



DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

Title: Managing MySQL Databases and Tables in MySQL

DATABASE SYSTEM LAB
CSE 210



GREEN UNIVERSITY OF BANGLADESH

1 Objective(s)

- To Create Database and Table
- To Insert Data in Table
- To Drop Database and Table

2 Problem analysis

After installation of proper tools, users have to create a database in his/her system and use it according to his/her demand. In the previous lab, we created a database from the phpMyAdmin panel. But, in this lab, we have to create databases and tables with SQL commands. We will also have to insert data in the tables. Finally, we will have to drop the tables and the database. The workflow of this lab has been described in figure 1.

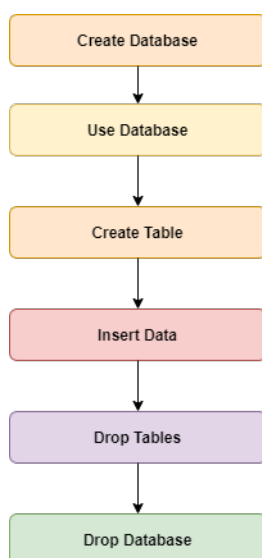


Figure 1: Workflow Diagram of this Lab

3 Procedure

As we have installed and launched the XAMPP in the previous lab, we can assume that the system is ready to use. First, we have to launch the XAMPP. We will get an interface like figure 2. Then, we have to press the **Start** button of **Apache** and **MySQL** module. After that, we have to press the **Admin** button of **MySQL** module. As a result, a tab will be opened on your default web browser like figure 3. Then, we have to select the SQL option. An editor space will be opened like figure 4 to write the required commands.

4 Implementations

4.1 Database Creation

To create a database, we have to write a command like "CREATE DATABASE [Database_Name]". Suppose, we have to create a database named "lab2". We have to write the command as below:

```
CREATE DATABASE lab2
```

A databased named "**lab2**" is created in your local-host.

