COMS2002A: DATABASE FUNDAMENTALS

SEMESTER 1, 2023

LAB 7: ADVANCED SQL (PRACTICE)

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PRELIMINARIES

1. Connect to the LAMP server
2. Connect to MySQL
3. Choose the database to be used using the USE command.

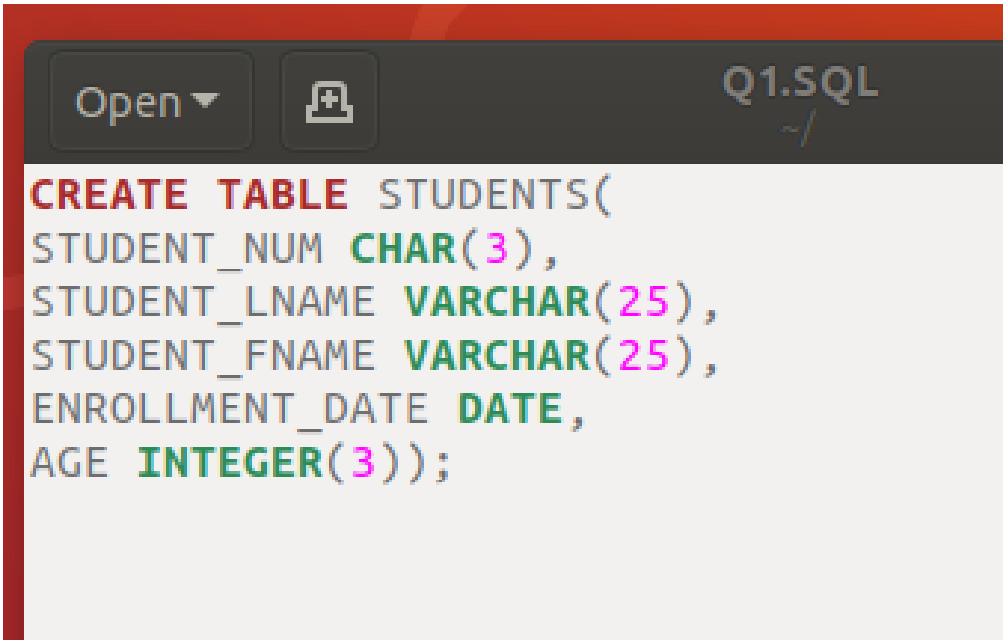
PART 1 – RUNNING SQL QUERIES FROM A FILE

Although we have always been typing our SQL commands directly into the MySQL prompt, that is not the only way to run SQL queries at the MySQL prompt. We can have SQL commands saved in a file and then execute the file at the MySQL prompt.

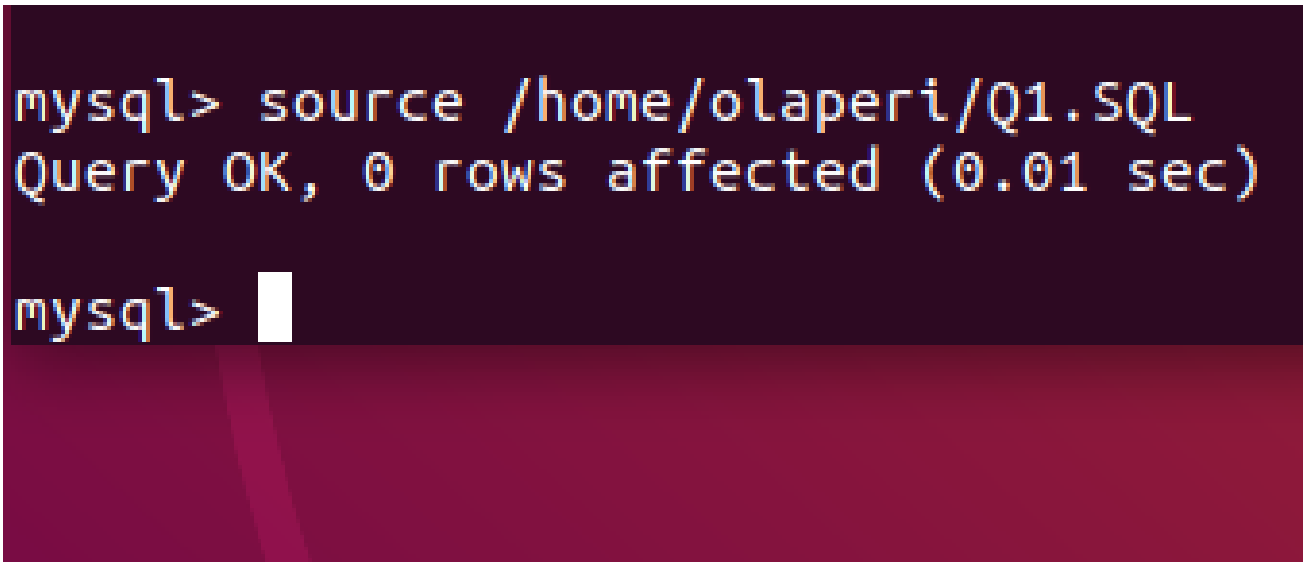
A. To do that **on your local machine,** you simply need to 'source' the file.

