Audience Analysis

This set of instructions is designed to provide an easy-to-follow guide for anyone who is new to MySQL. MySQL is a free and open-source database management system that allows users to store, manage, and retrieve data from databases. MySQL uses Structured Query Language (SQL) to manage data, which makes it easy for users to work with and manipulate data. MySQL is known for its flexibility, scalability, and high performance, which makes it ideal for applications that require a lot of data processing and storage. Additionally, MySQL is cross-platform, meaning it can be used on various operating systems such as Windows, Linux, and macOS. Overall, MySQL is a powerful and versatile database management system that is widely used by businesses, developers, and individuals around the world.

As an information science major, I have studied and worked on many projects in MySQL. After gaining a solid understanding of MySQL, I decided to create a set of instructions for generating a database and adding data to it in MySQL. The instructions will cover the basic steps involved in creating a MySQL database and adding data to it, including how to define the structure of the database, create tables, and insert data.

MySQL for Beginners:

Generating a Database with Data in MySQL

Introduction

MySQL is a free and open-source database management system that allows users to store, manage, and retrieve data from databases. MySQL uses Structured Query Language (SQL) to manage data, which makes it easy for users to work with and manipulate data. MySQL is known for its flexibility, scalability, and high performance, which makes it ideal for applications that require a lot of data processing and storage. Additionally, MySQL is cross-platform, meaning it can be used on various operating systems such as Windows, Linux, and macOS. Overall, MySQL is a powerful and versatile database management system that is widely used by businesses, developers, and individuals around the world.

Technical Background

Creating a database and entering data in MySQL is a process of organizing and storing large amounts of information in a structured manner. A database is a collection of related data that can be accessed, managed, and updated by users. In MySQL, a database is a container that stores tables, which are used to hold specific sets of data.

To create a database in MySQL, you will need to define the structure of your database and the tables within it. This involves specifying the names and data types of each column in the table, and defining the relationships between each table.

Once you have created your database and tables, you can begin to enter data. One easy method to enter data into your database is to import a source file. A source file is a file that contains the data you collected and want to import into your database. Once the source file is properly formatted and meets the requirements of your database, you can import it into your database.

