

# 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

# JavaScript - how used...

- JavaScript
  - Front-end interactions
  - 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>
```

# Programming Concepts

Syntax for variables and functions - most C -based languages  
(including JavaScript)

# 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.

```
function function_name() {  
    /* JavaScript statements */  
  
}
```



# Arrays in JavaScript

- Options go in an "array"

```
{  
  property: value,  
  property: value,  
  property: value,  
  property: value  
}
```

- Notice that commas go after each option, but not after the last option

# 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](http://www.w3schools.com/jsref/dom_obj_event.asp))

# JavaScript Popup Boxes

JavaScript has three kinds of popup boxes: **alert**, **confirm**, **prompt**

- An **alert** is used to give the user 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 inputted value, "Cancel" returns *null*)