Technical University of Denmark

DTU Compute
Department of Applied Mathematics and Computer Science

Database Tools

Installation and Use

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Overview

- About MariaDB and MySQL Workbench
- Exercise:
  1. Install MariaDB and MySQL Workbench
  2. Try the Workbench
  3. Try the Command Line Client (optional – not needed in the course)

About MariaDB

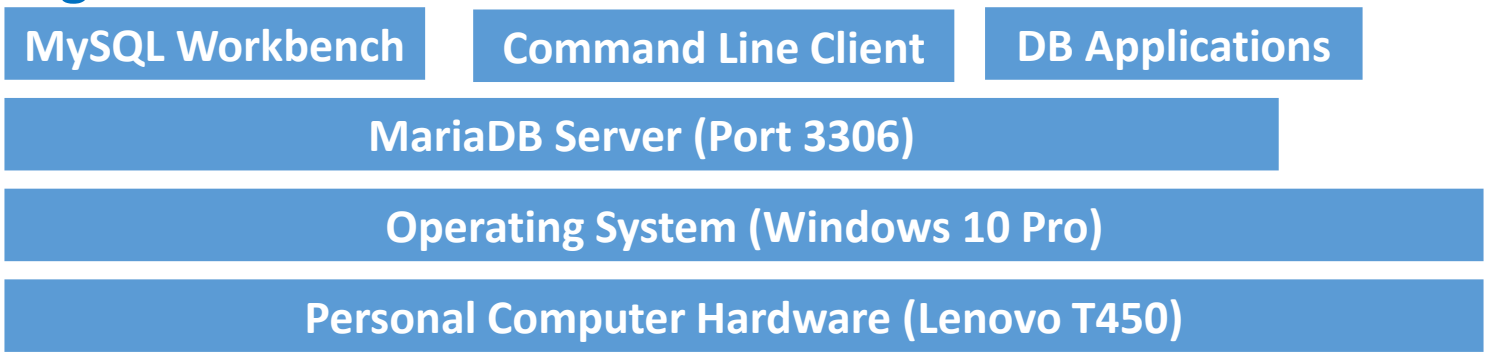
- Is a widely used *Relational Database Management System* supporting SQL.
- Is an open-source, community-developed fork of MySQL.
- Some *prominent users* : Google, Mozilla, Wikipedia, archlinux, RedHat, and Fedora.
- We will use it in this course.

- Online documentation**:** https://mariadb.com/kb/en/library/documentation/

About MariaDB and its User Interfaces

- MariaDB Server
  - Receives SQL input and returns SQL output to other programs via Port 3306.
- MySQL Workbench
  - Enables editing of SQL queries in a Graphical User Interface to be sent to execution in the MariaDB Server.
  - Entity-Relationship Diagrams for data modeling

- MariaDB Command Line Client
  - Enables editing of SQL queries in a Command Line Interface
- Program Stack



Exercises

- Purpose:

  to get the MariaDB server together with its Command Line Client and MySQL Workbench up and running on your PC.

- Exercises on the next pages:

  1. Install the Tools
  2. Try the Workbench
  3. Try the Command Line Client (optional – not needed in the course)

Exercise 1: Install the Tools

For Windows:
In the Course Content of DTU Learn, in the *Tools Guides* folder, there are installation guides for

1. Installing the MariaDB Server with the MySQL Command Line Client on Windows.
2. Installing the MySQL Workbench on Windows.

