COMP90050 Advanced Database Systems
MySQL Installation and Setup

Installation Steps:

MySQL:

MySQL is a SQL database that will be used as part of this subject to demonstrate certain topics from a practical perspective. It can be installed on a variety of Operating Systems (OS), such as Windows, MacOS, Ubuntu, etc.

Depending on your OS, you can choose one of the following installation options given here: https://dev.mysql.com/doc/refman/8.0/en/installing.html

During the installation, it will prompt you for a password to use for accessing the database. Please set a strong password that you can remember as you will need this to access the database.

MySQL Workbench:

Users can interact with the MySQL database using their terminal/command prompt but for ease in visualisation and interaction with the database, we will be using a visual tool called MySQL Workbench to access the database as part of this subject. There are other tools as well which provide similar services, but we will be standardising on MySQL Workbench.

Depending on your OS, you can choose one of the following installation options given here: https://dev.mysql.com/downloads/workbench/

Note: Installing MySQL Workbench on your device does not guarantee the presence of the MySQL server, which is our database. Therefore, please ensure that you install MySQL as stated in the previous section.

[Optional] Git:

We will be using datasets freely available as part of the MySQL public documentation. To download some of the datasets, you can either use Git to download them or you can download them as a Zip file and extract the individual data files.

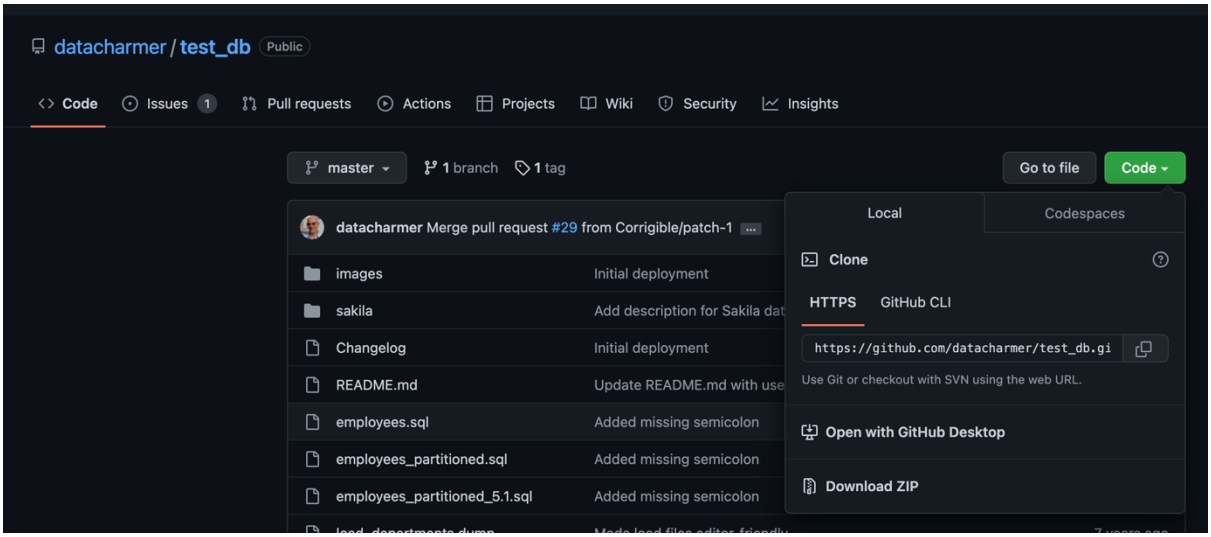
The repository containing the datasets is here: https://github.com/datacharmer/test_db.git

If you would like to use Git and currently do not have Git installed, then you can choose one of the following installation options for your OS given here:
https://github.com/git-guides/install-git

