CS157A Assignment 1: Getting Started with MySQL

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27-Aug-2020

Contents

1 Introduction

For this assignment, you will install and connect (log in) to MySQL database, using both command line and graphical user interface. You will be working in pairs to perform installation/setup to help each other and troubleshoot issues together in the process.

1.1 Obtaining MySQL

You can download the community version of the MySQL **server** from the MySQL community server: http://dev.mysql.com/downloads/mysql/. To log in to the server, you will need to use the MySQL **client**. An example of such a client is a Graphical User Interface (GUI)-based MySQL client, called MySQL Workbench, which comes default with installing MySQL server.

1.2 Logging in to MySQL

Once you have access to a MySQL server, you are ready to log in to it. Depending on the kind of MySQL client you use, the way you log in to a MySQL server will vary. But no matter what methods you follow, you will need at least the following information: your MySQL *username*, your MySQL *password*, and the *server* name or its IP address.

1.2.1 Method 1: Using Command Line

Run the following command on the command line where you have your MySQL client installed:

mysql -h *servername* -u *username* -p

Here, *servername* is the full address (e.g., example.organization.com) or the IP address of the server. If you are already logged in to the server where the MySQL server is installed, you can use "localhost" or "127.0.0.1" as your *servername*. Once you run the command, you will be asked to enter your MySQL password. AT the password prompt, you may not see what you are typing, not even "******". Just typethe password and hit "enter". Once you do that succesfully, you will be at the MySQL prompt, where you can run your MySQL commands. For example, you can run the following command to see what databases you have available:

show databases;

Remember to put a semicolon at the end of each command.
To exit the MySQL prompt, enter:

exit;

1.2.2 Method 2: Using a GUI Client

If you are using a GUI-based MySQL client, such as MySQL Workbench, you can connect to MySQL server using the standard approach, where you provide the same three details you did with the command line approach. See the screenshot

in Figure 11. *Hostname* is the same as *servername*, *Username* is the same as *username*, and "Password" indicates your MySQL password. Other parameters are optional.

2 Tasks

2.1 Pair up with MySQL buddy

1. Pair up with another student. You can message directly on Canvas or utilize discussion forum "Find MySQL Buddy" on Canvas to find a pair. This assignment must be completed in pairs. You should first try to pair up with a person working with another OS (i.e. if you are working on Windows, try to find somebody with MacOS). This way you will learn how to perform installation on different platforms.

2.2 Download MySQL server

2. Download MySQL Server 8.0, Community Edition, following the instructions at https://dev.mysql.com/downloads/mysql/.

2.3 Install MySQL server

3. Perform installation on your local machine following video instructions at https://www.youtube.com/watch?v=Ddx13KlW8yQ (for Windows) or https://www.youtube.com/watch?v=UcpHkYfWarMamp;t=303s/ (for MacOS)

4. Check with your pair if they successfully downloaded and installed, or if not, try to help them and troubleshoot their issue.

5. Refer to MySQL documentation at http://dev.mysql.com/doc/ and MySQL Workbench documentation at https://dev.mysql.com/doc/workbench/en/.

6. MySQL Server Error Message Reference https://dev.mysql.com/doc/refman/8.0/en/server-error-reference.html

2.4 Logging in to MySQL using Command Line

7. Make sure you can run mysql from the OS command line ("cmd" in Windows, Terminal application in macOS found under Applications - Utilities)

