

Contents

Foreword	xiii
About the Author	xv
About the Technical Reviewer	xvii
Acknowledgments	xix
Introduction	xxi
CHAPTER 1 Getting Started with JavaScript	1
The Why of JavaScript	3
What Is JavaScript?	4
Problems and Merits of JavaScript	5
Why Use JavaScript If It Cannot Be Relied On?	6
JavaScript in a Web Page and Essential Syntax	7
JavaScript Syntax	8
Code Execution	9
An Aside About Functions	11
Objects	12
Simple JavaScript Example	13
Summary	16
CHAPTER 2 Data and Decisions	17
Data, Data Types, and Data Operators	18
The String Data Type	18
Operators	21
JavaScript Variables	23
Converting Different Types of Data	26
The Composite Data Types: Array and Object	30
Objects JavaScript Supplies You with: String, Date, and Math	30
Arrays	39
The Array Object's Methods and Properties	42

Making Decisions in JavaScript	45
The Logical and Comparison Operators	45
Conditional Statements	49
Testing Multiple Values: the switch Statement.....	52
Repeating Things: Loops	54
Summary	59
 CHAPTER 3 From DHTML to DOM Scripting	61
JavaScript As “the Behavior Layer”	63
Object Detection vs. Browser Dependence	65
Progressive Enhancement.....	68
JavaScript and Accessibility	69
Good Coding Practices.....	71
Naming Conventions.....	71
Code Layout.....	72
Commenting.....	74
Functions	76
Short Code via Ternary Operator	79
Sorting and Reuse of Functions	80
Variable and Function Scope.....	80
Keeping Scripts Safe with the Object Literal	81
Summary	83
 CHAPTER 4 HTML and JavaScript.....	85
The Anatomy of an HTML Document.....	85
Providing Feedback in Web Pages via JavaScript:	
The Old School Ways	89
Using window Methods: prompt(), alert(),	
and confirm().....	90
Accessing the Document via the DOM	96
Of Children, Parents, Siblings, and Values.....	99
From the Parents to the Children	100
From the Children to the Parents	102
Among Siblings	103
Changing Attributes of Elements	107

Creating, Removing, and Replacing Elements	109
Avoiding NOSCRIPT	113
Shortening Your Scripts via InnerHTML	115
DOM Summary: Your Cheat Sheet	116
DOMhelp: Our Own Helper Library	118
Summary	122

■ CHAPTER 5 **Presentation and Behavior (CSS and Event Handling)** .. 123

Changing the Presentation Layer via JavaScript	123
Helping the CSS Designer	131
Changing the Document's Behavior via Event Handling	153
Events in the W3C-Compliant World	156
Fixing Events for the Non-W3C-Compliant World	165
Never Stop Optimizing	172
The Ugly Page Load Problem and Its Ugly Solutions	173
Reading and Filtering Keyboard Entries	174
The Dangers of Event Handling	179
Summary	180

■ CHAPTER 6 **Common Uses of JavaScript: Images and Windows** 183

Images and JavaScript	183
Basics of Image Scripting	184
Preloading Images	186
Rollover Effects	187
Slide Shows	196
Summary of Images and JavaScript	211
Windows and JavaScript	212
Window Properties	213
Window Methods	215
Summary: Windows and JavaScript	238
Summary	239

CHAPTER 7	JavaScript and User Interaction: Navigation and Forms...	241
	Navigation and JavaScript	241
	The Fear of the Page Reload	242
	Basics of Navigation and JavaScript	242
	Browser Navigation	245
	In-Page Navigation	246
	Site Navigation	255
	Pagination	263
	Summary of Navigation with JavaScript	272
	Forms and JavaScript	272
	Basics of Forms with JavaScript	274
	Form Elements	275
	Interactive Forms: Hiding and Showing Dependent Elements ...	291
	Custom Form Elements	297
	Summary of Forms and JavaScript	297
	Summary	297
CHAPTER 8	Back-End Interaction with Ajax	299
	Household Cleaning Liquid, Football Club, or Flash Gordon's Spacecraft: What Is Ajax?	300
	Et Tu, Cache?	309
	Putting the X Back into Ajax	309
	Replacing XML with JSON	314
	Using Server-Side Scripts to Reach Third-Party Content	316
	XHR on Slow Connections	320
	A Larger Ajax Example: Connected Select Boxes	323
	Optional Dynamic Ajax Menus	331
	Summary	340
CHAPTER 9	Data Validation Techniques	343
	Pros and Cons of Client-Side JavaScript Validation	343
	A Quick Reminder About Protecting Content with JavaScript	344
	The One-Size-Fits-All Validation Myth	345

Basic JavaScript Validation with String and Numeric Methods	346
String Validation Methods	346
Numeric Validation Methods	352
Regular Expressions	357
Syntax and Attributes	357
Wildcard Searches, Constraining Scope, and Alternatives	358
Restricting the Number of Characters with Quantifiers	359
Word Boundaries, Whitespace, and Other Shortcuts	360
Methods Using Regular Expressions	361
The Power of Parenthesis Grouping	361
Regular Expression Resources	363
Summary of Validation Methods	363
Form Validation Techniques	364
Designating Mandatory Fields	364
The Hidden Field Method	364
The Indicator Element Method	365
The CSS Classes Method	366
The Custom Attribute Method	366
Failures of These Methods	367
Sharing Validation Rules	367
Giving Users Validation Feedback	369
Showing a List of Erroneous Fields	369
Replacing the Main Form with a Clickable Error Message	374
Highlighting Erroneous Fields Individually	376
Instant Validation Feedback	379
Other Dynamic Validation Methods	381
Summary	385

■ CHAPTER 10 **Modern JavaScript Case Study: A Dynamic Gallery** 387

Basics of Thumbnail Galleries	387
What Is a Thumbnail Gallery and What Should It Do?	388
Static Thumbnail Galleries	388
Faking Dynamic Galleries with JavaScript	389
Displaying Captions	396
Dynamic Thumbnail Galleries	401
Creating an Image Badge from a Folder	406
Summary	414

CHAPTER 11	Using Third-Party JavaScript	415
	What the Web Offers You	415
	Code Snippets, RSS Feeds, APIs, and Libraries	416
	RSS Feeds and REST APIs	417
	Examples of REST APIs	418
	Using a Library: Short, Shorter, jQuery	419
	Dangers of jQuery and Other Libraries Using Their Own Syntax	426
	Using an API: Adding a Map to Your Site with Google Maps	427
	Full Service: The Yahoo Developer Network and User Interface Library	438
	Bouncy Headlines Using YUI	439
	Replacing Pop-Up Windows Using the YUI Connection Manager and Container Components	444
	Yahoo User Interface Library Summary	449
	Summary	450
APPENDIX	Debugging JavaScript	451
	Common JavaScript Mistakes	451
	Misspellings and Case-Sensitivity Issues	451
	Trying to Access Undefined Variables	452
	Incorrect Number of Closing Braces and Parentheses	454
	Concatenation Gone Wrong	456
	Assigning Instead of Testing the Value of a Variable	458
	Tracing Errors with <code>alert()</code> and “Console” Elements	458
	Error Handling with <code>try</code> and <code>catch()</code>	459
	Sequential Uncommenting	462
	Error Reporting in Browsers	463
	Microsoft Internet Explorer 6	463
	Safari	464
	Opera 8.5	466
	Firefox 1.5.0.3	466
	JSLint and JSUNIT	470
	Summary	470
INDEX		471