

Soft-Train



*At Soft-Train
Technology Works*

COURSE GOAL: To provide students with the knowledge and skills necessary to utilize JavaScript at a fundamental level.

PREREQUISITES: Students should attend the Java course or have equivalent working knowledge, prior to attending this class.

LEARNING OBJECTIVES:

Upon completion of this course the student will be able to:

- Understand object-oriented programming
- Understand Java Basics
- Understand Cookies
- Embed in HTML
- Use JavaScript at a fundamental level

Java Scripting (3 days)

KEY TOPICS:

I. Introduction to Java Script

- A. What is JavaScript
- B. Versions of JavaScript
- C. Client-Side JavaScript
- D. JavaScript in other Contexts
- E. Exploring JavaScript

II. Lexical Structure

- A. Character Set
- B. Case Sensitivity
- C. Whitespace and Line Breaks
- D. Literals
- E. Identifiers

III. Datatypes and Values

- A. Numbers
- B. Strings
- C. Boolean Values
- D. Functions
- E. Objects
- F. Arrays
- G. Null
- H. Undefined
- I. The Date Object
- J. Error Objects
- K. Regular Expressions
- L. Object-to-Primitive Conversion
- M. By Value Versus by Reference

IV. Variables

- A. Variable Typing
- B. Variable Declaration
- C. Variable Scope
- D. Garbage Collection
- E. Variable as Properties

V. Expressions and Operators

- A. Expressions
- B. Operator Overview
- C. Arithmetic Operators
- D. Equality Operators

- E. Relations Operators
- F. Logical Operators
- G. Bitwise Operators

VI. Statements

- A. Expression Statements
- B. Compound Statements
- C. If
- D. Else if
- E. Switch
- F. While
- G. Do/while
- H. For
- I. For/in
- J. Var
- K. Return
- L. The Empty statement

VII. Objects and Arrays

- A. Creating objects
- B. Object Properties
- C. Objects as Associative Arrays
- D. Universal Object Properties and Methods
- E. Arrays
- F. Reading and Writing Array Elements
- G. Array Methods

VIII. Functions

- A. Defining and Invoking Functions
- B. Function Arguments
- C. Functions Data
- D. Function Properties and Methods
- E. Function Scope and Closures
- F. The Function () Constructor

IX. Classes, Constructors and Prototypes

- A. Constructors
- B. Prototypes and Inheritance
- C. Simulating Classes in JavaScript
- D. Common Object Methods
- E. Superclasses and Subclasses
- F. Determining Object Type

X. Modules and Namespaces

- A. Creating Modules and Namespaces
- B. Importing Symbols from Namespaces
- C. Module Utilities

XI. Pattern Matching With Regular Expressions

- A. Defining Regular Expressions
- B. The RegExp Object

XII. Scripting Java

- A. Embedding JavaScript
- B. Scripting Java

XIII. JavaScript in Web Browsers

- A. The Web Browser Environment
- B. Embedding Scripts in HTML
- C. Event Handlers in HTML
- D. JavaScript in URLs
- E. Accessibility
- F. JavaScript Security
- G. Other Web-Related JavaScript Embedding

XIV. Scripting browser Windows

- A. Timers
- B. Browser Location and History
- C. Simple Dialog Boxes
- D. Scripting the Status Line
- E. Error Handling
- F. Multiple Windows and Frames

XV. Scripting Documents

- A. Dynamic Document Content
- B. Document Properties
- C. Overview of the W3C DOM
- D. Query Selected Text
- E. The IE 4 DOM

XVI. Cascading Style Sheets and Dynamic HTML

- A. Overview of CSS
- B. CSS for DHTML
- C. Scripting Inline Styles
- D. Scripting Computed Styles
- E. Scripting CSS Classes

F. Scripting Stylesheets

C. Scripting with Java

D. Scripting Flash 8

XVII. Events and Event Handling

- A. Basic Event Handling
- B. Advanced Event Handling with DOM Level 2
- C. The Internet Explorer Event Model
- D. Mouse Events
- E. Key Events
- F. The Onload Event
- G. Synthetic Events

XVIII. Forms and Form Elements

- A. The Form Object
- B. Defining Form Elements
- C. Scripting Form Elements
- D. Form Verification

XIX. Cookies and Client-Side Persistence

- A. An Overview of Cookies
- B. Storing Cookies
- C. Reading Cookies

XX. Scripting HTTP

- A. Using XMLHttpRequest
- B. Ajax and Dynamic Scripting

XXI. JavaScript and XML

- A. Obtaining XML Documents
- B. Manipulating XML with the DOM API
- C. Transforming XML and XSLT
- D. XML and Web Services

XXII. Scripted Client-Side Graphics

- A. Scripting Images
- B. Graphics with CSS
- C. SVG: Scalable Vector Graphics
- D. VML: Vector Markup Language
- E. Graphics in a <canvas>
- F. Graphics with Flash
- G. Graphics with Java

XXIII. Scripting Java Applets and Flash Movies

- A. Scripting Applets
- B. Scripting the Java Plug-in