

INFO20003 Week 1 Lab

MySQL software setup

Objectives:

In this laboratory you will:

- Use MySQL Workbench to connect to your labs database
- Change your password
- Disable Safe Updates
- Install MySQL Workbench and (optionally) MySQL Server on your own machine

Overview – MySQL, MySQL Server & MySQL Workbench

MySQL Server is a database management system (DBMS). It is a multithreaded (many things can go on at once) multi-user (many users can connect to the server at once) relational database that is largely compliant with the SQL ISO standards. This is the database that will store your tables and data and on which you will use to learn SQL – Structured Query Language.

MySQL Workbench is a Graphical User Interface (GUI) tool that can be used to connect to and work with a MySQL server. It provides an integrated development environment for database design, database administration, SQL code development and basic database migration tools. In this subject we will be using most of these features of MySQL Workbench – at first the database design tool for modelling and then the tool for SQL code.

The INFO20003 Labs MySQL server

The server used in INFO20003 is only available for use within the university, or via the university's VPN (Virtual Private Network). To gain access to the university's VPN you need to follow the instructions at <http://studentit.unimelb.edu.au/findconnect/vpn> (be sure to follow the instructions for your Operating System).

Connecting to the INFO20003 lab server

TASK 1: Open MySQL Workbench and create a connection to the server

1. Click the + symbol next to MySQL Connections

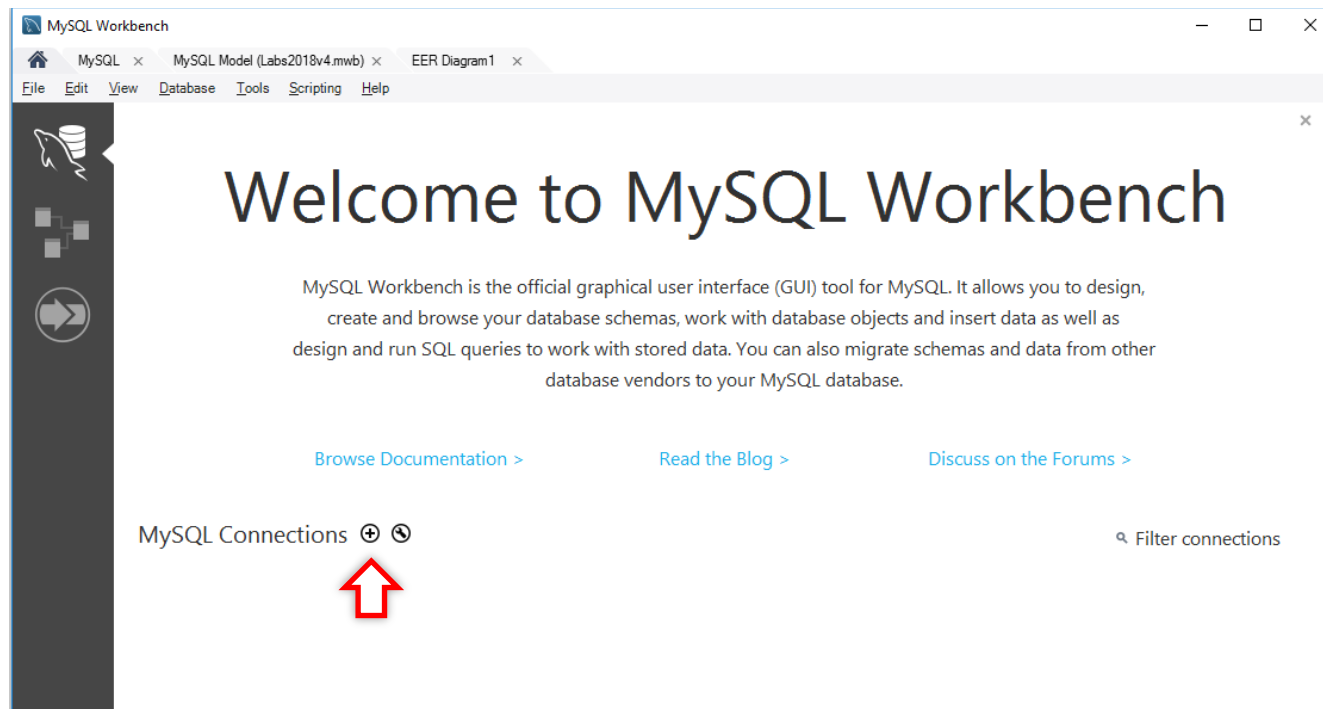


Figure 1: MySQL Workbench welcome screen

2. Fill in your connection details:

a) Choose a connection name (e.g. "INFO20003 lab server"). You can specify any connection name you like, but you must specify a connection name.

