

Aufgabe 4.1 Widgets

- Have a look at Yahoo Widgets [3].
How can those Widgets be developed? Which technologies are used?
- eBay togo [5]
- Access Widgetbox [4] or another Web Widget Web site and integrate at least one Web Widget to your project.
What do you have to do in order to integrate widgets with your Web page?
How and to which level can widgets be integrated with your own code?

Aufgabe 4.2 Google Analytics

Google Analytics (www.google.com/analytics) allows you to create visitor statistics for Web sites. You can choose between Part A and Part B:

Part A

- Create a Google Analytics account
- How can user information be tracked using Google Analytics? Which information is available here?
- Integrate Google Analytics code to one of your Web sites.

Part B

- Open http://www.google.com/analytics/en-GB/case_studies.html in a browser
- Summarise at least two case studies and describe in your words the advantage of using Google Analytics.

Aufgabe 4.3 External Files

- Place some JavaScript code in an external file and include it to an HTML file.

Aufgabe 4.4 String Operators

- Open www.google.de and search for "Berufsakademie Mannheim". Assign the resulting URL string ("http://www...") to a variable in your script and write some code filtering the search results out. The script should work for any two word queries.

Optional: Embed the Google search results to an Iframe in you Web page

Aufgabe 4.5 Control Structures

- Write a script which checks user input. You can obtain user input using the following code:

```
var choice = prompt("Please enter your choice:");
```


The numbers from 1-5 are valid input, all other input is invalid. Write two scripts echoing the user input for correct input but display a warning message for invalid input - one using an if statement, one using a switch statement.

Aufgabe 4.6 Exception Handling/Loops

- Write a script that imposes a division by zero error. What is the behavior of the script when using exception handling (with try/catch statements) and without?
- Write a script calculating the faculty (n!) of 2314 by using a
 - while loop
 - do while loop
 - for loop
 - recursive implementation

Aufgabe 4.7 Browser Information

- Write a script displaying which version of JavaScript is supported by your browser.
Hint: use "the language" property of the script tag, such as `<script language="JavaScript1.1">`
 - (advanced): Extend the script so that only one line of output is created by it, not one per version (1.1, 1.2, ...).

Aufgabe 4.8 Browser Objects

- Write a script displaying the contents of the navigator object (only 1st level content).
(advanced): Extend the script so that arrays contained in the navigator object are displayed correctly (all levels).
- Write a script which forwards a user to the page "ie.html" if he uses the browser Internet Explorer and to "other.html" if he user other browsers.
Hint: use `location.href = "..."` for page forwarding
(advanced): Extend the script so that it can be distinguished between different versions of Internet Explorer (pages "ie4.html", "ie5.html", ...).

Aufgabe 4.9 Object-orientation

Read the PDF file "Object_Oriented_Programming_in_JavaScript.pdf" (will be provided) and answer the following questions:

- a) What is a constructor?
- b) Explain the concept of "prototypes". Do you know other terms for that?
- c) Which behavior is meant by "polymorphism"?
- d) How can private members be realised within JavaScript? What is the purpose of those?

Online-Resourcen

- [1] Selft-HTML (<http://de.selfhtml.org>)
- [2] RoundedCornr (www.roundedcornr.com)
- [3] widgets.yahoo.com
- [4] www.widgetbox.com
- [5] togo.ebay.com/