CS 775/875 LAB 2 2/18/2021

Objective: This lab gives you hand-on experience with the MySQL database management system setup on the CS server **basalt**. This lab will not be graded.

Starting MySQL:

1. Every student registered for this class is given a database on basalt. The name of this database is your username. You can delete and create tables in this database.

2. In you home directory on agate, there is a file called **cs775.info** (or CS875.info) with two lines:

   username and *password* for **basalt.cs.unh.edu** and

   username and *mysql-password* for your **MySQL**database-name

3. From your agate account, log into your basalt account using

   ssh *username*.basalt.cs.unh.edu

4. Start the MySQL command-line application with the following command:

   mysql -u *username* -p *databasename*

   where *username* = *databasename*. You will then be prompted for your MySQL password (second line of cs775.info).

5. Ensure that you are properly connected to the MySQL service by displaying all databases: SHOW DATABASES;

   After running the command, a list of databases should appear including one with your username.

Importing a database using a SQL source file:

1. It is possible to create a SQL source file that contains all of the commands necessary to create and populate a database. You can download and import the SQL file, company.sql. This file contains the DDL for the COMPANY database and insert commands to populate your database.

2. Instructions for basalt:

   (a) You can't directly download a file to basalt from MyCourses. So, download the file to your agate account.

   (b) Next, ftp into basalt from your agate account.
   sftp *username*@basalt.cs.unh.edu
   Enter basalt password when prompted.

   (c) Once you successfully ftp into basalt:

i. To **upload** a file, say company.sql, from agate to basalt type
put company.sql

ii. Do **download** a file, say query.sql, from basalt to agate:
get query.sql

iii. To quit ftp, type
quit

(d) To log into your basalt account from agate:
ssh *username*@basalt.cs.unh.edu

3. Once you have downloaded company.sql, open the file (on basalt) and edit the first line (USE *username*) by adding your username.

4. Next, start MySQL and import the SQL source file into the MySQL database system with the command:

   source company.sql

   To ensure that your tables are properly populated, run the following command for each table:

   SELECT * FROM table;

5. Run some of the SELECT queries we discussed in class. It is simpler to type commands in a text file and then cut and paste to MySQL. If you want to save your output, cut and paste to an output text file.

Closing MySQL and exporting a database:

1. Close MySQL by entering: $\backslash q$

2. There exists a "dump" feature of MySQL, which dumps the contents of a database to a file using SQL commands. This feature is useful if you are working in an environment where your database gets wiped out every time you log out of the system. The dump file can be imported to MySQL using the same source command that was used previously. On basalt, your database will not be wiped out when you log out.

   IMPORTANT: The file format of the mysqldump output file differs from the SQL source file used in the previous section. DO NOT USE this dump file as a template; use company.sql as a template.

3. Run the following command at the basalt command line prompt:

   mysqldump *databasename* -u *username* -p –single-transaction $>$ company_dump.sql

Some MySQL Commands:

1. Create the empty database with this command:

   CREATE DATABASE;

2. To show all the databases:
   SHOW DATABASES;
3. Start using a new database with the command:
   USE dbname;
   On basalt, the database is your username, so type USE *username*.
4. Showing all the tables created in a database:
   SHOW TABLES;
5. View the configuration of a table:
   DESCRIBE tablename;
6. Show all rows in a table:
   SELECT * FROM tablename;
7. Removing an entire database:
   DROP DATABASE dbname;
8. Removing an entire table from the database:
   DROP TABLE tablename;
9. Removing all the rows/tuples from a table:
   DELETE FROM tablename;