

Course Outline | JavaScript the Definitive Guide

5 day(s)

Overview

JavaScript: The Definitive Guide provides delegates with a programmers guide to the core language and to the client-side JavaScript APIs defined by web browsers.

This course covers HTML5 and ECMAScript 5, and brings developers in line with todays best web development practices

Prerequisites

Delegates should have a working knowledge of HTML and CSS.

Course Outline

1 - Introduction to JavaScript

- Core JavaScript
- Client-Side JavaScript
- Core JavaScript

2 - Lexical Structure

- Character Set
- Comments
- Literals
- Identifiers and Reserved Words
- Optional Semicolons

3 - Types, Values, and Variables

- Numbers
- Text
- Boolean Values
- null and undefined
- The Global Object
- Wrapper Objects
- Immutable Primitive Values and Mutable Object References
- Type Conversions
- Variable Declaration
- Variable Scope

4 - Expressions and Operators

- Primary Expressions
- Object and Array Initializers
- Function Definition Expressions
- Property Access Expressions
- Invocation Expressions
- Object Creation Expressions
- Operator Overview
- Arithmetic Expressions
- Relational Expressions
- Logical Expressions
- Assignment Expressions
- Evaluation Expressions
- Miscellaneous Operators

5 - Statements

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- Expression Statements
- Compound and Empty Statements
- Declaration Statements
- Conditionals
- Loops
- Jumps
- Miscellaneous Statements
- Summary of JavaScript Statements

6 - Objects

- Creating Objects
- Querying and Setting Properties
- Deleting Properties
- Testing Properties
- Enumerating Properties
- Property Getters and Setters
- Property Attributes
- Object Attributes
- Serializing Objects
- Object Methods

7 - Arrays

- Creating Arrays
- Reading and Writing Array Elements
- Sparse Arrays
- Array Length
- Adding and Deleting Array Elements
- Iterating Arrays
- Multidimensional Arrays
- Array Methods
- ECMAScript 5 Array Methods
- Array Type
- Array-Like Objects
- Strings As Arrays

8 - Functions

- Defining Functions
- Invoking Functions
- Function Arguments and Parameters
- Functions As Values
- Functions As Namespaces
- Closures
- Function Properties, Methods, and Constructor
- Functional Programming

9 - Classes and Modules

- Classes and Prototypes
- Classes and Constructors
- Java-Style Classes in JavaScript
- Augmenting Classes
- Classes and Types
- Object-Oriented Techniques in JavaScript
- Subclasses
- Classes in ECMAScript 5
- Modules

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10 - Pattern Matching with Regular Expressions

- Defining Regular Expressions
- String Methods for Pattern Matching
- The RegExp Object

11 - JavaScript Subsets and Extensions

- JavaScript Subsets
- Constants and Scoped Variables
- Destructuring Assignment
- Iteration
- Shorthand Functions
- Multiple Catch Clauses
- E4X: ECMAScript for XML

12 - JavaScript in Web Browsers

- Client-Side JavaScript
- Embedding JavaScript in HTML
- Execution of JavaScript Programs
- Compatibility and Interoperability
- Accessibility
- Security
- Client-Side Frameworks

13 - The Window Object

- Timers
- Browser Location and Navigation
- Browsing History
- Browser and Screen Information
- Dialog Boxes
- Error Handling
- Document Elements As Window Properties
- Multiple Windows and Frames

14 - Scripting Documents

- Overview of the DOM
- Selecting Document Elements
- Document Structure and Traversal
- Attributes
- Element Content
- Creating, Inserting, and Deleting Nodes
- Example: Generating a Table of Contents
- Document and Element Geometry and Scrolling
- HTML Forms
- Other Document Features

15 - Scripting CSS

- Overview of CSS
- Important CSS Properties
- Scripting Inline Styles
- Querying Computed Styles
- Scripting CSS Classes
- Scripting Stylesheets

16 - Handling Events

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- Types of Events
- Registering Event Handlers
- Event Handler Invocation
- Document Load Events
- Mouse Events
- Mousewheel Events
- Drag and Drop Events
- Text Events
- Keyboard Events

17 - Scripted HTTP

- Using XMLHttpRequest
- HTTP by <script>: JSONP
- Comet with Server-Sent Events

18 - The jQuery Library

- jQuery Basics
- jQuery Getters and Setters
- Altering Document Structure
- Handling Events with jQuery
- Animated Effects
- Ajax with jQuery
- Utility Functions
- jQuery Selectors and Selection Methods
- Extending jQuery with Plug-ins
- The jQuery UI Library

19 - Client-Side Storage

- localStorage and sessionStorage
- Cookies
- IE userData Persistence
- Application Storage and Offline Webapps

20 - Scripted Media and Graphics

- Scripting Images
- Scripting Audio and Video
- SVG: Scalable Vector Graphics
- Graphics in a <canvas>

21 - HTML5 APIs

- Geolocation
- History Management
- Cross-Origin Messaging
- Web Workers
- Typed Arrays and ArrayBuffers
- Blobs
- The Filesystem API
- Client-Side Databases
- Web Sockets
- Core JavaScript Reference
- Client-Side JavaScript Reference