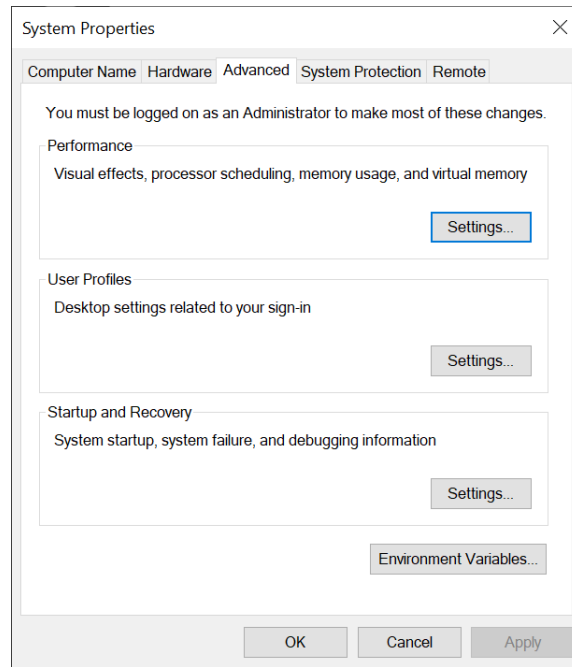   - If 'mysql' is an unrecognizable command, then you need to add it to the system path

Figure 1: Adding mysql to system path Step 1: Windows System Properties - Advanced tab.

- (For Windows OS) Go to *System Properties* 1- *Environment Variables* 2- *Path - Edit environment variables* 3 - New - Path to your MySQL installation bin folder

8. Check that you can connect to MySQL via command line as a root (example for Windows presented in Figure 4)

2.5   Logging in to MySQL using a GUI Client

9. Open MySQL Workbench. The home screen opens which should look similar as in screenshot 5).

10. Connect as root and provide the password you set during installation. After successfull connection you should see a screen similar to as in Figure 6.

2.5.1   Creating a new user with DBDesigner role

11. Choose the *Administration* tab below the *Navigator* panel (see Figure 6).
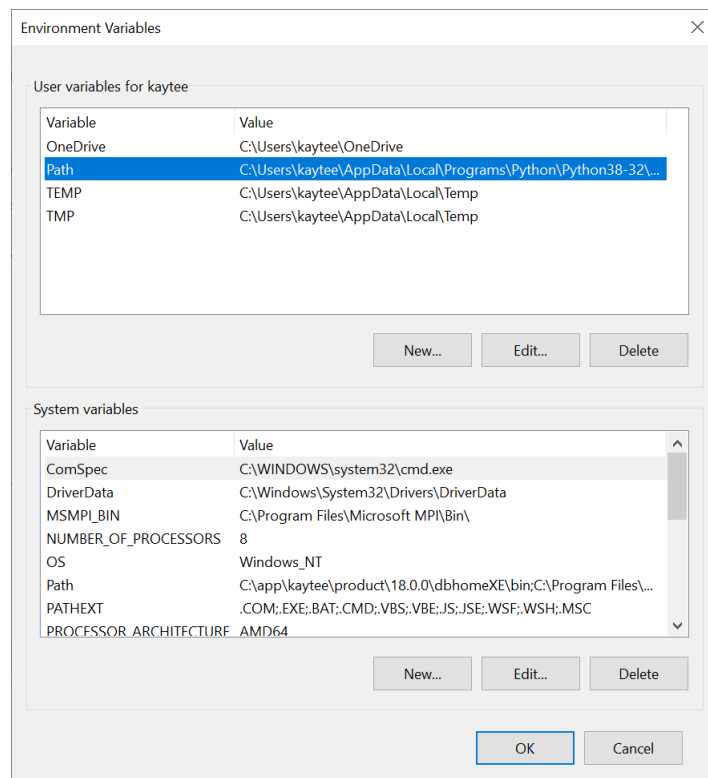
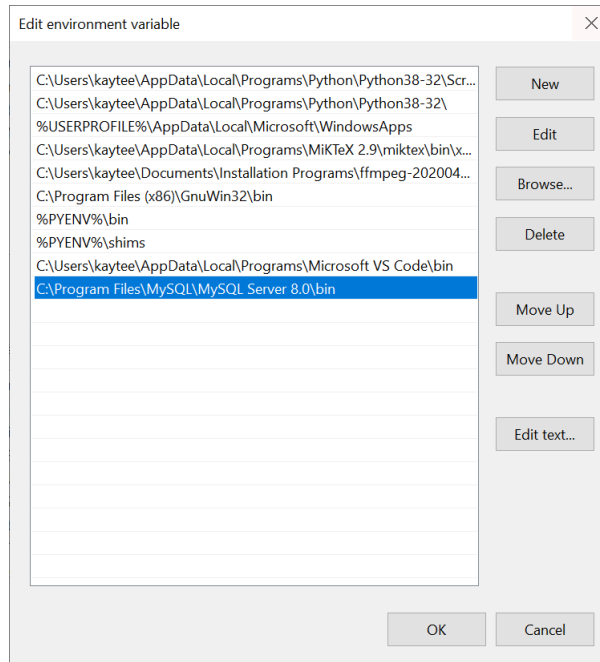Figure 2: Adding mysql to system path Step 2: Environment variables - Path - Edit

