1. Lab 1: Install and configure MySQL (Mac)

In this lab, you will download, install and configure MySQL on your Mac. If you already have a version of MySQL installed, you can probably use the version that is installed, but if there are features shown in the labs that you don't have, you should consider updating your installation.

1.1 Download MySQL from the web site

____ Open your web browser and go to the following URL:

http://www.mysql.com

The web page shown in Figure 1 is displayed.

____ Click the **Downloads** link at the top of the page, as shown in the figure.

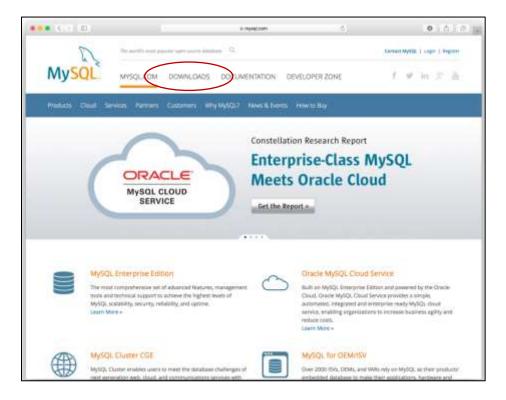


Figure 1: Start at the www.mysql.com web page.

L01_0010M

The **MySQL Downloads** page shown in Figure 2 is displayed.

Go to the **MySQL Community (GPL) Downloads** link at the bottom of the page and click the link.

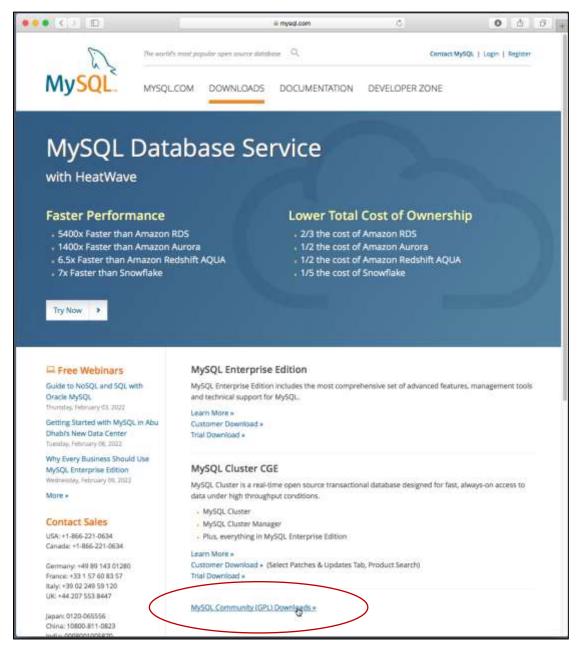


Figure 2: Click the Community (GPL) Downloads link at the bottom of the Downloads page.

L01 0011M

__ The **MySQL Community Downloads** page shown in Figure 3 is displayed.



Figure 3: Click the MySQL Community Server link.

L01_0012M

__ The MySQL Community Server page shown in Figure 4 is displayed.

NOTE: the version number might be different from what is shown in the figure (8.0.28). That was the current version when this document was created in January, 2022.

Verify that the **Select Operating System** drop-down is set to **macOS**.

Click the **Download** button for **DMG Archive**. Be sure to select the correct version (ARM, x86) for the macOS architecture that you are using. If your Mac has an M1 or later chip, select ARM, otherwise, select x86.

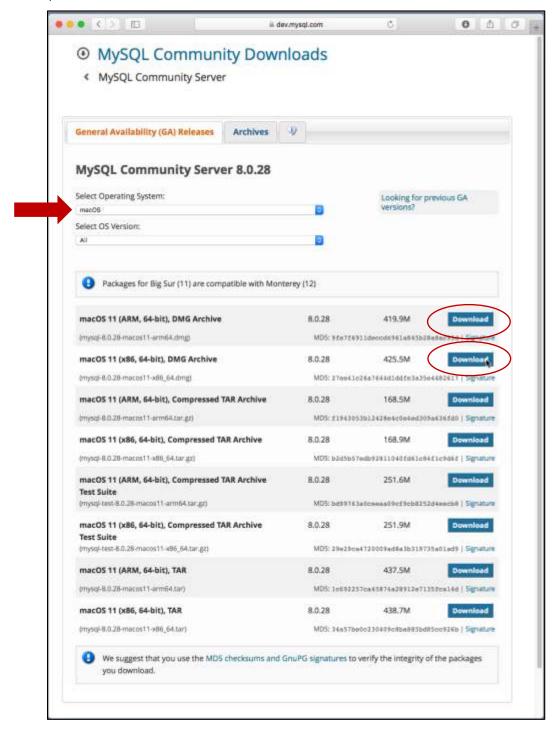


Figure 4: Click the **Download** button for the macOS architecture that you are using.

L01_0021M

The MySQL Community Downloads page shown in Figure 5 is displayed.
If you have an Oracle web account, you can login. If you do not have an Oracle web account, you can create one by clicking the Sign Up button. There is no charge to create an account.
If you do not want to login or create an account, click the No thanks, just start my download



Figure 5: You can login, sign up, or just start the download.

link.

L01_0023M

 _Your browser will start the download to the Dowr	nloads folder.
 $_$ This completes the steps to download the MySQL	product from the product web site.

1.2 Install the MySQL product from the installer file

Locate the **MySQL DMG** download in the **Downloads** folder (in the Dock) as shown in Figure 7. Click the download to open it.



L01_0031M

Figure 6: Locate the MySQL DMG download in the Downloads folder.

_____ The **MySQL PKG** file is displayed, as shown in Figure 7. Double-click the PKG file to start the installation process.



L01_0101M

Figure 7: Double-click the PKG installer file to start the install process.

_____ You may see the panel shown in Figure 8. If you get the panel, click the **Allow** button.



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Figure 8: Click the Allow button if you get this panel.

_ The installer may take several seconds to start up. You will then see the opening panel of the installer as shown in Figure 9.



