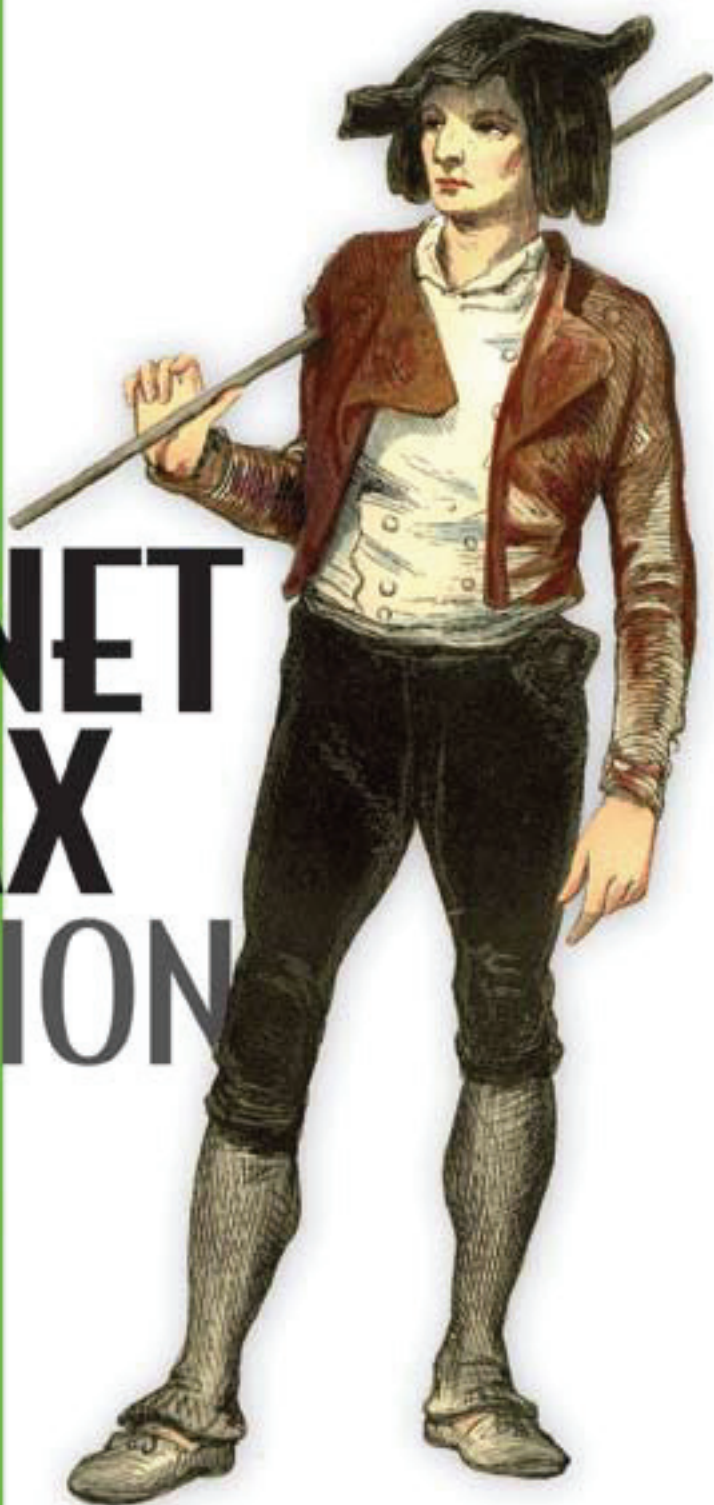


Alessandro Gallo
David Barkol
Rama Krishna Vavilala

ASP.NET AJAX IN ACTION

FOREWORDS BY
Scott Guthrie and Bertrand Le Roy

 MANNING



contents

forewords xvii
preface xxi
acknowledgments xxiii
about this book xxv
about the authors xxxi
about the title xxxii
about the cover illustration xxxiii

PART 1 ASP.NET AJAX BASICS 1

1 *Introducing ASP.NET AJAX* 3

1.1 What is Ajax? 4

Ajax components 5 ■ *Asynchronous web programming* 7
The XMLHttpRequest object 10 ■ *Ajax development issues* 14

1.2 ASP.NET AJAX architecture 15

Client framework 16 ■ *Server framework* 19 ■ *Client-centric development model* 20 ■ *Server-centric development model* 21
ASP.NET AJAX goals 22

1.3 ASP.NET AJAX in action 23

Simple server-centric solution 23 ■ *UpdateProgress control* 28
Simple client-centric example 30

