SELECT` and `SHOW` statements
- Your script should create these records:
  - `id` = 1, `name` = "John", `score` = 10
  - `id` = 2, `name` = "Alex", `score` = 3
  - `id` = 3, `name` = "Bob", `score` = 14
  - `id` = 4, `name` = "George", `score` = 8

```
guillaume@ubuntu:~/$ cat 9-full_creation.sql | mysql -hlocalhost -uroot -p hbtn_0c_0
Enter password:
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_database`
- Directory: `SQL_introduction`
- File: `9-full_creation.sql`

Help | Check your code | >_ Get a sandbox **6/6** pts

Score

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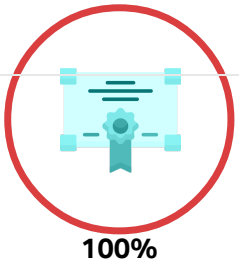

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Congratulations! You made it!

Next project: SQL - More queries

Open the next project (/projects/2088)

Previous project (/projects/2075)