

LAB 01

INSTALL AND MANAGE MYSQL DATABASE

1. Install

All downloads for MySQL Community are located at MySQL Downloads:

<https://dev.mysql.com/downloads/>

Pick a suitable version of *MySQL Community Server* you will be running on your platform and install.

Or install from xampp, lampp ...

<https://www.apachefriends.org/index.html>

2. MySQL Server structure

- **Configuration file:** All system settings are stored in the configuration file. The file name is *my.ini* on Windows or *my.cnf* on Linux, Unix. The main content of the configuration file is as follows (lines beginning with the # character are comment lines):

```
# The TCP / IP Port the MySQL Server will listen on
port = 3306
# Path to installation directory. All paths are
# usually resolved relative to this.
basedir = "C:/Program Files/MySQL/MySQL Server 8.0/"
# Path to the database root
datadir = "C:/Program Files/MySQL/MySQL Server 8.0/Data/"
```

- Port: specify the working port number of MySQL Server
- Basedir: the MySQL server installation directory.
- Datadir: the path to the data directory.

Note: You should change the basedir and datadir to improve the system security.

MySQL directory structure

<i>Directory</i>	<i>Contents of Directory</i>
<i>bin</i>	<i>Mysql server, client and utility programs</i>
<i>data</i>	<i>Where MySQL stores (reads and writes) data, and server log files.</i>
<i>docs</i>	<i>Release documentation</i>
<i>include</i>	<i>Include (header) files</i>
<i>lib</i>	<i>Libraries</i>
<i>share</i>	<i>Miscellaneous support files, including error messages, character set files, sample configuration files, SQL for database installation</i>

Figure 1: MySQL Installation Default Layout on Windows

3. Connect to MySQL server

Firstly, make sure that MySQL Server is running after the installation process. MySQL Server can be started directly through the command.

```
shell> basedir mysqld.exe --console
```

basedir: is the directory containing the *mysqld.exe* program.

<i>-u <username></i>	<i>--user=username</i>	<i>User login</i>
<i>-p</i>	<i>--password</i>	<i>Ask for the password immediately</i>
<i>-p <password></i>	<i>--password=xxx</i>	<i>User password</i>

-h hostname	--host=hostname	Specify the name or IP address of the MySQL server (the default value is "localhost")
-P port	--port=port	MySQL port

Two ways to log into the MySQL server

M1: *basedir\mysql.exe -u user_name -p your_password*

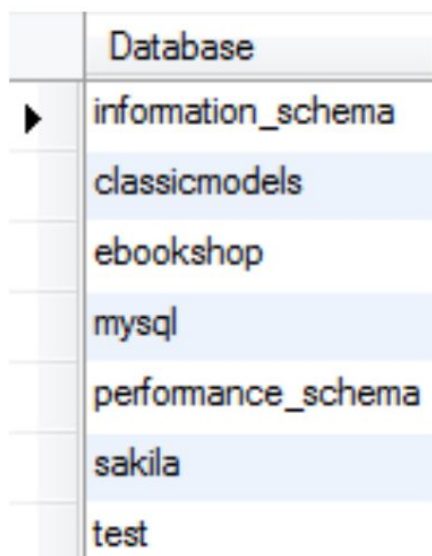
M2: *basedir\mysql.exe --user=user_name -- password=your_password*

4. Some Basic Operations with MySQL

After successfully connecting to the MySQL Server, you can query the database.

For example:

mysql> SHOW DATABASES;



	Database
►	information_schema
	classicmodels
	ebookshop
	mysql
	performance_schema
	sakila
	test

Disconnect from the MySQL server using:

mysql> EXIT;

After you have logged into the MySQL server using the mysql client, the following step describes how to create and delete a database.

CREATE DATABASE [IF NOT EXISTS] database_name;

Note: SQL statements ending with asterisk; or \g, \G and press the Enter key.

The CREATE DATABASE statement will create a database called “database_name”. IF NOT EXISTS is an option to avoid errors if a database with the same name exists. If it already exists, the command will not be executed.

USE database_name;

To select a database that you intend to work.

DROP DATABASE [IF EXISTS] database_name;

Database deletion means deleting the physical database, all data and related objects. Like the CREATE DATABASE statement, the IF EXIST option will not execute the command DELETE if the database does not exist

Practical Exercises

- 1. How to change the default port of MySQL server to 3307 and connect to MySQL server at this port?*
- 2. How to move the data directory of MySQL to another directory and reconfigure the configuration file to redirect to new data directory.*
- 3. Write the correct SQL statement to list all the existing databases in MySQL.*
- 4. Write the correct SQL statement to create a new database called “my_database”.*
- 5. Write the correct SQL statement to delete the database “my_database”.*