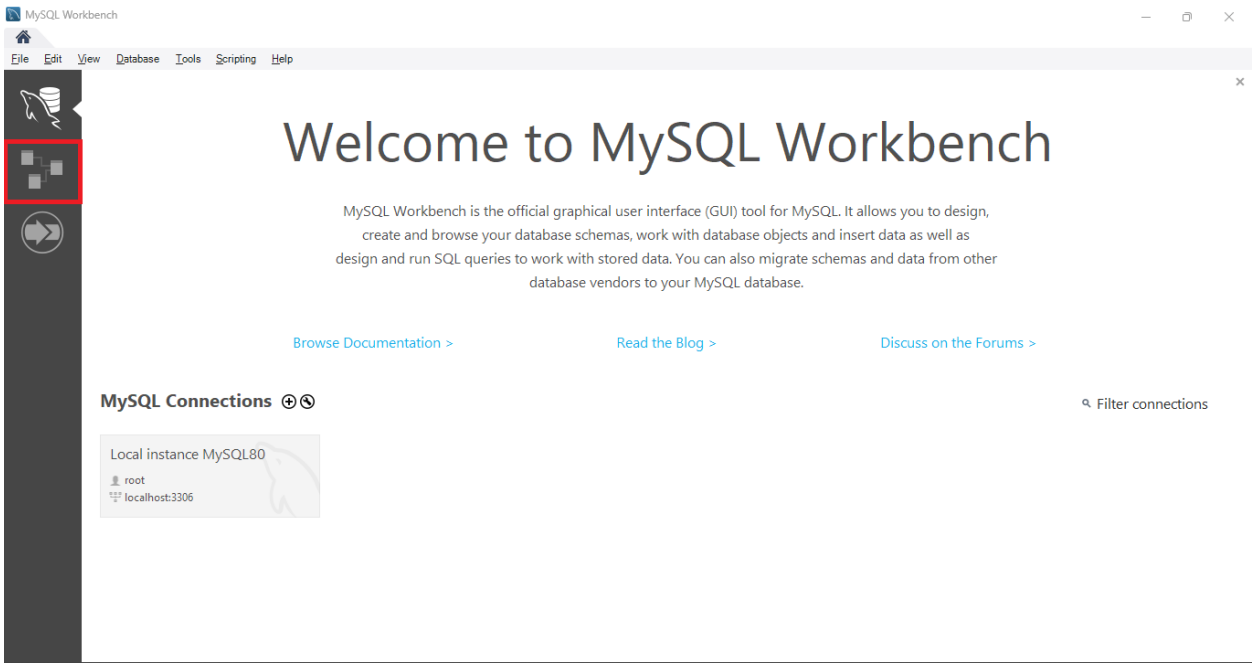
Materials

- Working Computer
- MySQL Application
- Microsoft Excel
- All Source Files (located inside the carmodels folder)

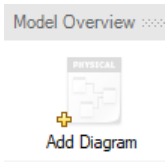
Instructions

Section 1 - Creating a Database

1. Open up the MySQL application.
2. Click on the second icon in the top left menu, as highlighted below.
    a. *This is where you will create your Entity-Relationship Diagram (ERD), which is where you will be able to design and visualize the relationships between entities in a database.*

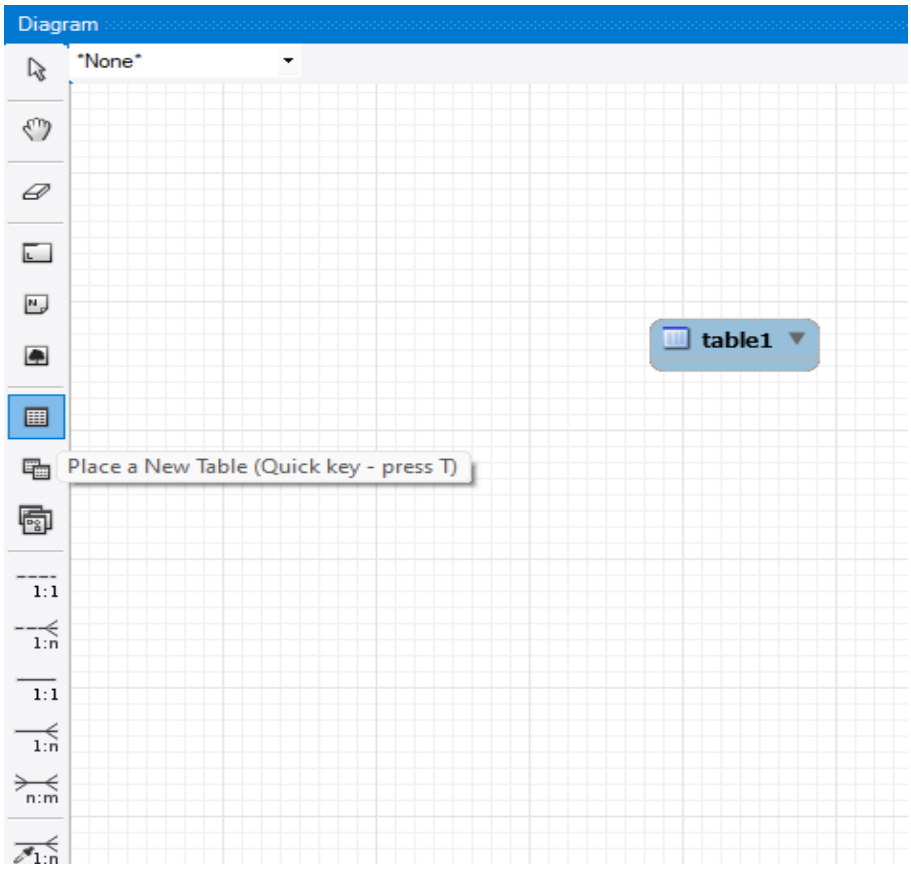


3. Click on the "+" button right next to "Models" to create a new ERD model.
4. Double-click on "mydb" under "Physical Schemas" to rename the database.
5. Rename the database to "Carmodels".

