

JavaScript

Duration: 4 Day(s)

Course Overview

This course is designed to give students hands on experience writing any kind of JavaScript code whether it's small scripts on web pages, libraries of code, other packages, or even working with jQuery.

Review this course online at <https://www.alta3.com/courses/WD-405>

Objectives

- Understand JavaScript syntax and data types.
- Implement logical program flow using loops and conditionals.
- Manipulate the DOM effectively using JavaScript.
- Utilize functions and debugging techniques for efficient coding.

Who Should Attend

- Web Developers
- Software Engineers
- Frontend Developers
- Programmers transitioning to JavaScript

Prerequisites

HTML and CSS at a basic level.

Course Outline

Introduction

1. pre-ECMAScript 1995
2. ECMAScript 1996 – 2011
3. ECMAScript 6 (ES6)
4. v8
5. Nashorn
6. Background
7. JavaScript trends
8. Development process choices

Scripting in HTML

9. Script tags
10. "use strict"
12. Output methods

13. Comments

Syntax & Variables

14. Code blocks

15. Statements

16. Variables

17. Identifiers

18. var

19. Block scope

20. Statement types

21. Variables get copied values

22. Data types

23. Strings (text)

24. boolean

25. truthy / falsey

26. Variables in scripts

27. Operators

28. Arithmetic

29. Relational

30. Logical

31. Logical – short circuit

32. Default and guard usage

33. Compound operators

34. If-else replacement (ternary op)

35. typeof

36. Operator precedence

Program flow

37. Program flow types

38. for loop logic

39. for syntax – init

40. for syntax – test

41. for syntax – step

42. Loop keywords – control

Debugging

43. console.*

44. console.log(a, b, c...)

45. console.table()

46. Tips

47. debugger;

Functions

- 48. A process/function model
- 49. Basics
- 50. Syntax
- 51. Naming
- 52. Using parameters
- 53. Calling functions
- 54. Pre-defined functions
- 55. Function scope
- 56. Function hoisting
- 57. Math

Program flow 2

- 58. Conditional basics
- 59. Conditionals
- 60. Nesting ifs
- 61. Checking values with switch
- 62. while loop
- 63. do while loop

Coding workflow

- 64. Name all your functions
- 65. Avoid closures
- 66. Use more and smaller functions
- 67. Check syntax & style
- 68. Strongly consider strict mode

Arrays

- 69. Creating + initializing
- 70. Accessing and length
- 71. Initializing
- 72. Sparseness
- 73. Array indexes & properties
- 74. Associative arrays
- 75. The arguments array
- 76. Array of functions
- 77. Array-like objects
- 78. Array-like object à array

Program flow 3

- 79. Array looping
- 80. forEach and related - ES5
- 81. for loop
- 82. for-in
- 83. for-of - ES6
- 84. explicit iterators – ES6

Objects

- 85. Intro
- 86. A relational data structure
- 87. An object data structure
- 88. Relational vs. OO
- 89. Objects
- 90. this
- 91. Creating an object - object initializers
- 92. Creating an object – constructors
- 93. Using the properties
- 94. Adding functions
- 95. Composition
- 96. for-in
- 97. Treating objects like an array

DOM Objects

- 98. the DOM
- 99. A DOM tree of nodes
- 100. Document properties
- 101. Nodes
- 102. Selecting nodes
- 103. querySelector()
- 104. querySelectorAll()
- 105. Navigator properties
- 106. History properties
- 107. Window object

DOM manipulation

- 108. Intro
- 109. Traversal
- 110. Attributes – HTML
- 111. Attributes - non HTML

112. Content

113. Create, insert, delete nodes

Events & event handlers

114. Intro

115. Binding/registering event handlers

116. Register event handlers

117. Event type overview

118. Events in the handler

119. Events in the handler – IE8

120. Useful value properties

121. `addEventListener()`

122. `attachEvent()`

123. Default action / bubbling / propagation

Math, Number, and Date Objects

124. Randomizing

125. Random link

126. Number

127. Strings to numbers

128. Date

Strings

129. Intro

130. Manipulation

Regular Expressions

131. Intro

132. Resources

133. Metacharacters

134. Quantifiers (greedy)

135. Characters

136. Character classes

137. Predefined Character Classes

138. Lookaround

139. Capturing groups

140. Match flags - embedded / flag

141. Writing for JavaScript

142. Functions

jQuery

143. the jQuery datatype

144. Creations

145. Conversion

Libraries

146. General Utilities

147. Misc

148. Communication

149. Charting

150. Mapping

151. Diagramming

152. Color

153. Misc

154. Resources