BRAC UNIVERSITY

Inspiring Excellence

# Department of Computer Science and Engineering

| Course Code: CSE370 | Credits: 1.5 |
|---|---|
| Course Name: Database Systems | Semester: Summer'20 |

## Lab 01

## Part-A

## Setting Up and Connecting to the MySQL Server in XAMPP

I. **Topic Overview:**

This is a short introduction to Database Systems. Brief overview of the expectations and outcomes of the lab i.e. informing students about the project they have to submit at the end of the semester are discussed. After that the students will install and connect to the MySQL server.

II. **Lesson Fit:**

There is no pre-requisite to this lab as this is an introductory lab.

III. **Learning Outcome:**

After this lecture, the students will be able to:

a. Install XAMPP

b. Connect to the server

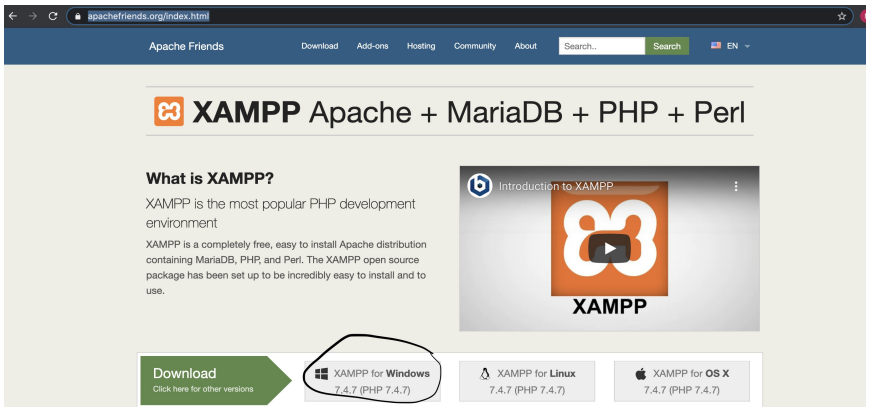
c. Login and create a database to write sample queries.

## IV. Acceptance and Evaluation

This is a preliminary setup. Students won't be evaluated for this task.

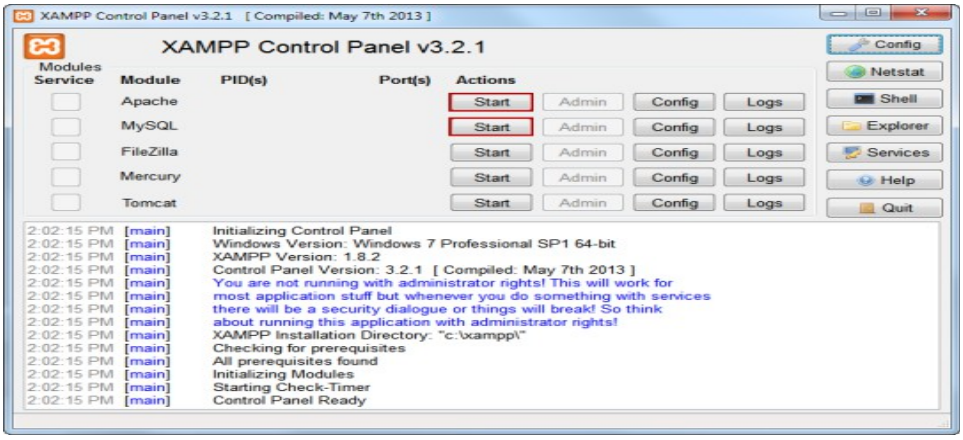
# Activity List for Part A

**Step 1: Go to [https://www.apachefriends.org/index.html](https://www.apachefriends.org/index.html) and download XAMPP for your OS.**



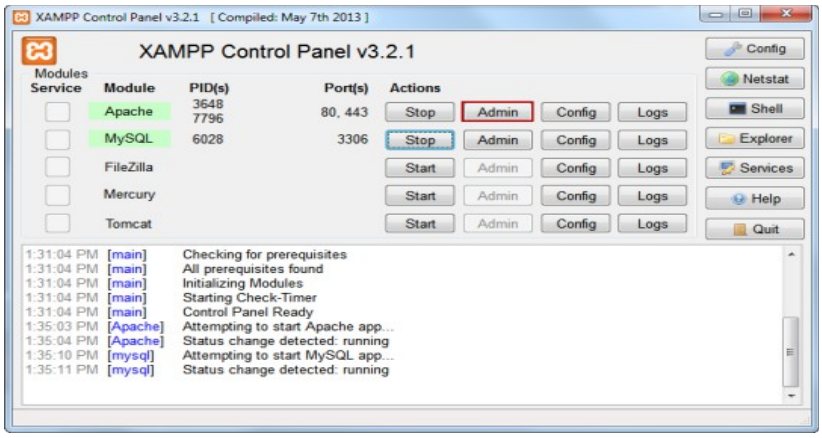

**Step 2: Install XAMPP according to the installation guide**

**Step 3: Open XAMPP control panel after installation**




Open the control panel and click on the start buttons (highlighted in red) beside Apache and Mysql.

