Multimedia im Netz
(Online Multimedia)
Wintersemester 2014/15

Übung 07 (Nebenfach)
Today’s Agenda

• Announcements
• Flashback 6th tutorial: Quiz
• HTML5
  – video
  – audio
  – canvas
• Discussion of assignment 06
Submissions

![Bar chart showing submissions for different assignments A01 to A06 with blue bars representing HF submissions and light blue bars representing NF submissions. The chart includes a pink line indicating a linear trend for NF submissions.](attachment:image.png)
Announcement

• Assignment 06
  – Assignment 06 has been submitted 69 times (HF & NF)
  – Therefore there will be no written mock exam (n < 75)
  – However, we will discuss exemplary questions in the tutorials after the Christmas break.
Flashback! - Quiz

1. What is the „onkeyup“ Event?
2. Does this work?
   ```html
   <input type="url" id="someURL" name="testURL" />
   ```
3. Given the pattern [A-Z0-9], which of the following will be matched?
   a) helloWorld09
   b) HELLOWORLD!
   c) HelloWorld123
   d) WORLD1234
4. Fill out the ??? to add a label for that input
   ```html
   <label for="???">Text: </label>
   <input id="myText" type="text" name="someText" />
   ```
HTML5: New features

• Compared to earlier HTML versions, some features have been added to HTML5:
  – HTML5 form validation (last tutorial)
  – <video></video> and <audio></audio> elements
  – <canvas></canvas> element
  – Additional elements: <article></article>; <footer></footer>
  – ... a lot more.
Video element

```html
<video width="320" height="240" controls="controls">
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
  Your browser does not support the video tag.
</video>
```

- Not all browsers support all video formats:

<table>
<thead>
<tr>
<th>Browser</th>
<th>MP4</th>
<th>WebM</th>
<th>Ogg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Explorer</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Chrome</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firefox</td>
<td>Partially*</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* [http://www.w3schools.com/tags/tag_video.asp](http://www.w3schools.com/tags/tag_video.asp)
Audio-Element

```html
<audio>
 <source src="audio.ogg" type="audio/ogg"/>
 <source src="audio.mp3" type="audio/mpeg"/>
 <source src="audio.wav" type="audio/wav"/>
 Your browser does not support the audio element.
</audio>
```

- Not all browsers support all video formats:

<table>
<thead>
<tr>
<th>Browser</th>
<th>MP3</th>
<th>WAV</th>
<th>Ogg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Explorer</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Chrome</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firefox</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Safari</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* [http://www.w3schools.com/tags/tag_audio.asp](http://www.w3schools.com/tags/tag_audio.asp)
Methods and Attributes

• **Methods**
  – play()
  – pause()
  – etc.

• **Attributes**
  – currentTime
  – duration
  – ended
  – muted
  – paused
  – volume
  – etc.
Events

• In some states, the video element triggers certain events, that we can handle:
  – abort
  – ended
  – pause
  – play
  – timeupdate
  – ...

Interactivity: Event listener

• Use the file 02_video_dom.html as skeleton (download it from website first)
• Add a new event listener for the “pause” and “play” event.
• If the user pauses the video, show a message.
• If the user resumes playback, hide the message.
The Canvas element

- The `<canvas>` Element is a container that is embedded into the HTML markup:

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8"/>
  <title>HTML 5</title>
</head>
<body>
  <canvas id="canvas" width="400" height="400"
    style="border:1px solid #000000;">
    Your browser does not support the HTML5 canvas tag.
  </canvas>
</body>
</html>
```
HTML5: Context

- You can draw on a canvas via JavaScript
- To draw, the canvas’ **context** is required: `getContext();`

- The context is an object with certain attributes and methods that allow you to draw inside a canvas element.

- There are two different types of context:
  - 2D
  - 3D (WebGL)

- Usage:
  ```javascript
  document.getElementById("canvas").getContext("2d");
  ```
Accessing the context

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8"/>
    <title>HTML 5</title>
</head>
<body>
    <canvas id="canvas" width="400" height="400"
        style="border:1px solid #000000;"/>
    Your browser does not support the HTML5 canvas tag.
</canvas>

<script>
    var canvas = document.getElementById("canvas");
    var context = canvas.getContext("2d");
</script>
</body>
</html>
```
JavaScript and Canvas

- Set colors and styles:
  - fillStyle
  - strokeStyle
- Draw rectangles
  - rect()
  - fillRect()
  - strokeRect()
- Draw images (e.g. JPG files) onto the canvas
  - drawImage()
- More functions
  [http://www.w3schools.com/tags/ref_canvas.asp](http://www.w3schools.com/tags/ref_canvas.asp)
Drawing a Rectangle

...<script>
    var canvas = document.getElementById("canvas");
    var context = canvas.getContext("2d");

    context.fillStyle="#00ff00";
    context.fillRect(0,0, 150, 100);
</script>

...
Interactivity: Experiment with canvas

• draw two different circles
• draw a rectangle without fill color but a blue border
• ... be creative ;)

• Find out more on this site: http://www.w3schools.com/tags/ref_canvas.asp
• Take 15 minutes time
Assignment 6

• Topic: HTML5 Video with more controls
• Due in: 1 Week
• Due date: 08.12.2014 16:00h
Thanks!

What are your questions?