b) Enter details as follows:

Hostname: info20003db.eng.unimelb.edu.au

Port: 3306

Username: Your username is the username that you use to log into university services normally. For example, Joanne Smith has the username

jsmith

Password: The default password is in the format of:

username_YYYY

where YYYY is the current year. In the year 2020 Joanne's password would be:

jsmith_2020

You will need to change your password (see below).

Default Schema: The Default Schema is the same as your username.

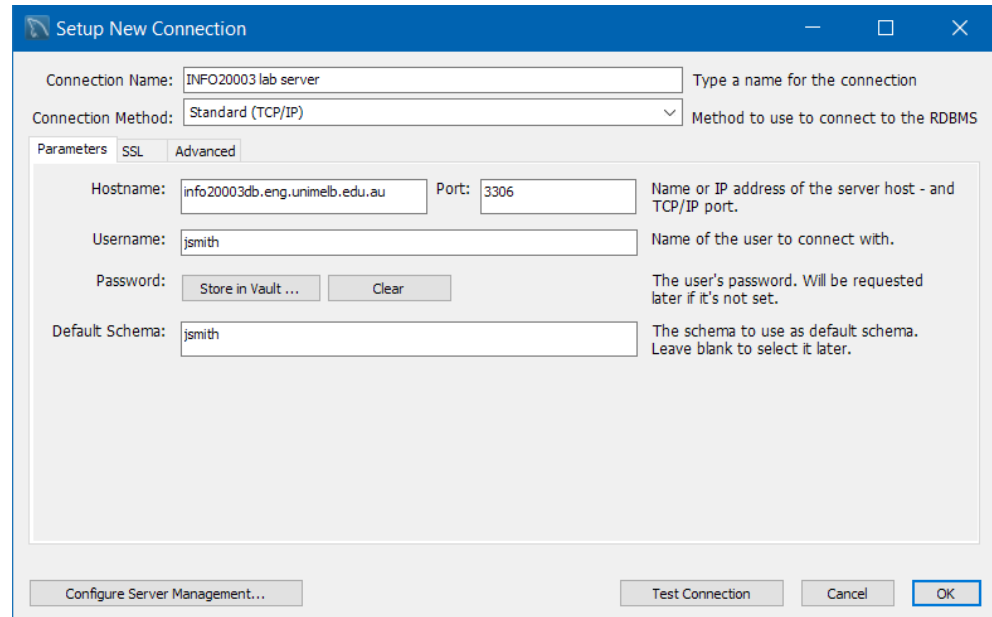


Figure 2: MySQL Workbench's Setup New Connection dialog

c) Click “Test Connection”.

If the connection is correct you will see the following dialog box:

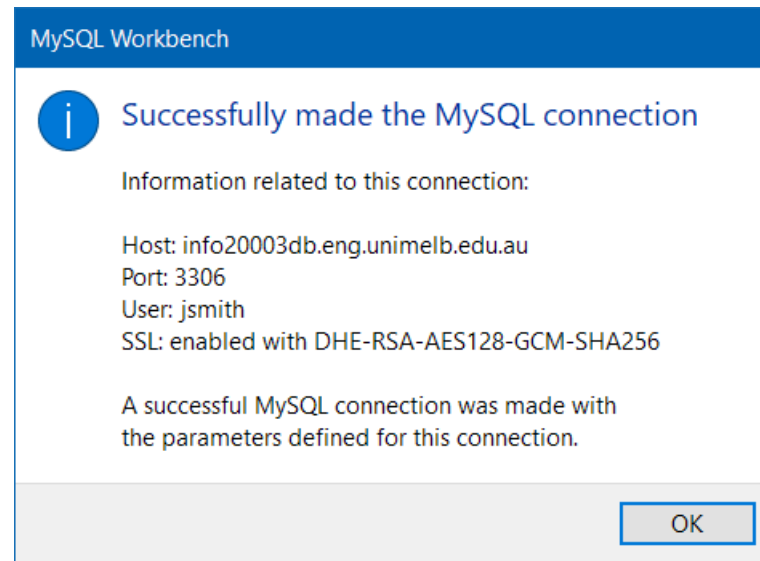


Figure 3: A successful connection

If you see an error similar to “Access denied for user 'jsmith'@'12.34.56.78' (using password: YES)”, ensure you are using the password specific to this subject as described above. If you enrolled late in the subject, you should email the head tutor to arrange for an account to be created for you on the server.

d) Click “OK” to close the dialog window.

TASK 2: Test your saved connection to the MySQL Server.

Click on the connection name (e.g. “INFO20003 lab server”) button to test your connection from Workbench to the database.