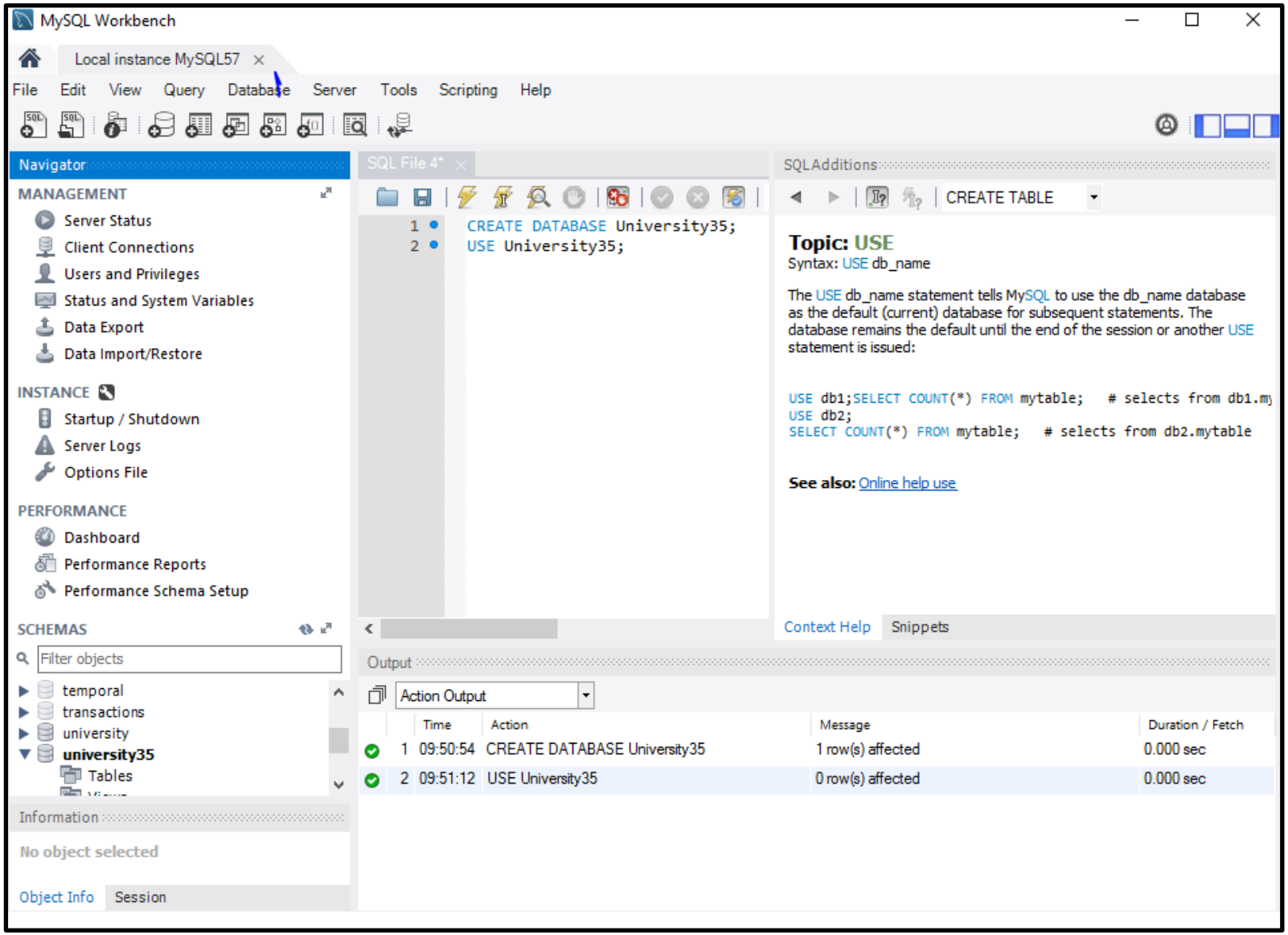
For Mac:
In the Course Content of DTU Learn, in the *Tools Guides* folder, there is a document with a guide for installing the tools on Mac.

For Linux:
The installation procedure depends on the Linux distribution and package manager you are using. Therefore, no general recipe is given, but some tips can be found in the document InstallationsOnLinux.pdf, which can be found in the Course Content of DTU Learn, in the *Tools Guides* folder. You might also use Google to find a solution.

Exercise 2: Try MySQL Workbench

Try MySQL Workbench by following the guide “MySQL Workbench – Ultra-short Introduction” (in the file *WorkbenchUserGuide.pdf*) which can be found in the *Tools Guides* folder in the Course Content of DTU Learn.

MySQL Workbench



MySQL Workbench

- MySQL Panels
  - Navigator Panel: to start/stop the Server, …
  - SQL Panel: to write and execute SQL statements
  - Output Panel: to show status (**GYR**) for each executed SQL statement
  - SQL Additions Panel: to display SQL syntax and options
  - Information Panel: to show information about an object or connection

OPTIONAL Exercise 3: Try the Command Line Client

1. Download "FamilyDB.sql" file from the *Databases* folder in the Course Content of DTU Learn to a file, e.g. it could be C:\Users\aeha\Documents\02170\Databases\FamilyDB.sql This file contains SQL commands to create and populate a table with data.

2. Start MariaDB Command Line Client as follows and enter your server password:

   - Under **Windows:** you can start the tool from the start menu by selecting MariaDB->MySQL Client (MariaDB …)
   - Under **Linux:** you can start the tool by the command: mariadb -u root –p or mysql -u root -p
   - Under **Mac:**
     - Start Docker by double-clicking the Docker.app application in the Applications folder.
     - In the Containers section of the Docker Desktop, select the *mariadbtest* container instance, and then
       1. click the play button in the Actions section
       2. click on the … icon in the Actions section and choose **Open in Terminal**
     - In the resulting terminal you can now start the Command Line Client by executing the command: mariadb -u root –p

3. Now you can enter SQL commands on the command line after the MariaDB […]> promt.

4. Try to execute the following SQL commands and see what the system replies.
   (On Mac, in order to use the FamilyDB.sql file below, you must first copy it from your local host to a folder in the *mariadbtest* container as follows: Go to the **Files** tab in the Docker Desktop (see page 12). Then right-click the container folder to where you want the file to be copied, and choose the "import" option which allows you to select the use Family.sql from the file system on your local host.)