1.4 Summary 34

- ## 2 *First steps with the Microsoft Ajax Library* 36
- 2.1 A quick overview of the library 37
 - Library features* 37 ■ *Ajax-enabling an ASP.NET page* 39 ■ *Script versions* 40
 - 2.2 The Application model 42
 - Client components* 43 ■ *Client-page lifecycle* 44 ■ *“Hello Microsoft Ajax!”* 45
 - 2.3 Working with the DOM 48
 - The abstraction API* 48 ■ *A dynamic, cross-browser text box* 49
 - CSS and positioning* 53 ■ *Client delegates* 54
 - \$addHandlers and \$clearHandlers* 56 ■ *Callbacks* 57
 - 2.4 Making development with JavaScript easier 58
 - The String object* 58 ■ *Sys.StringBuilder* 59 ■ *The Array object* 61 ■ *Globalization* 63 ■ *Browser detection* 65
 - Debugging* 66 ■ *Typed errors* 69
 - 2.5 Summary 72
- ## 3 *JavaScript for Ajax developers* 73
- 3.1 Working with objects 74
 - Objects* 75 ■ *Arrays* 76 ■ *Functions* 77 ■ *Creating custom objects* 81 ■ *The prototype object* 82 ■ *Extending a JavaScript type* 83 ■ *Literals* 85
 - 3.2 Working with JSON 86
 - JSON structures* 86 ■ *JSON and the Microsoft Ajax Library* 88
 - 3.3 Classes in JavaScript 89
 - Client classes* 89 ■ *The registerClass method* 90
 - Properties* 91 ■ *Namespaces* 93
 - 3.4 Understanding inheritance 95
 - Prototype-based inheritance* 95 ■ *Passing arguments to the base class* 97 ■ *Overrides* 98
 - 3.5 Understanding interfaces and enumerations 99
 - Interfaces* 99 ■ *Enumerations* 101
 - 3.6 Using type reflection 104
 - Reflection methods* 104 ■ *Object typing* 105 ■ *Building a simple class browser* 106

- 3.7 Working with events 108
 - Exposing an event* 109 ■ *Subscribing to and handling events* 112
- 3.8 Summary 113

4 **Exploring the Ajax server extensions 114**

- 4.1 Ajax for ASP.NET developers 115
 - What are the Ajax server extensions?* 115
- 4.2 Enhancing an existing ASP.NET site 116
 - A sample ASP.NET site* 117 ■ *Configuring an existing ASP.NET site* 118
- 4.3 ScriptManager: the brains of an Ajax page 120
 - Understanding the ScriptManager* 121 ■ *Deploying JavaScript files* 122 ■ *Registering services* 123
 - Localization* 124 ■ *Using the ScriptManagerProxy* 126
- 4.4 Partial-page updates 127
 - Introducing the UpdatePanel control* 128 ■ *More UpdatePanels* 131 ■ *Insert feedback here* 133 ■ *Working with a timer* 135 ■ *Error handling* 138
- 4.5 Summary 140

5 **Making asynchronous network calls 141**

- 5.1 Working with ASP.NET Web Services 142
 - Configuring a web service* 143 ■ *Invoking web service methods from JavaScript* 146 ■ *Managing complex types* 150 ■ *Using HTTP GET* 158
 - Page methods* 159
- 5.2 The asynchronous communication layer 160
 - A simple WebRequest* 161 ■ *The executor* 162
 - WebRequestManager* 163 ■ *Handling errors* 163
- 5.3 Consuming external Web Services 166
 - The script technique* 167 ■ *Cross-domain calls through the server* 168 ■ *Mash-it-up with ASP.NET AJAX* 169
 - Bridges* 175

- 5.4 Using ASP.NET application services 183
 - Enabling ASP.NET application services* 183 ■ *Authentication service* 184 ■ *Profile* 187 ■ *Roles: an Orcas preview* 191
 - Message board application* 192
- 5.5 Summary 193

6 ***Partial-page rendering with UpdatePanels*** 194

- 6.1 With great power comes great responsibility 195
 - Evolution of the UpdatePanel* 195 ■ *A simple example* 196
- 6.2 Getting to know the UpdatePanel 201
 - Content for the UpdatePanel* 201 ■ *Update modes* 203 ■ *Render modes* 205 ■ *ASP.NET page lifecycle* 207
- 6.3 Triggers 208
 - Asynchronous triggers* 208 ■ *PostBack triggers* 210
 - Manual triggers* 211
- 6.4 Advanced techniques 213
 - Repeating UpdatePanels* 213 ■ *Nesting UpdatePanels* 216
- 6.5 Live GridView filter 216
 - Live GridView filter goals* 217 ■ *How does the GridView filter work?* 218 ■ *Adding Ajax to the GridView filter* 223
 - It's alive!* 224
- 6.6 Summary 227

PART 2 ADVANCED TECHNIQUES 229

7 ***Under the hood of the UpdatePanel*** 231

- 7.1 The PageRequestManager: the unsung hero 232
 - The client-side event model* 233 ■ *The anatomy of an asynchronous postback* 236
- 7.2 A client-side event viewer 243
 - Getting started* 244 ■ *Handling client-side events* 245
 - Aborting a postback* 250 ■ *Managing postback priority* 251
 - Notifying the user* 252 ■ *Locked and loaded* 253 ■ *Client-side error handling* 255

