



## Assignment 9 (NF, minor subject)

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*Due: Wed 13.01.2016 12:00h (4 Weeks)*

### Goals

After doing these exercises,

- You know how to program a video player for the browser
- You have understood the concept of watermarking

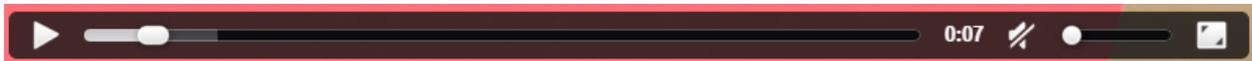
### Task 1: Video Player

**Difficulty: Intermediate/Difficult**

In the tutorial, we set up a video player like this:

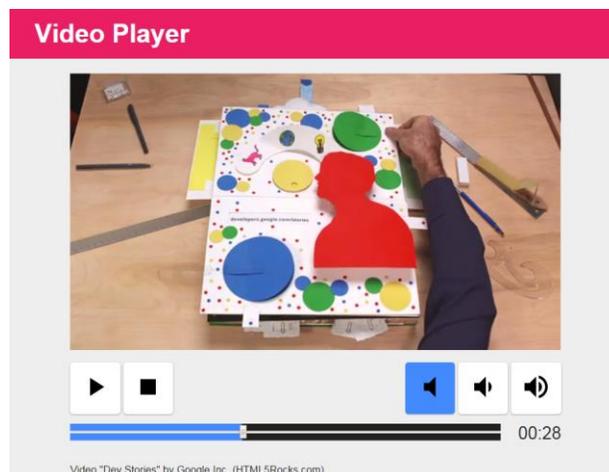
```
<video controls id="videoPlayer">  
  <source src="../video/web-standards.mp4" type="video/mp4"/>  
</video>
```

The “controls” attribute made the browser show a play button, a time-range slider, the current time, volume controls and a full-screen button. The result looks something like this:



We can actually implement all of the controls on our own using the methods and attributes of the <video> Element. Let’s not use the “controls” attribute and create our own interface elements.

To help you get started, we provide the HTML skeleton for this. All you need to do is to complete the JavaScript Code. You will find more instructions there. Since you have four weeks to finish this assignment, we want you to really invest some time into solving this task.



Put your text into the folder ‘task1’.



## Task 2: Watermarking

**Difficulty: Intermediate**

Please characterize the following watermarks regarding visibility, universality, detectability, robustness, capacity, security, and efficiency:

- a) watermark on a banknote
- b) Image rendered on top of another image (what we did in the tutorials)
- c) A Digimarc Watermark
- d) EXIF Information in images
- e) The copy protection of a BluRay disc

Put your solution into the folder 'task2'

## Submission

Please turn in your solution via UniWorX as a ZIP archive. You can form groups of up to three people. We look forward to your solutions!

In case the task assignment is unclear or if you are stuck with a problem, please contact us via email.

**The MIMUC team wishes you happy holidays! See you next year!**