JavaScript Browser

Course Summary

Description

This course focuses on JavaScript's capabilities across the various major browsers. It assumes that students are familiar with everything from JavaScript Language Topics and is very feature oriented. This class is mostly for clients who want students to learn about "pure" JavaScript and don't plan to use a library like jQuery, AngularJS, Dojo, or the like. If they were they to use one of those libraries, many topics here would be supplanted by said libraries.

Topics

- Introduction
- Loading and running JavaScript
- Event handling
- DOM manipulation
- UI features
- Forms
- Ajax
- Web Storage
- Developer tools

Audience

This course is designed for students who want to learn about “pure” JavaScript and do not plan to use a library like jQuery, AngularJS, Dojo, or similar.

Prerequisites

Prior to taking this course, students must be familiar with everything from JavaScript Language Topics.

Duration

Two days

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Course Outline

I. Introduction
- A. Setup
- B. Intentions and purposes
  1. JavaScript in the browser
     a) Not JavaScript the language
  2. Ignoring language features
  3. We will run this class in the browser
- C. Assumptions
  1. JavaScript programming concepts should be known to you
  2. Or they are otherwise integrated into this course

II. Loading and running JavaScript
- A. In-line JavaScript and why it's bad
- B. Block JavaScript and why it should not be used often
- C. JavaScript in separate files

III. Event handling
- A. Ways to capture events
  1. In HTML
  2. As properties
  3. addEventListener
- B. Event bubbling and trickling
- C. Event delegation
- D. Custom events
  1. Creating custom events
  2. Dispatching custom events
  3. Listening and handling custom events

IV. DOM manipulation
- A. Finding elements
  1. getElementById
  2. querySelector / querySelectorAll
  3. matches / matchesSelector
  4. getElementsByClassName
  5. getElementsByTagName
- B. The DOM Interface
  1. Nodes
  2. Elements
  3. Collections of Elements
  4. Relationships between elements
- C. Creating or manipulating elements
  1. innerHTML
  2. innerText/textContent
  3. nodeValue
  4. insertAdjacentHTML
- D. Styling elements
  1. CSS styles
  2. CSS classes
- E. Positioning elements
  1. Finding element properties
  2. Using Element.getBoundingClientRect
  3. Moving an element
- F.Other features
  1. DOM Mutation Observer?

V. UI features
- A. Drag and drop
  1. HTML requirements
  2. JS API
  3. Browser issues
  4. Cross-browser implementation
- B. Animations
  1. Basic animations using setTimeout and setInterval
  2. Improving our animations with requestAnimationFrame

VI. Forms
- A. Form validation
  1. The validation model
  2. Validation types
  3. Custom validations and custom messages
- B. The FormData object
  1. Accessing FormData
  2. Changing FormData
  3. Using FormData

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Course Outline (cont'd)

VII. Ajax
- A. Ajax concepts
- B. A simple Ajax request
- C. Cross Origin Resource Sharing
- D. Other New Ajax features
  1. Data types
  2. Events
  3. Sending FormData

VIII. Web Storage
- A. Concept: Allows persistent storage in the browser
- B. The Storage API
- C. sessionStorage
- D. localStorage
- E. Storage events

IX. Developer tools
- A. The console
- B. Using the debugger
- C. The Network tab
- D. Other useful developer tools