Once you have Git installed, you can direct yourself to an empty folder/directory on your local device and run the following command on your command prompt/terminal:

git clone https://github.com/datacharmer/test_db.git

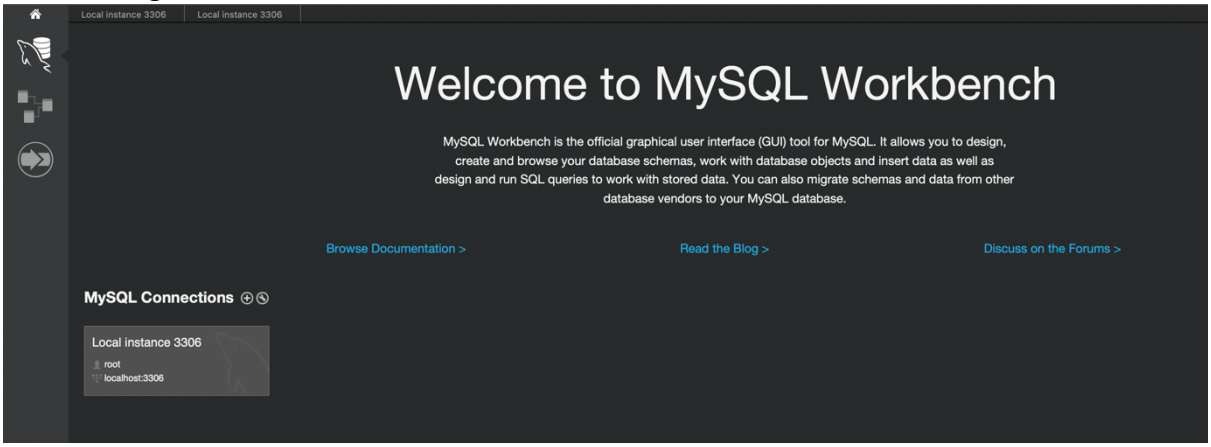
Or, if you would like to download the files as a zip file then click on the code icon on the Github Repository as shown in the diagram below and choose the option – “Download ZIP”



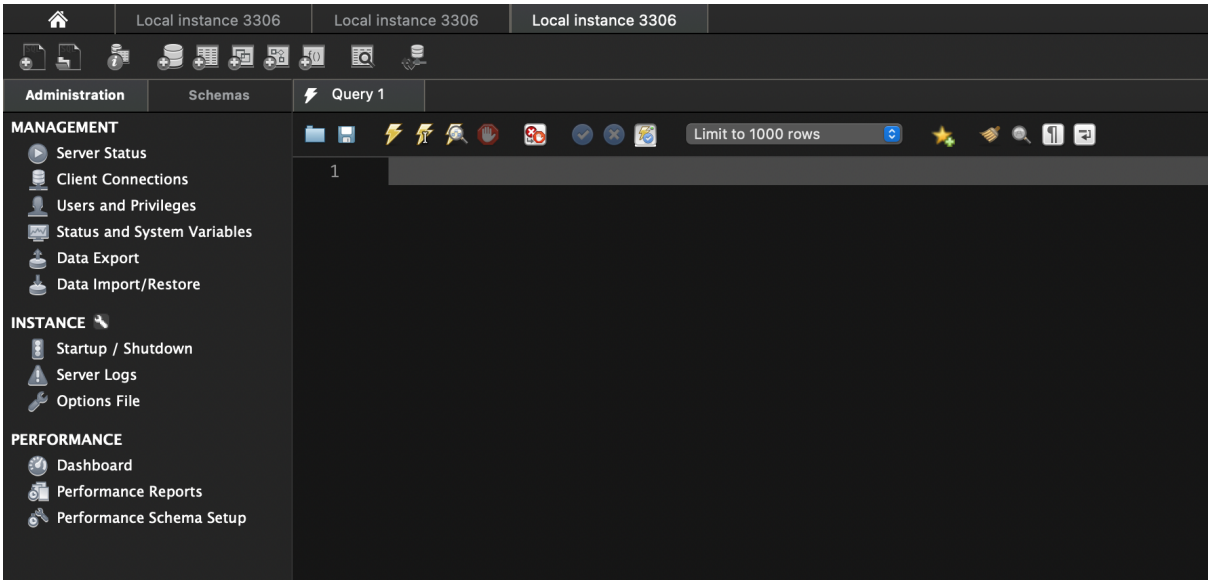
Once you have downloaded the datasets locally on your device, you need to load this into MySQL. There are a few options to do this, by using the CLI or via MySQL Workbench. As part of this document, we will showcase how to import the data using MySQL workbench.

Steps:

- Open MySQL workbench and notice an instance of the MySQL connection being present (with the same or similar naming) in the user interface (UI) as shown in the image below.



