5.6 Database Access with PHP and MySQL

MySQL is a Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). It is also free and open source. The combination of PHP and MySQL gives unmet options to create just about any kind of website - from small contact form to large corporate portal.

SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use. MySQL is an essential part of almost every open source PHP application.

Example Table:

```sql
-- Create a database
CREATE DATABASE `cardb`;

-- Create a table for this database
USE `cardb`;
CREATE TABLE `cars` (
 `id` int UNIQUE NOT NULL,
 `name` varchar(40),
 `year` varchar(50),
 PRIMARY KEY(id)
);

-- Insert some values into this table
INSERT INTO cars VALUES(1,'Mercedes','2000');
INSERT INTO cars VALUES(2,'BMW','2004');
INSERT INTO cars VALUES(3,'Audi','2001');
```

NOTE: Use phpmyadmin to create this database if you have installed XAMPP

Now we have a database namely: **cardb**
In cardb database, we have created a database table called **cars.**

1. Connecting to MySql

Connect to your MySQL server using the mysql_connect statement. For example:

```php
<?php
$hostname = 'localhost';  // where database is installed
$db_username = 'root';  // database username
$db_password = 'password'; // password
$dbhandle = mysql_connect($hostname,$db_username, $db_password) or
die('Could not connect to mysql');
?>
```

2. Selecting Database

Select the database that you want to access using mysql_select_db. For example:

```php
<?php
$database_name = 'cardb'; // Name of the database that we have created
mysql_select_db($database_name, $dbhandle) or die('Could not select
database');
?>
```

3. Executing Queries

Now we can perform different mysql queries to extract, edit, add data to mysql database.
The following is the example how we retrive data from mysql database:

```php
<?php
//execute the SQL query and return records
$result = mysql_query("SELECT id, model,year FROM cars");

//fetch tha data from the database
while ($row = mysql_fetch_array($result)) {
    echo "ID:".$row['id']." Name:".$row['model']." Year: ". //display the results
    $row['year']."<br>";
}
//close the connection
mysql_close($dbhandle);
?>
```

4. Closing database connection

Finally, after connection is not needed anymore, mysql_close call should be used to close connection.

```php
<?php
mysql_close($dbhandle);
?>
```

Let's see the complete example

```php
<?php

// STEP 1 : Prepare database credentials
$hostname = 'localhost';
$db_username = 'root';
$db_password = 'password';


// STEP 2: connection to the database
$dbhandle = mysql_connect($hostname, $db_username, $db_password)
   or die("Unable to connect to MySQL");
echo "Connected to MySQL<br>";



// STEP 3: select a database to work with
$selected = mysql_select_db("cardb",$dbhandle)
   or die("Could not select cardb");



// STEP 4: execute the SQL query and return records
$result = mysql_query("SELECT id, model,year FROM cars");

//fetch tha data from the database
while ($row = mysql_fetch_array($result)) {
    echo "ID:".$row['id']." Name:".$row['model']." Year: ". //display the results
    $row['year']."<br>";
}



// STEP 5: close the database connection
mysql_close($dbhandle);
?>
```

References:
https://www.udemy.com/php-mysql-tutorial/
https://www.siteground.com/tutorials/php-mysql/
http://webcheatsheet.com/php/connect_mysql_database.php
http://www.homeandlearn.co.uk/php/php13p1.html
http://www.yohng.com/phpm/phpm.htm