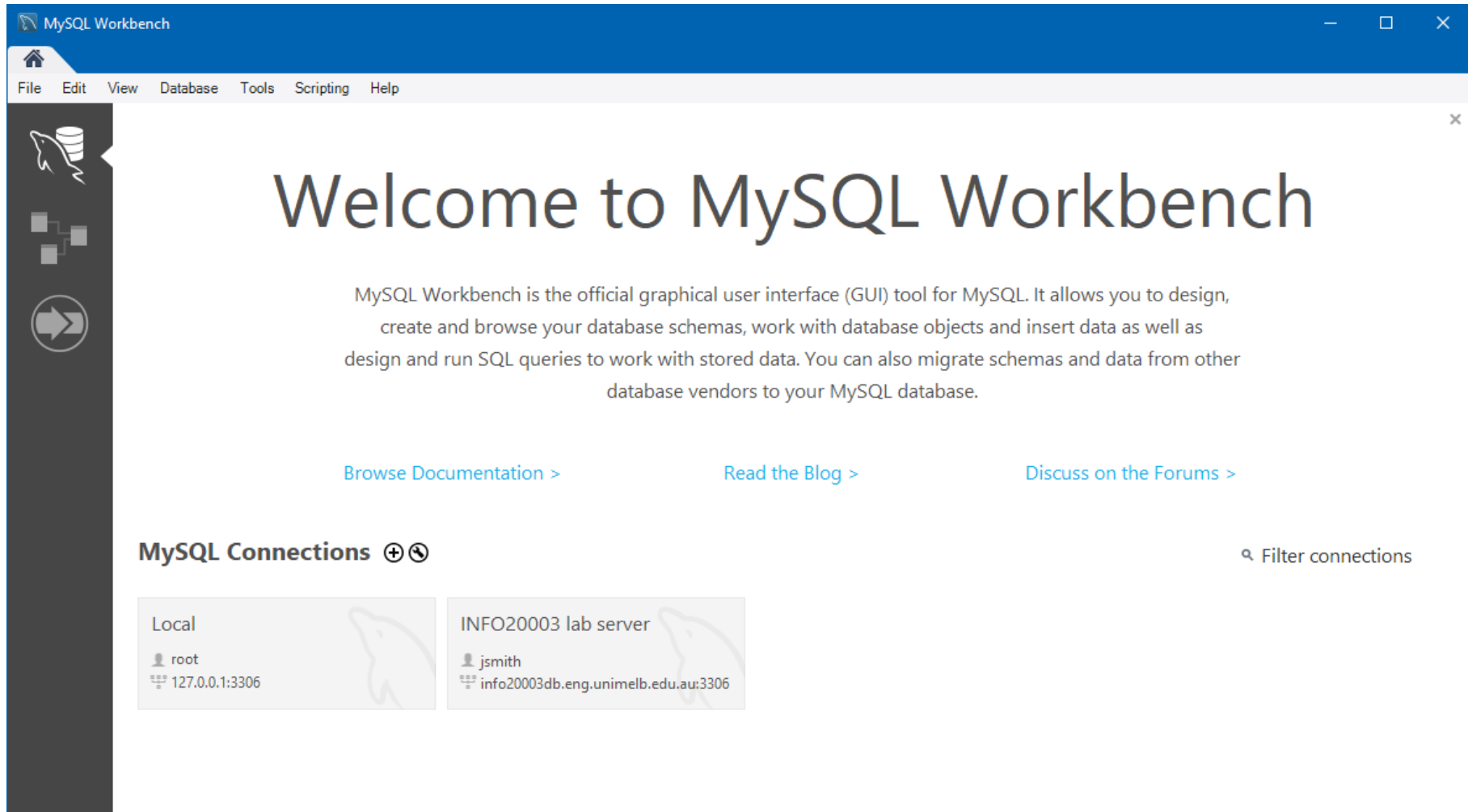


Figure 4: MySQL Connections showing the new MySQL database connection

If successful you will see the MySQL Workbench Query window (Figure 5).

Switch to the **Schemas** tab in the left-hand panel. You will only see one schema. Its name will be your username, and it should be shown in bold. If the name is not shown in bold, check that you entered the “Default Schema” correctly in the saved connection.

