Multimedia im Netz
Online Multimedia
Winter semester 2015/16

Tutorial 03 – Minor Subject

Today's Agenda

- Quick test
- Server side scripting: Sessions with PHP
- Breakout task
- Quiz
- Discussion of previous assignments

Quick Test

- We will distribute a 1-page test sheet in the tutorial
- Fill it out and hand it back
- Returned next week in the same tutorial slot
- Be prepared for the exam ;)

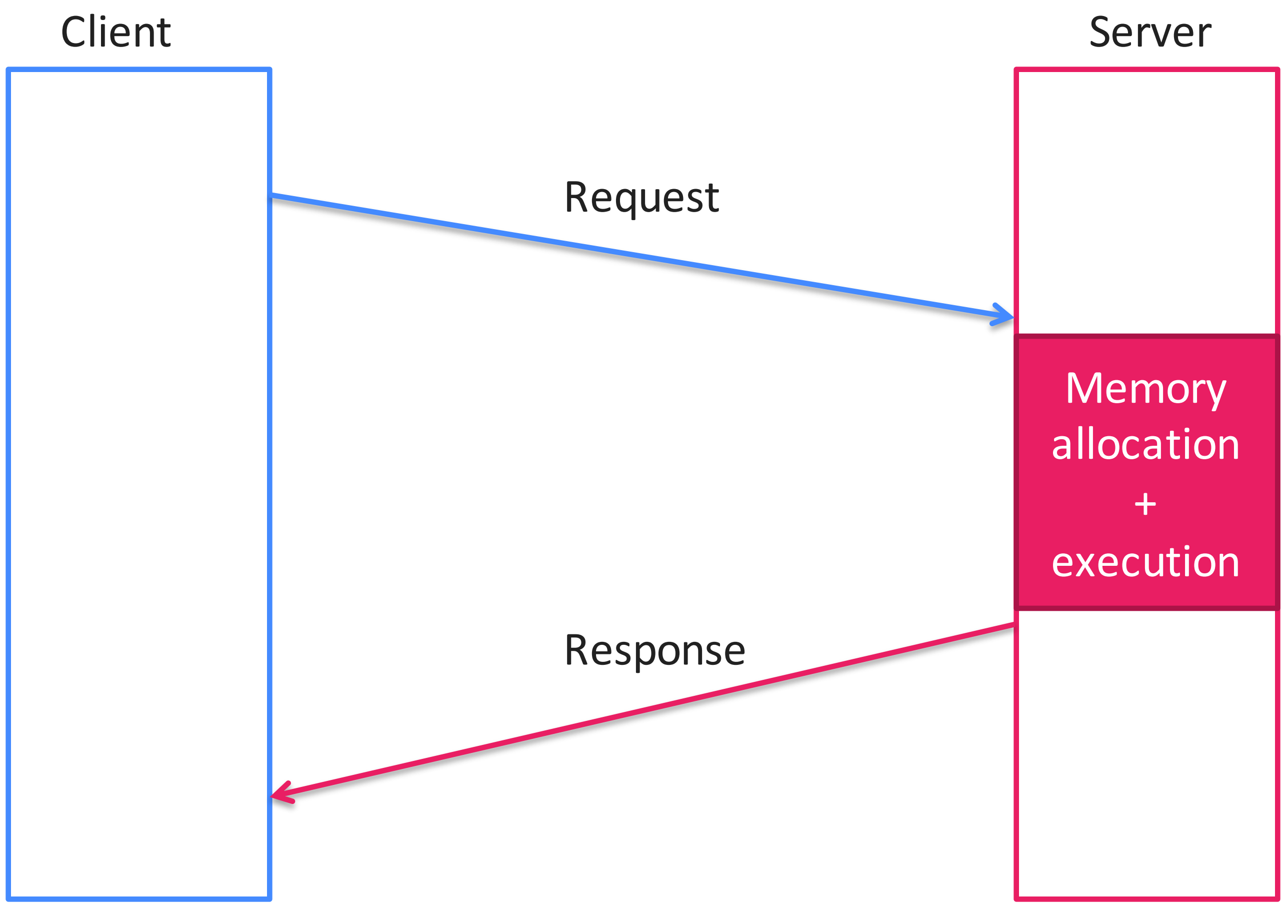
PHP Sessions

Break Out

- Visit a website where you have an account.
- Explore how the browser transmits cookies
- Which information is inside the cookies?
- Find out which websites stored cookies in your browser.

- Group discussion: What are the dangers of cookies, when are they harmless?

Problem: HTTP is stateless



Cookies

- Goals:
  - Persist information on the client side
  - Identify client
- HTTP cookies:
  - Stored in browser
  - Usually small text-based data
  - Sent with all requests depending on current host URL
- Example usages:
  - Items in a shopping cart
  - Measure interaction (navigation on a site)
  - Authentication

Cookies are not...