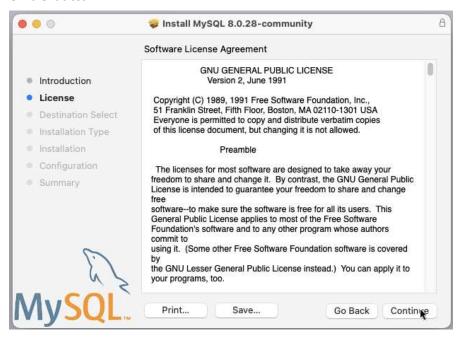
L01_0102M

Figure 9: This is the opening panel of the MySQL community installer.

_____ Click the **Continue** button.

The **Software License Agreement** panel shown in Figure 10 is displayed.

Click the **Continue** button.

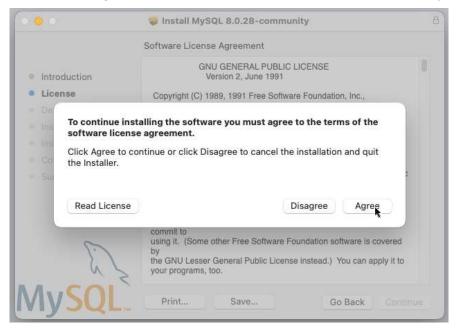


L01_0121M

Figure 10: You can review the license terms, then click the Continue button.

____ The message shown in Figure 11 is displayed.

_ Click the **Agree** button to agree to the license terms and continue the install process.



L01_01211M

Figure 11: Click the Agree button to agree to the license terms.

_____ The **Standard Install** panel shown in Figure 12 is displayed.

____ Do not change any of the options, just click the **Install** button.

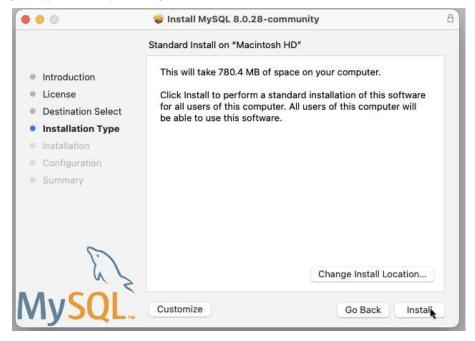


Figure 12: Click the Install button for a standard installation.

L01_0122M

_ The Installer may prompt you to enter your password, as shown in Figure 13.



L01_0124M

Figure 13: Enter your password to install the MySQL software.

_____ The **Installing** panel shown in Figure 14 is displayed while the software is being installed.

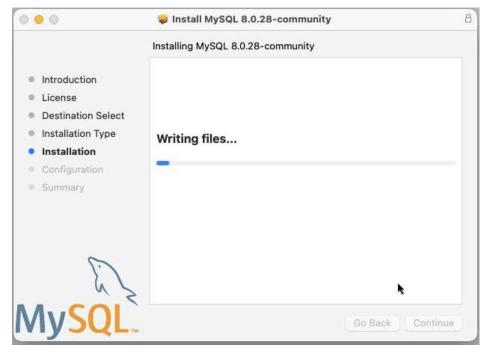


Figure 14: The installer shows a progress panel during the install process.

L01_0125M

___ The **Configuration** panel shown in Figure 15 is displayed. Leave the option set to **Use Strong**Password Encryption.

Click the **Next** button.



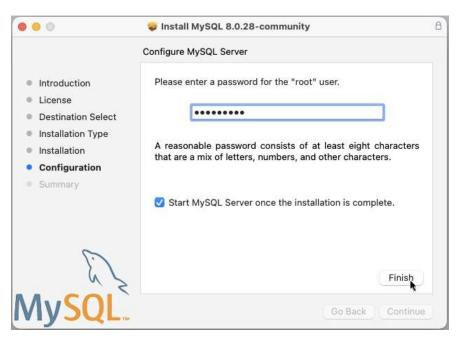
L01_0126M

Figure 15: Leave the option set to Use Strong Password Encryption.

_____ The **Configuration** panel shown in Figure 16 is displayed.

Enter a password for the MySQL Server "root" password. **You must remember the password**, and notice that you are not prompted to confirm the password. Type carefully!

_ Click the **Finish** button after entering the password.



L01 0127M

Figure 16: Enter the password you want to use for the "root" user.

____ You may be prompted to enter your Mac password again, as shown in Figure 17.



L01_0128M

Figure 17: You may be prompted to enter a password for the InstallerRemotePluginService.

- _____ Another panel briefly appears, followed by the panel shown in Figure 18.
- _____ Click the **Close** button to close the installer.

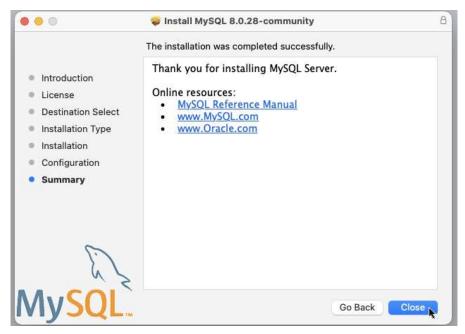


Figure 18: This is the final panel displayed by the installer.

L01_0132M

The installer displays the message shown in Figure 19, offering to move the installer to the Trash. You can keep the installer or move it.



L01 0135M

Figure 19: The installer offers to move the program to the Trash.

Verify that the MySQL Server is running

Now that the MySQL Server is installed, you will use the Mac System Preferences to check to see if it is active.

Open the System Preferences dialog. You can use either the System Preferences menu item on the Apple menu or click the System Preferences icon in the tray (see Figure 20).





L01 0142M

L01 0141M

Figure 20: Open the System Preferences dialog using either of these techniques.

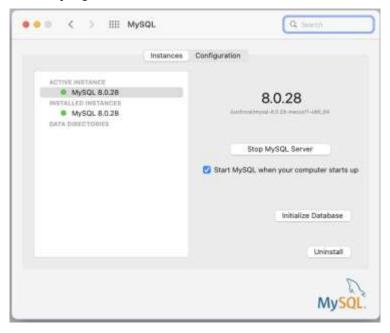
____ In the System Preferences dialog (Figure 21), click the MySQL icon in the bottom row. The other icons that are in the row will be different on your system.



