Lab1: MySQL and MySQL Workbench

Objectives:

1. To illustrate the concepts of relational database and SQL within the MySQL environment
2. To understand how to use the visual tools, called MySQL Workbench *(or other tools of learners' choice),* for SQL development, server administration and database design and modeling by self-studying.

Estimated Time: 1.5 hours

Summary

MySQL is one of the most popular Open-Source SQL database management systems. In this course, it will be used to illustrate the concepts of relational databases which store data in a structured format using rows and columns and to understand the fundamentals of SQL and how they are implemented in MySQL.

MySQL Workbench provides a visual console to easily administer MySQL environments and gain better visibility into databases. Developers and DBAs can use the visual tools for SQL development, Server administration, and database designing and modeling. More information about MySQL Workbench: http://dev.mysql.com/doc/workbench/en

Figure. 1 show MySQL Workbench Architecture uses to run SQL commands or test queries to use in application later.

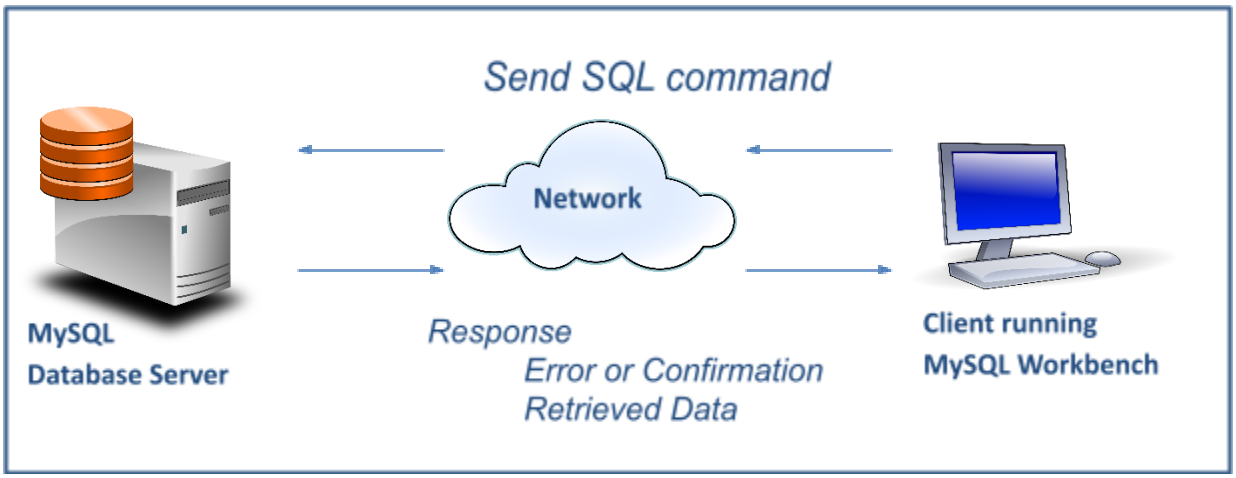


Figure 1. MySQL Workbench Architecture

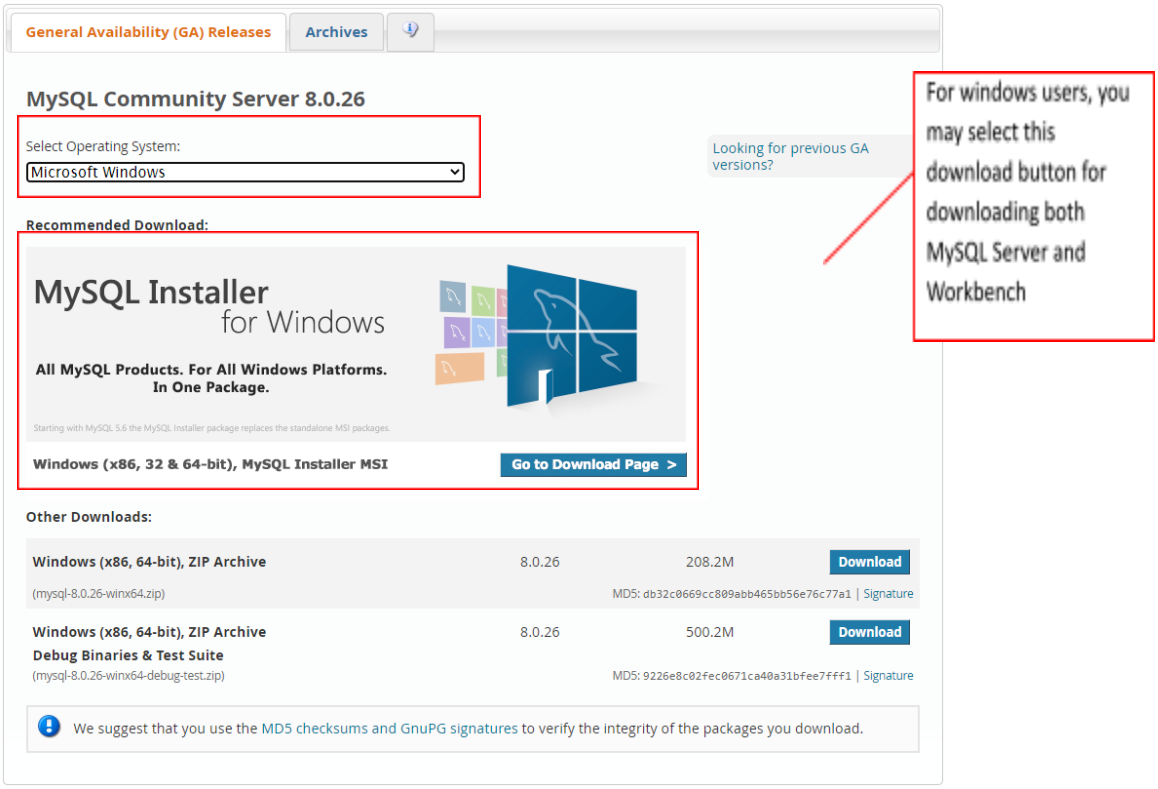
Lab Instruction

1.1 Install MySQL Server - The Community Edition