- Click on the “Local instance 3306” connection and it will ask for the password of the database. This is the same password you set when installing the MySQL database.
- After authenticating, the UI would show you the administrative view where you can manage some of the database engine functionalities as seen in the image below.



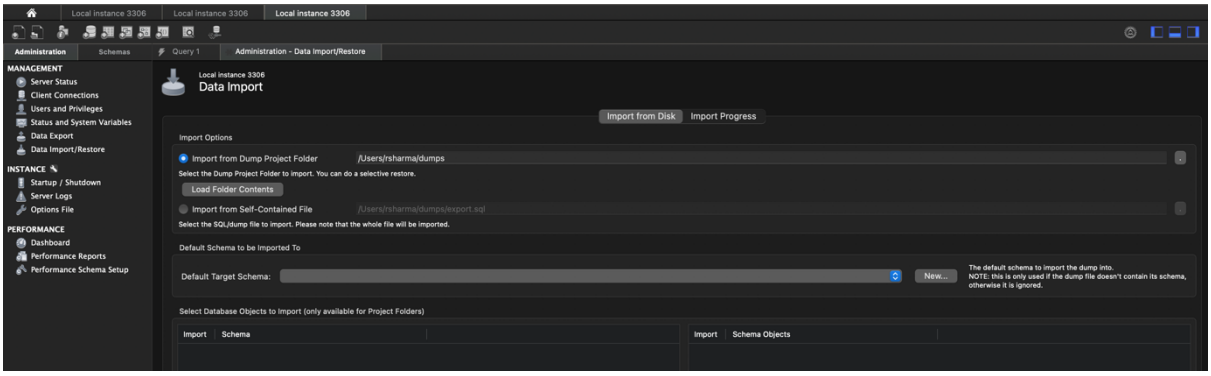
- At this point, we have accessed the database via the MySQL workbench UI, but we do not have any data in it to run our queries against. To load the data into the database, we need to open the open the "*employees.sql*" file with a text editor, and then add the absolute path (of your machine) for each of the dump files. For example, the following line:

  source load_departments.dump;

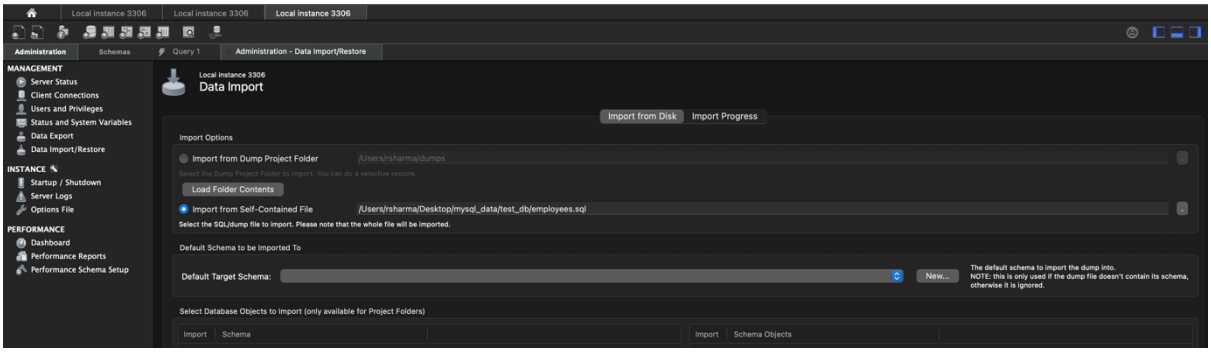
  Should be updated as:

  source absolute/path/to/load_departments.dump;