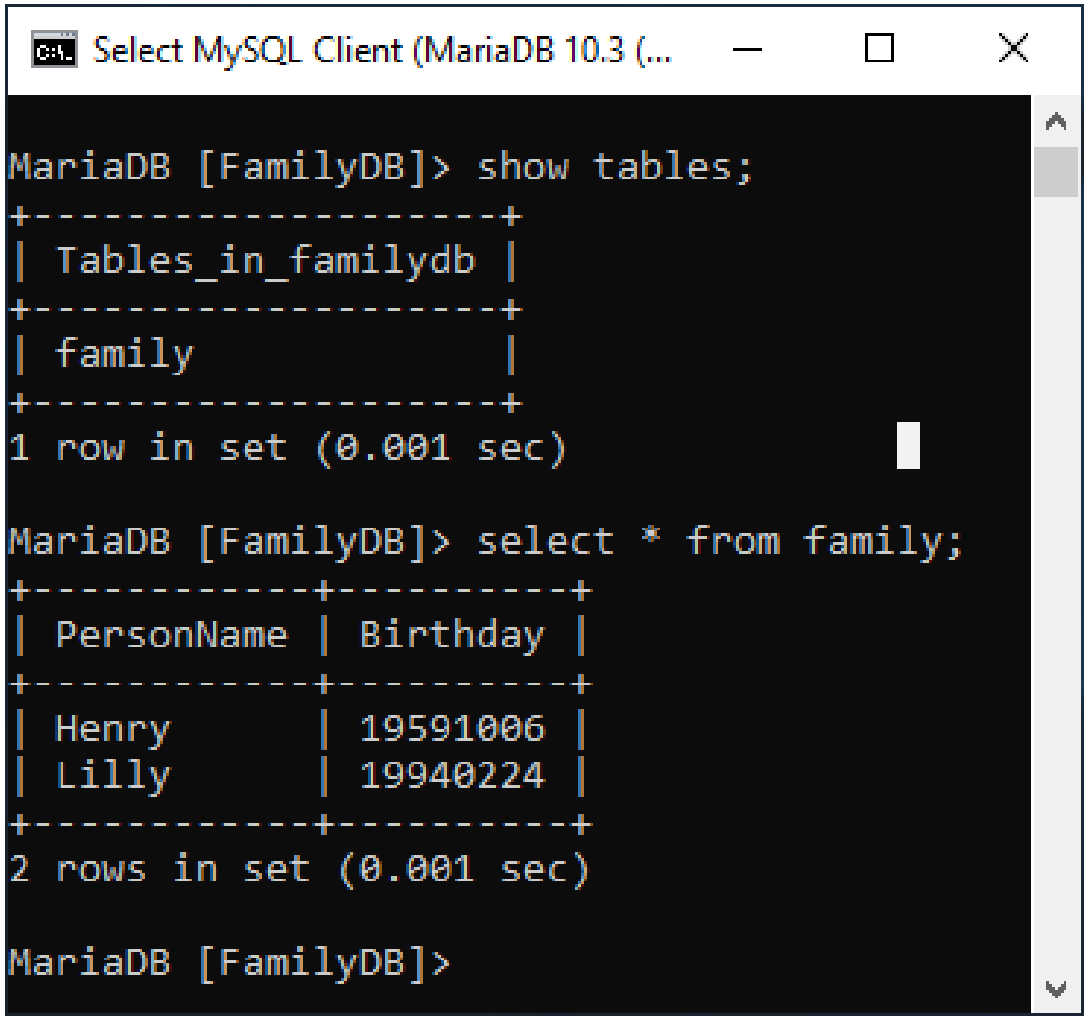
```
MariaDB [(none)]> \h
MariaDB [(none)]> create database FamilyDB;
MariaDB [(none)]> use FamilyDB;
MariaDB [FamilyDB]> source C:/Users/aeha/Documents/02170/Databases/FamilyDB.sql;
```

   The green text should be modified so it is the path to the FamilyDB.sql file. In some cases the slashes (/) in the path should be changed to backslashes (\).

```
MariaDB [FamilyDB]> show databases;
MariaDB [FamilyDB]> show tables;
MariaDB [FamilyDB]> select * from family;
MariaDB [FamilyDB]> exit;
```

Exercise 3. Try the Command Line Client, continued

Here you see the output from two of the SQL commands:



Mac: Import of Files into Docker Container