6. Double-click on “Add Diagram” 

to start adding tables to your diagram .

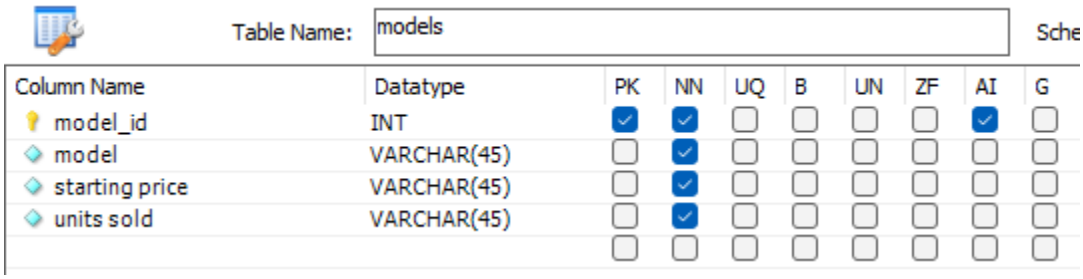
7. Click on the New Table icon located in the left toolbar and click anywhere on the Diagram, as highlighted below.



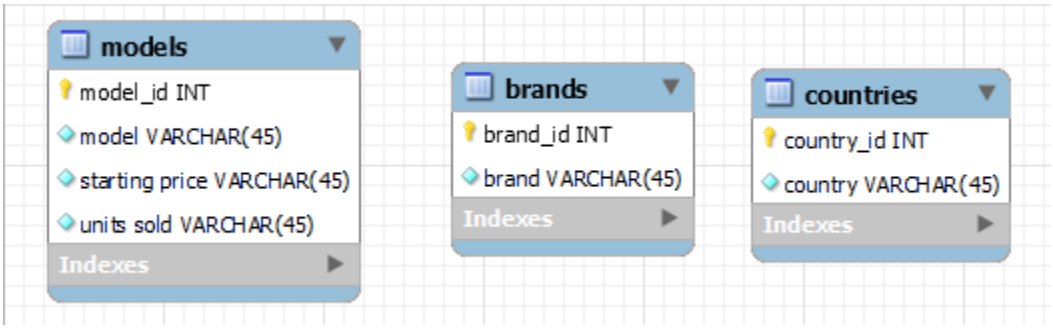
8. Double-click on the new table you just created and rename the table to the same name as one of the source files (i.e. models, brands, countries).

9. Open up the source file in Excel and under “Column Name” in MySQL, create new rows with the same names as the titles in row 1 in the Excel Sheet. Note: You do not need to make new columns for titles that have “_id” except for the first one.

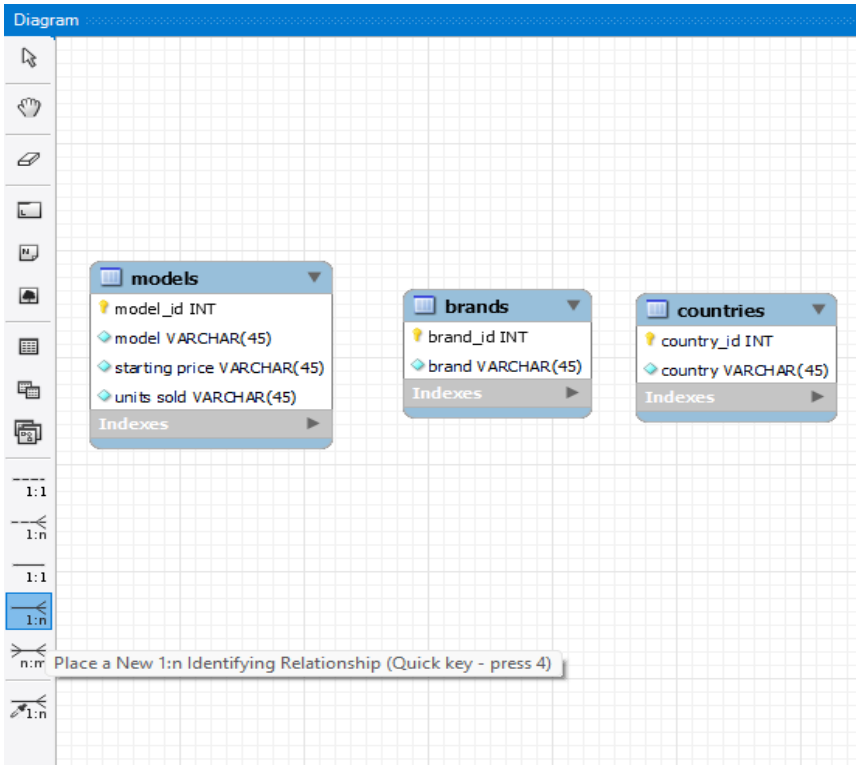
10. Check the “AI” box for the first row and check the “NN” box for all rows, as shown below.



