Multimedia im Netz

Online Multimedia

Winter semester 2015/16

Tutorial 05 – Minor Subject
Today’s Agenda

• Discussion of assignment 04
• PHP and MySQL
• Break Out: Music-Albums Organization WebPage
• Quiz
• Discussion of “Hangman” Solution (Assignment 03)
# Assignment 04, Task 1

<table>
<thead>
<tr>
<th>ID</th>
<th>FirstName</th>
<th>LastName</th>
<th>StreetAddress</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Theresa</td>
<td>Bauer</td>
<td>Amalienstr. 17</td>
<td>Munich</td>
</tr>
<tr>
<td>2</td>
<td>Max</td>
<td>Mustermann</td>
<td>Theresienstr. 49</td>
<td>Munich</td>
</tr>
<tr>
<td>3</td>
<td>Felix</td>
<td>Stein</td>
<td>Hauptstr. 2</td>
<td>Karlsruhe</td>
</tr>
</tbody>
</table>
PHP + MySQL
PHP & MySQL

• Multiple functions and APIs available for PHP to work with databases:
  – mysql („Deprecated“ since PHP 5.5.0)
  – mysqli (i is for „improved“)
  – PDO (PHP Data Objects)
• „mysql“ is still supported for older PHP versions
• It is highly recommendable to use mysqli or PDO
MySQL at the CIP-Pool (reminder)

• Access “Datenbank Management” here: https://tools.rz.ifi.lmu.de/
• Create a new account (required)
• Create a new database (required)
• Connect to db2.cip.ifi.lmu.de
Mysqli

• i stands for “improved”
• Offers two interfaces
  – Procedural (traditional) ← that’s what we will use.
  – Object-oriented (see lecture slides)
• Supports...:
  – „prepared“ statements
  – multiple statements within one query
  – transactions
• Improved debugging tools
Mysqli (procedural)

• Establish connection (replace user, password, and mydb with your own credentials)
  $c = \	extit{mysqli}_{-}\textit{connect}(\textit{"localhost"}, \textit{"user"}, \textit{"password"}, \textit{"mydb"});

• Select database
  \	extit{mysqli}_{-}\textit{select}_{-}\textit{db}(\$c, \textit{"mydb"});

• Close connection
  \	extit{mysqli}_{-}\textit{close}(\$c);

• PHP statement for MySQL query
  \$results = \textit{mysqli}_{-}\textit{query}(\$c, \$query);

• Process the results:
  \	extit{mysqli}_{-}\textit{fetch}_{-}\textit{array}(\$results);
  \	extit{mysqli}_{-}\textit{fetch}_{-}\textit{array}(\$results, \textit{MYSQLI}_{-}\textit{NUM});
  \	extit{mysqli}_{-}\textit{fetch}_{-}\textit{array}(\$results, \textit{MYSQLI}_{-}\textit{ASSOC});
### Table: Contacts

<table>
<thead>
<tr>
<th>PersonID</th>
<th>FirstName</th>
<th>LastName</th>
<th>PhoneNumber</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Max</td>
<td>Mustermann</td>
<td>089455544431</td>
</tr>
<tr>
<td>2</td>
<td>Laura</td>
<td>Stern</td>
<td>070815643593</td>
</tr>
<tr>
<td>3</td>
<td>Tanja</td>
<td>Baumann</td>
<td>0895673138</td>
</tr>
<tr>
<td>4</td>
<td>Felix</td>
<td>Maurer</td>
<td>0894562897</td>
</tr>
</tbody>
</table>
Establish Connection with MySQLi

```php
<?php
$c = mysqli_connect("localhost", "root", "");

if($c){
    echo "Connection has been successfully established.";
} else {
    echo "Could not connect to database. ";
}
?>
```
Create Database (not possible at CIP-Pool!)

```php
//... Create connection
$query = "CREATE DATABASE mmn1516";
$result = mysqli_query($c, $query);

if (!$result){
    echo mysqli_error($c);
}
else{
    echo "Database was created";
}
?>
Select a specific database

• Either at connection (DB has to exist beforehand):

```php
$c = mysqli_connect("localhost","username", "password","mmn1516");
```

• Or with mysqli_select_db():

```php
mysqli_select_db($c, "mmn1516");
```
Create a table

```php
<?php

// ... Connection etc.
$query = "CREATE TABLE Contacts
(PersonID int NOT NULL PRIMARY KEY AUTO_INCREMENT,
  FirstName varchar(255) NOT NULL,
  LastName varchar(255) NOT NULL,
  PhoneNumber int NOT NULL)";

$result = mysqli_query($c, $query);

?>
```
Add an entry

```php
<?php
$query = "INSERT INTO Contacts
(FirstName, LastName, PhoneNumber)
VALUES ('Max', 'Mustermann', 098776557)";

mysqli_query($c, $query);
?>
```
<?php
// ... Connection etc.
$query = "SELECT * FROM Contacts";
$result = mysqli_query($c, $query);

while($contact = mysqli_fetch_assoc($result)){
    $firstName = $contact['FirstName'];
    $lastName = $contact['LastName'];
    $phoneNumber = $contact['PhoneNumber'];
    echo "$firstName $lastName $phoneNumber <br />";
}
?>
Breakout

• Create a database table “albums” with PHP
• The table has these columns:
  – ID: automatically incremented, primary key
  – Title: the name of the album
  – Artist: the artist name of the album
  – Year: The release year of the album
• Add one or two albums with a PHP script
• Show the contents of the table in a web page

• Time frame: 40 Minutes
Round-up Quiz

1. What does the “i” in mysqli mean?
2. What is mysqli_close() good for?
3. Which parameters does mysqli_query() take?
4. When do we need mysqli_select_db()?
5. What does mysqli_fetch_assoc() do?
6. Which parameter does mysqli_fetch_assoc() take?
Thanks!
What are your questions?
Let’s begin with the Assignment!

• Download the assignment sheet
• Start with task 1
• You can collaborate with your neighbor

• Turn in the assignment by November 25\textsuperscript{th}, 12:00 noon via UniWorX