Notes on using MySQL at NIU

The basic command to get to the mysql database is

mysql -h hostmachine -u username -p databasename

For us, the hostmachine is either 'courses' or 'students' or 'babbage'.
The username will be the zID. For students, the databasename will be identical to the zID.
As a little annoyance, the -p flag stands for "password", but you don't actually give the password on the command line. It will ask you for your database password so enter it after the prompt.

So in practice, something like

```
mysql -h courses -u z1234567 -p z1234567
```

(logging in to your account and using your database, assuming your zid is z1234567.)

The mysql prompt should come up:

```
mysql>
```

The first, most important command is \h to access help. This should give you a list of all the commands (not queries). The next is how to exit, which is exit; or quit; or \q
All text commands must end with ;

To use a different database, while in the mysql shell,

```
mysql> use databasenamehere;
```

A. When you log into mysql you need a user name and password. If you have mysql installed on your own machine you will choose a root password when you install it. If you are using one of the computer science accounts your user name is your znumber and your password is birthdate (see below).

B. To access mysql at NIU:

- Log into turing.cs.niu.edu via putty.
- To log into mysql:
  `mysql -u z###### -h students -p`
- When you press enter, you will be prompted for your password. Initially it will be your birthday in the form yyyymmdd.

C. We are not allowed to create our own databases. However, a database has been provided for all users. Its name is your zid.

- Once there you need to choose the database you will be using by:
  `use databasename; **** use z######;`
- To determine which databases you have access to:
  `show databases;`
- To determine which tables are in the database:
  `show tables;`
- To see what the column names and data types of a table are:
  `describe tablename;`

A couple of other useful items, in no particular order

1. You an use a script and the source command to create and load databases or tables from a text file. This is only an example, you don't need to actually do it.

```
drop table instrument;
drop table owner;
drop table owns;

create table instrument
      (serial_num char(6),
      type char(15),
      maker char(25),
      date_made date,
      original_price decimal(10,2),
      primary key (serial_num));

create table owner
      (ownerId int(4) auto_increment,
      last_name char(15),
      first_name char(15),
      street char(25),
      city char(15),
      zip char(10),
      phone char(12),
      primary key (ownerId));

create table owns
      (serial_num char(6),
      ownerId int(4),
      date_bought date,
      bought_price decimal(10,2),
      date_sold date,
      sold_price decimal(10,2),
      primary key (serial_num, ownerId),
      foreign key (serial_num) references instrument(serial_num),
      foreign key (ownerId) references owner(ownerId));

insert into instrument values
      ('KS1000','Violin','Kelvin Scott',20030101,9500.00);
insert into owner values
      (1,'Hansen','Jakob','1234 State St','Center City','12345-1234','123-123-
1234');
insert into owns values
      ('KS1000',1,20030317,8500.00,NULL,0.0);
```

Do the following:

- Copy script into note pad.
- Save (as filename.ext) and ftp it to the turing machine, I tend to name the extension .sql
- Logon to turing and mysql
- Run this script by executing the following command (use the full path name – ie make a subdirectory for 466 scripts and put them in it.)

```
mysql>source filename.ext;
```

If any sql statements are incorrect, you will get an error message.

On your own machine: You can also load data into a table from a text file by using the load data local infile command. The name of the file must be the complete path name enclosed in single quotes.

Example: If the file is in the bin directory of the mysql server subdirectory.

```
mysql> load data local infile
-> 'c:\\466fall2011\\menagerie\\pet.txt' into table pet;
```

Actually, on your own machine, use phpmyadmin, which you get to by opening a browser and going to http://localhost/phpmyadmin/ Then, the same file, minus the drop statements at the beginning can be imported in to a database. You'll get feedback about how many statements were executed and then you can browse your tables.

2. Use the tee command (\T to start and \t to end) to create a file that has all the statements that you type and the results of those statements. (This will work on turing (or any command line system)). You'll need to do this for a couple of the assignments.
3.

```
mysql>\T myfile.out
```

- will create and put what you type into myfile.out in the same subdirectory as above and mysql>\t (stops the spooling)
- You can then either printout this dataset or ftp it to your computer and upload it to Blackboard.

3.If you are using several databases and cannot remember which one is the current one, use

```
    select database();
```

Each student should have a database assigned to their account that is the same as their zid. There are several other databases that are available as well.

database() is a function that returns the name of the current database. If you have not selected a database yet it returns the empty string.

4. The status command (\s is the synonym) shows the current database as well as some other information.

5. You can temporarily use a table from another database as long as you use the fully qualified name which is

databasename.tablename.

6. If you want your output to be numbered you have to do two things.

1. Declare a variable and set it to 0 within mysql.

   ```
   set @num = 0;
   ```

2. Then assign it a value in your select statement.

```
select @num := @num+1 as rownum,name from country;
```

Notice that both statements end with semi-colons and the set command has an ‘equal’ sign while the select has both a ‘colon’ and an ‘equal sign’.