11. Repeat steps 7-10 for all source files. Here is what each table should look:

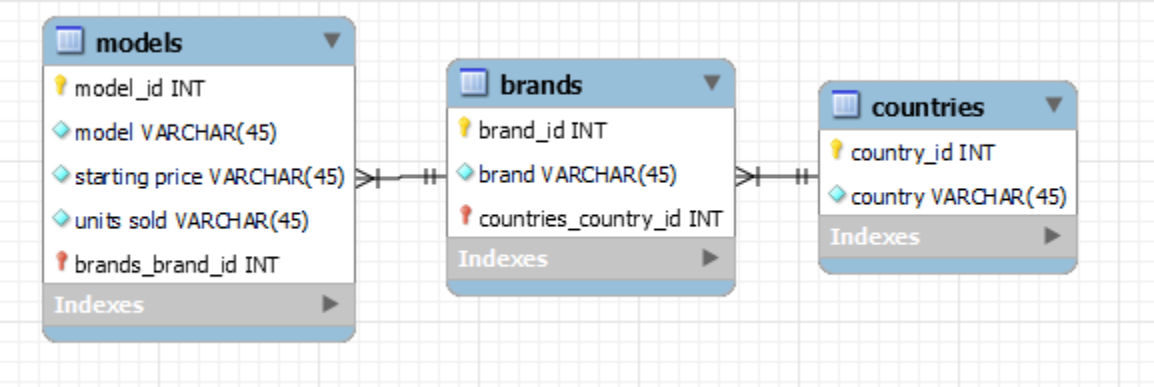


12. Click on the “1:n relationship” icon located in the left toolbar, as highlighted below.



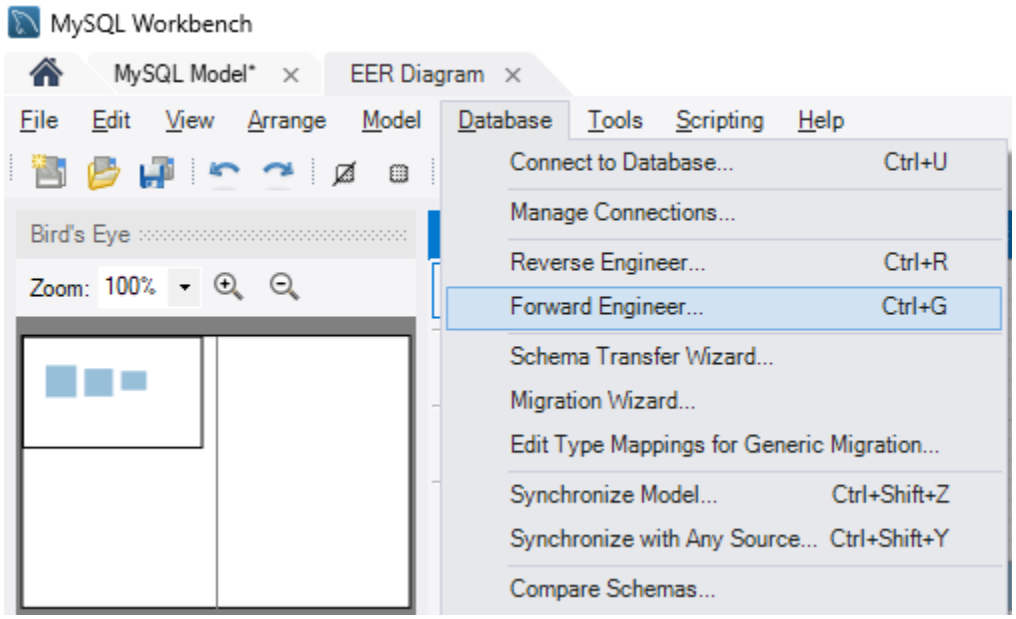
13. Click on the “models” table and the “brands” table to create a one-to-many relationship between the tables.