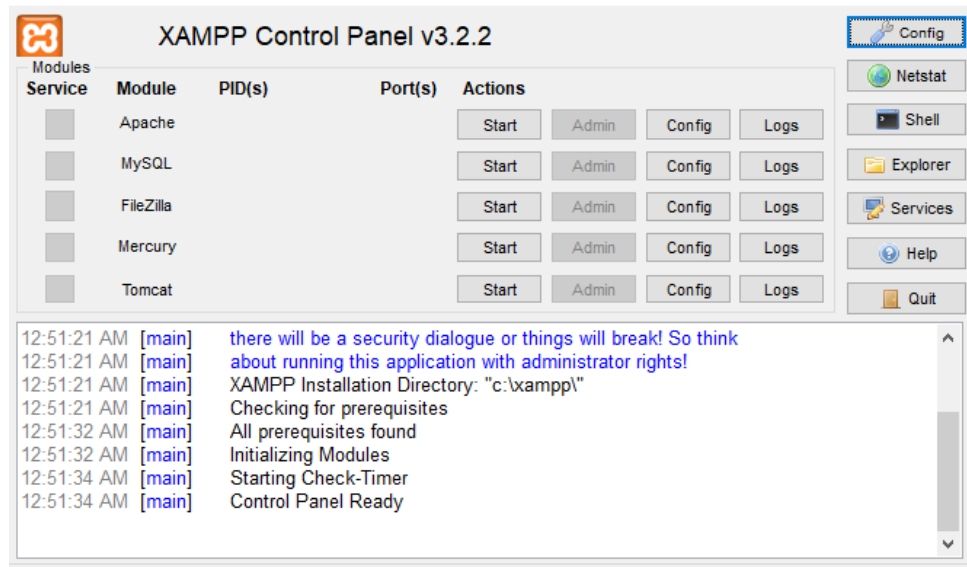


Figure 2: XAMPP Control Panel

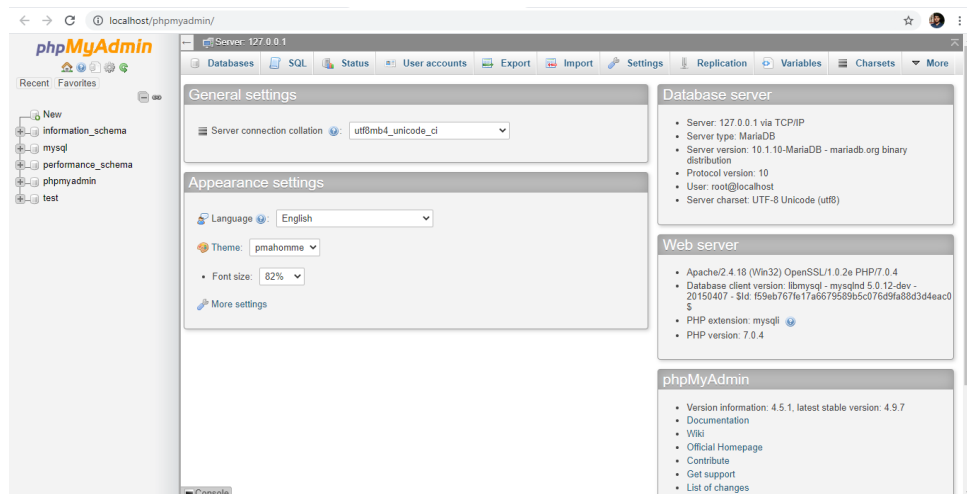


Figure 3: Session in Localhost

4.2 Database Use

To use the "lab2" database, we have to write the command in SQL editor space as below:

```
USE lab2
```

4.3 Table Creation

Now, to create a table named "Student" in database lab2 with attributes like StudentID (int), LastName (varchar), FirstName (varchar), Address (varchar), City (varchar), we have to write command in SQL editor space like below:

```
CREATE TABLE Student(StudentID int, LastName varchar(20), FirstName varchar(20), Address varchar(50), City varchar(20));
```

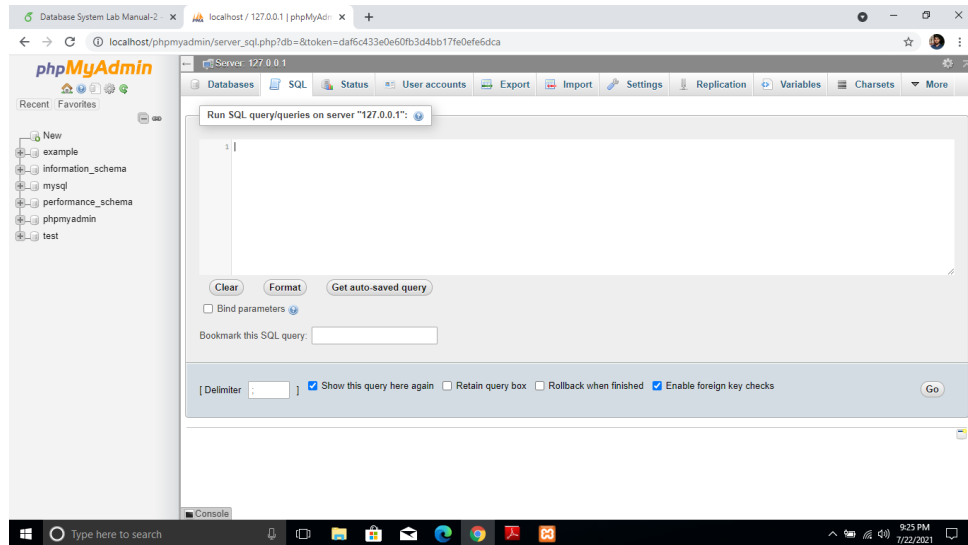


Figure 4: Space for Editing Commands

4.4 Table Description

To describe the table structure, we must write a command like "DESCRIBE [Table_Name]". Suppose, we want to describe **Student** table. So, we have to write the command in SQL editor space as below:

```
DESCRIBE student;
```

We will get table like figure 5 on the browser tab.

Field	Type	Null	Key	Default	Extra
StudentID	int(11)	YES		NULL	
LastName	varchar(20)	YES		NULL	
FirstName	varchar(20)	YES		NULL	
Address	varchar(50)	YES		NULL	
City	varchar(20)	YES		NULL	

Figure 5: Description of **Student** Table

The **Student** table is ready to insert data.

4.5 Data Insertion

To insert data in the table, we have to write proper SQL commands on the SQL editor space. Suppose, we want to insert student details in **Student** table like **StudentID: 1001, LastName: Das, FirstName: Utsha, Address: 704, Shamim Shoroni, West Shewrapara, City: Dhaka**, we have to write command as bellow:

```
INSERT INTO 'student' ('StudentID', 'LastName', 'FirstName', 'Address', 'City') VALUES ('1001', 'Das', 'Utsha', '704, Shamim Shoroni, West Shewrapara', 'Dhaka');
```

We also want to insert another student's details in **Student** table like **StudentID: 1002, LastName: Hasan, FirstName: Md. Mehedi, Address: 102, Shapla Shoroni, West Shewrapara, City: Dhaka**, we have to write the command as below:

```
INSERT INTO 'student' ('StudentID', 'LastName', 'FirstName', 'Address', 'City') VALUES ('1002', 'Hasan', 'Md. Mehedi', '102, Shapla Shoroni, West Shewrapara', 'Dhaka');
```

In this way, we can insert many student details in the **Student** table.

