

Information Technologies

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Lecture 12 - Overview

PHP, MySQL and CSS, Bootstrap → Dynamic Website

Exercise 5 Demo

- MySQL: Key Commands
- Recap: Login.php | connectDatabase.php
- Form with Radio Buttons | \$_POST | PHP to Display \$_POST
- Create MySQL Table for Data from Form with Radio Buttons
- Add Form Data to MySQL table (use MySQL Workbench to monitor)
- Use PHP to Display Data in MySQL Table
- Compute Average Score and Control Display with CSS & Bootstrap

Lectures – Week 12 Content

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Lectures.html#week12>

Recap – MySQL & PHP: Process Steps

The process of using MySQL with PHP:

- 1. Connect to MySQL** `mysqli_connect`
- 2. Select database to use** `mysqli_select_db`
- 3. Build query string** `$query = "SELECT * FROM tableName";`
- 4. Perform query** `$result = mysqli_query ($db_connect, $query);`
- 5. Retrieve results and output it to a web page**
 - `$rows = mysqli_num_rows($result);`
 - `$row = mysqli_fetch_row($result);`
- 6. Repeat Steps 3 to 5 until all desired data retrieved.**
- 7. Disconnect from MySQL** (usually done automatically)

MySQL – Key Commands

Command	Parameter(s)	Meaning
ALTER	DATABASE, TABLE	Alter DATABASE or TABLE
BACKUP	TABLE	Back up TABLE
CREATE	DATABASE, TABLE,	Create DATABASE or TABLE
DELETE	(expression with TABLE & ROW)	Delete ROW from TABLE
DESCRIBE	TABLE	Describe the TABLE'S columns
DROP	DATABASE, TABLE	Delete DATABASE or TABLE
INSERT	(expression with <i>data</i>)	Insert <i>data</i>
RENAME	TABLE	Rename TABLE
SHOW	(too many <i>items</i> to list)	List <i>item</i> 's details
UPDATE	(expression with <i>data</i>)	Update an existing record
USE	<i>database</i>	Use <i>database</i>

MySQL Resource: <https://dev.mysql.com/doc/refman/8.0/en/>

Demos of MySQL & PHP

Steps 0-3

- login.php
- Connect to Your MySQL Database
- Run Query
- Display Results

Steps 4-9

- Form with Radio Buttons and Validate using HTML5
- Use \$_POST and PHP to Display \$_POST
- Create MySQL Table for Data from Form with Radio Buttons
- Add Form Data to MySQL table (use MySQL Workbench to monitor)
- Use PHP to Display Data in MySQL Table
- Compute Average Score and Control Display using CSS and Bootstrap

Recap – MySQL & PHP: login.php for your database – Step 0

Create login_**lastname**.php file

```
<?php // login_lastname.php  make sure to place in personal folder
```

```
$db_hostname = 'localhost';
```

```
$db_database = 'yourFTPusername_mi550';
```

```
$db_username = 'yourMySQLusername'; // yourFTPusername
```

```
$db_password = 'yourMySQLpassword'; // yourFTPpassword
```

```
?>
```

Upload to Server, Set Permissions, View Source in Browser

Now that you have **login.php** file saved, you can include it in any PHP files that will need to access the database by using the **require_once** statement.

Recap – MySQL & PHP: Connect to Database – Steps 1-3

```
<?php // connectDatabase.php
require_once 'login_lastname.php';
$db_connect = mysqli_connect($db_hostname, $db_username,
    $db_password);
if (!$db_server) die("Unable to connect to MySQL: " .
    mysqli_error($db_connect));
mysqli_select_db($db_connect, $db_database) or die("Unable to select
    database: " . mysqli_error($db_connect));
$query = "SELECT * FROM classics";
$result = mysqli_query($db_connect, $query);
if (!$result) die ("Database access failed: " . mysqli_error($db_connect));
$rows = mysqli_num_rows($result);
for ($j = 0 ; $j < $rows ; ++$j){
    $row = mysqli_fetch_row($result);
    echo 'Author: ' . $row[0] . '<br>';
    echo 'Title: ' . $row[1] . '<br>';
    echo 'Year: ' . $row[3] . '<br>';
    echo 'ISBN: ' . $row[5] . '<br><br>';
?>
```

Create Form with sets of Radio Buttons

- Use **Bootstrap Form Styles**
- Want to **collect feedback** about **tools covered in class**
- Need to **assign name** to each set of radio buttons
- **Name** used as **field in MySQL database**
- Use “tool1”, “tool2”, ... to have flexibility

Validate Form using HTML5

- Include **required** in **each** input of type="radio"
`<input type="radio" name="tool1" value="1" required>`