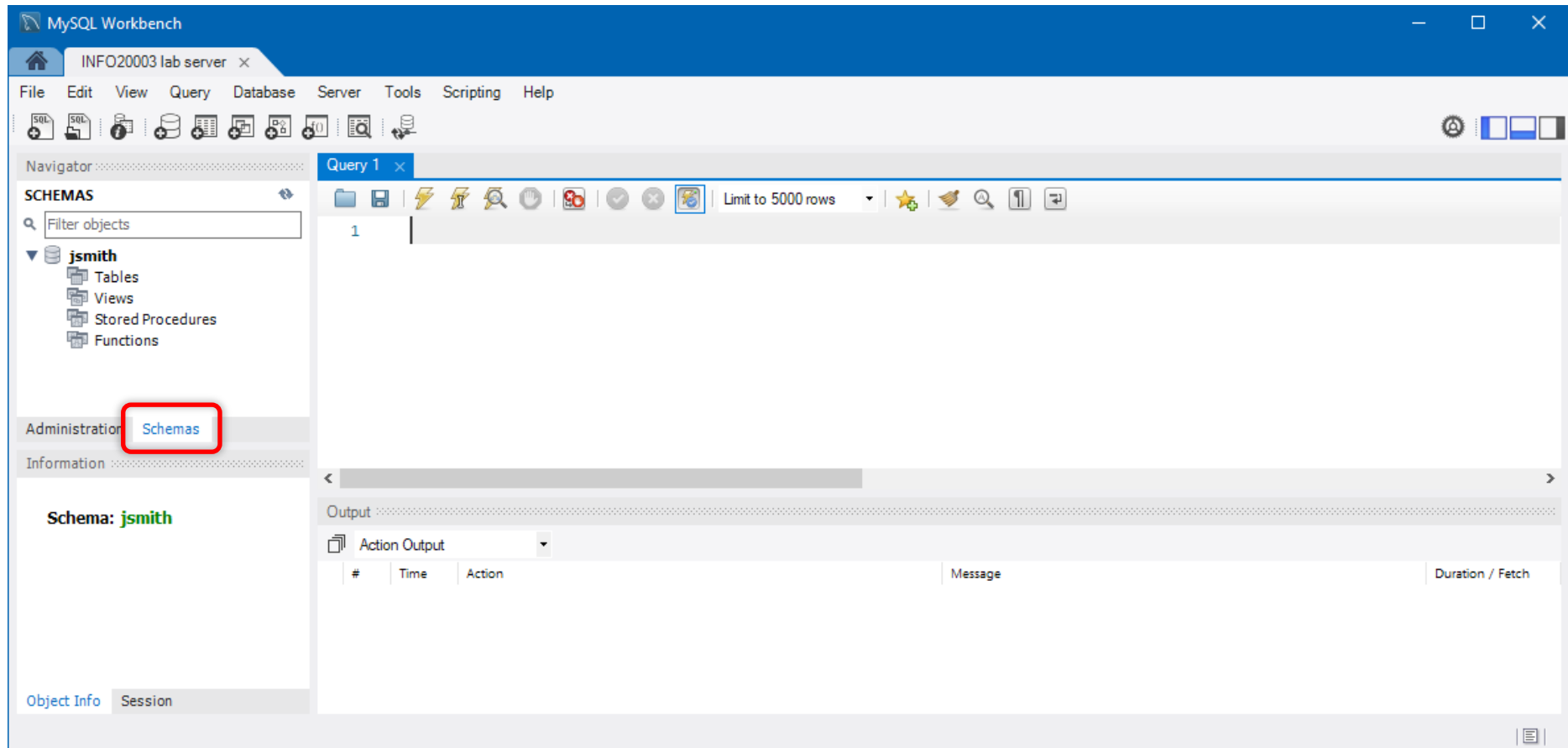


Figure 5: The MySQL Workbench query window

Changing your password

To change your password, after logging in, set a new password by entering the command (including the apostrophes):

```
SET PASSWORD = 'my-new-super-secure-password-123';
```

Now press Ctrl+Enter (⌘+Return on Mac), or the leftmost lightning button on the toolbar, to run the query. Also remember that your password is case sensitive.

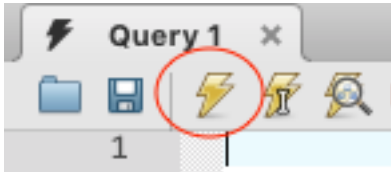


Figure 6: The lightning button executes all statements in the query window

IMPORTANT: Do not forget your password. If you do forget, you will have to request a password change from a tutor.

Disable Safe Updates

MySQL Workbench tries to prevent you from making mistakes by running in “safe update” mode. However, safe update mode is very strict, and it isn’t necessary in this subject where we are not dealing with real-world, valuable data.

To disable safe updates, toggle the option in **Edit > Preferences > SQL Editor** (for macOS users, **MySQL Workbench** menu > **Preferences > SQL Editor**):

