

October 26, 2011

## Web Technologies Assignment 1

In addition to group exercises, there are compulsory homework assignments which you are to work on in groups of three students. To be admitted to the exam, you have to hand in reasonable solutions for all but two assignments, and you have to present your homework in one of the exercises classes. Please hand in your homework by email to pgiarrusso@informatik. The exercise descriptions are published on <http://www.uni-marburg.de/fb12/ps/teaching/ws11/webtec/> on Wednesdays, and have to be handed in until Monday of the following week. The deadline for this assignment is October 31.

Please form groups of three students and notify me via email to pgiarrusso@informatik about who is in your group as soon as possible.

If at all possible, please bring your laptop to the following exercises.

### G1.1 Unicode Character Encoding

1. Consider the following bitstring.

```
01110011 11001101 10100010 01100000 00110010 11100011  
10001001 10110110 11110111 10000001 10111100 10101010
```

Transform this UTF-8 string into a sequence of code points.

2. How can the Unicode encoding be utilized to determine the byte-order of the used architecture?

### G1.2 CSS Matching

Consider the following HTML document.

```
<html>  
<head>  
  <style type="text/css">  
    b {color:red;}  
    b i {color:green;}  
    b i i {color:black;}  
    b b {color:blue;}  
    b.foo {color:yellow;}  
    b i.foo {color:purple;}  
  </style>  
</head>  
</html>
```

```

        *.bar {color:white;}
    </style>
    <title>Test</title>
</head>
<body>
<b>
    A
    <b>
        B
        <b>C</b>
        <b class="foo">D</b>
        <i class="foo">E</i>
    </b>
    <b class="bar">F</b>
    <i>G</i>
    <i class="bar">
        <i>H</i>
        <b class="foo">I</b>
    </i>
</b>
</body>
</html>

```

Determine the matching of the selectors against the document's body. Which color is which letter?

**Update:** when copying and pasting this document into your browser, please remove "please turn the page!", which will be pasted as well. The selector

```
please turn the page! *.bar
```

does not achieve the intended purpose.

## G1.3 HTML Validity and Limitations

1. Why does it make sense to standardize HTML?
2. Why do many websites not follow the HTML standard?
3. What are the limitations of HTML?

### H1.1 HTML Forms

Similar to the Google frontend shown in the lecture (slide 19 of 1-html.pdf), implement your own HTML frontend to the HTML validator at <http://validator.w3.org/>. Include some of the additional options in your frontend as well, e.g. the option "verbose output". Also check your code for validity!

### H1.2 HTML for Library Management

Assume you want to represent a collection of software libraries in an HTML document. Libraries have a name, a version, are written for some programming language, are either free or proprietary, have at least one developer, and possibly depend on other libraries. Developers, in turn, consist of a name and a website.

1. Design an HTML document displaying a table of developers and a table of libraries. Developers are identified by their name in the library table, and each name should be (internally) linked to the respective entry in the developer table. Similarly, library dependencies are displayed as a sequence of library names, where each one is linked to the respective library entry.
2. Gather some sample data for your tables. You should at least list 10 libraries with numerous developers and interdependencies.
3. Add a CSS to make your library collection look nicer.