NOTE: For those who already have MySQL engine installed on your local server, you may skip to the step 1.2. For example, if you have installed a web server stack, like, WAMP or LAMP stack, you usually have MySQL installed on your server.

Download Link: https://dev.mysql.com/downloads/mysql/

Make sure that you have selected the operating system you are using. For some OS like MacOS or Linux you may have to select the version of your OS (Intel or ARM for MacOS and various versions of Ubuntu linux, etc.)



1.2 Install MySQL Workbench

For those who never use MySQL before, it is recommended to use MySQL workbench because it will help users to manage database schemas easier. However, if you are experienced in other MySQL clients, like DBeaver or Navicat), you can keep using those tools for this laboratory and immediately go to **STEP 1.3.**

Download Link: https://dev.mysql.com/downloads/workbench/

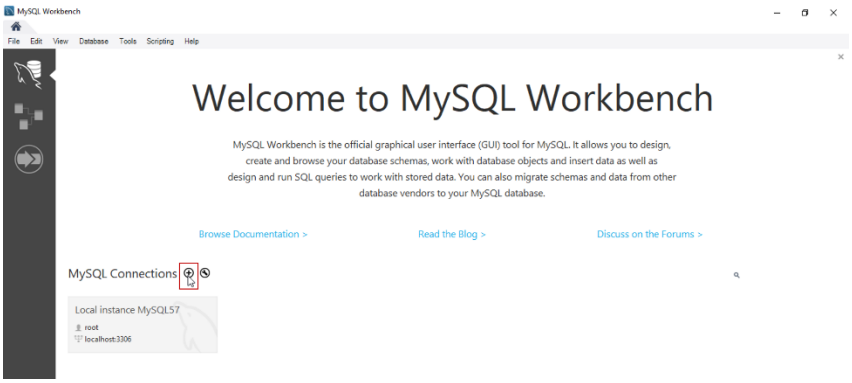
Like MySQL Server, you have to select your operating system then click the download button of your architecture. The following figure shows that the MacOS was selected.

1.3 Study MySQL Workbench

NOTE: For users of other MySQL client tools, you can use those tools you feel familiar with to complete these 3 tasks equivalently.

1.3.1 Test connection to MySQL server

1) Create a connection by clicking on the + sign on the home tab.