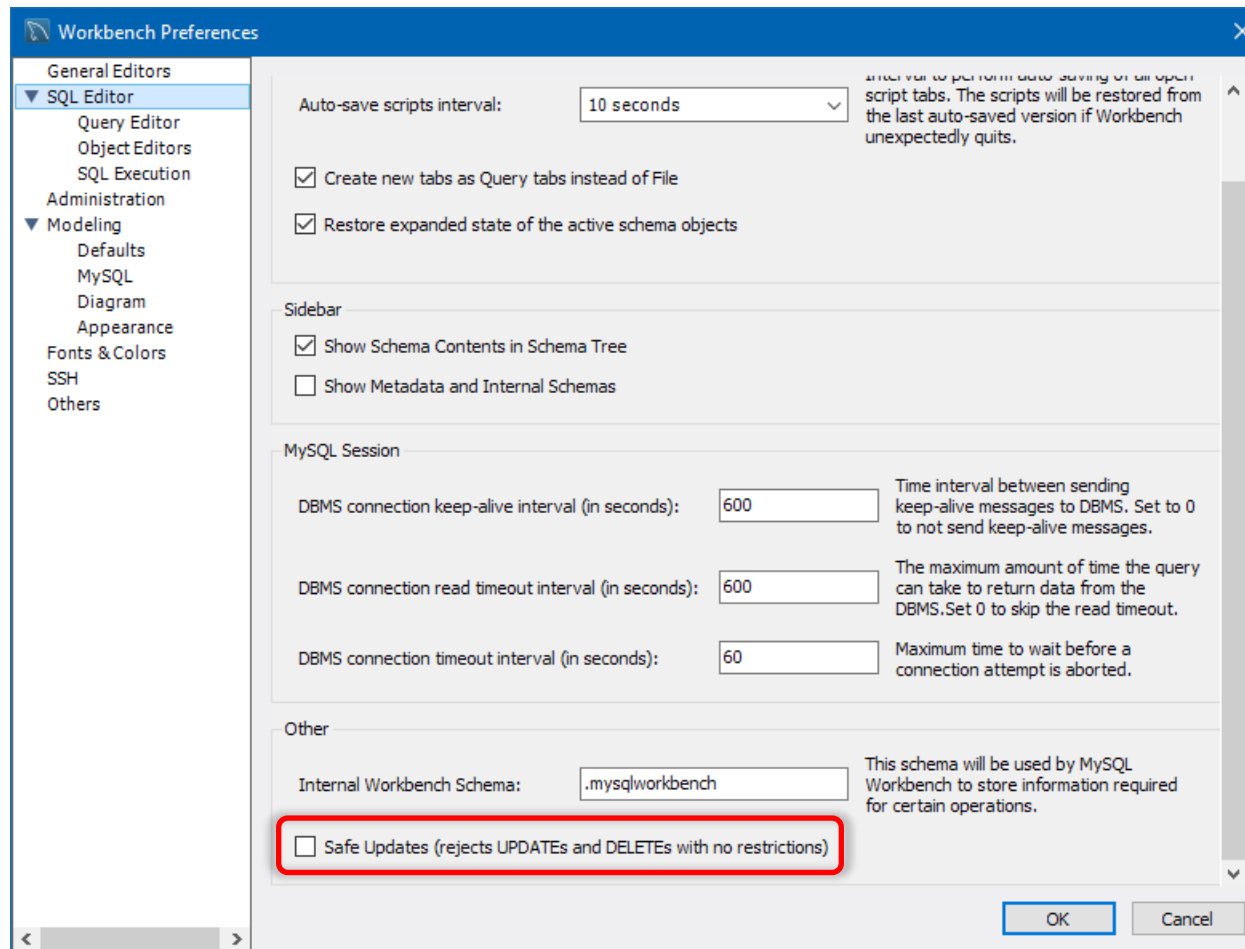


Figure 7: Safe Updates is turned off

You may have to scroll down the preferences window to see the “Other” section to disable safe updates.

It is important that you **exit** and **reload** MySQL Workbench, and **reconnect** to the server, so that the preference changes take effect. This is true for all preference changes.

Appendix A.1: BYOD Install of MySQL Workbench

If you wish to connect only to our info20003db MySQL server, you may choose to only install MySQL Workbench on your own device. Workbench works on Windows, macOS and Linux systems.

Downloads:

MySQL Workbench is available from the MySQL downloads pages. You will need to download and install MySQL Workbench to complete the SQL labs in this subject.

Download MySQL Workbench from this link:

<http://dev.mysql.com/downloads/workbench/>

When downloading, it is advised to select “**No thanks, just start my download**” rather than signing up for an Oracle account.

Don't forget to also install the University VPN if you plan to connect to the info20003db server from home.

Appendix A.2: BYOD Install of MySQL Server

In addition to MySQL Workbench, you may choose to additionally install MySQL Server on your own computer.

Installing MySQL Server allows you to carry around your data with you on your own device, meaning you do not need to connect to our info20003db server through the University VPN to do your work in this subject. Installing your own server also allows you to have full control over the server, including creating multiple database schemas and changing user permissions – these actions are not required for this subject, but you may find them useful at some point during semester.

MySQL Server is supported on Linux, macOS and Windows operating systems.

macOS and Linux users:

Install Workbench first. When you have done that, the Server can be downloaded from this link: <https://dev.mysql.com/downloads/mysql/>

Be sure to download MySQL Community Server **version 8.0**. When downloading, it is advised to select “**No thanks, just start my download**” rather than signing up for an Oracle account.

Important note for macOS users: Be sure to carefully note down the password that is shown to you during the installation process!

