Webpage Behavior

Programming concepts using JavaScript

Progressive enhancement

- Structure
  - Technology: HTML
  - Focus on content and the concept of the document
- Presentation
  - Technology: CSS
  - Focus on appearance and layout
- Behavior
  - JavaScript
  - Focus on interaction and usability

What is JavaScript?

- JavaScript is NOT Java
- *Object-oriented computer programming language commonly used to create interactive effects within web browsers*
- Netscape
  - ECMAScript (European Computer Manufacturers Association)
  - Mocha → LiveScript → JavaScript
  - Webpages with JavaScript: DHTML (*dynamic* HTML)
- Collaboration
  - Netscape and Sun Microsystems: license agreement → JavaScript
  - Java = popular!
- JavaScript → all major web browsers

More about JavaScript

- JavaScript
  - Front-end
  - Web applications (programming, back-end)
- Interpreted by the client software
  - Downloaded along with the HTML, CSS and images
  - Runs in the client
  - Limited by the capabilities of the client

Where is JavaScript?

JavaScript statements can be coded on a Web page using three different techniques

- Link JavaScript code from an EXTERNAL file

```
<script src="js/scripts.js"></script>
```

- INTERNAL : Place JavaScript code between script tags

```
<script>
    alert("Hello World!");
</script>
```

- Place JavaScript code as part of an EVENT attached to an HTML element (i.e. click)

```
<div onclick="alert('Hello World!');">
    Click Me!
</div>
```

Events

When things happen

JavaScript and Events

- Events:
  - actions taken by the Web page visitor
  - a special type of method to which an element can respond

  - clicking (onclick)
  - placing the mouse on an element (onmouseover)
  - removing the mouse from an element (onmouseout)
  - loading the page (onload)
  - unloading the page (onunload)
  - clicking into a form element (onfocus)
  - leaving a form element (onblur)
  - many more (http://www.w3schools.com/jsref/dom_obj_event.asp)

JavaScript Popup Boxes

- JavaScript has three (3) kinds of popup boxes: **alert**, **confirm**, **prompt**

- An **alert** is used to give information. User must click "OK" to proceed.

- A **confirm** is used to verify something.
  User will have to click either "OK" or "Cancel" to proceed
  ("OK" returns true, "Cancel" returns false)

- A **prompt** is used to gather information from the user.
  User will have to click either "OK" or "Cancel" to proceed
  ("OK" returns the input value, "Cancel" returns null)

JavaScript Programming Concepts

Variables and Functions

Variables in JavaScript

- A variable is a placeholder for information.
- The variable is stored in the computer's memory (RAM).
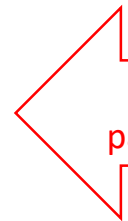
- var userName;   ⟵ declaration

- userName = "Karen";   ⟵ assignment

- document.write(userName);   ⟵ Call to the write() method, passing the variable as the argument

Functions in JavaScript

A function is a block of one or more JavaScript statements with a specific purpose, which can be run when needed.

```javascript
function function_name() {
    ... JavaScript statements …
}
```