# MySQL

My SQL Database server is installed and available on a VM on Canterbury's school network. Note you must be connected to Cavalier Net in order to connect; if you are on Guest or Hotspot, you will not see this server.

## My SQL Workbench

<https://www.mysql.com/products/workbench/>

The client is called "My SQL Workbench". Download the appropriate version, install, and run. This will be the application that all the SQL commands will be executed from.

## Connection Settings

**Hostname** : ~~ClassLab.canterburyschool.local~~ (not working right now; use the ip address as hostname)

**IP Address** (may be used as the hostname) : 10.42.0.20

**Port** : 3306 (standard MySQL Port)

## Credentials

**username** : student

**password** : 3210Smith

## General Info

For now, we will use a simple set to build our database tables and do some elementary SQL.

The test database is kimtest. This is the one you will use; if you do not specify this, you can have get some erros and not be able to progress. Make sure to put the line **use kimtest;** at the beginning of your code.

Test Database : **kimtest**

Here is a list of the hotkeys, some of which are highly useful and will cut down the time spent on mouse clicks.

<https://dev.mysql.com/doc/workbench/en/wb-keys.html>

note (from the documentation): "**Modifier** in the tables stands for the platform-specific modifier key. This is **Command** on macOS, **Control** on other platforms. On macOS, the **Alt** key is **Option**."

One of the most import key commands is "Modifier+Enter" and "Shift+Modifier+Enter". You hit this to EXECUTE a SQL command/query. After you enter your all your commands and then want to **run the entire file** (or the **currently highlighted ones**), you hit Shift+Command+Enter (Mac) or Shift+Control+Enter (Windows). To execute the **current line only**, use Command+Enter/Control+Enter.

**You will have 2 Database tables named in the following format** :

* comic\_books\_***${YOUR\_FIRSTNAME\_IN\_LOWER\_CASE}***
* publishers\_***${YOUR\_FIRSTNAME\_IN\_LOWER\_CASE}***

## Tasks

There are MANY tasks that you may need to do. For full documentation, see <https://dev.mysql.com/doc/>

## Database Administration Stuff

For the test run, you will have 6 fields (columns) in your **comics** database. They are primary\_id, comic\_title, comic\_issue, issue\_date, value, comic\_publisher\_id. The primary\_id, comic\_issue, and comic\_publisher\_id are all integers. The issue\_date is a date. The value is a decimal amount. The comic\_title is string not to exceed 32 chars long. (**note**: SQL does not have a "string" type, so you have to find an equivalent!). The primary\_id is an automatically incrementing integer that is also the primary key for the table (how do you do this?).

**Publishers** will have 2 fields. primary\_id, publisher\_name. The primary\_id is an integer (not auto-incrementing) and is the primary key. The publisher name is a string no longer than 255 chars.

We will use the "INNODB" engine.

<https://dev.mysql.com/doc/refman/5.5/en/creating-tables.html>

<http://www.mysqltutorial.org/mysql-create-table/>

**Build a Table (or tables) (CREATE TABLE)**

<https://dev.mysql.com/doc/refman/8.0/en/create-table.html>

B.1. Build a table for your comic books.

B.2. Build a table for your publishers

**View all the Tables (SHOW TABLES)**

<https://dev.mysql.com/doc/refman/8.0/en/show-tables.html>

V.1. Display the tables and verify that your 2 tables are visible.

**Remove Table(s) (DROP TABLES)**

<https://dev.mysql.com/doc/refman/8.0/en/drop-table.html>

R.1 Let's not drop tables yet.



## Querying (SQL) Stuff

**[C] reate data in your Table (INSERT)**

<https://dev.mysql.com/doc/refman/8.0/en/insert.html>

C.1. See the attached data sheets. You must write the INSERT statements to put that data into your database tables.

**[R] ead data from your Table (SELECT)**

<https://dev.mysql.com/doc/refman/8.0/en/select.html>

R.1. Retrieve all the comic book data

R.2. Retrieve a complete list of all the publisher's names (just the names)

R.3. Retrieve all the #1 issues for all the comic books

R.4. Retrieve all the Spiderman comic books

## JOINS

HUGE part of Relational Database is retrieving data from multiple RELATED databases. Much of this is accomplished using the JOIN. There are two types of joins, INNER joins and OUTER joins. Furthermore, there are two types of OUTER joins, LEFT OUTER join and RIGHT OUTER join.

<https://dev.mysql.com/doc/refman/8.0/en/join.html>

<https://dev.mysql.com/doc/refman/8.0/en/outer-join-optimization.html>

R.5. Get all the comic books titles and issues and include the publisher's name

R.6. Get all the comic book titles and issues for the books that do not have a publisher in the publisher's table

R.7. Get all the publisher names that aren't used in the comic book table

**[U] pdate data into your Table (UPDATE)**

<https://dev.mysql.com/doc/refman/8.0/en/update.html>

U.1. Modify the data in your comic table so that any row that has a publisher\_id of 4 is now changed so that the publisher\_id is now 5.

U.2. Re-do R.6 and R.7 (above) and verify that there are No Results. Ie., comic book publishers are now matched correctly.

**[D] elete data from your Table (DELETE)**

<https://dev.mysql.com/doc/refman/8.0/en/delete.html>

D.1. Delete all Spawn comic books from your database