14. Click on the “1:n relationship” icon located in the left toolbar again and click on the “brands” table and the “countries” table to create a relationship between the tables, as shown below.



a. *A one-to-many relationship is a type of relationship that exists between two entities in a database, where one entity (the parent) has many related data in another entity (the child), but each record in the child entity belongs to only one parent record as seen in the figure above.*

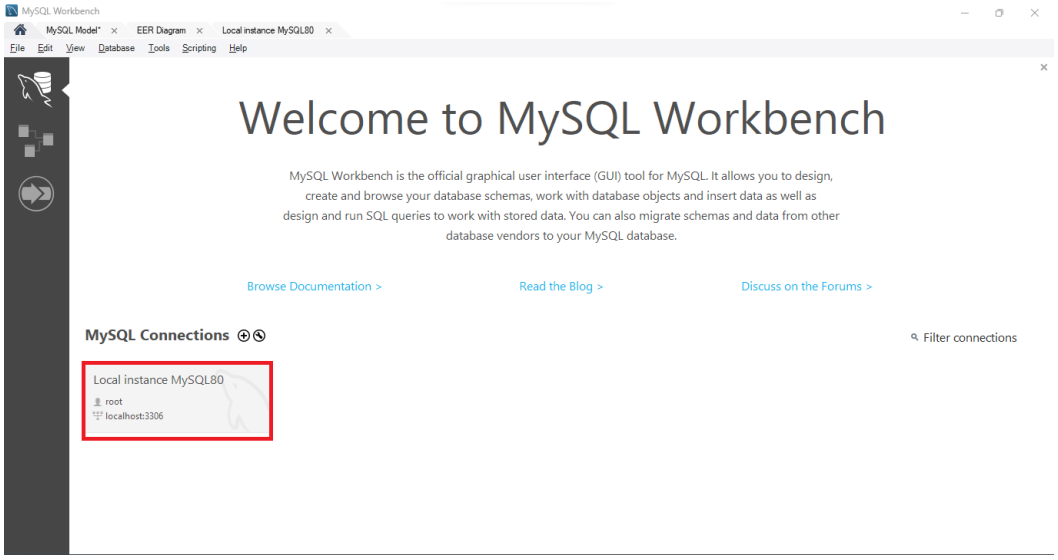
15. At the top menu bar under “Database” click on “Forward Engineer” to generate your database, as highlighted below.



   a. *Forward engineering is the process of generating a database schema from your ERD.*

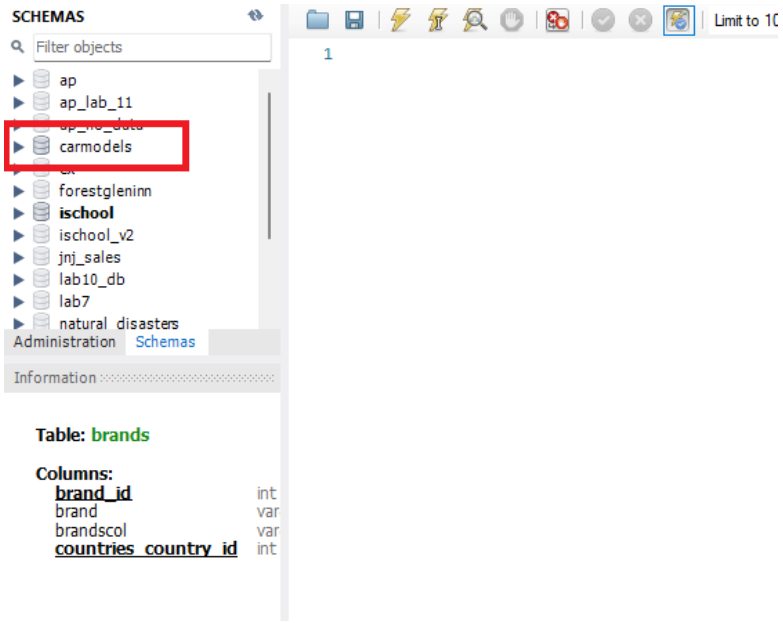
16. Click “Next” through all stages of the Forward Engineer to Database popup menu and click close.

