COURSE OUTLINE

JavaScript and HTML5: Develop Web Applications

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
4 Day(s)	Beginner	Oracle	In Class	N/A

Course Overview

This JavaScript and HTML5 course teaches you how to code application logic in web applications using JavaScript and how to create HTML5 pages to parse and send data using HTML5 forms. Create and modify the Document Object Model(DOM), create responsive layouts with CSS3, store local data with JSON, and draw on HTML5 canvas. Students will add interactive behaviors to web pages creating better user experiences and add dynamic data using AJAX, REST and WebSocket with JavaScript.

Learn to:

- Code application logic using JavaScript to control user interactions and display data.
- Create applications with HTML5 forms to send data to services.
- Debug and inspect web applications and styles using browser's tools.
- Create design templates and standards using CSS and JavaScript that adapt to different devices including mobile with Media Queries and Responsive Design.
- Read and validate data from HTML5 forms using JavaScript.
- Parse, modify, and validate data using Javascript API.
- Add interactivity in HTML5 forms using events and DOM modification.
- Store and send JavaScript Object data to services, local storage or across different pages and HTML5 elements using JavaScript Object Notation.
- Draw on HTML5 canvas using JavaScript.
- Store user data in web applications using HTML5 Local Storage
- Create JavaScript code to retrieve and display dynamic data from REST services using AJAX.
- Create JavaScript code to interact with WebSocket for real-time communication.
- Create jQuery code to animate elements, handle DOM, events, or AJAX responses.

Prerequisites

- Basic web knowledge
- Basic programming experience

Audience

- Developer
- Implementer
- Manager

At course completion

- Create and run an HTML5 applications in NetBeans
- Write JavaScript code to use variables, objects, functions and arrays
- Create HTML5 forms to request information and process it
- Write JavaScript functions for HTML5 events
- Manipulate HTML5 elements through DOM
- Use the JavaScript API
- Store objects by using the JSON API, Cookies, and Local Storage
- Style HTML documents with CSS3
- Use Media Queries and media data to adapt the web page to different screen sizes
- Create closures, prototypes, and modules in JavaScript
- Create a Canvas, intervals, Drag and Drop interactions, and implement mouse gestures in HTML5
- Use AJAX to consume RESTful Web Services
- Identify the required Back-End technologies for REST and WebSocket with Java EE7
- Use Selectors and DOM manipulators to handle documents with jQuery
- Handle events and AJAX server responses with jQuery

Topics

Introduction

- Knowing the objectives of the course
- Setting up the Environment

Web Application Essentials

- Creating HTML5 Applications in NetBeans
- Running HTML pages and analizing them by using the browser's development tools
- Separating CSS and JavaScript content from HTML pages
- Running HTML5 Applications in NetBeans
- Practice: Creating HTML5 Web Applications with NetBeans 8
- Practice: Separating JavaScript and CSS Resources

JavaScript Fundamentals

- Writing JavaScript code to declare variables, objects, functions and arrays
- Writing JavaScript Arrays to store data
- Defining JavaScript Objects as a key-value store
- Accessing the properties of an object
- Practice: Writing JavaScript code to pass tests in Jasmine

Combining HTML5 and JavaScript in Web Applications

- Creating HTML5 Documents
- Creating HTML5 Forms to request information and process it
- Validating HTML5 form input
- Writing JavaScript functions for HTML5 events

- Manipulating HTML5 elements through DOM
- Practice: Writing JavaScript code to modify document elements

The JavaScript API

- Validating user input with JavaScript and Regular Expressions
- Handling multiple values with JavaScript Collections
- Manipulating Dates with the JavaScript Date API
- Practice: Creating a meal-divider application
- Practice: Calculating the total based on the age

Web Application Data

- Converting Objects to JSON Strings
- Parsing JSON Strings into JavaScript Objects
- Storing Objects by using the JSON API, Cookies, and Local Storage
- Practice: Saving user input using JSON and Local Storage
- Practice: Restoring saved data when page loads

Style Applications using CSS3 and JavaScript

- Applying CSS styles to HTML documents
- Using CSS3 features to add dynamic styles to elements with events
- Using Media Queries and media data to adapt to different screens
- Using JavaScript to add and remove styles from elements
- Practice: Writing CSS rules to style elements in the document

Advanced JavaScript

- Defining Functions
- Creating Closures and explaining Variable Scope
- Writing JavaScript functions as modules
- Creating Prototypes
- Creating Drag-and-Drop interactions with JavaScript
- Creating JavaScript Timers and Delays to create animations in HTML
- Using the HTML5 Canvas Object to draw in pages

- Practices: Creating a Canvas, intervals, Drag and Drop, and implementing Mouse Gestures

AJAX and WebSocket

- Using AJAX with JavaScript to request data from an Application Server
- Using AJAX to consume RESTful Web Services
- Using AJAX calls to create "Server Push" interactions
- Identifying alternatives to AJAX used in legacy code
- Understanding AJAX Security
- Using WebSocket to create Real-time Client/Server interactions
- Identifying the required Back-End technologies for REST and WebSocket with Java EE7
- Practices: Creating a Single-Page Application using RESTand a Tic-Tac-Toe Game Client with WebSocket