Work with MySQL client
Part I: Setup

MySQL

MySQL is a popular open-source DBMS originally developed under the auspices of Sun Microsystems, and currently developed and distributed by Oracle (after Oracle's acquisition of Sun). MySQL comes in a variety of open-source variants, one of which, MariaDB is the DBMS server we are using in this class.

MySQL server comes with a simple interactive client program, mysql. This program allows users to connect to a MySQL server of their choice, send commands to the server and observe output of the commands.

This handout is a brief "survival manual" that explains how to set up your mysql client to work with the course's MySQL server, and how to work with the client.

Setup Instructions

These setup instructions refer to running mysql client from the CSL linux machines, such as the ones found in the database lab, 14-302. They also should work when you are working on one of the CSL servers (`unix1, unix2`, etc.)

Our MySQL server. Our MySQL server is installed on the CSL VM `csc-db0`. **You DO NOT HAVE access to the** `csc-db0` server itself, nor do you need this access in order to work with the MySQL server. Instead, you will set up your mysql client to access the course MySQL server.

Our server is a MariaDB server, Version 5.5.40.

All of you have accounts on the CSC 365 MySQL server. The accounts are protected by a password. Instructions for modifying the password are found further in this document. Your MySQL account name

`mysql` client. The `mysql` client prgram is installed on all machines in CSL and on all CSL servers.

```
dekhtyar@csclnx11:~ $ which mysql
/usr/bin/mysql
```

In order to correctly access the CSC 365 MySQL server, you shall type the following

```
$ mysql -h cslvm74.csc.calpoly.edu -p
```

or

```
$ mysql -h cslvm74.csc.calpoly.edu -u <username> -p
```

where `<username>` is your Cal Poly login id.

Enter your password at the prompt. If you did everything correctly, you will see something like this on your terminal screen:

```
dekhtyar@csclnx11:~ $ mysql
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 100
Server version: 5.5.52-0ubuntu0.14.04.1 (Ubuntu)

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

mysql>
```

Database selection

All MySQL activity happens inside a selected database. With each student accout, we associate the database under the same name. Outside of some MySQL's test databases, this is the only database you have access to.

When you see the following `mysql` client prompt:

```
mysql[none]>
```

it means that you have not yet selected the database. You need to do so before continuing any other work. Note, sometimes, your prompt looks as follows:

```
mysql>
```

but the database has not yet been set. Therefore it is safe to always execute the commands below at the beginning of your session.

First, you can see what databases are available by issuing the `show databases;` command:

```
mysql[none]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| dekhtyar           |
| test               |
+--------------------+
3 rows in set (0.00 sec)
```

Here, `dekhtyar` is the instructor's designated database, while `information_schema` and `test` are MySQL's internal databases with open access.

To select the database you want to work with, issue the `use` command:

```
mysql[none]> use dekhtyar;
Database changed
mysql@dekhtyar>
```

(Note: your prompt may vary at this point.)

Setting Up Access to MySQL server

There is a way to automatically connect to `csc-db0` server and select your database. This requires creating and placing in your home directory a MySQL *options file*, and adding an `alias` command to your `.bashrc` file.

Step 1: option file. Create in your home directory a file `my.cnf` with the contents described below. Note, a simple template for this file can be downloaded from the course web page, but you still need to edit it.

In the file, place the following text:

```
[mysql]
host=cslvm74.csc.calpoly.edu
user=<your username>
database=<your username>
password
```

Here is a brief explanation:

Line	Explanation
`[mysql]`	Options files are used to control different MySQL executables. This line declares a block of options for the `mysql` client.
`host=<hostname>`	specifies the server to which `mysql` client will connect.
`user=<username>`	specifies the user under which name `mysql` client will connect.
`database=<dbName>`	specifies the database in which the `mysql` session will start.
`password`	specifies that `mysql` client shall prompt the user for a password.

In order to run the `mysql` client with these options, you need to issue the following command:

```
$ mysql --defaults-extra-file=~/my.cnf
```

This, by itself is not any more convenient than `mysql -h csc-db0.csc.calpoly.edu -u dekhtyar -p dekhtyar` (the `mysql` command that uses all the same settings as the `my.cnf` file). However, in Step 2 we can change the `mysql` alias.

Step 2: modifying `.bashrc`. This assumes that you are using `bash` as your Linux shell. If you use something else, you will need to modify the rc (resources) file for your shell.

Edit `.bashrc`. Find in that file the location of your `alias` definitions, and add the following line to it:

```
# MySQL setup
alias mysql="mysql --defaults-extra-file=~/my.cnf"
```

Save the file, logout, login again. You should be able to log onto the `csc-db0` server just by typing `mysql` (with no command line options) and entering the password at the prompt.