Figure 3: Adding mysql to system path Step 3: Edit environment variable - New

Figure 4: Successfull connection to MySQL server as a root user using command **mysql -h localhost -u root -p**
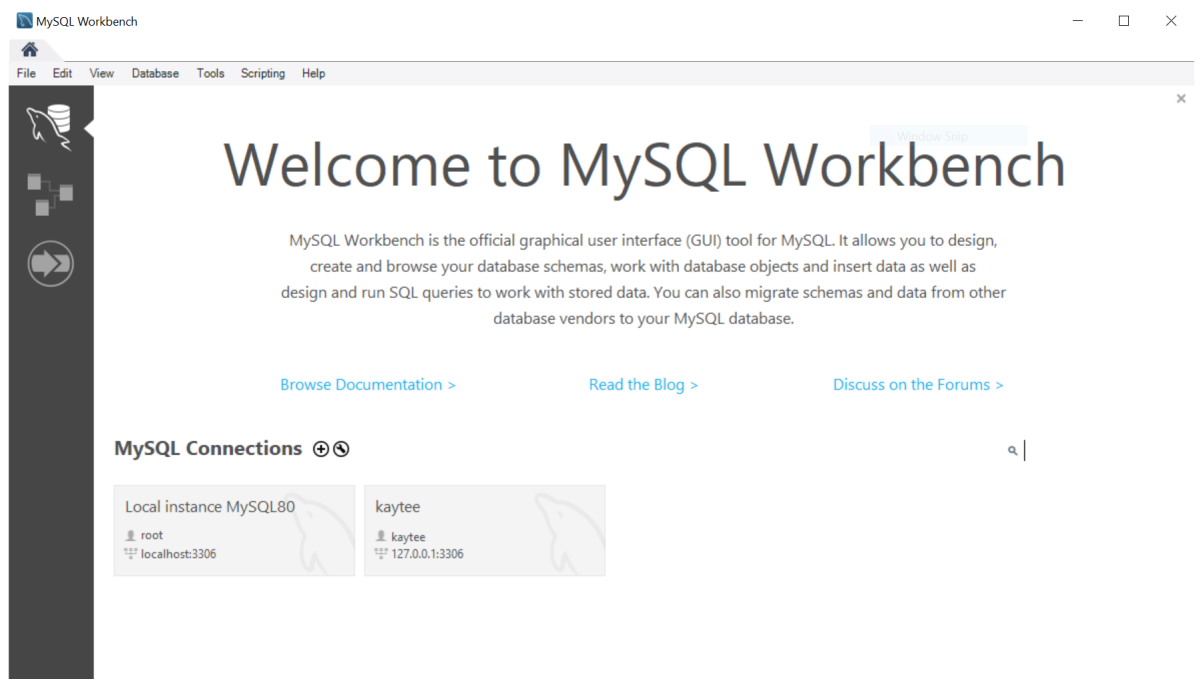
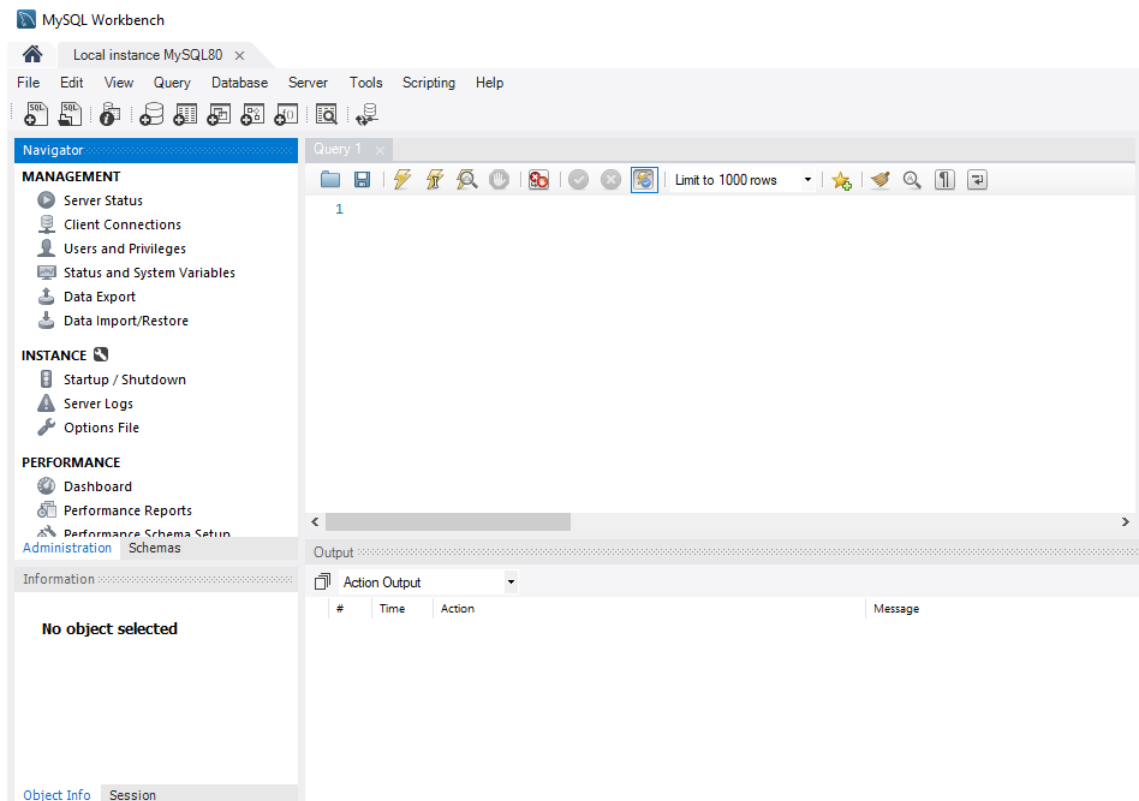Figure 5: MySQL Workbench home screen (as seen under Windows).