L01_0143M

Figure 21: Click the MySQL icon to open the MySQL preferences.

The MySQL preferences panel is displayed, as shown in Figure 22. If the server is running, you will see "green dots" next to the Active Instance and Installed Instances names. If the server is not running, click the **Start MySQL Server** button to start it.



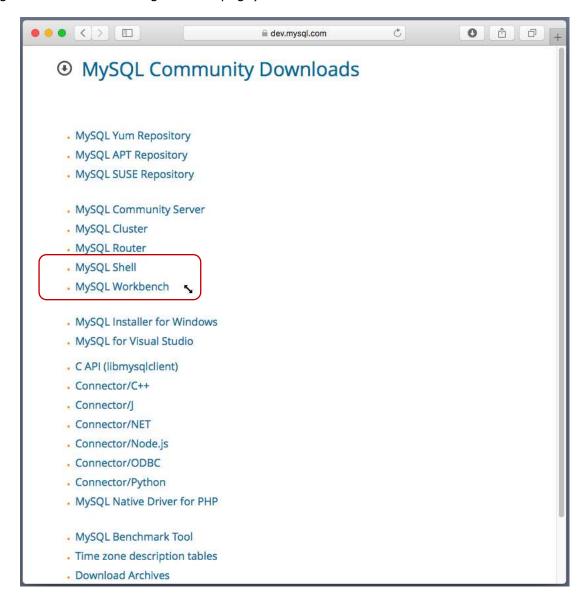
L01_0144M

Figure 22: This is the MySQL preferences panel.

1.4 Download and install additional MySQL products

Now that the installation of the MySQL Server is complete, you will download and install additional MySQL products.

_ Go back to the **MySQL Community Downloads** page, as shown in Figure 23 (see Figure 2 on page 2 to review how to get to the page).



L01_0151M

Figure 23: Locate the MySQL Shell and MySQL Workbench items on the MySQL Community Downloads page.

1.4.1 Download the MySQL Shell

____ Click the MySQL Shell link.

_____ The **Download MySQL Shell** page shown in Figure 24 is displayed.

Click the **Download** button to download the DMG Archive. Be sure to select the correct version (ARM, x86) for the macOS architecture that you are using. If your Mac has an M1 or later chip, select ARM, otherwise, select x86.

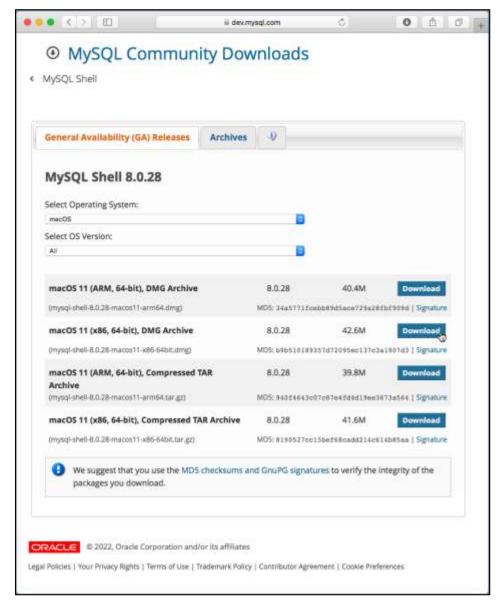


Figure 24: Click the Download button to download the MySQL Shell.

L01_0152M

_____ The **My SQL Community Downloads** dialog is displayed, similar to Figure 5 on page 5.

Click the **No thanks, just start my download** link to download the MySQL Shell.

The DMG file is downloaded to the **Downloads** folder.

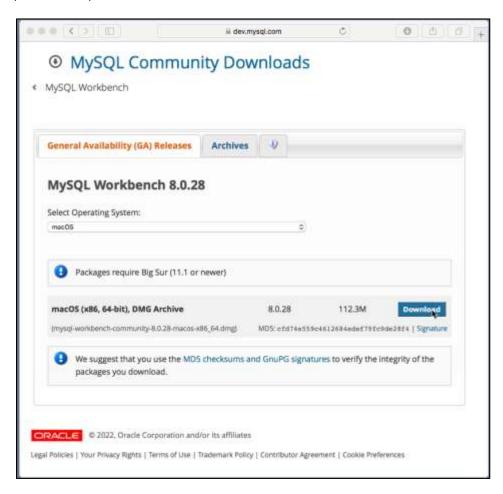
1.4.2 Download the MySQL Workbench

$_{}$ Go back to the MySQL (Community Downloads page	(Figure 23 on page 14).
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____ Click the MySQL Workbench link.

_____The Download MySQL Workbench page shown in Figure 25 is displayed.

_ Click the **Download** button to download the DMG Archive. Be sure to select the correct version (ARM, x86) for the macOS architecture that you are using. If your Mac has an M1 or later chip, select ARM, otherwise, select x86.



L01 0162M

Figure 25: Click the Download button to download the MySQL Workbench.

_____ The **My SQL Community Downloads** dialog is displayed, similar to Figure 5 on page 5.

__Click the **No thanks, just start my download** link to download the MySQL Shell.

The DMG file is downloaded to the **Downloads** folder.

1.4.3 Install the MySQL Shell

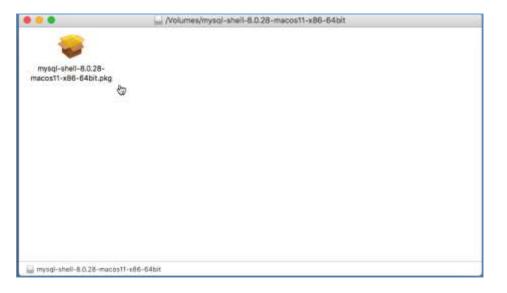
Locate the **MySQL Shell DMG** download in the **Downloads** folder (in the Dock) as shown in Figure 26. Click the download to open it.



L01_0155M

Figure 26: Locate the MySQL Shell DMG download in the Downloads folder.

The **MySQL PKG** file is displayed, as shown in Figure 27. Double-click the PKG file to start the installation process.



L01_0156M

Figure 27: Double-click the PKG file to start the MySQL Shell installation.