\$_POST

\$_POST = All User Input

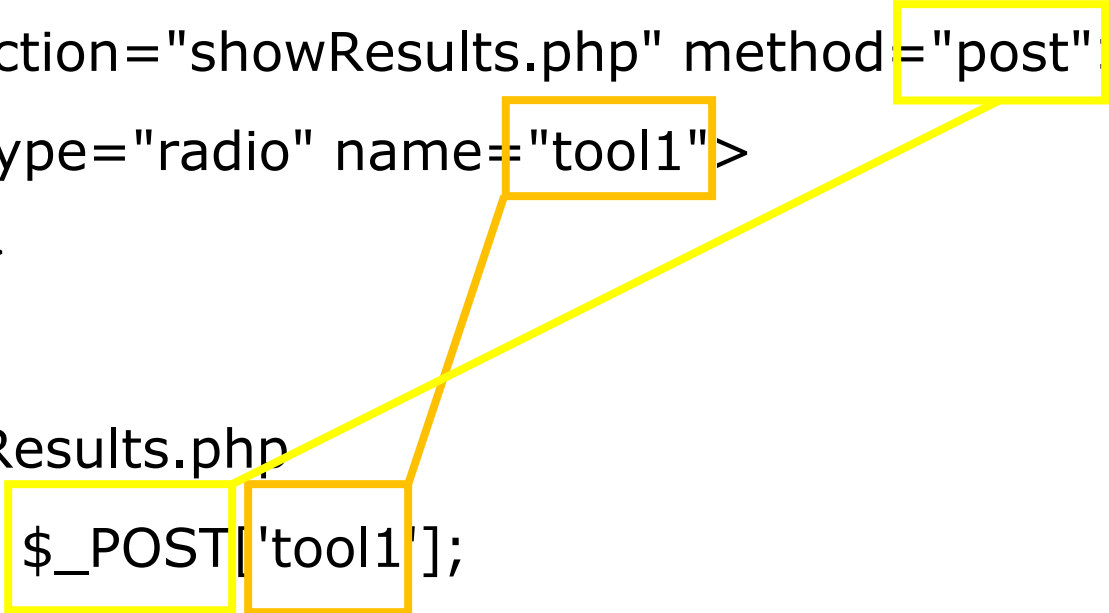
- Web server bundles up all user input and puts it into an array named \$_POST.

\$_POST is an associative array

- Each field has an element in the array named after that field.

```
<form action="showResults.php" method="post">  
<input type="radio" name="tool1">  
</form>
```

```
in showResults.php  
$tool1 = $_POST['tool1'];
```



\$_POST and PHP – Step 5

Create PHP page to Display \$_POST

Simple, but hand-coded way to display \$_POST

– **echo** ("Info Tech Tool 1 = " . \$_POST['tool1']);

Flexible way to display \$_POST

– Create PHP function to display \$_POST contents

```
foreach ($postarray as $tool => $score)
{
    echo "$tool" . " = " . "$score<br>";
}
```

Remember to use: formTest_**step5**.html and showResults_**step5**.php
as well as to **update action** in **form**
and **update reference** for **login_username.php**

Create "tools" SQL Table – Step 6

DatabaseToUse = **yourFTPusername_mi550**

USE DatabaseToUse; // tells SQL which database to use

Workaround in MySQL Workbench:

Double-click icon of database to use in left-hand panel below "Schemas" to tell SQL which database to use.

```
CREATE TABLE tools (  
  tool1 INT UNSIGNED,  
  tool2 INT UNSIGNED,  
  id INT UNSIGNED NOT NULL AUTO_INCREMENT KEY)  
ENGINE MyISAM;
```

```
DESCRIBE tools;
```

```
// Delete table if want to start fresh
```

```
DROP TABLE tools;
```

Connect to MySQL Database and Add Form Data – Step 7

Connect to MySQL

See Step 1 make sure to link to **your login file**

Make Sure **Form Data Specified**

```
isset($_POST['tool1'])
```

Sanitize Form Data

```
function mysqli_fix_string($db_connect, $string)
{
    if (get_magic_quotes_gpc()) $string = stripslashes($string);
    return mysqli_real_escape_string($db_connect, $string);
}
```

Add Form Data to Table = tools

test in MySQL Workbench

```
$query = "INSERT INTO tools (tool1, tool2) VALUES"
        . "('$tool1', '$tool2)";
```

Remember to use: formTest_**step7**.html and showResults_**step7**.php
as well as to **update action** in **form**
and **update reference for login_username.php**

Display Table Contents – Step 8

Display Contents of Table = “tools”

See Steps 2-4

Make sure to link to **your login file**

Make sure to specify to use **tools** table

```
$query = "SELECT * FROM tools";  
$result = mysqli_query ($db_connect, $query);  
if (!$result) die ("Database access failed: " . mysqli_error($db_connect));  
$rows = mysqli_num_rows($result);  
for ($j = 0 ; $j < $rows ; ++$j){  
    $row = mysqli_fetch_row($result);  
    // need to consult table to identify correct index for field  
    echo ' Tool 1: ' . $row[0] . '<br>';  
    echo ' Tool 2: ' . $row[1] . '<br><hr>';  
}
```

Remember to use: formTest_**step8**.html and showResults_**step8**.php
as well as to **update action** in **form**
and **update reference for login_username.php**

Display SUM and Average Scores using CSS – Step 9

Retrieve SUM data

```
$query = "SELECT SUM(tool1), SUM(tool2) FROM tools";
```

Display SUM and Average

```
$firstrow = mysqli_fetch_row($result);
```

```
echo ' SUM for Info Tool 1: ' . $firstrow[0] . ' and AVE = ' .  
number_format($firstrow[0] / $rows, 2) . '<br>';
```

CSS class controls display of SUM and Average

Define CSS class in style tag inside of head tag

Need to **escape ** the **quotation marks**

```
echo '<div class=\resultStyle\>';
```

Remember to have closing tag </div>

Use **Bootstrap Table** to show different SUM and AVE as **striped rows**

Remember to use: formTest_**step9**.html and showResults_**step9**.php
as well as to **update action** in **form** and **update login_username.php**

Exercise 5 – Next Steps

Once step9 works,

need to prepare to be able to **track 10 tools**

- **“tools” table** needs fields for **tool1, ..., tool10**
- **Drop** existing “tools” table
- **Create new “tools” table** with the needed fields
(modify SQL query in step 6)
- **Form needs to be modified** to collect data for 10 tools
- **PHP code needs to be modified** to examine
and **record, retrieve & display data** from MySQL table
for 10 tools

Reminders

Watch out

- **Spelling Errors**
 - **Filename Errors** login.php action="file.php"
 - **Missing Closing " or) or }**
 - **Missing ;**
 - **Missing Permissions**
 - **Saved in Wrong Location on Server**
- ➔ Check Easy Things First**