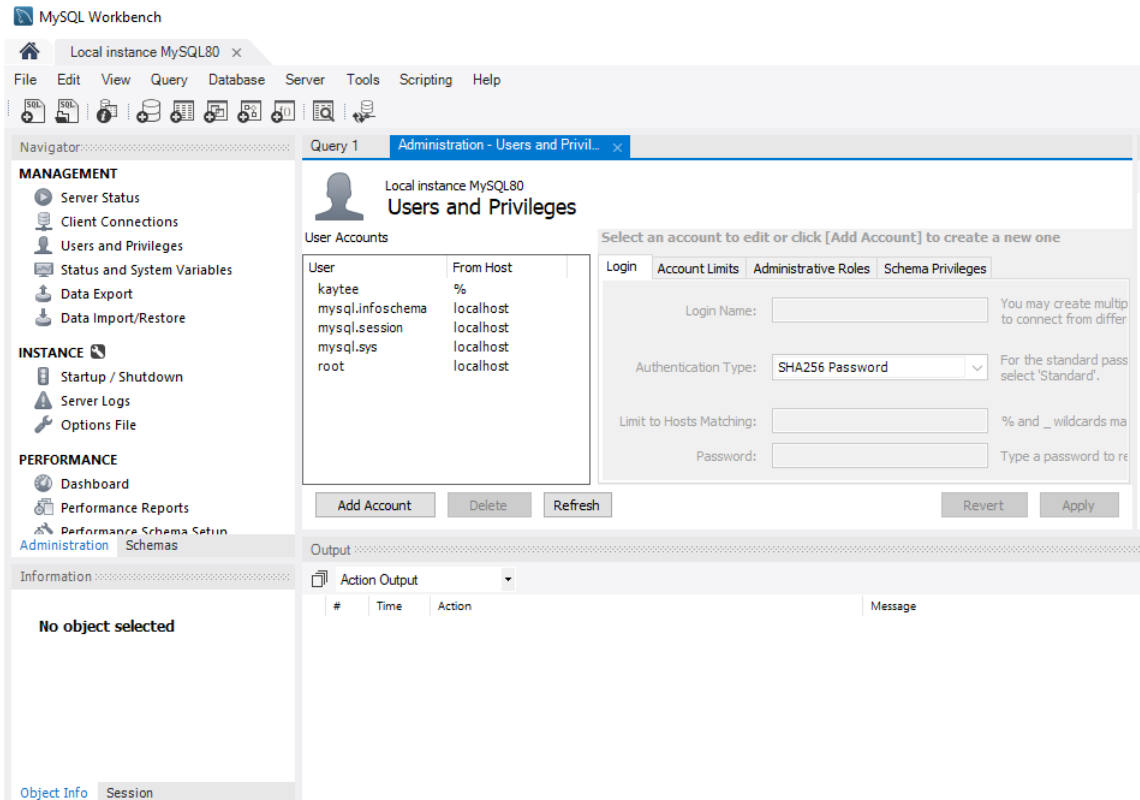Figure 6: MySQL workbench after successfull connection. The screen shows **Administration** tab.

Figure 7: Management - Users and Privileges - Add Account

12. Create a new user from MySQL Workbench Click Administration tab and *Users and Privileges* in the left-side *Navigator* (see Figure 7). Click *Add account*. Enter *Login Name* as the first letter of your first name, first letter of your middle name (if any), and last name. Leave *Authentication Type* to "Standard", and set password (see Figure 8).