- When a file is sourced, the lines of code in the file are executed as if they were printed at the command line.
- Create a new file in your local directory and populate with all the SQL queries you would like to execute
    - Save the file as *file_name.txt* or *file_name.sq*l
    - Source the file at mysql >
    - `source path_to_file.sql`

This first screenshot shows a file named Q1.SQL on my local computer.



This second screenshot shows how the file was sourced and the feedback given. Note that this was done on a Linux operating system. Specify the file path based on your operating system.



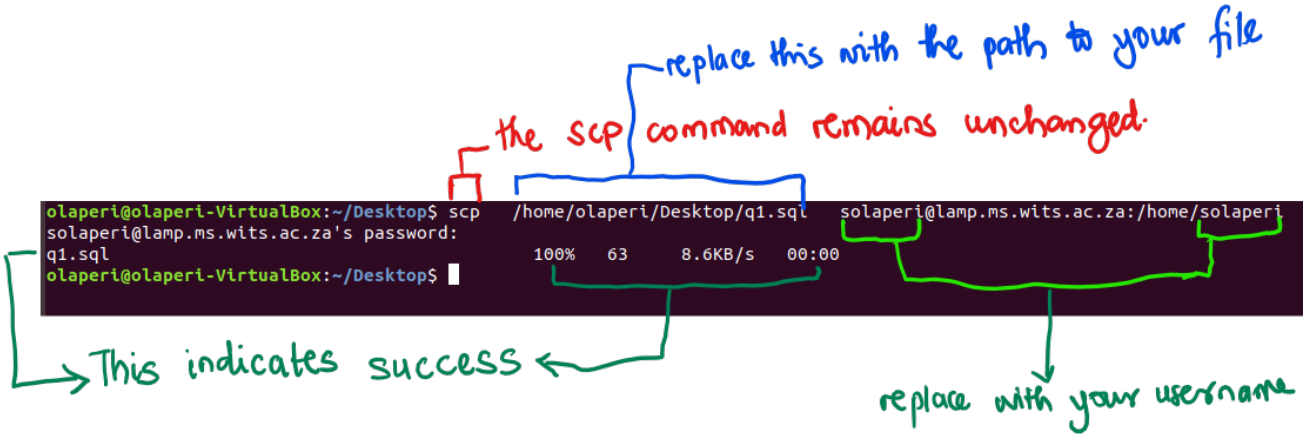
B. However, for the purpose of this class, we would be saving our files on the LAMP server and sourcing it from there. The steps are slightly different, as you need to copy the file from your local computer to the LAMP server.
   a. Connect to a LAMP server (just as you have always done)
      `ssh username@lamp.ms.wits.ac.za`
   b. Write queries in your file, save as a .txt or .sql file on the local desktop (or download the file from Ulwazi, etc.).
   c. Copy the file from your local disk to the LAMP server:

i. Open another terminal on your local desktop (not the one connected to the LAMP server,).
ii. Use the 'scp' command as follows (see the screenshot for an example):

