

Contents

Acknowledgments	xvii
Introduction	xix
Chapter 1: What Is Ajax?	1
Ajax Is Born	2
The Evolution of the Web	2
JavaScript	2
Frames	3
The Hidden Frame Technique	3
Dynamic HTML and the DOM	3
Iframes	4
XMLHttpRequest	4
The Real Ajax	5
Ajax Principles	6
Technologies Behind Ajax	6
Who Is Using Ajax?	7
Google Suggest	7
Gmail	8
Google Maps	8
A9	10
Yahoo! News	11
Bitflux Blog	11
Confusion and Controversy	12
Summary	13
Chapter 2: Ajax Basics	15
HTTP Primer	15
HTTP Requests	16
HTTP Responses	18
Ajax Communication Techniques	19
The Hidden Frame Technique	19
XMLHttpRequests	33

Contents

Further Considerations	43
The Same Origin Policy	43
Cache Control	44
Summary	45
Chapter 3: Ajax Patterns	47
<hr/>	
Communication Control Patterns	47
Predictive Fetch	48
Page Preloading Example	48
Submission Throttling	56
Incremental Form Validation Example	58
Incremental Field Validation Example	64
Periodic Refresh	67
New Comment Notifier Example	68
Multi-Stage Download	72
Additional Information Links Example	73
Fallback Patterns	75
Cancel Pending Requests	76
Try Again	78
Summary	79
Chapter 4: XML, XPath, and XSLT	81
<hr/>	
XML Support in Browsers	81
XML DOM in IE	81
XML DOM in Firefox	91
Cross-Browser XML	95
A Basic XML Example	96
XPath Support in Browsers	102
Introduction to XPath	103
XPath in IE	104
Working with Namespaces	104
XPath in Firefox	107
Working with Namespace Resolver	109
Cross-Browser XPath	110
XSL Transformation Support in Browsers	111
Introduction to XSLT	111
XSLT in IE	114
XSLT in Firefox	119
Cross-Browser XSLT	120
Best Picks Revisited	121
Summary	124

Chapter 5: Syndication with RSS/Atom	125
RSS	125
RSS 0.91	126
RSS 1.0	127
RSS 2.0	128
Atom	128
FooReader.NET	129
Client-Side Components	130
Server-Side Components	139
Tying the Client to the Server	145
Setup	152
Testing	155
Summary	156
Chapter 6: Web Services	157
Related Technologies	157
SOAP	157
WSDL	160
REST	163
The .NET Connection	166
Design Decisions	167
Creating a Windows Web Service	168
System Requirements	168
Configuring IIS	168
Coding the Web Service	170
Creating the Assembly	172
Web Services and Ajax	175
Creating the Test Harness	175
The Internet Explorer Approach	177
The Mozilla Approach	179
The Universal Approach	182
Cross-Domain Web Services	184
The Google Web APIs Service	184
Setting Up the Proxy	185
Summary	189
Chapter 7: JSON	191
What Is JSON?	191
Array Literals	191
Object Literals	192
Mixing Literals	193

Contents

JSON Syntax	194
JSON Encoding/Decoding	195
JSON versus XML	195
Server-Side JSON Tools	197
JSON-PHP	197
Other Tools	199
Creating an Autosuggest Text Box	199
Functionality Overview	200
The HTML	200
The Database Table	202
The Architecture	203
The Classes	204
The AutoSuggest Control	204
The Suggestion Provider	220
The Server-Side Component	222
The Client-Side Component	223
Summary	225
Chapter 8: Web Site Widgets	227
Creating a News Ticker Widget	227
The Server-Side Component	228
The Client-Side Component	229
Styling the News	237
Implementing the News Ticker Widget	239
Creating a Weather Widget	240
The Weather.com SDK	240
The Server-Side Component	240
The Client-Side Component	249
Getting Data from the Server	249
Customizing the Weather Widget	251
Implementing the Weather Widget	254
Creating a Web Search Widget	255
The Server-Side Component	256
The Client-Side Component	257
Customizing the Web Search Widget	262
Implementing the Web Search Widget	265
Creating a Site Search Widget	266
The Server-Side Component	267
The Client-Side Component	273
Customizing the Site Search Widget	277
Implementing the Site Search Widget	279
Summary	280

Chapter 9: AjaxMail	281
Requirements	281
Architecture	282
Resources Used	282
The Database Tables	283
The Configuration File	284
The AjaxMailbox Class	285
Performing Actions	308
The User Interface	313
The Folder View	316
Read View	319
Compose View	320
Layout	322
Tying It All Together	323
Helper Functions	324
The Mailbox	326
Callback Functions	343
Event Handlers	345
The Last Step	346
Summary	346
Chapter 10: Ajax Frameworks	347
JPSpan	348
How It Works	348
Installing JPSpan	348
Creating the Server-Side Page	349
Creating the Client-Side Page	355
Error Handling	359
Type Translation	360
Summary of JPSpan	362
DWR	362
How It Works	362
Installing DWR	362
Creating the Client-Side Page	366
Using a Custom Class	367
Error Handling	371
More about dwr.xml	371
Converters	372
Summary of DWR	373

Contents

Ajax.NET	374
How It Works	374
Installing Ajax.NET	374
Creating the Web Page	376
Simple and Complex Types	382
Session State	384
Summary of Ajax.NET	385
Summary	386
Index	387