You may get the message shown in Figure 28, stating that Apple cannot check the MySQL Shell download to determine if it contains malicious software.
If you downloaded the MySQL Shell from the official MySQL site, as shown in these instructions, it
is almost certainly OK to install the application (if hackers were able to upload a malware version to the MySQL site, it would not be OK). If you believe that it will be OK to install the application, proceed with the next steps.
Click the OK button to dismiss the warning message.



Figure 28: You may get this message when you try to install the MySQL Shell.

L01_01561M

- _____ To override the Apple warning message and install the MySQL Shell, Command-Click (right-click) the .pkg file (shown in Figure 27).
- _____ A pop-up menu appears, as shown in Figure 29. Click the **Open** item to open the file.

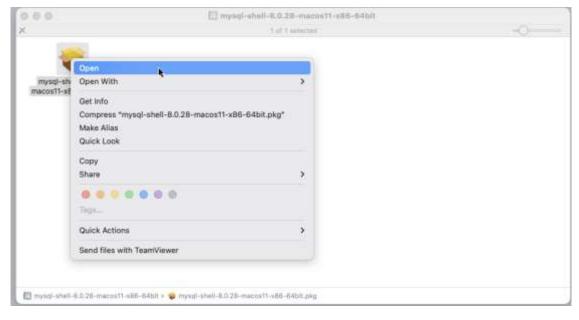
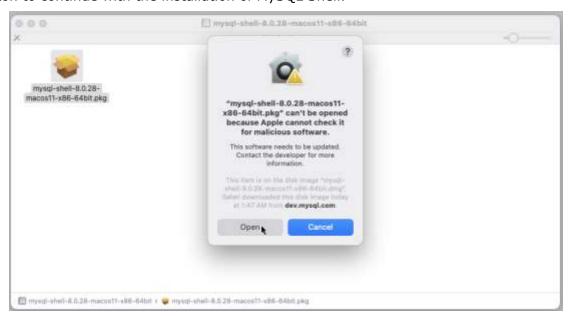


Figure 29: Right-click the PKG file and select the Open menu item.

L01_01562M

___ The same message is displayed, but this time, there is an **Open** button (Figure 30). Click the **Open** button to continue with the installation of MySQL Shell.



L01_01563M

Figure 30: This time, the message contains an Open option. Click Open to install the MySQL Shell.

_____ The Install MySQL Shell installer starts, as shown in Figure 31.

Click the **Continue** button.



L01_0157M

Figure 31: The Install MySQL Shell installer is started.

_____ The remaining panels in this installer are similar to those shown in Figure 10 through Figure 19 on pages 7 through 12.

Although you will not be using the M been installed successfully.	ySQL Shell until later in this course, you can verify that it has
Open a Terminal session (Launchpa	ıd, Other, Terminal).
At the command prompt, enter the f MySQL Shell is installed:	following command to navigate to the directory where the
cd /usr/local/mysql-shell/b	in
Enter the following command to star	t the MySQL Shell:
mysqlsh	
You will see the MySQL Shell start, a	s shown in Figure 32.
• • •	■ bin — mysqlsh — 120×56
Last login: Sun Jan 30 23:50:32 on	ttys000

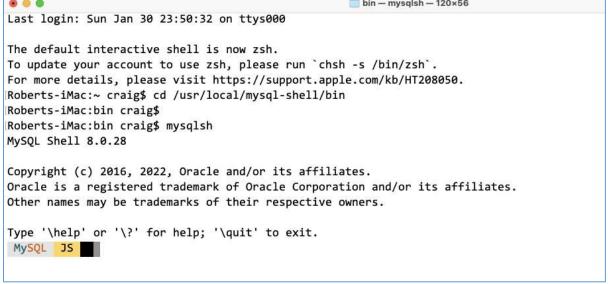


Figure 32: You start the MySQL Shell from a Mac shell (terminal) session.

L01_0158M

_____Enter the following command to end the MySQL Shell session:

1.4.4 Install the MySQL Workbench

Locate the MySQL Workbench DMG download in the Downloads folder as shown in Figure 33. Click the download to open it.



Figure 33: Locate the MySQL Workbench DMG download in the Downloads folder.

L01_0165M

The dialog shown in Figure 34 file is displayed.

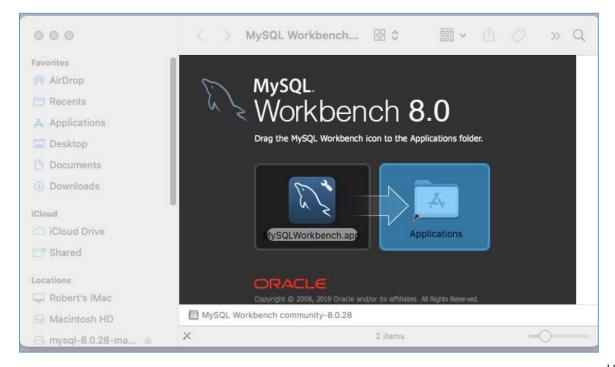


Figure 34: The MySQL Workbench is installed by dragging it to the Applications folder.

L01_0166M

Drag-and-drop the MySQL Workbench.app icon (the dolphin) to the Applications icon on the right, as shown in Figure 35. Or, you can drag-and-drop the dolphin over to the **Applications** icon in the Favorites list on the left side.

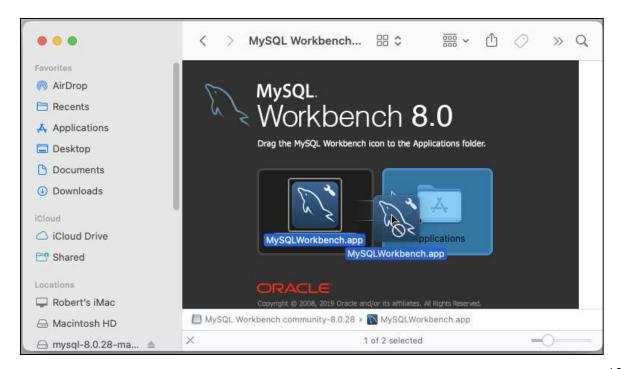


Figure 35: Drag-and-drop the MySQL Workbench.app icon (the dolphin) to the Applications folder.