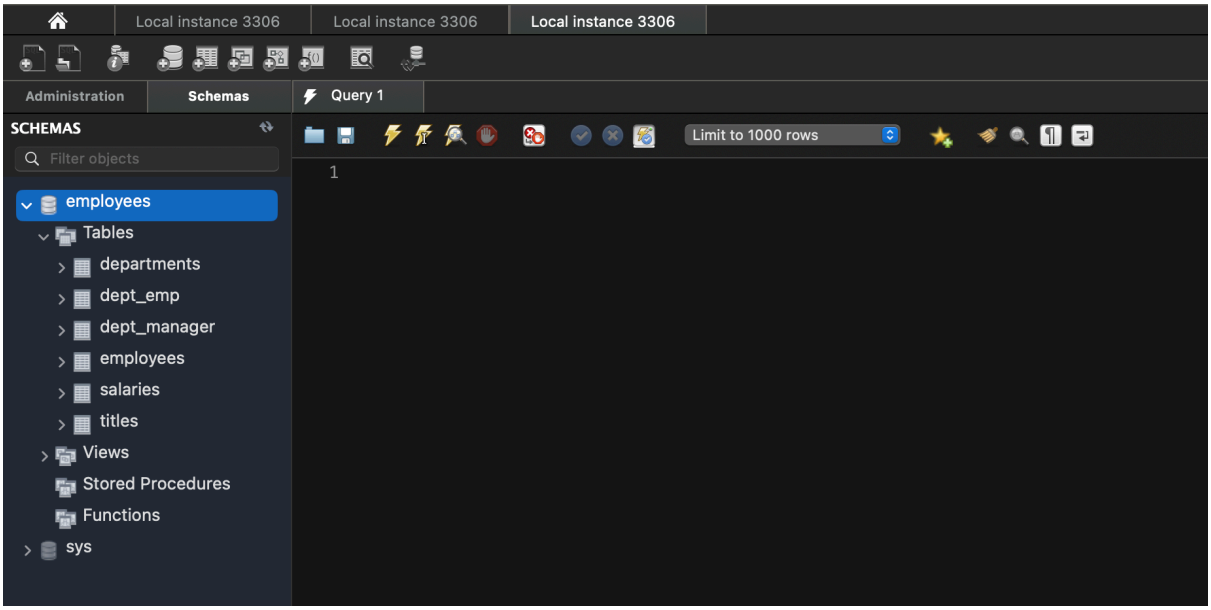
  Please note that the exact path and how it is represented will vary depending on your OS and where you downloaded the files in your system.
- Next, we return to MySQL Workbench and click on the "Data Import/Restore" option in the "Management" section tab as seen in the image above, which will render the below view.



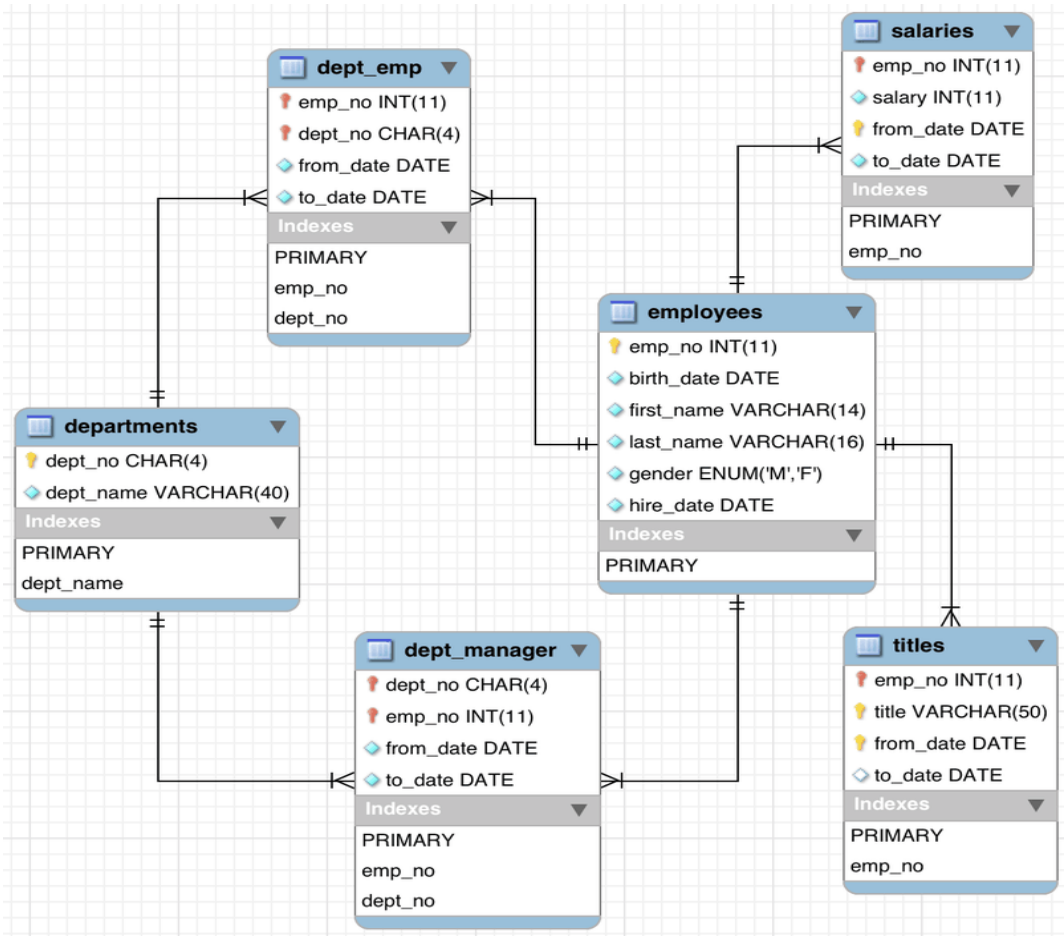
- We can import the data as a folder reference or as a single self-contained data file. In this example, we will import the data as a self-contained data file. We will start running our queries against the *employees* database, which is present in the "employees.sql" file, so we will import this data into the MySQL database as shown in the below image. Click on "Start Import" at the bottom of this UI, which should load the dataset.



