



JavaScript Introduction – 3 days



Course Objectives

Delegates will learn how to add various JavaScript enhancements to Web sites using vendor-neutral international standards for dynamic HTML. The course also answers the browser-specific problems which practical web developers face.

Prerequisites

It is recommended that students have completed the HTML Introduction / Intermediate courses or have equivalent knowledge and experience. It would be useful if students had an understanding of programming logic and techniques but this is not essential.

Exercises

This course is instructor led, involving the utilisation of examples and exercises in a workshop environment.

Getting started with JavaScript

- Web Scripting
- What is JavaScript? – capabilities
- Application of JavaScript
- JavaScript vs. Jscript vs. ECMAScript
- How Client-Side JavaScript works
- Embedding JavaScript
- Simple JavaScript features
- Variables in JavaScript
- What your Browser does

The core JavaScript language

- Application areas
- Core language items
- Character set
- Declaring variables
- Identifies
- Reserved words
- Literals
- String literals
- Escape sequences in strings
- Case and space
- Semicolons
- Comments
- Numeric data types
- Numeric constants
- Floating point constants
- Pop-up dialog boxes and prompting for input

Arithmetic and Operators

- Data types in JavaScript
- Special numeric constants
- What are operators?
- Arithmetic operators
- The variable assignment operator
- Comparison operators/relational operators
- Logical Operators
- Incrementing/decrementing operators



Objects and Events

- Typical Events
- Events and HTML
- Example validation function
- Event models – various browsers
- Useful events
- Simple form validation
- Image rollover example
- Document event example
- Document Object Model (DOM)
- The DOM window
- The window Object
- The document Object
- The Form Object and form elements
- Using form Objects and elements
- Naming, accessing and verifying forms and form elements
- Verifying Elements
- The focus method
- Input fields, events and methods

JavaScript Objects, Methods and Properties

- The JavaScript Object Model and Hierarchy
- Document
- Window
- window.navigator
- window.location
- window.history
- Window Methods
- Opening new windows
- Timeouts
- Intervals
- Manipulating Frames
- Saving state with Cookies
- Detecting JavaScript with Cookies
- Privacy and Security

JavaScript Tips

- Focusing a form with the page loads
- Menus which jump to a new page
- Image Preload
- Double Image Rollover
- Double Image Rollover: Code
- Decrementing Operators
- String Operators
- Converting a string to a number
- The conditional operator (ternary operator)
- The Unary Minus Operator
- Bitwise Operators
- Variable assignments shortcuts
- Short-circuit Operators
- Operator Precedence and Associativity

JavaScript Flow Control

- Blocks
- Variables in Blocks
- Flow control: `if...else`
- Hierarchical conditions (nested `if` statements)
- Flow control: `switch`
- The `while` loop
- Using `while` loops
- `do / while`
- Loops using `for`
- Additional control concepts
- The `break` statement
- The `continue` statement
- `for .. in` loops

JavaScript Functions

- What are Functions for
- Built-in Functions
- Function Structure
- Function Arguments
- Number of Function Arguments
- Constructing Functions
- Returning Values
- Local Variables
- The Call Chain
- Recursion
- Scope of Functions
- Including Files



Storing Data in Arrays in JavaScript

- Array Basics
- JavaScript Arrays
- Mouse-over status-bar text
- Paired <select> Boxes

The JavaScript

- Nodes and Attributes
- HTML and the DOM
- DOM Conformance
- Navigating a Document
- Modifying Documents
- Adding Contents
- Documents Fragments

CSS and JavaScript

- Naming Conventions and Properties
- Positioning and Size
- Computed Styles
- The Z-Index
- Visibility
- Animation