

Multimedia im Netz (Online Multimedia)

Wintersemester 2014/15

Übung 11 (Nebenfach)



Today's Agenda

- Announcements
- Repetition:
 - JavaScript
 - HTML5
 - Selected Topics from the lecture

Announcements

- Remaining tutorial dates / topics
 - 28.01.2015: Q&A
 - Send your questions in advance to tobias.stockinger@ifi.lmu.de
- Repetition sheet
 - For your individual preparation
 - Not submitted to UniWorX
 - Try to do it on paper!

Exam (1)

- Exam Details:
 - Open Book: it's okay to bring handwritten notes, printed slides, code and other resources (do not bring books)
 - You can bring a non-programmable calculator, but you are not going to need it.
 - Bring a valid student card and personal ID card!
- Date, Time & Location:
 - **16.02.2015 14-16h, Rooms A140 & A240 (Main Building)**
 - register until: 09.02.2015
 - de-register until: 13.02.2015
 - If you do not de-register, the attempt will be treated as “failed”

Exam (2)

- Possible topics:
 - Interactive web applications
 - digital rights
 - multimedia content description
 - streaming architectures
- Excluded:
 - Market trends, statistics, numerical data
 - Topics that were explicitly excluded by Prof. Hußmann.
- Distribution Lecture : Tutorial = roughly 40:60

Repetition

JavaScript (1)

- JavaScript is a programming / scripting language
- Code is **interpreted** by the browser
- Code is embeddable into HTML:

```
<html>
<head>
  <title>Example</title>

  <script type="text/javascript">
    alert("Hello World!");
  </script>

</head>
<body></body>
</html>
```

JavaScript (2)

- Just as in PHP, JavaScript has a number of data- and control structures:
 - Variables
 - Arrays
 - Functions
 - For- loops / while-loops
 - If ... else
 - Etc.

JavaScript

- **Scopes:**

Depending on where you declare your variables, they have different scopes

- **Exercise:**

The code on the following slide is faulty and does not work.

- Write the value of the variables in the comment next to the alert() calls!
- How do you fix the problems?

Task: Scopes

```
<html><head><title>Scopes</title>
  <script type="text/javascript">
    var var1 = "A";

    function test(){
      var var1 = "D";
      var var2 = "B";
      var3 = "C";
    }

    alert(var1); // output:
    alert(var2); // output:
    alert(var3); // output:

    test();

    alert(var1); // output:
    alert(var2); // output:
    alert(var3); // output:
  </script>

</head><body></body></html>
```

JavaScript: Interaction

- What does “DOM” stand for?
- Each element in the DOM of an HTML / XML file is accessible through JavaScript
- **Events:** JavaScript can handle numerous events, e.g. when the user types into a text field or submits a form

JavaScript: Interaction

- What does “DOM” stand for?
- Each element in the DOM of an HTML / XML file is accessible through JavaScript
- **Events:** JavaScript can handle numerous events, e.g. when the user types into a text field or submits a form
 - Mouse events (onclick, onmousedown, ...)
 - Keyboard events (onkeydown, onkeypress, ...)
 -
- There are multiple ways to handle events in JS, e.g. with **addEventListener()**

Task: Interaction with JavaScript

```
<html><head><title>Interaction</title>
  <script type="text/javascript">

    </script>
</head>
<body>
<input type="text"                                />

<h3>Output</h3>
<div id="output"></div>
</body>
</html>
```

HTML5

- The HTML5 standard brought many new features:
 - Form validation
 - New input types (E-Mail, URL, number, etc...)
 - New attributes (placeholder, required, pattern, ...)
 - Constraint Validation API: allows you to customize user dialogs
 - New elements
 - `<video></video>`
 - `<audio></audio>`
 - `<canvas></canvas>`

Form Validation

- Look at the code skeleton on the following slide. There is a text field and a button.
 - The field should only take **upper- and lower-case letters**, as well as **numbers**
 - The field is **not optional**
 - Provide a customized error message, if the user fails to enter valid data.
- Extend the code on the next slide to meet the requirements.

Task: Form Validation

```
<!DOCTYPE html><html lang="de">
<head><title>HTML5</title></head>
<body><form><div>
  <label for="text">Text: </label>
  <input id="text" type="text" name="text"/>

  <input type="submit" id="submit" />
</div></form>

<script>

</script>
</body> </html>
```


Multimedia Elements

- The <video> and <audio> elements embed multimedia content into a web page
- Greatest advantage: Playback does not require plug-ins, e.g. Flash / QuickTime / VLC
- Shortcoming: Not all browsers support all file formats and encodings.
 - You can provide alternatives and the browser picks the one that it can play back.
 - Ultimately, you could fall back to a plug in.

Task: Video Element

- You want to embed a video into a web page
 - You have the video as movie.mp4 and movie.ogv
 - You want to use the <video> tag.
- How do you code that in HTML5?

```
<video width="320" height="240" controls="controls">  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogv" type="video/ogg">
```

Your browser does not support the video tag.

```
</video>
```

Multimedia Content

- You are asked to create a 3 minute video clip about thunderstorms for a television news magazine. The company you work for has a huge collection of video snippets.
 - Explain how meta data comes into play now!
 - The company uses a software tool that implements the MPEG-7 standard.
Which meta data parts are standardized by MPEG-7?
 - A colleague recommends searching the library by “segments”. What is a segment? Explain 3 subclasses of segments!

Watermarking



- Name 3 things that digital watermarks should „survive“?
- What does „imperceptible watermarking“ mean?
- Explain and discuss the following statement:
Steganography aims for imperceptibility to human senses, digital watermarking tries to control the robustness as top priority. (Wikipedia)

eBooks

- ePub is just a container. What does it actually contain? What other e-book formats do you know?
- Explain how an e-Ink display works in your own words!
- A friend of yours needs to decide whether to buy an eBook-reader or a tablet PC. She mainly wants to read books. Explain the pro's and con's of each technology to her!

Off Topic: Tutors wanted!

- If you enjoyed this course and are excited about the topic, become a tutor!
- Responsibilities:
 - run tutorials (at least one)
 - help with corrections
- Feel free to contact us for further details 😊
tobias.stockinger@ifi.lmu.de



Thanks!

What are your questions?