**Step 4: Click on the “shell” button on right of the window**




**Step 5: Connect to the mysql server**

After clicking on shell, you should see a black window. Type in the following command:

```
mysql -u root -p
```

When you are asked for password, don't type anything just press enter. The default password for xampp is an empty string.

## Part-B

## An Introduction to MySQL Queries

I. **Topic Overview:**

Students will get introduced to MySQL queries and will test them under the database they created in Part A.

II. **Lesson Fit:**

They would have to complete Part A first.

III. **Learning Outcome:**

After this lecture, the students will be able to:

a. Run and Execute simple MySQL queries e.g. CREATE, INSERT, SELECT

b. Understand how the compiler works.

c. Answer a short quiz regarding the tasks completed in Part A and Part B.

IV. **Anticipated Challenges and Possible Solutions**

a. Students might face problem running the queries and run into various syntax errors.

**Solutions:**

a.i. Faculty will help them individually.

a.ii. Students should not copy paste queries with quotation marks, instead they should type the quotes themselves.

b. They might face problem by accidentally closing the server window without formally exiting and might not be able to login back again.

**Solutions:**

b.i. Restarting the server from Windows Task Manager.

b.ii. Restarting the computer

c. Syntax error in a query, might cause the mysql> prompt to not appear after executing the query.

**Solutions:**

c.i. Typing one of the following may solve the problem

c.i.1. ‘);

c.i.2. `);

c.i.3. `;

c.i.4. ‘;

c.i.5. Or log out with ctrl+c and login agian

V. **Acceptance and Evaluation**

Students will answer a few short questions at the end of this lab, where their observation skills will be evaluated. Teachers will check that they have finished all tasks.

## Activity List for Part B

- **All commands are shown in the red boxes .**
- **In the green box write the response you see after entering each query. Also write the query for cases where you had to make changes.**

! **The part of query in bold italic are variables, the rest are keywords. In some cases you might need to change the variables as per requirement.**

A Server can have multiple databases, for example, a movie database and a car rental database. So how can you view the list of all databases?

```
show databases;
```

If you want to start a new project you should create your own database. After creating check if the new database is in the list now.

```
create database Your_DB_name ;
```

Before storing or manipulating any data, you HAVE to select the database you want to work on. All new command will take effect in selected database.

```
use Your_DB_name ;
```

All data are stored in tables. Each table will represent 1 entity, for example students_info, the column of the table will be attributes of the students(e.g. student_id, name, department, cgpa, grad_date) and each row will have information about 1 single student. Each attribute has a pre-defined data type such as int, char etc.

```
create table Lab_grades
(
    student_id char(4),
    name varchar(30),
    major char(3),
    section char(1),
    days_present int,
    project_marks double,
    cgpa decimal(3,2),
    submission_date date
);
```

You can have many tables in database, e.g student_info, teacher_info, course_info etc. So how to vie the list of all tables?

```
show tables;
```

You might want to check the structure of a table e.g. what columns are there, what are the data types etc.

describe ***Your_tabele_name;***

| Std_ID | Name | Major | section | Days_present | Project_marks | CGPA | Submission_date |
|---|---|---|---|---|---|---|---|
| s001 | Abir | CS | 1 | 10 | 18.5 | 3.91 | 2018-09-15 |
| s019 | Naima | CSE | 2 | 12 | 20 | 3.7 | 2018-08-14 |
| s002 | Nafis | CSE | 1 | 12 | 20 | 3.86 | 2018-08-15 |
| s003 | Tasneem | CS | 1 | 8 | 18 | 3.57 | 2018-09-18 |
| s004 | Nahid | ECE | 2 | 7 | 16.5 | 3.25 | 2018-08-20 |
| s005 | Arafat | CS | 2 | 11 | 20 | 4.0 | 2018-09-13 |
| s006 | Tasneem | CSE | 1 | 12 | 17.5 | 3.7 | 2018-08-15 |
| s007 | Muhtadi | ECE | 1 | 10 | 19 | 3.67 | 2018-09-16 |
| S008 | Farhana | CSE | 2 | 6 | 15 | 2.67 | 2018-08-16 |

Now you want to insert the data above in the table you created. There are two commands: a long version and a shorter one! Insert all the data above in the table.

Insert into ***Your_table_name (std_id,name,major, section, days_present,project_marks,cgpa,submission_date)*** values ('s001','Abir','CS','1',10, 18.5, 3.91,'2018-09-15') ;

Insert into ***Your_table_name*** values ('s001','Abir','CS','1', 10, 18.5, 3.91,'2018-09-15') ;

So now you want to view all the data you inserted? For that we will use the select query. More on that later!

Select * from ***Your_table_name*** ;

# Sample Quiz for Lab 01 (Sample Quiz)

**Time to test your observation and deduction skills!**

1. Which keyword or symbol in an SQL query lets the server know that a command/query has ended?

2. What is the main difference between the two insert commands?

3. What is the purpose of the * in the select query?

4. How do you think you can view some selective information of all students, e.g. only name and cgpa?

5. If I write the queries in all upper case or if I mix upper and lower cases, what will happen?

6. What does decimal(3,2) mean in the create query and what is the highest value you can store in this case?