17. Click on the home icon at the top left corner to navigate to the welcome screen and click on “Local instance MySQL80” under “MySQL Connections” as highlighted below.



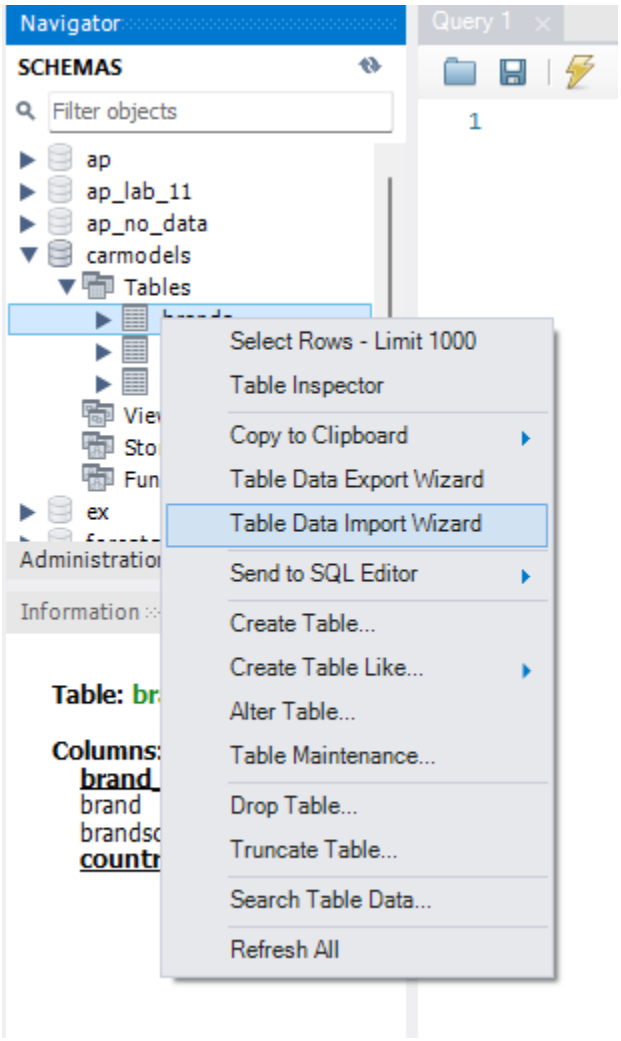
18. Under “SCHEMAS,” you should be able to find your new database “carmodels” as shown below.

Note: You may need to hit the refresh button next to “SCHEMAS”.



Section 2 - Importing Data

1. Click on the triangle next to your database and the triangle next to “Tables” to find all the tables you created.
2. Right-click on the “countries” table and click “Table Data Import Wizard,” as highlighted below.



   a. *The Table Import Wizard will allow you to import all of your data from your excel file.*
3. In the “Table Data Import” menu, click “Browse…” and locate the source file with the same name as the table you selected and click “Next”.
4. Click “Next” again and in the “Configure Import Settings” make sure each column matches up with the column names in the source file.

5. Continue to click “next” until “Finish”.
6. Repeat steps 2-5 for the “brands” and “models” table respectively.
    a. *The order in which you import data into your tables is important as you cannot import data to a table if a table relies on another table for some of its data. Therefore, you must start with a table that does not rely on any other tables for its data.*
7. You should now have a complete database with all your data. If you would like to look through your database, you can hover your mouse over a table and click on the right-most icon that appears to see all the data inside that table, as highlighted below.