L01_0167M

____ The installer runs and installs the MySQL Workbench.

1.5 Work with the MySQL Workbench

To finish up this lab, you will do some initial work with the MySQL Workbench.

1.5.1 Start MySQL Workbench

____ Go to the Launchpad.

Locate the **MySQL Workbench** icon as shown in Figure 36. Click the icon to start the Workbench. The MySQL Workbench icon might be located anywhere within your Launchpad. You may have to use the Search box to locate it.

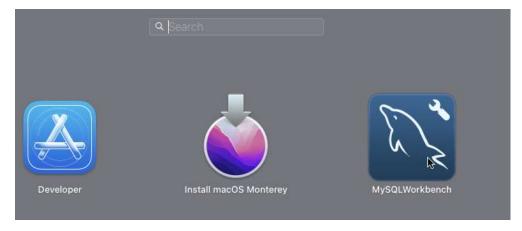


Figure 36: Locate the MySQL Workbench icon in the Launchpad.

L01_0200M

__ You may see the "malicious software" message as shown in Figure 37. If you get this message, click the **Show in Finder** button.



L01 0201M

Figure 37: Click the Show in Finder button if you get this message when trying to start MySQL Workbench.

Once in the Finder, you can Command-Click (right-click) the application name (**MySQLWorkbench.app**) as shown in Figure 38. You can also Command-Click the dolphin icon as shown in Figure 39

____Command-clicking either the name or the icon displays a pop-up menu. Select the **Open** item from the menu to open the MySQL Workbench.

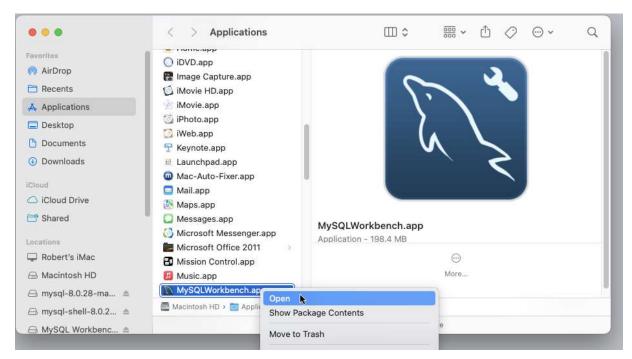


Figure 38: Right-click the application name and select the Open item.

L01_0202M

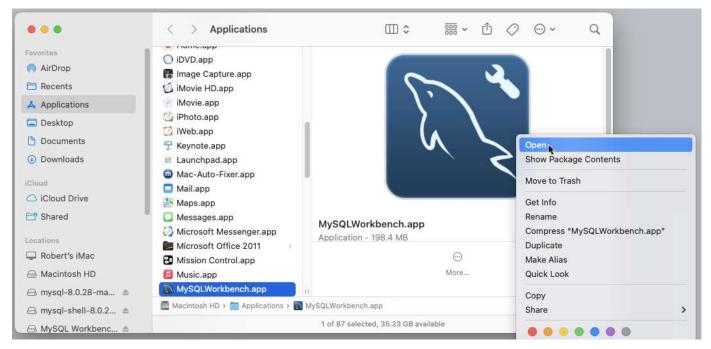


Figure 39: Right-click the dolphin icon and select the Open item.

L01_0203M

The message shown in Figure 40 is displayed. Click the **Open** button open the MySQL Workbench.



Figure 40: Click the Open button to open the MySQL Workbench.

L01_0204M

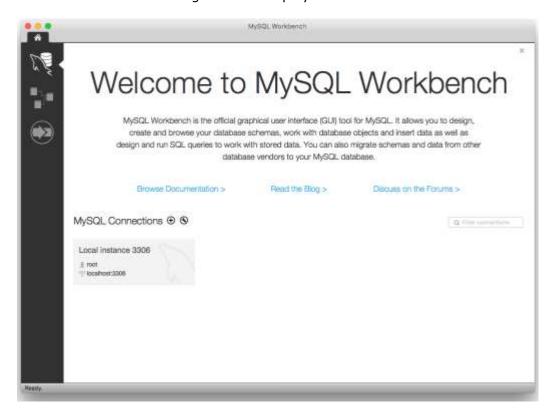


Figure 41: The MySQL Workbench, when it is initially opened.

L01 0183M

_____ Click the **Database, Connect to Database** menu option as shown in Figure 42.

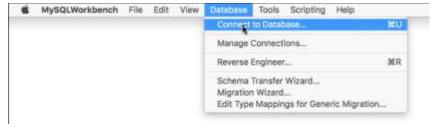


Figure 42: Use the Database, Connect to Database menu option.

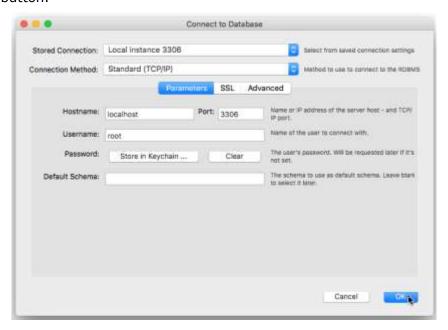
L01_02011M

The **Connect to Database** panel shown in Figure 43 is displayed.

For the **Stored Connection** option, click the drop-down arrow and select **Local instance 3306**.

Leave all of the other options set to their default values, as shown in the figure.

Click the **OK** button.



L01_0202M

Figure 43: Select the Local Instance and click OK.

_____ The **Connect to MySQL Server** prompt shown in Figure 44 is displayed.

Enter the **root** password that you assigned to the MySQL Server during the install process (see Figure 16Figure 15 on page 10).

If you want to, you can check the **Save password in keychain** checkbox. That way, you won't have to enter the password the next time you start the MySQL Workbench and connect to the database.

