

Contents

About the Author	ix
About the Technical Reviewer	xi
Acknowledgments	xiii
Introduction	xv
■ CHAPTER 1 Introducing Ajax	1
From CGI to Flash to DHTML	2
Pros and Cons of Today's Web Application Environment	3
Enter Ajax	4
Ajax Requirements	8
Summary	9
■ CHAPTER 2 Ajax Basics	11
HTTP Request and Response Fundamentals	11
The XMLHttpRequest Object	13
XMLHttpRequest Methods	13
XMLHttpRequest Properties	15
Cross-Browser Usage	17
Sending a Request to the Server	19
Basic Ajax Example	20
Summary	24
■ CHAPTER 3 PHP and Ajax	25
Why PHP and Ajax?	25
Client-Driven Communication, Server-Side Processing	26
Basic Examples	26
Expanding and Contracting Content	26
Auto-Complete	32
Form Validation	41
Tool Tips	44
Summary	47

CHAPTER 4	Database-Driven Ajax	49
	Introduction to MySQL	50
	Connecting to MySQL	51
	Querying a MySQL Database	52
	MySQL Tips and Precautions	57
	Putting Ajax-Based Database Querying to Work	58
	Auto-Completing Properly	60
	Loading the Calendar	63
	Summary	65
CHAPTER 5	Forms	67
	Bringing in the Ajax: GET vs. POST	68
	Passing Values	69
	Form Validation	80
	Summary	86
CHAPTER 6	Images	87
	Uploading Images	87
	Displaying Images	91
	Loading Images	94
	Dynamic Thumbnail Generation	95
	Summary	99
CHAPTER 7	A Real-World Ajax Application	101
	The Code	102
	How It Looks	111
	How It Works	113
	Summary	122
CHAPTER 8	Ergonomic Display	123
	When to Use Ajax	124
	Back Button Issues	125
	Ajax Navigation	125
	Hiding and Showing	127
	Introduction to PEAR	128
	HTML_Table	129
	Summary	134

CHAPTER 9	Web Services	135
	Introduction to SOAP Web Services	136
	Bring in the Ajax	137
	Let's Code	137
	How the SOAP Application Works	142
	Summary	147
CHAPTER 10	Spatially Enabled Web Applications	149
	Why Is Google Maps so Popular?	149
	Where to Start	151
	How Our Mapping System Works	163
	Summary	174
CHAPTER 11	Cross-Browser Issues	175
	Ajax Portability	175
	Saving the Back Button	177
	Ajax Response Concerns	180
	Degrading JavaScript Gracefully	183
	The noscript Element	184
	Browser Upgrades	185
	Summary	185
CHAPTER 12	Security	187
	Increased Attack Surface	187
	Strategy 1: Keep Related Entry Points Within the Same Script	188
	Strategy 2: Use Standard Functions to Process and Use User Input	188
	Cross-Site Scripting	189
	Strategy 1: Remove Unwanted Tags from Input Data	191
	Strategy 2: Escape Tags When Outputting Client-Submitted Data	192
	Strategy 3: Protect Your Sessions	192
	Cross-Site Request Forgery	193
	Confirming Important Actions Using a One-Time Token	193
	Confirming Important Actions Using the User's Password	195
	GET vs. POST	195
	Accidental CSRF Attacks	195

Denial of Service	196
Strategy 1: Use Delays to Throttle Requests	197
Strategy 2: Optimize Ajax Response Data	198
Protecting Intellectual Property and Business Logic	200
Strategy 1: JavaScript Obfuscation	200
Strategy 2: Real-Time Server-Side Processing	201
Summary	204
 ■ CHAPTER 13 Testing and Debugging	205
JavaScript Error Reporting	205
Firefox Extensions	208
Web Developer Toolbar	208
The DOM Inspector	208
LiveHTTPHeaders	209
Venkman JavaScript Debugger	211
HTML Validation	212
Internet Explorer Extensions	213
Internet Explorer Developer Toolbar	214
Fiddler	215
Summary	216
 ■ CHAPTER 14 The DOM	217
Accessing DOM Elements	217
document.getElementById	217
getElementsByTagName	218
Accessing Elements Within a Form	219
Adding and Removing DOM Elements	219
Manipulating DOM Elements	221
Manipulating XML Using the DOM	222
Combining Ajax and XML with the DOM	223
How the Ajax Location Manager Works	228
Summary	233
 ■ INDEX	235