scp *file_path_on_local_desktop.sql* *lamp_account*:/home/*username*

Remember to replace the following:
file_path_on_local_desktop.sql – specify the path to the file on your local computer
lamp_account – this is your ***username***@lamp.ms.wits.ac.za
username – Your username is 's' followed by your student number *sstudent_number*

```
olaperi@olaperi-VirtualBox:~/Desktop$ scp   /home/olaperi/Desktop/q1.sql   solaperi@lamp.ms.wits.ac.za:/home/solaperi
solaperi@lamp.ms.wits.ac.za's password:
q1.sql                                        100%   63     8.6KB/s   00:00
olaperi@olaperi-VirtualBox:~/Desktop$
```



iii. Enter your password to your lamp server
iv. You should see a line of feedback showing the file has been copied

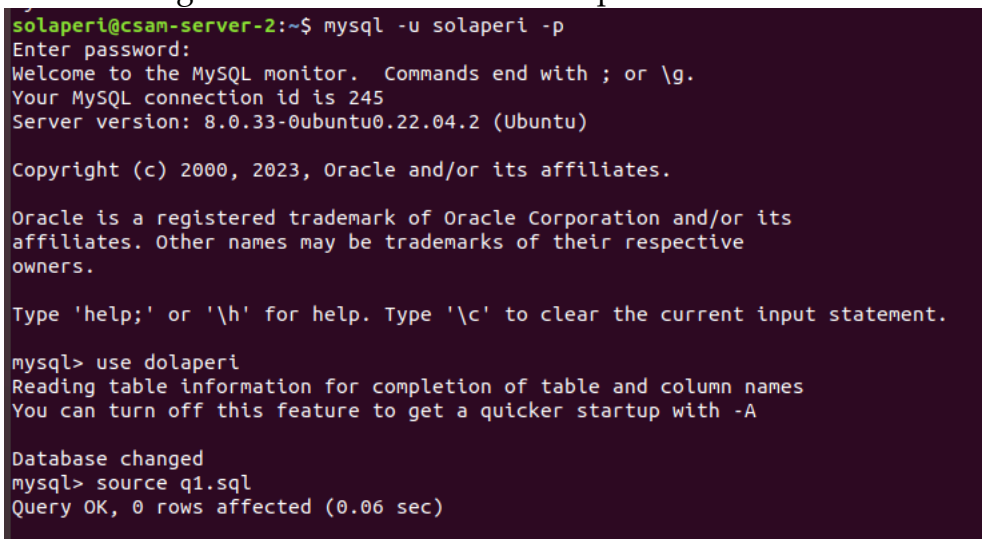
d. Verify that the file has been copied.
   i. Go to your LAMP server prompt
   ii. type in `ls`
   iii. You'll see all the files you have there, confirm that the file you just copied is there

```
solaperi@csam-server-2:~$ ls
myfirstfile.sql  public_html  q1.sql
solaperi@csam-server-2:~$
```

The copied file is available

e. Source from MySQL prompt
   i. Log on the MySQL server on the LAMP server
   ii. mysql -u username -p
   iii. you'll be prompted to enter your password

iv. then you'll have the mysql> prompt
v. Choose your database: USE XXX
vi. Source your file: SOURCE path_to_file.sql
vii. You should get feedback for all executed queries



PART 2

1. Practice 'Sourcing' on the LAMP server.
    a. Review the file load_data.txt. Ensure you understand all the queries there.
    b. Download and 'source' the file load_data.txt to your database on the MySQL server.
    c. Verify that you have all the tables and data loaded. Hint: Use the DESC and SELECT keywords. The queries are also in Unit 8, slides 5 – 20.
2. Type and run the queries on slide 27; Unit 8 – Advanced SQL (Important).
3. Type and run all the queries in Unit 8 – Advanced SQL. You are advised to type in and run all the queries in the Screenshots from slides 28 -92. You can choose to type them directly into the MySQL prompt or type them into a file and source it.
4. Although this lab does not have to be submitted, the knowledge in this lab will be tested via the next Lab and/or a Quiz.