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Introduction to MySQL with PHP

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Reference Documentation:
http://dev.mysql.com/doc/refman/5.6/en/sql-syntax.html

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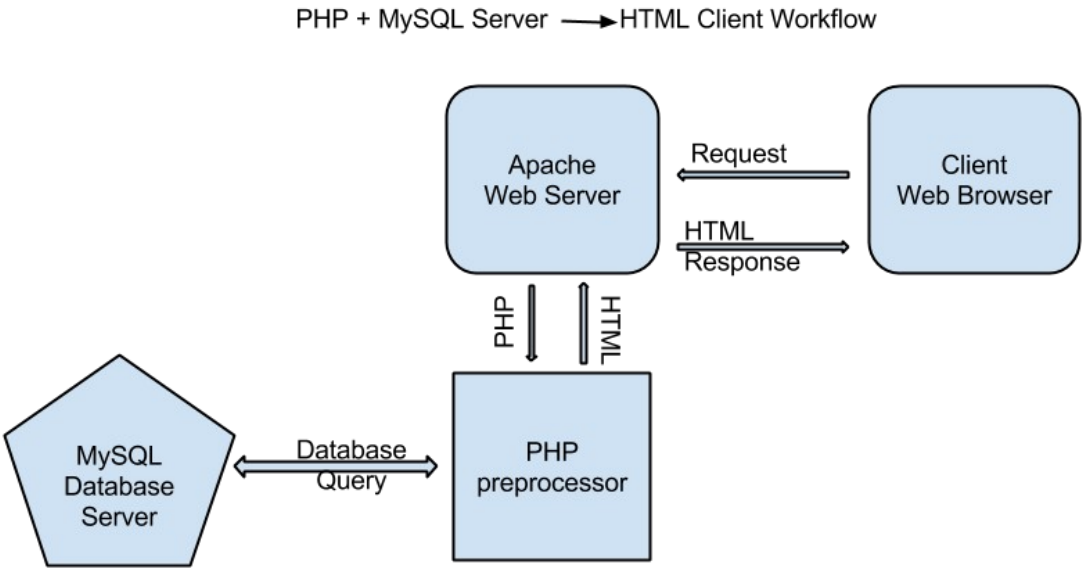
MySQL

MySQL is one of the most popular, open-source, database management system(DBMS). Uses the SQL acronym which stands for Structured Query Language. Used by a variety software and application systems e.g. LAMP Drupal, every major website.

Prerequisites: PHP knowledge, apache server with php5 installed and configured



PHPMYADMIN

```
sudo apt-get install phpmyadmin
```

enter your mysql root password when asked during install.
Visit http://127.0.0.1/phpmyadmin login with root mysql account
Begin by creating a new database, call it **testdb**

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Connect

First we need to seperate our work into to **four** .php files on your apache server:

- configuration file(config.php), for all our MySQL account information.
- MySQL class file(dbconnect.php), for all connections, queries, to MySQL
- implementation file(sql_test.php),

This makes MySQL queries easier to: organize, test, build, update, maintain.

Config – config.php

```
<?php
 DEFINE('dbAddress','127.0.0.1');  // dblocation
 DEFINE('dbUser','');        // dbuser
 DEFINE('dbPass','');  // dbpass
 DEFINE('dbName',''); // dbname
?>
```

Prepared MySQL Library Object – dbconnect.php

```
<?php
class dbconnect
{

	function sqlConn(){
		include_once('config.php');
		$db = new PDO("mysql".":host=".dbAddress.";dbname=".dbName, dbUser, dbPass);
		return $db;
	}
	function addTables(){
		/// To be filled with query
	}
	function addRow(){
		/// To be filled with query
	}
	function displayRow($qry){
		/// To be filled  with query
	}
	function updateRow($qry){
		/// To be filled  with query
	}
	function removeRow($qry){
		/// To be filled  with query
	}
}

?>
```

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Implementation – sql_test.php

```
<?php
require('dbconnect.php');

$db = new dbconnect();
/// $db->addRow();  etc
/// we'll add our test function calls  here
?>
```

Explanation

```
$db = new PDO(driver.":host=".dbAddress.";dbname=".dbName.", dbUser, dbPass);
```

