Assignment 3

DOM, Java Script

Suggested literature for this assignment:

- http://de.selfhtml.org/
- http://htmldog.com/guides/
- http://www.w3schools.com/html/
- http://www.wikipedia.org

Tool Tips:

- Browser Development Tools:
- Chrome: STRG+SHIFT+i
- Edge F12
- Firefox F12

Exercise 1 – Questions

Answer the following questions:

- What is the purpose of JavaScript and how does it complement HTML and CSS?
- Which kind of typing is provided by JavaScript? What are the risks?
- What is DOM?

Exercise 2 – A new Window opens!

Write a HTML document that displays a form with the following entry fields:

- URL (string)
- SizeY (positive integer)
- SizeY (positive integer)
- Title (string)

Now implement the following behavior with JavaScript. When the user clicks on the submit button then
A new browser window is opened with the given size and title.
The upper left corner of this window shall be located in the middle of the current browser window. And it must not have any controls except the close-button (disable everything else, like menu bar, scrollbars, maximizer, minimizer, resizer, etc.).

- Make sure that it loads the content specified by the given URL.
- What do you have to do if you want to write the text “This window was opened with a button“ into the new window? What is the same-origin policy?

Exercise 3 - Understand the Tree

Given is the following HTML code:

```
<body>
 <a href="http://www.orf.at/" target="_new">Link zum ORF</a><br>
 <a href="http://www.sms.at" target="_new">Link zu sms.at</a><br>
 <a href="http://www.aau.at" target="_new">Link zur AAU Seite</a>
</body>
```

Embed this JavaScript in your page and explain the output in detail:

```
var link = document.getElementsByTagName("a")[2];

//what is the difference of the following three statements???
alert (link.attributes["href"].nodeValue);
alert (link.getAttributeNode("href").nodeValue);
alert (link.href);

alert(link.firstChild.data);

alert (link.attributes[0].nodeType);
alert (link.firstChild.nodeType);

alert(link.parentNode.nodeName);
alert(link.lastChild.parentNode.nodeName);

alert(link.attributes.length);
```

Moreover, explain the consequence of this JavaScript code:

```
var link = document.getElementsByTagName("a").item(0);
link.removeAttribute("target");
```

Exercise 4 - Convert

A currency value is a floating point number with two digits after the decimal point (e.g., 10000.25). Unfortunately in Germany and Austria, floating point numbers (e.g., currency values) are written like this: 10000,25. Write a JavaScript program which converts such a representation into a floating point number (i.e., to 10000.25). The German/Austrian representation should be inserted into an input flied. After pressing a button, the floating point number should appear in an alert() popup window. If the input value was not a number then "error" must be returned in the alert-window.

Exercise 5 – Picture slide show

Take six small (in size) pictures of your choice.

Exercise 5.1

Build a HTML page. All the pictures must be loaded into this HTML page such that it appears as slide show. If the last picture is loaded, then the whole slide show starts again with the first picture. Write the necessary JavaScript functions for this slide show. Do not hard-code URL´s of pictures or require specific naming conventions. Instead, include hidden image tags in the HTML and access the image URLs from there in your script.

Exercise 5.2

Based on the results of Exercise 5.1., write an HTML page which loads the first image. Furthermore the user is provided with the following buttons on this page: „Play", „Stop", „>>", „<<". If the user presses the button „Play" then a slide show is executed (see Exercise 5.1). The slide show can be stopped with the button „Stop". The button „>>" triggers the following functionality: If a slide show is running, then it stops and it moves to the next picture. If no slide show is running, then it simply shows the next picture. If the user presses "<<" then the previous picture is presented. Once again, if this button is pressed during the slide show, then the slide show stops.

Hint: Use the functions setTimeout() and clearTimeout(). Use the value 1000 for the delay.

Exercise 6 – Form Validation

Visit the web page: http://www.webcheatsheet.com/javascript/form_validation.php

There you will find the necessary JavaScript functions and the HTML specification of a form. Try it, and collect all the specifications. Put it into a HTML and a JavaScript file respectively.

Exercise 6.1

Read and analyze the code that you can explain the code (HTML, JavaScript) in the next course unit.

Exercise 6.2

Extend the HTML and JavaScript (JS) specification. Particularly, add a new text input field (password confirmation) where the user can confirm his password. Write the necessary JavaScript function which checks the value of the password confirmation field with the password field. If both Strings are not identical, then an error message must occur at the end. Therefore, embed this function into the general JS form check function.

Exercise 6.3

What have to be done if the password confirmation check is not only executed at the end (together with all the other checks) but checking is executed as soon as the user enters the password confirmation field and strikes a key?

Reader for your project:

Modern browsers provide basic means for form validation which allow an easier implementation of some of the checks from assignment 6. Have a look at the page http://www.the-art-of-web.com/html/html5-form-validation/ for your project.