

The *JavaScript Specialist* course focuses on the fundamental concepts of the JavaScript language. This course will empower you with the skills to design client-side, platform-independent solutions that greatly increase the value of your Web site by providing interactivity and interest. You will learn how to use JavaScript to communicate with users, modify the Document Object Model (DOM), control program flow, validate forms, animate images, create cookies, change XHTML on the fly, and communicate with databases.

By the end of this course, you will understand and use the most popular applications of JavaScript.

Topics

Introduction to JavaScript

Introduction to Scripting
JavaScript Characteristics
JavaScript and Common Programming Concepts
JavaScript Flavors and Versions
Server-Side vs. Client-Side Applications
Annotating Your Code with Comments

Working with Variables and Data in JavaScript

Using JavaScript to Communicate with the User
Using Data More Than Once: Variables
JavaScript Expressions
Operators
Inline Scripting, Simple User Events, and Basic Event Handlers
Keywords and Reserved Words

Functions, Methods and Events in JavaScript

Introduction to Functions
Defining a Function
Calling a Function
User Events and JavaScript Event Handlers
Methods as Functions

Controlling Program Flow in JavaScript

Controlling Decisional Program Flow
The *if...else* Statement
The *while* Statement
The *do...while* Statement
The *for* Statement
The *break* Statement
The *continue* Statement
The *switch* Statement

The JavaScript Document Object Model (DOM)

The JavaScript Document Object Model (DOM)

The *window* Object
The *document* Object
The *with* Statement
The *image* Object
The *history* Object
The *location* Object
The *navigator* Object

JavaScript Language Objects

Introduction to JavaScript Language Objects
The *String* Object
Evaluating Strings
JavaScript Regular Expressions
The *Array* Object
The *Date* Object
Setting and Extracting Time Information
The *Math* Object

Developing Interactive Forms with JavaScript

Interactive Forms
Overview of Form Elements
Referring to Form Elements
The *form* Object
The *button* Object
The *checkbox* Object
The *text* and *textarea* Objects
The *radio* Object
The *select* Object
Form Validation

JavaScript Security

Introduction to JavaScript Security Issues
Browser vs. Operating System
Browser-Specific Security Issues
Browser Compatibility and Client-Side Detection
Script blocking
Differences in *document.write* Among Browsers
Malicious and Accidental Coding
Frame-to-Frame URL Changing
Signed Scripts
Cross-Site Scripting (XSS)
Cookies and Security in JavaScript
Creating Secure JavaScript Code

Custom JavaScript Objects

Creating Custom Objects
Creating a JavaScript Object: The Constructor
Creating an Instance of a Custom Object
Creating Object Methods
Creating Functions for Your Objects

Changing X/HTML on the Fly

Changing X/HTML on the Fly
Using the *getElementById* Method
Using the *getElementsByName* Method
Using the *getElementsByTagName* Method
Modifying Attributes within the DOM
Appending Text to the DOM

JavaScript Libraries

JavaScript Libraries
Choosing a Code Library
External and Pre-Made Scripts
Loading Your First Library
Using JavaScript Library Plug-ins
Best Practices with JavaScript Libraries
Copyright Issues and JavaScript

JavaScript and AJAX

Introduction to AJAX
Introduction to XML
Interactions Among JavaScript, XML and XHTML
Using AJAX Scripts
AJAX and Servers
AJAX and Databases
Usability Issues with AJAX
Combining AJAX with Libraries
Alternatives to XML-based AJAX

Debugging and Troubleshooting JavaScript

What Is Debugging?
Tools for Debugging Code
Testing Code in Various Browsers
Debugging Logical Errors
JavaScript and Mobile Devices

Target Audience

The *CIW JavaScript Specialist* course is for individuals who want to understand how to fully use the features of the JavaScript programming language in Web application development. These specialized Web language skills can help you begin or grow a career in advanced Web development and technologies:

- Web developers
- Software developers
- Application programmers
- Client/server developers
- Desktop publishers

Job Responsibilities

Implement and maintain hypertext-based Web sites using authoring and scripting languages; create Web content; use Web management tools and digital media tools; and apply human-factor principles to design.

Prerequisites

No prior knowledge of the JavaScript programming language is necessary. However, students should be familiar with using the Internet, developing Web pages and configuring networks to a level consistent with that found in the CIW Web Foundations series. Knowledge of X/HTML code development is required.