

Web Systems Nov. 2, 2017

Topics of Discussion

- Using MySQL as a Calculator
- Command Line: Create a Database, a Table, Insert Values into Table, Query Database
- Using PHP API to Interact with MySQL
 - Check_connection.php
- Using PHP API to query Customer Database: CustomerInfo Table
- Lab 11 Exercise 08

Use MySQL as a Calculator

```
MariaDB [(none)]> select 2 + 2;
+-----+
| 2 + 2 |
+-----+
|      4 |
+-----+
1 row in set (0.00 sec)

MariaDB [customer]> select 10 * 2;
+-----+
| 10 * 2 |
+-----+
|      20 |
+-----+
1 row in set (0.02 sec)

MariaDB [(none)]> SELECT version(), now();
+-----+-----+
| version() | now() |
+-----+-----+
| 10.1.16-MariaDB | 2017-11-01 21:21:09 |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [(none)]>
```

MySQL Command Line Practice:

Create a Customer Database "Customer"

```
#mysql > CREATE DATABASE Customer;
```

```
#mysql > USE Customer;
```

Create a Table "CustomerInfo" with the following fields:

- firstName (VARCHAR 20), lastName (VARCHAR 20), emailAddr (VARCHAR 30)

```
#mysql > CREATE TABLE CustomerInfo(firstName VARCAHR(20), lastName VARCHAR(20),
emailAddr(VARCHAR 30);
```

Show Properties of the "CustomerInfo":

```
#mysql > DESCRIBE CustomerInfo;
```

```
#mysql > SHOW DATABASES;
```

Insert Three Customer Info into the table "Customer"

```
MariaDB [(none)]> CREATE DATABASE Customer;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> USE Customer;
Database changed

MariaDB [Customer]> CREATE TABLE CustomerInfo(firstName VARCHAR(20), lastName VA
RCHAR(20), emailAddr VARCHAR(30));
Query OK, 0 rows affected (0.02 sec)

MariaDB [Customer]> DESCRIBE CustomerInfo;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| firstName | varchar(20)   | YES  |     | NULL    |       |
| lastName  | varchar(20)   | YES  |     | NULL    |       |
| emailAddr | varchar(30)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

MariaDB [Customer]> SHOW DATABASES;
+-----+
| Database |
+-----+
| art       |
| art2      |
| bookcrm-comprehensive |
| customer  |
| information_schema |
| mysql     |
| performance_schema |
| phpmyadmin |
| test      |
| travels   |
+-----+
10 rows in set (0.02 sec)

MariaDB [Customer]> INSERT INTO CustomerInfo VALUES("Paul", "Lin", "pilin@purdue
.edu");
Query OK, 1 row affected (0.02 sec)

MariaDB [Customer]> INSERT INTO CustomerInfo VALUES("John", "Paul", "jp@yourcom.
com");
Query OK, 1 row affected (0.00 sec)

MariaDB [Customer]> INSERT INTO CustomerInfo VALUES("Peter", "Long", "plong@long
Inc.com");
Query OK, 1 row affected (0.02 sec)

MariaDB [Customer]> SELECT * FROM CustomerInfo;
+-----+-----+-----+
| firstName | lastName | emailAddr |
+-----+-----+-----+
| Paul      | Lin      | pilin@purdue.edu |
| John      | Paul     | jp@yourcom.com   |
+-----+-----+-----+
```

```

| Peter      | Long      | plong@longInc.com |
+-----+-----+-----+
3 rows in set (0.00 sec)

MariaDB [Customer]> SELECT emailAddr FROM CustomerInfo;
+-----+
| emailAddr |
+-----+
| pilin@purdue.edu |
| jp@yourcom.com   |
| plong@longInc.com |
+-----+
3 rows in set (0.00 sec)

MariaDB [Customer]> SELECT lastName FROM CustomerInfo ORDER by lastName DESC;
+-----+
| lastName |
+-----+
| Paul      |
| Long      |
| Lin       |
+-----+
3 rows in set (0.00 sec)

```

Example 1. Using PHP API to Interact with MySQL **customer** database created from above activities