13. Add the *DBDesigner* role to a new user under Administrative (see Figure 9).

2.5.2 Connecting as a new user

14. Check if you can login into MySQL server as a new user via the command line (se Figure 10)

15. Connect to MySQL Server as a new user: choose *Database - Connect to Database...* from MySQL Workbench menu. Alternatively, you can close
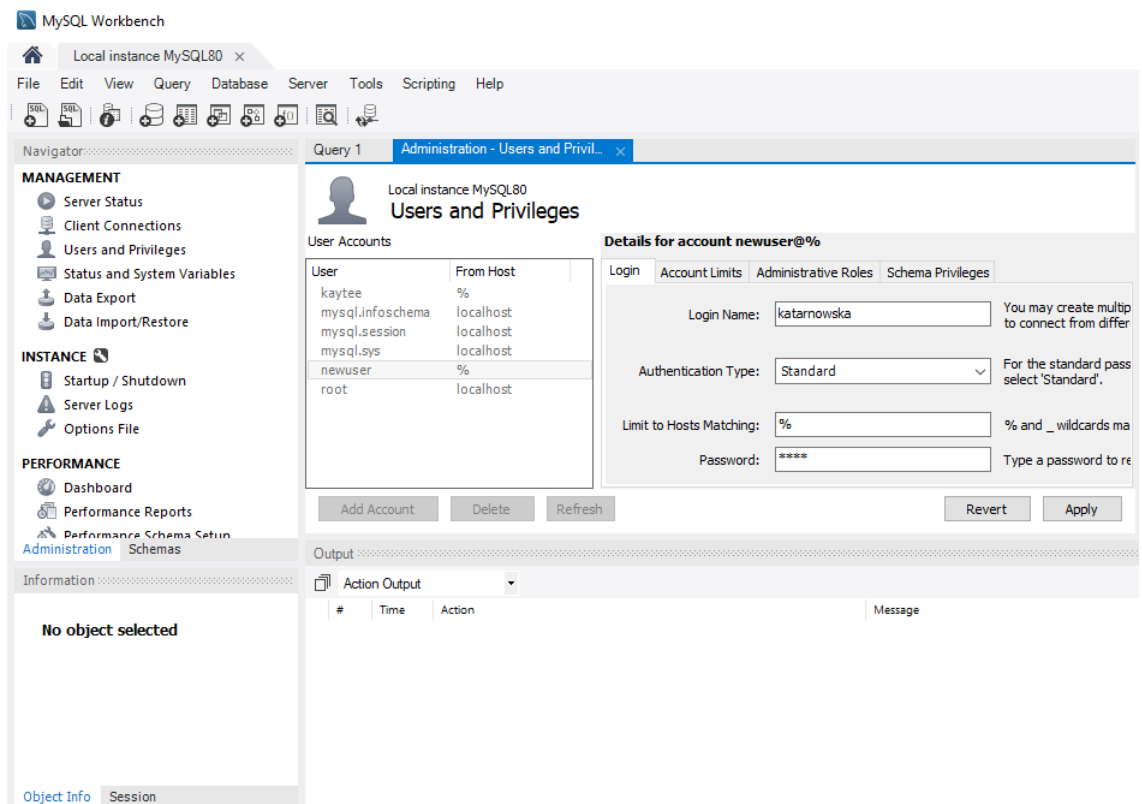
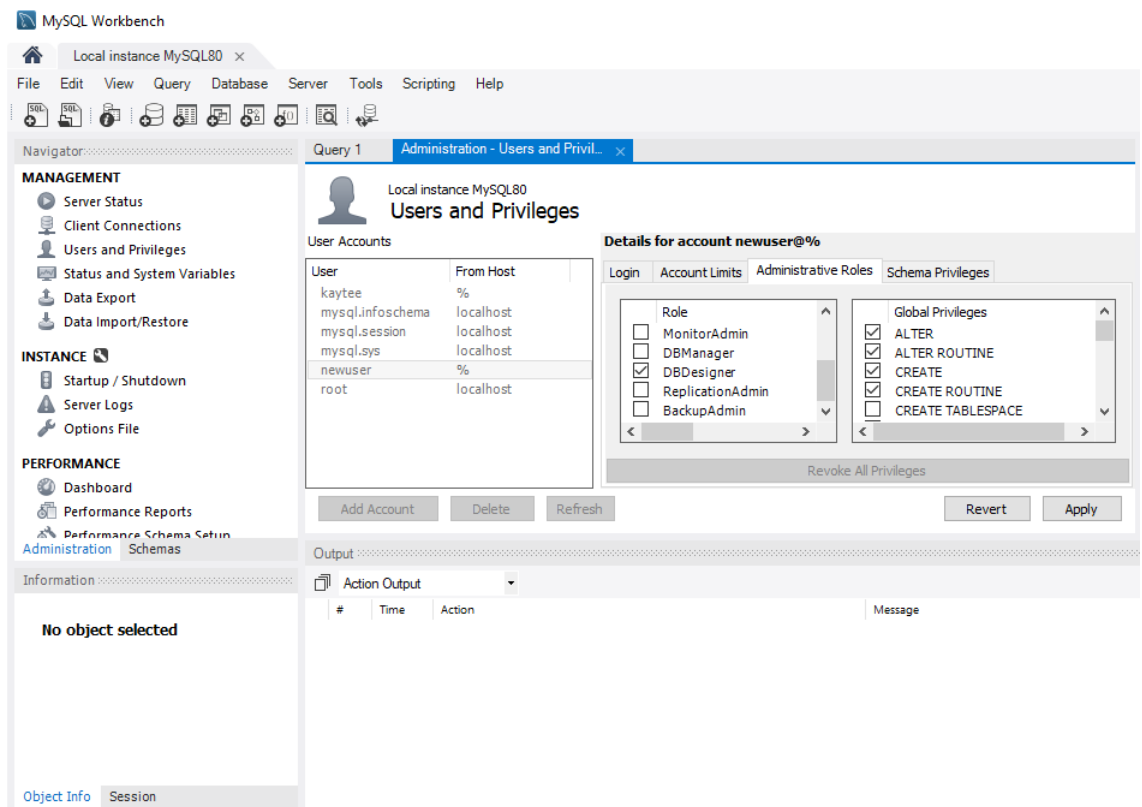Figure 8: Users and Privileges - Specifying Login information for a new user.