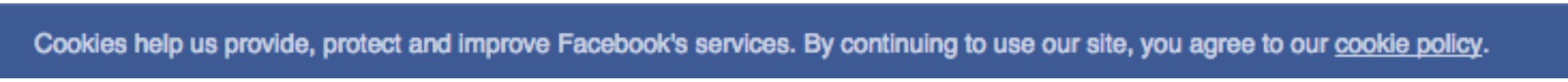
- Necessarily evil:
  - Malware containers
  - Viruses
  - Spam

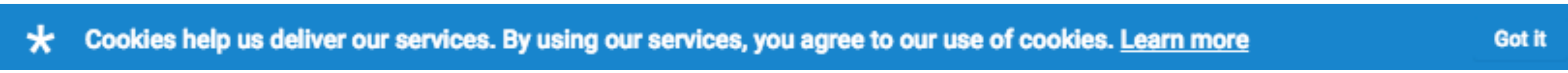
- A place to store large data
  - only small, serializable chunks
  - use the local storage API instead for larger data

- Dependent on server-side scripting
  - Also available with JavaScript

The Cookie Dilemma

- There is a “cookie law” that requires web site operators to inform the visitors about the use of cookies.
- Users do not necessarily read / understand / want this
- Almost all sites require cookies


Cookies help us provide, protect and improve Facebook's services. By continuing to use our site, you agree to our cookie policy.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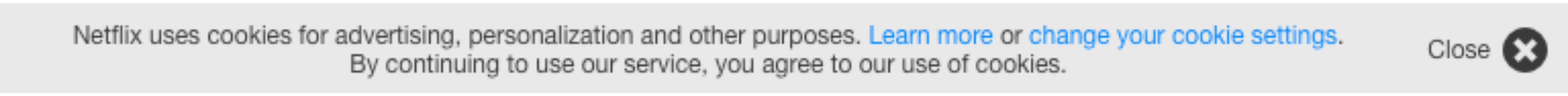
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By continuing to use our service, you agree to our use of cookies.

Sessions

- Sessions maintain “states” on the **server side**
- Sessions store current state of variables as long as connected to the client
- On the client side, sessions are identified with a **session ID cookie**:
  - default cookie name in PHP: PHPSESSID
  - renaming possible with session_name()

Sessions with PHP

- Sessions need to be started **before any output occurs**
- Create session ID cookie:
  `session_start()`
- Delete the session ID cookie:
  `session_destroy()`
- Read / write session values:
  - superglobal `$_SESSION` array
  - immediately reset session like this `$_SESSION = array();`

Example: Counting visits

```
<?php session_start(); ?>
<!DOCTYPE html>
<html>
[...]
<body>

<?php

if(!isset($_SESSION['count'])){
    $_SESSION['count'] = 1;
}
else{
    $_SESSION['count']++;
}

echo '<p>Current count: '.$_SESSION['count'].'</p>';

?>
</body></html>
```

Example: Destroying Sessions

```
<?php session_start(); ?>
<!DOCTYPE html>
<html>
[...]
<body>

<?php

if(isset($_POST['destroy'])) {
    session_destroy();
    $_SESSION = array();
}

if(!isset($_SESSION['count'])){
    $_SESSION['count'] = 1;
}
else{
    $_SESSION['count']++;
}

echo '<p>Current count: '.$_SESSION['count'].'</p>';

?>
<form method="post">
    <input type="submit" name="destroy" value="Reset"/>
</form>
</body>
</html>
```

Session Functions - Overview

- **session_start**
  Start or resume a session
- **session_destroy**
  Destroy all data from a session, including session ID and cookies (only after page refresh!)
- **session_unset**
  Free all session variables, but maintains the session ID
- **session_name**
  Get or set the session name

Taken from: https://secure.php.net/manual/en/book.session.php
last access on 02/11/2015

Example: Resetting Sessions

```
<?php session_start(); ?>
<!DOCTYPE html>
<html><head lang="en">
 <meta charset="UTF-8"><title>Session Reset</title>
</head>
<body>

<?php
echo session_name() . '<br />';
echo session_id() . '<br />';

$_SESSION['answer'] = 'yes';

session_unset();

echo session_id() . '<br />';
echo $_SESSION['answer'].'<br />'; // ?

$_SESSION['answer'] = 'yes';
echo $_SESSION['answer'].'<br />'; // ?
?>
</body></html>
```

Break Out: Parking lot counter

- Imagine you are the gatekeeper at a parking lot.
- The parking lot holds exactly 15 spots.
- You need to keep track of the occupied slots yourself, so you use a web app that has a +1 and -1 button.
- The page shows the current count.
- If the count reaches the maximum number, the +1 button is greyed out (inactive). The same is true, if no cars are at the parking lot.
- Use PHP-Sessions to maintain the current count.

- Take approx. 30 minutes time
- Present your solution to your peers

Round-up Quiz

1. Why are sessions necessary?
2. Can you initialize a session only at the beginning of a script?
3. Are (session-)cookies stored on the server or on the client?
4. What does `session_destroy()` actually do?
5. What is the difference between `session_destroy()` and `session_unset()`?
6. Why do you need to refresh the page to see the effects of `session_destroy()`?

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 11th, 12:00 noon via UniWorX