- db_connection_functions.php
- check_connection.php

PHP API:

mysql_result, <http://php.net/manual/en/function.mysql-result.php>

Procedure

1. Create the **db_connect_functions.php** file
2. Create the **check_connection.php** file
3. Create a directory under **htdocs**, called **phpconnecttest**.
4. Move the both **db_connect_functions.php** and **check_connection.php** files to phpconnecttest folder.
5. Run check_connection.php
 - a. Open a browser and enter the address:
localhost/phpconnecttest/check_connection.php
 - b. See the return result

```

<?php
/* db_connect_functions.php */
function openConnect()
{
    $DB_HOST      = "localhost";
    $DB_USER      = "root";
    $DB_PASSWORD  = "secrete";          // use your root password
    $DB_NAME      = "customer";         // database name

    $connHandler = new mysqli($DB_HOST, $DB_USER, $DB_PASSWORD, $DB_NAME)
        or die("<p> Error connecting to database: " . mysql_error() .
"</p>");

```

```

        return $connHandler;
    }
function closeConnect($conn)
{
    $conn -> close();
}
?>

```

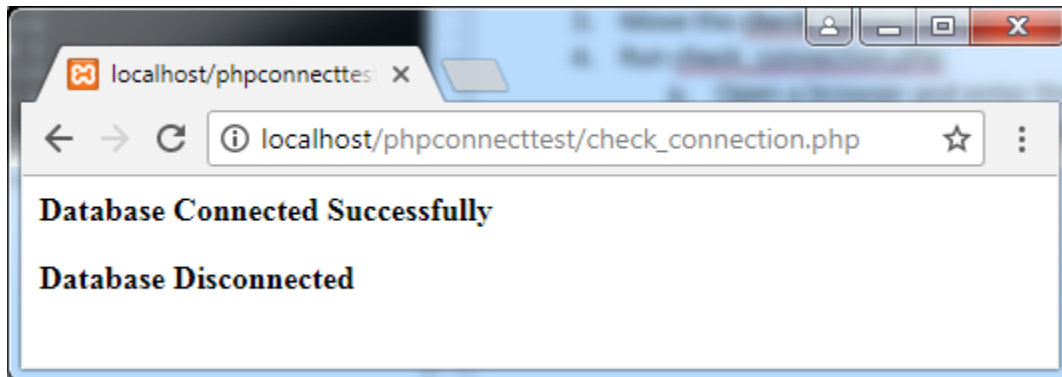
```

<?php
/* check_connection.php */
include "db_connect_functions.php";

$conn = openConnect();
echo "<p><b>Database Connected Successfully </b></p>";

closeConnect($conn);
echo "<p><b> Database Disconnected</b></p>";
?>

```



Example 2. Using PHP API to query CustomerInfo Table inside MySQL **customer** database created from above activities

- root_customerDB_config
- db_connection_functions.php
- check_connection.php

mysqli APIs:

- mysqli_fetch_row(), <http://php.net/manual/en/mysqli-result.fetch-row.php>
- mysqli_query(), <http://php.net/manual/en/mysqli.query.php>

```

<?php
/* root_customerDB_config.php */
define('DB_HOST', 'localhost');
define('DB_NAME', 'customer');
define('DB_PASSWORD', 'secrete');
define('DB_USER', 'root');
?>

```

```

<?php
/* db_connect_functions.php */
function openConnect()
{
    $connHandler = new mysqli(DB_HOST, DB_USER, DB_PASSWORD, DB_NAME)
        or die("<p> Error connecting to database: ") . mysql_error() .
"</p>";
    return $connHandler;
}
function closeConnect($conn)
{
    $conn -> close();
}
?>

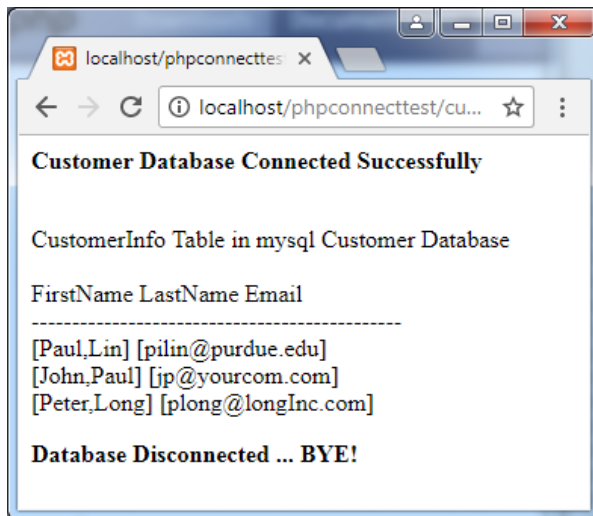
```

```

<?php
/* customerTableQuery.php */
/* mysql Database, query "customer" Table */
include("root_customerDB_config.php");
include("connectToDB.php");
$conn = openConnect(DB_HOST, DB_USER, DB_PASSWORD, DB_NAME)
    or die("<p> Error connecting to database: ") . mysql_error() . "</p>";
echo "<p><b>Customer Database Connected Successfully </b></p></br>";
/* Ref: http://php.net/manual/en/mysqli-stmt.execute.php */
/* http://php.net/manual/en/mysqli-result.fetch-row.php */
$query = "SELECT * FROM customerinfo";
// $stmt =mysqli_prepare($conn, $query);
// $results = mysqli_stmt_execute($stmt);
$i =0;
echo "CustomerInfo Table in mysql Customer Database </br></br>";
echo "FirstName      LastName      Email      </br>";
echo "-----</br>";

if($results = mysqli_query($conn, $query))
{
    while ($row = mysqli_fetch_row($results))
    {
        printf("[%s,%s] [%s]\n", $row[0], $row[1], $row[2]);
        echo "<br/>";
        //echo %row[0]; echo[1]; echo[2];
    }
}
mysqli_free_result($results);
/* Close connection */
closeConnect($conn);
echo "<p><b> Database Disconnected ... BYE!</b></p>";
?>