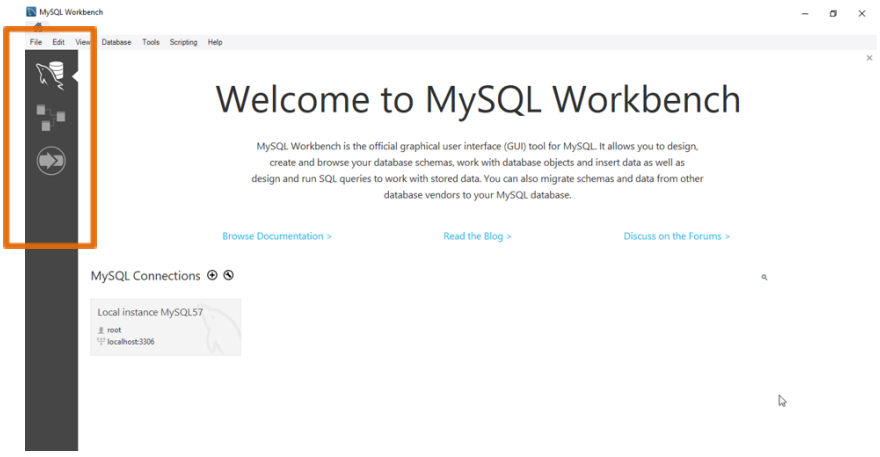
2) Provide the connection name=DBS_<your id> e.g. my ID is st121032, my connection name is **DBS_121032** in New Connection dialog box and click the ***Test Connection*** button. If success, then click OK.

3)

[TASK1] Show an image to verify successful connection.

1.3.2 Self-study MySQL Workbench functionalities

MySQL Workbench provides three main areas of functionality: SQL Development, Data Modeling, and Server Administration in Home tab.

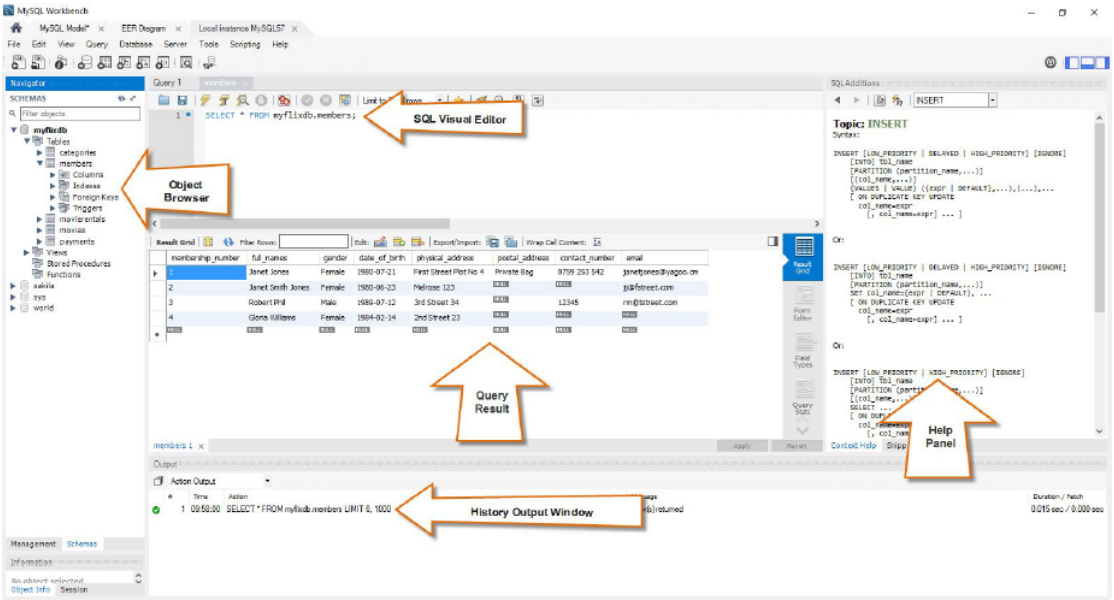


[TASK2] Describe what the three functionalities are and how useful they are. *(For other tools, please introduce briefly the important functions provided by your tools.)*

1.3.3 Verify proper operation of MySQL Workbench

1) Open *SQL Editor*

Note: SQL Editor consists of a set of specialized set of editors such as query, schema, and table.



2) Run the below command

CREATE DATABASE myFirstDB;

USE myFirstDB;

3) **[TASK3]** Show an image reflecting the successful completion of the running the command.

Lab Submission (Due: Tue 17 August 2022, 9.00 P.M.)

Total number of tasks: 3

How to submit: Submit into the course Google Classroom

Deliverable: A lab report which explains each task you have done (not more than 100 words for each task).

Format: PDF