This is our prepared connection to MySQL through our config's global variables.

```
$db  = $this->sqlConn();
```

We return this new database object to each function that needs it to perform MySql functions such as queries.

```
$stmt = $db->prepare("INSERT INTO some_table (somefield, somevar2, something3)");
```

prepare takes a query, complete with field variables, that can be binded following it's invocation.

```
$stmt->bindValue('somefield', 'anything', PDO:PARAM_STR);
$stmt->bindValue('somevar2', 'somevalue', PDO:PARAM_STR);
$stmt->bindValue('something', 'whatever', PDO:PARAM_STR);
```

Values are binded to variables within the prepare() query. The syntax bindValue($field, $value, $datatype);

```
$stmt->execute();
```

Perform the query.

A deprecated method(not recommended):

```
mysql_connect(dbAddress, dbUser, dbPass) or die(mysql_error());
```

This opens the connection to mysql, to any given server IP, using a user and password. If no connection is made, it will throw mysql_error() - prints the error to the window

```
mysql_select_db(dbName) or die("couldn't select db: " . mysql_error());
```

This sets the selected database on the mysql server we connect to.

```
mysql_query($qry)
```

This querys the mysql connection, at the selected database, with the selected query.

```
mysql_close();
```

This closes the mysql connection.

Create Tables

syntax: CREATE table sometable (somefieldname datatype(fieldsize));
explanation: some datatypes include:
Strings
varchar, char, binary, blob, text, enum, set
Integers
integer, int, smallint, tinyint, mediumint, bigint, decimal, numeric, float, double,

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Timestamps
date, time, datetime, timestamp, year,
reminder: always open and close your sql connections

A better example:

```
$someqry = “CREATE table Contacts  (id INT NULL AUTO_INCREMENT, PRIMARY KEY(id), UserID
varchar(50),ContactName varchar(100), ContactEmail varchar(100), ContactPhone varchar (20))";
```

To add an **auto_increment** field, we add **id INT NULL AUTO_INCREMENT.**
To set the primary key we use **primary key**(fieldname);

To apply this to our working MySQL model above, open the dbconnect.php library you created earler, add the following within the function addTables(){ }

```
$db  = $this->sqlConn();

$stmt = $db->prepare("CREATE table Contacts  (id INT NULL AUTO_INCREMENT, PRIMARY KEY(id), UserID
varchar(50),ContactName varchar(100), ContactEmail varchar(100), ContactPhone varchar (20))");

$stmt->execute();
```

Finally, amend your implementation file(sql_test.php) to look like this:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$db->addTables();
?>
```

Try it

Visit http://127.0.0.1/yoursite/sql_test.php then check the tables were added by visiting your phpmyadmin mysql administration page(assuming you installed it, as per instructions) at http://127.0.0.1/phpmyadmin open the database you created called **testdb.** Look at the left hand side see if you see any table listed named “Contacts” .

Congratulations, you just created your first MySQL database table.

Now, it's time to fill it with some actual data.

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Insert into table

syntax: INSERT into SomeTable values ('col1value', 'col2value', 'col3value')
explanation: an insert query must contain values for all the fields in a table.
reminder: always open and close your sql connections

To place data in your newly created tables, change your **dbconnect.php** in the function addRow(){ } to reflect the following:

```
function addRow($userid, $contactName, $contactPhone, $contactEmail){
		$db  = $this->sqlConn();
		$stmt = $db->prepare("INSERT into Contacts (userid, name, email, phone)");
		$stmt->bindValue(':userid', $userid, PDO::PARAM_INT);
		$stmt->bindValue(':name', $contactName, PDO::PARAM_STR);
		$stmt->bindValue(':email', $contactEmail, PDO::PARAM_STR);
		$stmt->bindValue(':phone', $contactPhone, PDO::PARAM_STR);
		$stmt->execute();
}
```

Finally, create a new **sql_test_add.php** or simply modify your **sql_test.php** to look like the following:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$db->addRow(1, 'Joe', '432 322 2234', 'joe@mailinator.com');
?>
```

Try it!