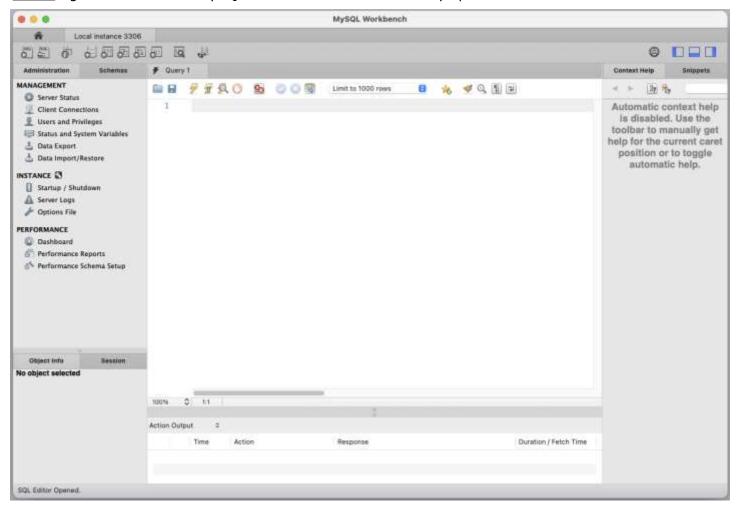
Click the **OK** button to continue.



L01_0203M

Figure 44: Enter the root password and click the OK button.

_ Figure 45 shows the MySQL Workbench when it is initially opened with a local instance connection.



L01_0211M

Figure 45: This shows the MySQL Workbench when it is initially opened with a local instance connection.

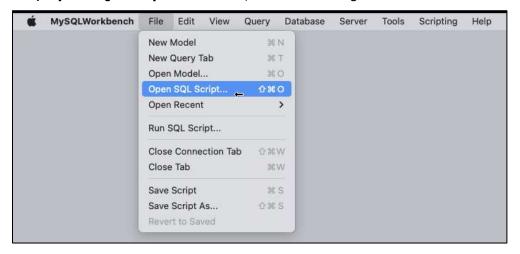
1.5.2 Download and install the world database

To test the MySQL Workbench, you will download and install a small database known as the **world** database. This database contains some sample data about countries and cities.

The **world** database is provided as part of MySQL. For your convenience, the database was copied from the download site to the course website.

 Go to the course website and locate the download for the world database.
 _ Download the database to your Mac. The file that you download is named world.sql.zip
 _ Go to the folder where you downloaded the world.sql.zip file and double-click it to open it.
 You should see the world.sql file in the folder. That file was extracted from the .zip file. The world.sql file is the only file that is in the .zip file.
 _ Go back to the MySQL Workbench. If the Workbench is not open, open it using the steps described in Section 1.5.1 starting on page 22.

___ Click the **File, Open SQL Script** menu item, as shown in Figure 46.



L01_02111M

Figure 46: Click the File, Open SQL Script menu item.

_____ A file selection dialog opens, as shown in Figure 47. Navigate to the folder where the world.sql file is located.

__ Click the world.sql file to select it, then click the **Open** button.

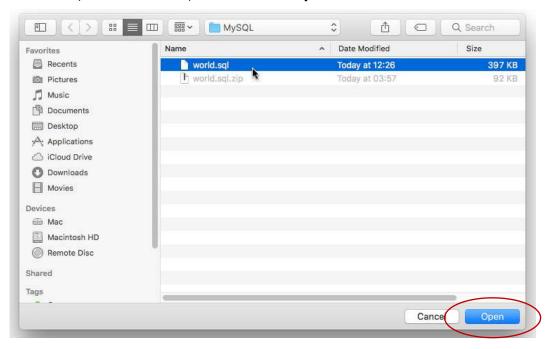
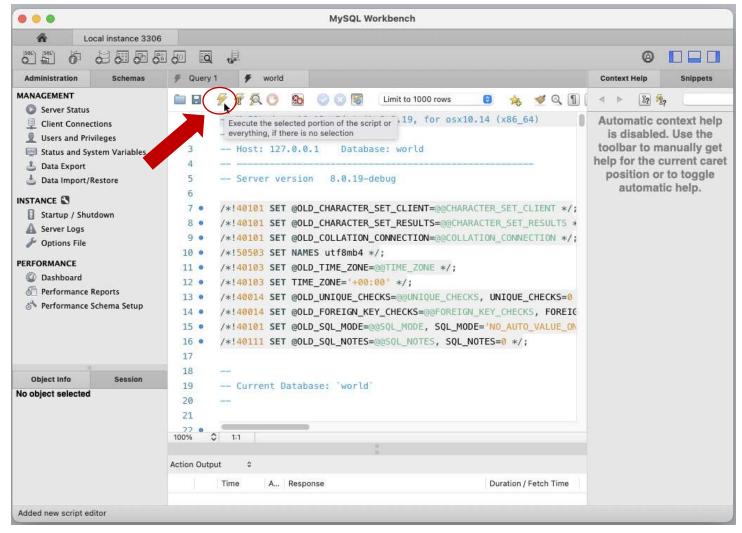


Figure 47: Select the world.sql file and click the Open button.

L01_02112M

The **world.sql** script (a series of SQL statements) opens in MySQL Workbench, as shown in Figure 48.



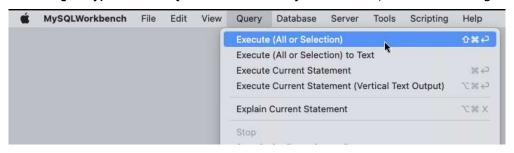
L01_02113M

Figure 48: The world.sql script is shown in the MySQL Workbench.

_____Use either of the following techniques to run the script. When you run the script, the **world** SQL schema will be created. You only need to use one of these techniques.

