

## **Web Application Development**

### **Practical 4: JavaScript and the HTML DOM**

**WYSIWYG Editors such as MS FrontPage, Dreamweaver, etc., should not be used during the practical. An editor such as Notepad/TextEdit or Brackets should be used to edit the HTML.**

The aim in this practical is to use JavaScript and the HTML DOM to change elements of a webpage. Please refer to the notes from “Lecture 7 – JavaScript Part 1” for examples and references to the required methods and properties.

The zip file contains starter files for most exercises and also solution files. Please try the exercises yourself before referring to the solutions.

#### **Exercise 1:**

Open the file “e1\_starter.html”. In this file write a JavaScript function to display the text “Hello world!” in the <p> element.

Next add a second statement to set the text color of <p> to "red"

#### **Exercise 2:**

Open the file “e2\_starter.html”. Use the innerHTML property to change the content of the <h1> element to "New Header".

#### **Exercise 3:**

Open the file e3\_start.html”. Use HTML DOM to change the value of the image's src attribute to "pic\_mountain.jpg" when the page is loaded.

Next add a function so that the image alternates between “smiley.gif” and “pic\_mountain.gif” when it is clicked.

Finally change your script such that the image shows “smiley.gif” only while the user clicks the image. (**Hint:** you will need to make use of two different events for this part.)

#### **Exercise 4:**

Open the solution you wrote for Exercise 1 and add statements to make the following changes:

- Set the text color of <p> to "red".
- Add a yellow background color to <p>.
- Center-align the text of <p>.
- Change the text size of <p> to 40 pixels

#### **Exercise 5:**

Open the file e5\_start.html. Add a JavaScript function to show/hide the div with id=panel when the user clicks the paragraph with the show/hide text.

## Video Exercise: Controlling Videos with JavaScript

Before HTML5, there was no standard for showing videos on a web page, videos could only be played with a plug-in (like flash). The HTML5 <video> element specifies a standard way to embed a video in a web page.

See [video\\_example.html](#)

```
<video width="400" controls>
  <source src="videos/mov_bbb.mp4" type="video/mp4">
  | Your browser does not support HTML5 video.
</video>
```

The **controls** attribute adds default video controls, like play, pause, and volume. If height and width are not set, the browser does not know the size of the video. The effect will be that the page will change (or flicker) while the video loads.

Text between the <video> and </video> tags will only display in browsers that do not support the <video> element.

Multiple <source> elements can link to different video files. The browser will use the first recognized format.

HTML5 defines DOM methods, properties, and events for the <video> element. This allows you to load, play, and pause videos, as well as setting duration and volume. There are also DOM events that can notify you when a video begins to play, is paused, etc.

The aim in this exercise is to replace the default controls with new controls that you create yourself.

To do this you will need to create several buttons and then use the onclick event for these buttons to trigger JavaScript functions that interaction with the methods and properties of the <video> element. See here for the HTML5 Audio/Video DOM reference:

[http://www.w3schools.com/tags/ref\\_av\\_dom.asp](http://www.w3schools.com/tags/ref_av_dom.asp)

Begin with the file video\_example.html.