Visit http://127.0.0.1/site/sql_test_add.php to add a new row to your database table called “Contacts”.

Check that a new row was added by logging into your phpmyadmin at http://127.0.0.1/phpmyadmin then select the “Contacts” table from the right hand side.

Select from table

syntax: “SELECT somefield, somethingelse, someotherfield from SomeTable where field=:var”
explanation: an insert query must contain values for all the fields in a table.
reminder: always open and close your sql connections

To place data in your newly created tables, change your **dbconnect.php** in the function displayRow() { } to reflect the following:

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```
function displayRow($username){
try {
		$contact = array();
		$db  = $this->sqlConn();
		$stmt = $db->prepare("SELECT ContactName, ContactEmail, ContactPhone FROM Contacts WHERE
ContactName=:username");
		$stmt->bindValue(':username', $username, PDO::PARAM_STR);
		$stmt->execute();

		$rows = $stmt->fetchAll(PDO::FETCH_ASSOC);
		if(is_array($rows) AND count($rows) == 1) {
			$row = $rows[0];
			if(isset($row['ContactName'])){
				$contact['name'] = $row['ContactName'];
				$contact['email'] = $row['ContactEmail'];
				$contact['phone'] = $row['ContactPhone'];
			}
		}
} catch (exception $e) {
	echo $e;
}
		return $contact;
}
```

Finally, create a new **sql_test_display.php** or simply modify your **sql_test.php** to look like the following:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$user = $db->displayRow('joe');
var_dump($user);
?>
```

Try it!

Visit http://127.0.0.1/yoursite/sql_test_display.php to display the row you previously inserted into the database table.

Update from table

syntax: "UPDATE SomeTable SET somefield='somevalue', someotherfield='somevalue' "
explanation: an insert query must contain values for all the fields in a table.
reminder: always open and close your sql connections

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To place data in your newly created tables, change your **dbconnect.php** in the function displayRow() { } to reflect the following:

```
function updateRow($userid, $contactName, $contactPhone, $contactEmail){
	$db  = $this->sqlConn();

	$stmt = $db->prepare("UPDATE Contacts set ContactName = :name, ContactEmail = :email, ContactPhone = 
:phone WHERE UserID = :userid");
	$stmt->bindValue(':userid', $userid , PDO::PARAM_INT );
	$stmt->bindValue(':name', $contactName ,  PDO::PARAM_STR);
	$stmt->bindValue(':phone', $contactPhone ,  PDO::PARAM_STR);
	$stmt->bindValue(':email', $contactEmail ,  PDO::PARAM_STR);
	$stmt->execute();
}
```

Finally, create a new **sql_test_update.php** or simply modify your **sql_test.php** to look like the following:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$db->updateRow(1, 'Joe', '422 342 2614', 'someguy@mailinator.com');
?>
```

Try it!

Visit http://127.0.0.1/yoursite/sql_test_update.php to display the row you previously inserted into the database table.

Check that the current row was update by logging into your phpmyadmin at http://127.0.0.1/phpmyadmin then select the “Contacts” table from the right hand side.

Or

Amend your implementation file(**sql_test_update.php** or **sql_test.php**) with the following:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$user = $db->displayRow('joe');
var_dump($user);
?>
```

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Delete from table

syntax: "DELETE from SomeTable where somefield = :somevalue"
explanation: an insert query must contain values for all the fields in a table.
reminder: always open and close your sql connections

To place data in your newly created tables, add the following to your **dbconnect.php** in the function removeRow(){ }

```
function removeRow($username){
        $db  = $this->sqlConn();
        $stmt = $db->prepare("DELETE FROM Contacts WHERE ContactName =:name");
        $stmt->execute(array(':name' => $username));
}
```

Finally, create a new **sql_test_del.php** or simply modify your **sql_test.php** to look like the following:

```
<?php
require('dbconnect.php');

$db = new dbconnect();
$db->removeRow('Joe');
?>
```

Try it!

Visit http://127.0.0.1/yoursite/sql_test_del.php to delete a row from your database table with a ContactName of Joe

Check that a row was removed by logging into your phpmyadmin at http://127.0.0.1/phpmyadmin then select the "Contacts" table from the right hand side.

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