Lab 1 – Database Fundamentals

Aim:

Todays Lab will allow you to successfully install MySQL onto your PC as well as create a simple Database and learn about what a dump file does and how to use it.

1. Installation of MySQL:

- Visit -> https://dev.mysql.com/downloads/installer/
- Download the installer for Windows that suits your machine (Use the second one – the larger of the downloads)
- Save the installer in Downloads
- Click on the blue text “No thanks, just start my download.”
- Follow the instructions and select the option that says MySQL Server Only for the installation.
- Set a password and finish the installation.
- Initiate the MySQL command line

2. Create a Database

Keywords and Syntax are very important when using MySQL. Thus to create a database we will use this command:

create database database_name;

eg. Create database DBF;

This will create a database with the name “DBF”

Check to see that the database was successfully created:

Use the following command:

show databases;

Now that we understand the basics to create and view the databases. Lets understand what are dump files.

3. Dump Files

What are dump files:

In MySQL, a dump file refers to a file created by exporting or "dumping" data from a database. This is typically done using the mysqldump utility, a command-line tool provided by MySQL for backing up MySQL databases. The dump file contains SQL statements that can be used to recreate the database's structure and data.

Here are some key aspects of a MySQL dump file:

- **SQL Statements:** The file typically contains SQL statements to create tables, populate data, and sometimes, to create stored procedures, triggers, and views.
- **Backup and Restore:** Dump files are often used for backup purposes. You can use the contents of a dump file to restore the database to its state at the time of the dump. This is especially useful for recovering data after accidental data loss or corruption.
- **Data Transfer:** Dump files can be used to transfer data from one MySQL server to another. Since the file contains SQL commands, it can be executed on another MySQL server to recreate the original database.
- **Format:** The standard format for a MySQL dump file is plain text, which makes it easy to view and edit with text editors. The file extension is typically .sql.

How to Create a Dump File:

1. First, we need to add the path to the system executables:
2. On your PC go to the folder that has the bin folder for mysql:
3. Mine was -> "C:\Program Files\MySQL\MySQL Server 8.0\bin"
4. Copy the Path
5. Search on the PC for “edit the system environment variables”
6. Select Environment Variables
7. Under the System Variables select “PATH” and then double-click on it
8. Then click on “New”
9. Then paste the path that you copied without the quotation marks.
10. Click on OK till you get back to the start

Now that this is done, we can create a dump file. We need to open a command prompt terminal:

DUMP FROM A DATABASE

Use the following command:

mysqldump -u {username} -p database_name > dump_name.sql

for example, the one I used:

mysqldump -u root -p mysql > DBFdump.sql

This creates a database dump by the name DBFdump

Now lets create a **DATABASE FROM A DUMP:**

mysql -u {username} -p database_name < dump_name

the one I used was:

mysql -u root -p DBF < DBFdump.sql

Note there will be an error since we used the entire MySQL server for the creation of the dump file. This will work if we use a different database to create the dump file. Also, the "DBF" database must be empty before we do anything.