Figure 9: Adding DBDesigner role to a new account.

Figure 10: Connecting to MySQL as a newly created user using command **mysql -h localhost -u** *fmLastname* **-p**
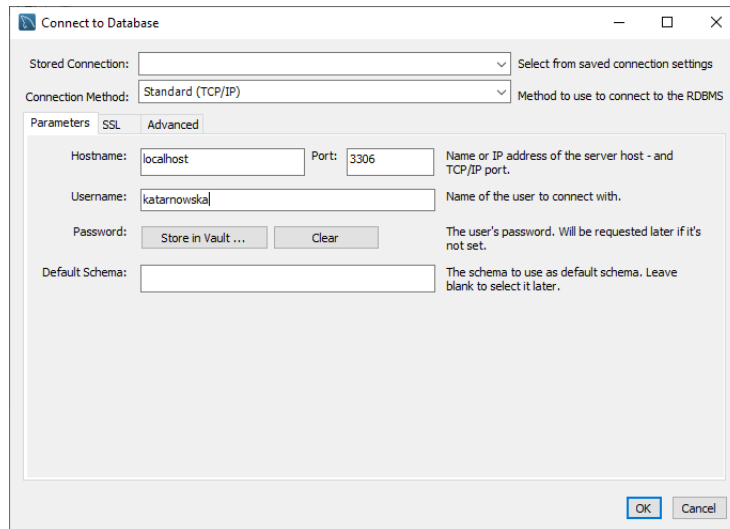
Figure 11: A new connection login screen in MySQL Workbench. Provide your username (fmLastname)
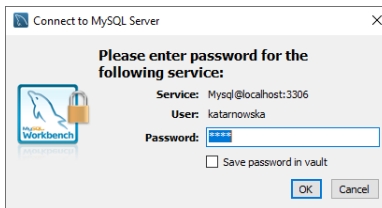
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Figure 12: Logging into MySQL Workbench as a new user.

the current connection tab, and add a new connection from the home screen (using "+" icon next to the MySQL Connections). The new login window opens (see Figure 11).