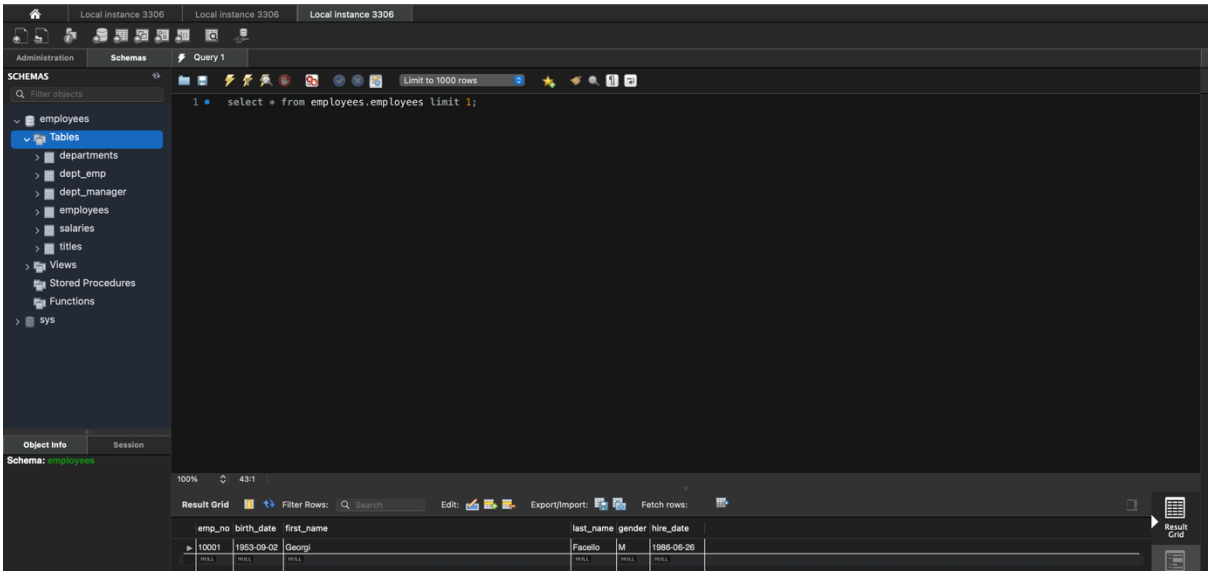
- You can now view the dataset in workbench by going to the “Schemas” tab, next to the “Administration” tab. In our case, the dataset looks as follows, where the “employees” schema contains all the relevant tables we will need.



- We can now test that we can access and run queries against the data by running a sample query in the editor window. The Employees schema is as follows:



- We can run the following query to test our access to the database.



Here, employees.employees represents the <schema>.<table_name>. If you created a new schema for when importing your data, you would need to replace the schema name with the one you picked.

If you can view a row being returned, your setup is completed.