

## JavaScript and HTML5: Develop Web Applications

**Duration:** 4 Days

### What you will learn

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.

Benefits to You

This course will prepare any web developer with enough JavaScript, HTML5 and CSS3 knowledge to build complex and modern sites and for those looking to develop Java EE front-end web applications.

### Related Training

#### *Required Prerequisites*

Basic experience in any programming language

Basic knowledge of web concepts

## Course Objectives

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

## Course Topics

### Introduction

Knowing the objectives of the course

Setting up the Environment

### Web Application Essentials

Creating HTML5 Applications in NetBeans

Running HTML pages and analyzing 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 REST and a Tic-Tac-Toe Game Client with WebSocket

## **Developing Applications with jQuery**

Adding jQuery and jQuery UI libraries to your projects

Using Selectors and DOM manipulators to handle documents

Handling Events with jQuery

Animating elements and Applying effects in the document

Handling AJAX server responses