____ In the MySQL Workbench, click the "lightning bolt" icon (highlighted in Figure 48).

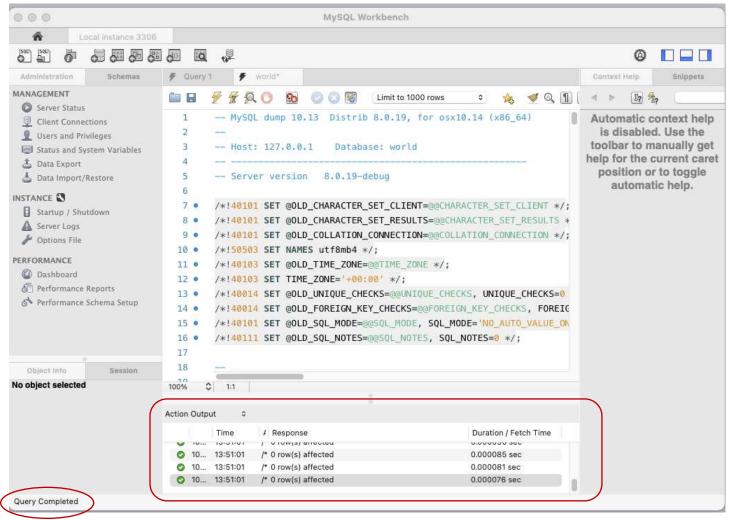
_ Click the Query, Execute (All or Selection) menu item, as shown in Figure 49



L01_021131M

Figure 49: You can also click the Query, Execute (All or Selection) menu item.

The script will run for a second or two. When done, you will see a series of messages written to the Action Output area. You will also see the words Query Completed in the lower left corner of the Workbench, as shown in Figure 50.



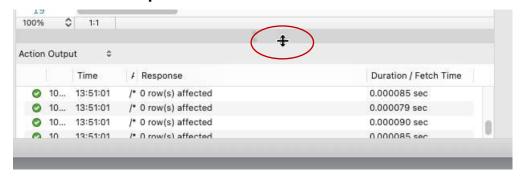
L01_02114M

Figure 50: You will see the Action Output messages and "Query Completed" when the script finishes running.

_____You can expand the **Action Output** area by dragging the "splitter" control to resize it.

_____ Position the mouse cursor in the gray area as shown in Figure 51.

When the cursor changes to the splitter as shown in the figure, click/hold and drag up to resize the **Action Output** area.



L01_021141M

Figure 51: Use the "splitter" control to adjust the height of the Action Output area.

1.5.3 Work with the world database in the MySQL Workbench

When you ran the SQL script, it created a *schema* on your MySQL server. The *tables* for the world database are contained within the schema. To work with the tables in the MySQL Workbench, you need to make the world schema visible in the Workbench.

In the Workbench, click the **Schemas** tab as shown in Figure 52.

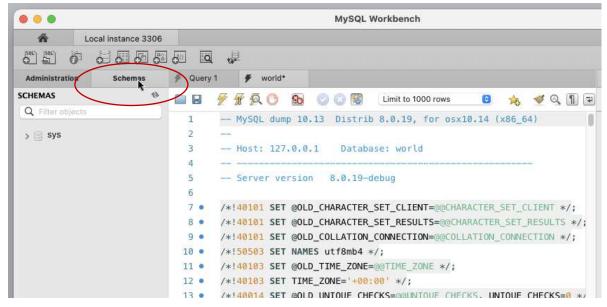


Figure 52: Click the Schemas tab in the Workbench.

L01_02116M

_ Click the **Refresh** icon in the Schemas tab, as shown in Figure 53

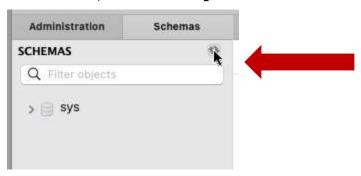
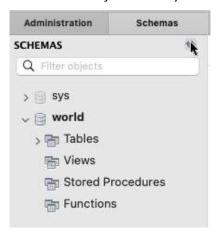


Figure 53: Click the Refresh icon in the Schemas tab.

L01_02117M

___You should see the world schema below the sys schema, as shown in Figure 54.



L01_02118M

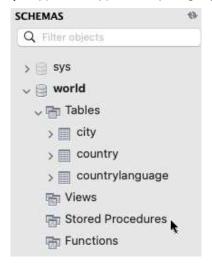
Figure 54: You should now see the world schema in the SCHEMAS section.

_____ If you do not see the items below the **world** name, click the triangle to the left of **world** to expand it.

___ Click the triangle to the left of **Tables** to expand it.

Figure 55: In the Schemas section, expand world, Tables.

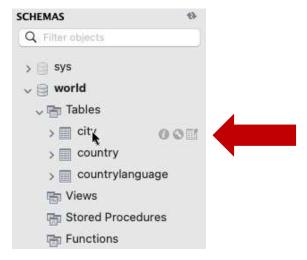
___You should see the three tables (city, country, countrylanguage) as shown in Figure 55.



L01_0212M

__ Hover over the city table, as shown in Figure 56.

_ When you hover over a table, three icons are displayed to the right of the table name, as shown in the figure.



L01_0213M

Figure 56: When you hover over a table, three icons are displayed to the right.

_____ Click the leftmost icon, as shown in Figure 57.



Figure 57: Click the leftmost icon.

L01_0214M

- _____ The **Table Inspector** tabs are displayed in the Workbench, as shown in Figure 58.
- You can click through the tabs to examine characteristics of the table. You will learn more about some of the tabs later in this course.

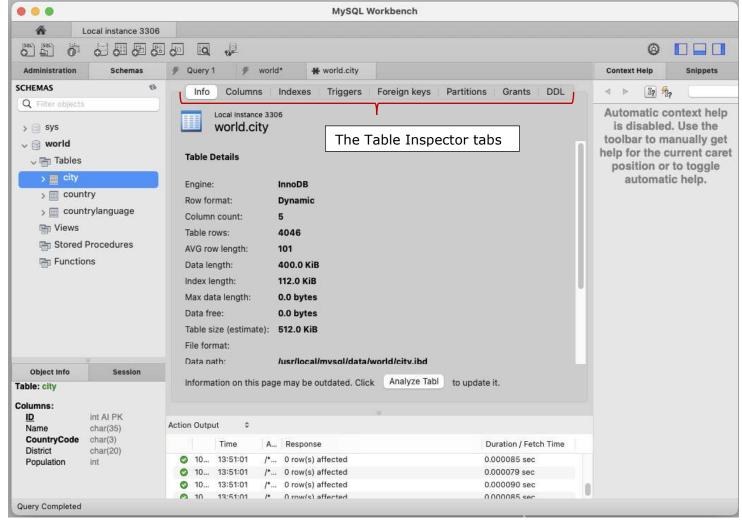


Figure 58: The Table Inspector tabs are displayed in the Workbench.