4.6 Data Browse

To browse the **Student** table, we have to write the command below:

```
SELECT * FROM 'student';
```

A table will appear on the tab like figure 6.

StudentID	LastName	FirstName	Address	City
1001	Das	Utsha	704, Shamim Shoroni, West Shewrapara	Dhaka
1002	Hasan	Md. Mehedi	102, Shapla Shoroni, West Shewrapara	Dhaka

Figure 6: Browsing Result of Student Table

4.7 MySQL Dates Data Insertion

MySQL comes with the following data types for storing a date or a date/time value in the database:

- DATE - format: YYYY-MM-DD
- DATETIME - format: YYYY-MM-DD HH:MI:SS
- TIMESTAMP - format: YYYY-MM-DD HH:MI:SS
- TIME - format: hh:mm:ss
- YEAR - format: YYYY or YY

Table 1: Overview of Data Types Used in MySQL

Types	Description	Display Format
DATETIME	Use when you need values containing both date and time information.	YYYY-MM-DD HH:MM:SS
DATE	Use when you need only date information.	YYYY-MM-DD
TIMESTAMP	Values are converted from the current time zone to UTC while storing and converted back from UTC to the current time zone when retrieved.	YYYY-MM-DD HH:MM:SS

Now, create a table named "**testdate**" in database **lab2** with attributes like **id** (**int**), **name** (**varchar**), **Birthdate** (**date**), **Orderdate** (**datetime**), **Entrydate** (**datetime**) we have to write commands in SQL editor space like below:

```
CREATE TABLE testdate (id int, name varchar(20), Birthdate date, Orderdate datetime, Entrydate datetime default current_timestamp);
```

To describe the table structure, we must write a command describe **testdate** table. So, we have to write the command in SQL editor space as below:

```
DESCRIBE testdate;
```

We will get table like figure 7 on the browser tab.

Field	Type	Null	Key	Default	Extra
id	int(11)	YES		NULL	
name	varchar(20)	YES		NULL	
Birthdate	date	YES		NULL	
Orderdate	datetime	YES		NULL	
Entrydate	datetime	YES		current_timestamp()	

Figure 7: Description of **Student** Table

The **testdate** table is ready to insert data.

To insert data in the table, we have to write proper SQL commands for this table, such as MySQL date commands, in the SQL editor space. We want to insert data in **testdate** table like **id: 1001, name: Anas, Birthdate: 2002-10-10, Orderdate: 2010-12-12 12:12:12**, as the entrydate column is set to default to the current timestamp, we don't need to insert a value manually. The command should be written as follows:

```
INSERT INTO 'testdate' ('id', 'name', 'Birthdate', 'Orderdate') VALUES ('1001', 'Anas', '2002-10-10', '2010-12-12 12:12:12');
```

To browse the "**testdate**" table, we have to write command **SELECT * From testdate;** After that, we will get a table like 8 on the browser tab.

id	name	Birthdate	Orderdate	Entrydate
1	Anas	2002-10-10	2010-12-12 12:12:01	2024-08-30 14:13:11

Figure 8: Browsing Result of **testdate** Table

4.8 Dropping Table and Database

To drop a table, we have to write a command like "DROP TABLE [Table_Name]". Suppose, we want to drop the **Student Table**, SQL command will be as bellow:

```
DROP TABLE student;
```

Student table will be removed from **lab2** database.

To drop the **lab2** database, we have to write the command below:

```
DROP DATABASE lab2;
```

5 Discussion & Conclusion

In this lab, we have created a database with a table. We have also inserted data in the table and browsed the table. Finally, we have dropped the table as well as the database. That's meant, we have achieved our lab objectives.

6 Lab Task (Please implement yourself and show the output to the instructor)

1. Create a database named "University"
2. Create a Table named "Teacher" with attributes named TeacherID, Name, Designation, Address, and Email.
3. Create a Table named "Student" with attributes named StudentID, Name, Address, and Phone.
4. Insert at least five entities in each table.
5. Drop each table of the database.

6.1 Problem analysis

1. You have to create a database named "University" with the help of create option provided in pypMyAdmin panel.
2. You have to create a table named "Teacher" with attributes named TeacherID, Name, Designation, Address, and Email. You must use proper data type and size.
3. You have to create a table named "Student" with attributes named StudentID, Name, Address, and Phone. You must use proper data type and size.
4. You have to insert at least five tuples both in **Student** and **Teacher** table.
5. You have to drop the tables.

7 Lab Exercise (Submit as a report)

- Create a Database with five tables.
- Insert five to ten tuples in each table.
- Browse each table and take a snapshot.

8 Policy

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