```



Example 3: Lab 11 Exercise08

- Database: art.sql
- Table: genres

PHP API:

- `mysqli_fetch_assoc()`, <http://php.net/manual/en/function.mysqli-fetch-assoc.php>

```
MariaDB [(none)]> use art;
Database changed
MariaDB [art]> show tables;
+-----+
| Tables_in_art |
+-----+
| artists        |
| artworkgenres  |
| artworks       |
| artworksubjects |
| customerlogon  |
| customers      |
| galleries      |
| genres         |
| orderdetails   |
| orders         |
| reviews       |
| subjects       |
| typesframes    |
| typesglass     |
| typesmatt      |
| typesshippers  |
| typesstatuscodes |
+-----+
17 rows in set (0.00 sec)
```

```
MariaDB [art]> DESCRIBE genres;
```

Field	Type	Null	Key	Default	Extra
GenreID	int(11)	NO	PRI	NULL	auto_increment
GenreName	varchar(50)	NO	UNI	NULL	
Era	int(11)	YES		NULL	
Description	longtext	YES		NULL	
Link	varchar(255)	YES		NULL	

5 rows in set (0.02 sec)

```
<?php
//config_root.php
define('DBHOST', 'localhost');
define('DBNAME', 'art');
define('DBUSER', 'root');
define('DBPASS', 'secrete');
define('DBCONNSTRING','mysql:host=localhost;dbname=art');
?>
```

```
<?php
//lab11-exercise08-mysqli.php
require_once('config_root.php');
?>
<!DOCTYPE html>
<html>
<body>
<h1>Database Tester (mysqli)</h1>
Genre:
<select>
<?php
$connection = mysqli_connect(DBHOST, DBUSER, DBPASS, DBNAME);
if ( mysqli_connect_errno() ) {
    die( mysqli_connect_error() );
}
$sql = "select * from Genres order by GenreName";
if ($result = mysqli_query($connection, $sql)) {
    // loop through the data
    while($row = mysqli_fetch_assoc($result))
    {
        echo '<option value="' . $row['GenreID'] . '">';
        echo $row['GenreName'];
        echo "</option>";
    }
    // release the memory used by the result set
    mysqli_free_result($result);
}
// close the database connection
mysqli_close($connection);
?>
</select>
</body>
</html>
```



//View web page generated by lab11-exercise08-mysqli.php

```
<!DOCTYPE html>
<html>
<body>
<h1>Database Tester (mysqli)</h1>
Genre:
<select>
<option value="50">Abstract Expressionism</option>
<option value="66">American Scene</option>
<option value="39">Art Nouveau</option>
<option value="84">Baroque</option>
<option value="48">Bauhaus</option>
<option value="63">Blaue Reiter (Blue Rider)</option>
<option value="1">Cubism</option><option value="46">Dada</option><option
value="56">Expressionism</option><option value="40">Fauvism</option><option
value="43">Futurism</option><option value="79">High Renaissance</option><option
value="35">Impressionism</option><option value="81">International Gothic</option><option
value="80">Mannerism</option><option value="54">Nabis</option><option
value="76">Neoclassical</option><option value="77">Northern Renaissance</option><option
value="36">Post-Impressionism</option><option value="34">Realism</option><option
value="78">Renaissance</option><option value="83">Rococo</option><option
value="33">Romanticism</option><option value="55">Sculpture, Early Modern</option><option
value="47">Surrealism</option><option value="64">Symbolism</option></select>
</body>
</html>
```