L01_0215M

Now go back to the **Schemas** section. Hover over the city table and click the middle icon displayed to the right of the table, as shown in Figure 59.



L01 0221M

Figure 59: Click the middle icon.

The **Alter Table** tab is displayed in the Workbench, as shown in Figure 60. This tab shows the columns that are defined in the table (ID, Name, CountryCode, District, Population). You will learn much more about columns and column attributes in this course.

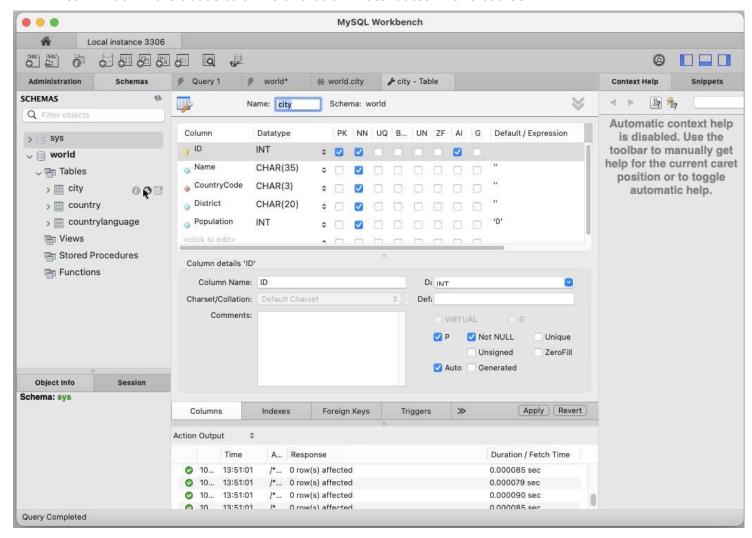


Figure 60: The Alter Table tab is displayed in the Workbench.

L01_0222M

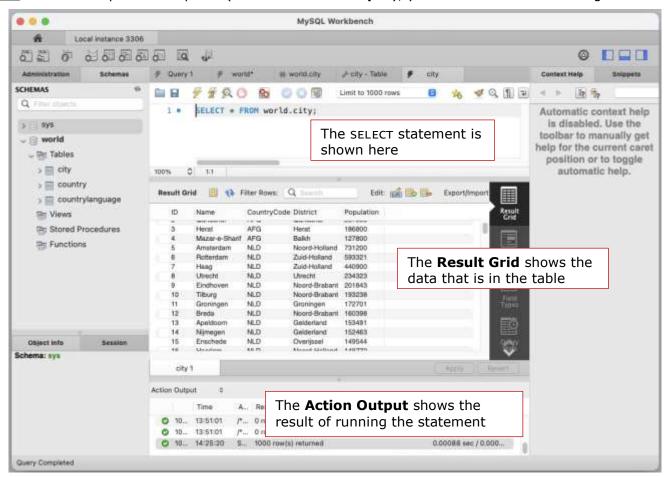
___ Now go back to the **Schemas** section. Hover over the city table and click the rightmost icon displayed to the right of the table, as shown in Figure 61.



L01 0231M

Figure 61: Click the rightmost icon.

- _____ The first 1000 rows in the table are displayed in the Workbench, as shown in Figure 62 (if there are fewer than 1000 rows in the table, all of the rows are displayed).
 - ____ In the top part of the panel, an SQL SELECT statement is displayed. This is the statement that retrieves data from the city table.
 - ____ In the middle part of the panel, the **Result Grid** shows the rows. You can position your cursor in the grid and use your keyboard arrow and page keys to scroll up and down in the grid.
 - In the lower part of the panel (labelled **Action Output**), you see the result of running the SELECT.



L01_0232M

Figure 62: The first 1000 rows of the table are displayed in the Workbench.

 _Now go back to the Schemas section. You will see the pop-up menu alternatives to clicking the icons that appear to the right of a table when you hover over it.
 Command-Click (right click) the city table.
 _A pop-up menu is displayed, is shown in Figure 63.
 _Click the Select Rows - Limit 1000 item on the pop-up menu, as shown in the figure.
The Result Grid is displayed in the Workbench, as shown in Figure 62 on page 36.

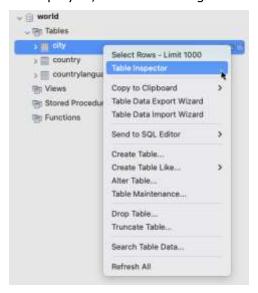


L01_0241M

Figure 63: Command-Click the city table and select the Select Rows - Limit 1000 item from the pop-up menu.

Command-Click the city table and select the **Table Inspector** item from the pop-up menu, as shown in Figure 64.

_____ The **Table Inspector** tabs are displayed, as shown in Figure 58 on page 34.

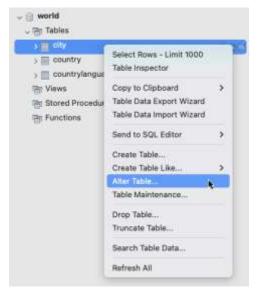


L01_0242M

Figure 64: Command-Click the city table and select the Table Inspector item from the pop-up menu.

_____ Command-Click the city table and select the **Alter Table** item from the pop-up menu, as shown in Figure 65.

The **Alter Table** tab is displayed, as shown in Figure 60 on page 35.



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Figure 65: Command-Click the city table and select the Alter Table item from the pop-up menu

_____ The following table shows the equivalence of the three icons that you used earlier and the pop-up menu items.

Icon	Pop-up Menu Item	Used For
	Table Inspector	View attributes of the table, including column names, indexes, triggers, foreign keys and other features
	Alter Table	View and change column definitions and attributes
3 1	Select Rows - Limit 1000	Display data that is contained in the table

You will frequently use those three features when you work with a MySQL database. In the future, you can use either the icon or the pop-up menu technique to work with the features.

1.6 Summary

In this lab, you downloaded, installed and configured the MySQL database server and associated features. You then did some initial work with the MySQL Workbench. In future labs, most of your work will be with the Workbench.