BRAC UNIVERSITY
Inspiring Excellence

Department of Computer Science and Engineering

Course Code: CSE370	**Credits: 1.5**
Course Name: Database Systems	

Lab 06
Database Connection Basics

I. Topic Overview:

In this lab, students will learn how to connect to MySQL database using PHP. Connecting database to MySQL is an important step for the CSE370 course project. Students will learn different techniques (mostly involving *mysql and mysqli* and the fundamental differences between *$GET* and *$POST* method. Students will also learn about the PHP Data Objects (PDO).

II. Lesson Fit:

Students should have an understanding of the following:

1. SQL syntax
2. Any working PHP server (e.g. Xampp, Wampp, etc.)
3. Basic HTML syntax

III. Learning Outcome:

After this exam, the students will:

a. Learn to create a basic form using HTML and PHP
b. Learn to connect their own databases to the form they've created.
c. Learn to use PDO instead of *mysql* and *mysqli*.

IV. Anticipated Challenges and Possible Solutions

Students might face problems in understanding link multiple *.php files.
Solutions: Teachers will explain the PHP directory and how to create different PHP web pages.

V. Acceptance and Evaluation

Students are expected to complete all tasks during the class. This lab will be graded. Home assignment will be given to the students who will fail to finish the given task within the scheduled time.

VI. Activity Detail

Hour: 1

Students will be explained the basics of *mysql* and *mysqli* functions and the basics on how to create a simple webpage with form and extract information from the user. Then they will learn to connect the webpage to a database they've created previously.

Hour: 2

Students will get 1 hour to complete Task 1, 2 and 3. Students will be explained how to work with PHPmyAdmin.

Hour: 3

Students will complete Task 4. Lab instructors will then explain Task 5 and 6.

Lab 6 Activity List

Suggestions for this Lab:

- Use a **Text editor** such as NotePad /NotePad++ to open *.php and *.html files.
- Save your text file regularly.

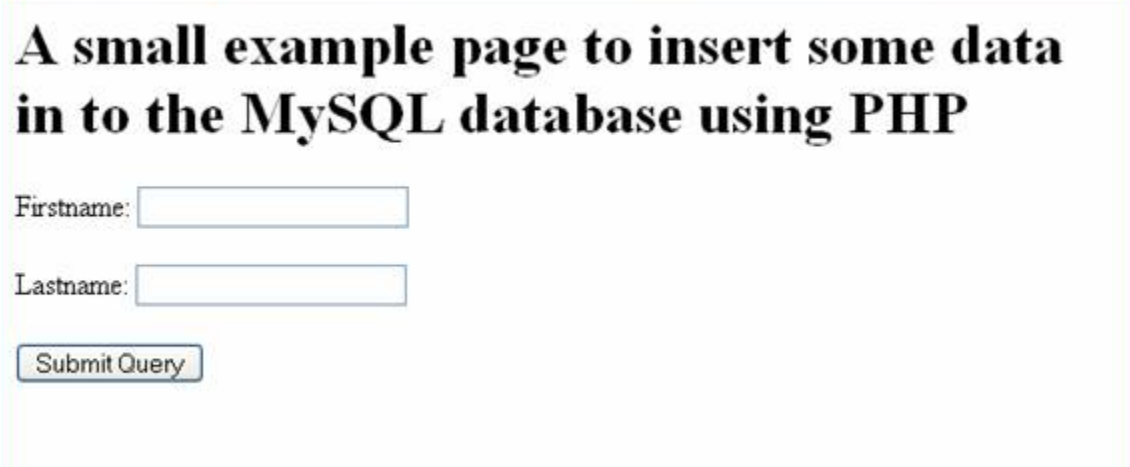
Task 1

Create a simple new "form.html" file and design a simple text form with text boxes. Write the following code:

```
<html>
<body>
<h1>A small example page to insert some data in to the MySQL database using
PHP</h1>
<form action="insert.php" method="post">
Firstname: <input type="text" name="fname" /><br><br>
Lastname: <input type="text" name="lname" /><br><br>

<input type="submit" />
</form>
</body>
</html>
```

Your form will look like this:



Task 2

a. Add another textbox for ID in Task 1.
b. Change Firstname to Name
c. Change Lastname to CGPA. Change the input type to number. Specify max and min and step for allowing decimal values. (https://www.w3schools.com/tags/att_input_type_number.asp)

Task 3

Create the "insert.php" file. Now use one approach below to connect to MySQL:

MySQLi Object-Oriented

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname= "dbname";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
echo "Connected successfully";
?>
```

MySQLi Procedural

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname= "dbname";

// Create connection
$conn = mysqli_connect($servername, $username, $password, $dbname);

// Check connection
if (!$conn) {
    die("Connection failed: " . mysqli_connect_error());
}
echo "Connected successfully";
?>
```

PHP Data Object (PDO)

```php
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname= "dbname";

try {
    $conn = new PDO("mysql:host=$servername;dbname=$dbname ", $username,
$password);
    // set the PDO error mode to exception
    $conn->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
    echo "Connected successfully";
    }
catch(PDOException $e)
    {
    echo "Connection failed: " . $e->getMessage();
    }
?>
```

Task 4

Open PhPmyAdmin (localhost/phpmyadmin) and create database. In the database you should have a Students table with the following attributes: ID, Name, CGPA

Task 5

a. Write the code to insert data manually into the database in the “insert.php” file
   $sql = "INSERT INTO STUDENTS VALUES ('01902192', 'Harry', '3.8')";

b. Make the necessary changes in insert.php according to https://www.w3schools.com/php/php_mysql_insert.asp

Task 6

Now change your code to insert values from the form into the database. The data in each text box/input button can be accessed using `$_POST[fname]`.

```
E.g. $sql="INSERT INTO nameoftable VALUES ('$_POST[fname]','$_POST[lname]')";
```

Examples

For selecting data from database: https://www.w3schools.com/php/php_mysql_select.asp

For deleting data from database: https://www.w3schools.com/php/php_mysql_delete.asp

For updating data in database: https://www.w3schools.com/php/php_mysql_update.asp