16. Provide a password for the new user (see screenshot 11.)

2.5.3 Issue a SQL query from the client to server

17. In the query editor, type command: **SELECT USER(), CURRENT_DATE;** - see screenshot 13.

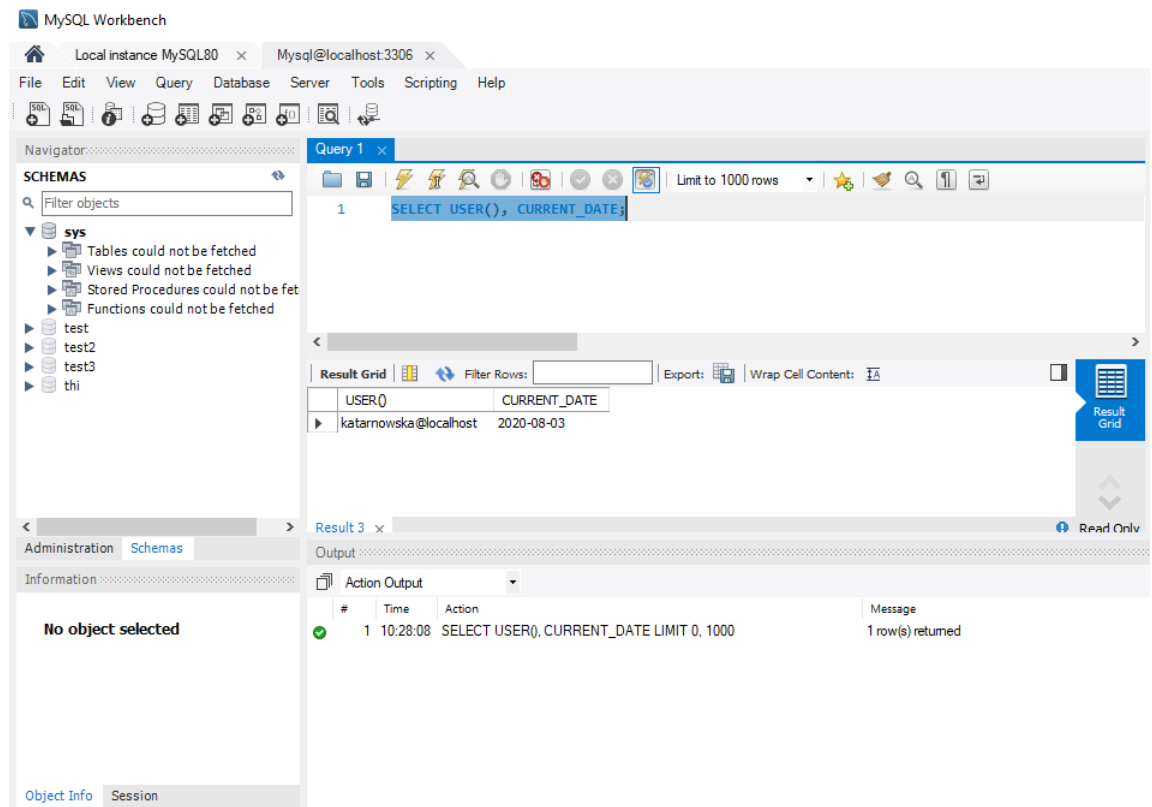18. Review the results in the *Result Grid* below the Query editor - see screenshot 13.

Figure 13: Typing your first SQL query: **SELECT USER(), CURRENT_DATE;**

3 Deliverables

The deliverable is the task report uploaded on Canvas in pdf format. It has to contain the following sections and screenshots embedded into the report. Each student has to submit their report individually.

1. The name of the student you paired up with.

2. The step-by-step instructions you performed to download and install MySQL Server.

3. The step-by-step intstructions *your pair* performed to download and install (you can ask them to provide these from their report).

4. Description of tasks where you helped each other.

5. Screenshots providing proof of successfully login into a created user thorugh command line (see Figure 10 as an example)

6. Screenshots providing proof of succesfull login into a new user through MySQL and the result of the following query **SELECT USER(), CURRENT_DATE;** (see Figure 12 as an example)

4 Grading

The lab will be graded according to the rubric in Table 1.

Table 1: Grading rubric

Rubric #	Criteria	Points
1	Paired up with another student - name provided	10
2	Provided step-by-step instructions to download and install MySQL	20
3	Provided the pair's step by step instructions	20
4	Provided description of tasks where you helped each other	10
5	Screenshot of logging as a new user via command line	20
6	Screenshots showing result query connected as a newly created user	20
Total		**100**