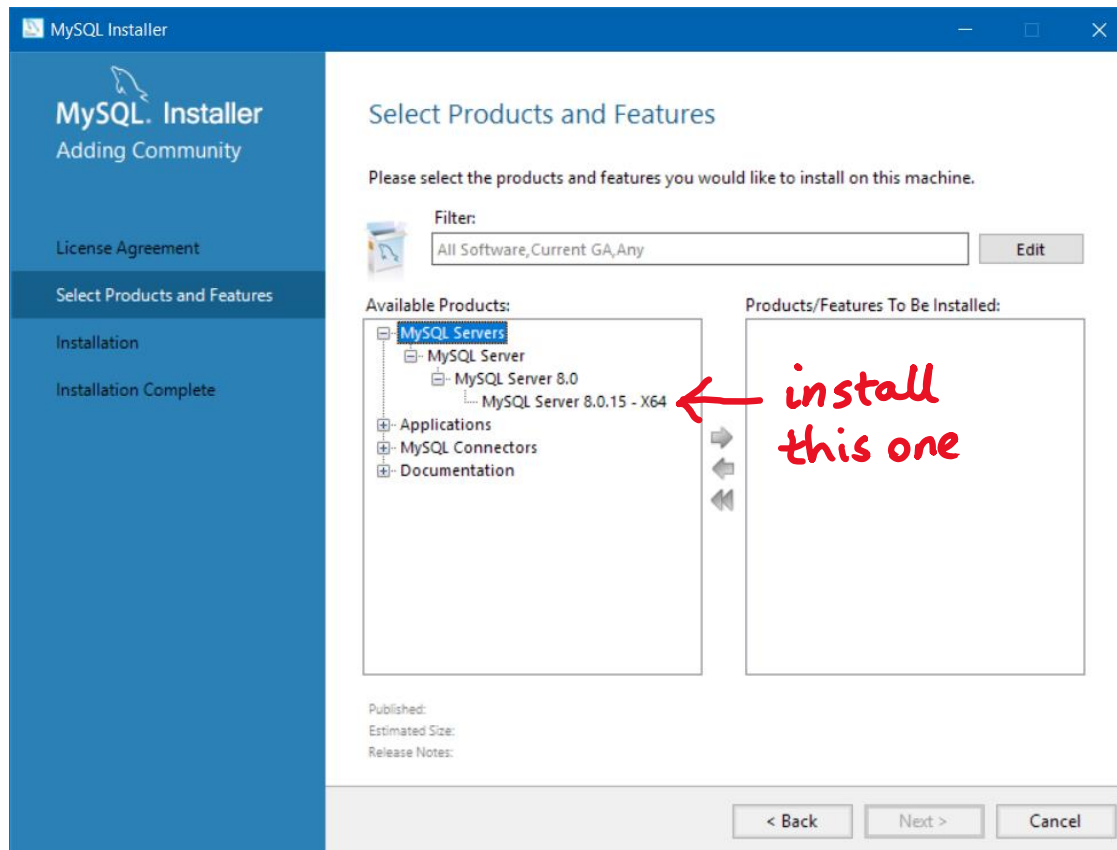
To start your MySQL server: on macOS you will need to open 'System Preferences', select the MySQL Server icon, and start the MySQL Server. On macOS you can elect to start the database each time you start your machine.

Windows users:

Install Workbench first. When you have done that, the Server installer can be downloaded from this link:

<https://dev.mysql.com/downloads/windows/installer/8.0.html>

Launch the downloaded file and follow it through to “add” a new product. When you reach the “Select Products and Features” screen, choose the X64 version of the server:



Continue stepping through the wizard, accepting the default options until you get to the “Accounts and Roles” page.

Your username for this server will be **root**. You need to select a password for this **root** account. You don’t need to create any other user accounts.

MySQL Installer

MySQL Server 5.7.22

Group Replication

Type and Networking

Accounts and Roles

Windows Service

Plugins and Extensions

Advanced Options

Apply Configuration

Accounts and Roles

Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL Username	Host	User Role
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Add User

Edit User

Delete

< Back Next > Cancel

Keep clicking through the wizard, accepting the defaults.

When the process is complete, try connecting to the server using Workbench. The hostname is 127.0.0.1, port 3306, username **root**, password is the password that you entered into the installation wizard, and leave the default schema blank.

When you install the MySQL Server install on Windows it will create a MySQL Server service. This means your database server daemon (the process that allows the database server to start) will run each time you start your Windows machine.

Appendix B: macOS Password Reset for MySQL Server

If you need to reset your MySQL Server **root** password on macOS, follow these steps:

1. In System Preferences, stop the MySQL server service.
2. Open a Terminal window.
3. In the Terminal window execute the following commands:

```
$ cd /usr/local/mysql/bin  
$ sudo ./mysqld_safe --skip-grant-tables
```

4. You will then be prompted to enter a password. This is the password for the administrator account on the Macintosh – NOT the MySQL account generated as part of the install.

5. Open a second (new) Terminal window and execute the following commands:

```
$ cd /usr/local/mysql/bin  
$ ./mysql -u root  
mysql> FLUSH PRIVILEGES;  
mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY 'newpassw0rdh3r3'; -- your new password in quotes  
mysql> EXIT
```

6. Start the MySQL server service in System Preferences.