- 7.3 UpdatePanel cookbook 256
 - Why is the UpdatePanel slow?* 256
 - *Inject JavaScript during a partial postback* 258
 - *Getting the validators to work* 260
 - Sys.WebForms.PageRequestManagerParseException* 261
- 7.4 Caveats and limitations 262
 - Asynchronous requests are sequential* 263
 - *Unsupported ASP.NET 2.0 controls* 263
- 7.5 Summary 263

8 **ASP.NET AJAX client components** 264

- 8.1 The client component model 265
 - Visual and nonvisual components* 267
 - *Controls and behaviors* 268
 - *Component lifecycle* 268
 - *Containers* 269
- 8.2 Working with client components 270
 - Creating components* 273
 - *Accessing components* 276
 - *Events and property change notification* 276
- 8.3 Behaviors 279
 - Sys.UI.Behavior* 280
 - *Creating behaviors* 281
 - *Accessing behaviors* 281
 - *Enhancing a text box element* 282
- 8.4 Controls 287
 - Sys.UI.Control* 287
 - *Creating controls* 288
 - *Accessing controls* 289
 - *Creating an element wrapper: text box* 289
 - Creating a PhotoGallery control* 292
- 8.5 Summary 298

9 **Building Ajax-enabled controls** 299

- 9.1 Script descriptors 300
 - Script descriptor hierarchy* 300
 - *Describing a behavior* 302
 - Describing a control* 304
 - *Script references* 306
- 9.2 Introduction to Ajax-enabled controls 306
 - How Ajax-enabled controls work* 307
 - *Extenders and script controls* 308
- 9.3 Extenders 311
 - The IExtenderControl interface* 311
 - *Extender registration* 312
 - An extender for FormattingBehavior* 313
 - *Using an extender* 316

- 9.4 Script controls 319
 - The IScriptControl interface* 319 ■ *Script control registration* 320 ■ *Design strategies* 322 ■ *Adding Ajax to the ASP.NET Login control* 322 ■ *Using a script control* 328
- 9.5 Summary 330

10 **Developing with the Ajax Control Toolkit** 332

- 10.1 A world of extenders 333
 - The auto-complete extender* 334 ■ *The ScriptPath property* 340
 - The BehaviorID property* 340
- 10.2 The Ajax Control Toolkit API 343
 - The Toolkit's base classes* 343 ■ *A metadata-driven API* 345
 - Building Toolkit extenders: the TextChanged extender* 347
 - Support for Visual Studio Designer* 355
- 10.3 Animations 357
 - Toolkit animation framework* 357 ■ *Animation basics* 359
 - Using the AnimationExtender* 360 ■ *The UpdatePanelAnimation extender* 364 ■ *JSON and animations: adding transitions to the PhotoGallery control* 365
- 10.4 Summary 369

PART 3 ASP.NET AJAX FUTURES 371

11 **XML Script** 373

- 11.1 XML Script basics 374
 - Hello XML Script!* 375 ■ *Controls and XML Script* 378 ■ *From XML Script to JavaScript* 382 ■ *Type descriptors* 383
- 11.2 Actions 386
 - SetPropertyAction* 387 ■ *PostBackAction* 389
 - InvokeMethodAction* 389 ■ *Custom actions* 394
- 11.3 Bindings 398
 - A simple binding* 398 ■ *Binding direction* 400 ■ *Target and data path* 401 ■ *Bindings as components* 402 ■ *Transformers* 404
 - Playing with transformers* 405 ■ *Custom transformers* 408
- 11.4 Summary 409

12 *Dragging and dropping* 410

12.1 The drag-and-drop engine 411

How the engine works 412 ■ *A simple scenario for drag and drop* 415 ■ *Creating a draggable item* 416
The startDragDrop method 418 ■ *The IDragSource interface* 419 ■ *Creating a drop target* 422 ■ *The IDropTarget interface* 423 ■ *Putting together the pieces* 426

12.2 A drag-and-drop shopping cart 427

Server-side design 429 ■ *Client-side design* 431 ■ *The ShoppingCart control* 432 ■ *The BooksCatalog control* 435
Piecing it together 438

12.3 Summary 440

PART 4 MASTERING ASP.NET AJAX 441

13 *Implementing common Ajax patterns* 443

13.1 Script versioning 444

Getting informative stack traces 445 ■ *XML comments in JavaScript code* 447 ■ *Validating function parameters* 449 ■ *Parameter validation in production code* 452 ■ *Compressing and crunching script files* 454

13.2 Helpers, help me help you! 455

Automating the declaration of properties 456
Automating the creation of events 458

13.3 Logical navigation and unique URLs 461

Logical navigation 462 ■ *Unique URLs* 468

13.4 Declarative data binding 470

Setting up the Web Service 470 ■ *The ListView control* 473

13.5 Declarative widgets 476

The drag-drop list 477 ■ *Widgets and XML Script* 479

13.6 Summary 484

<i>appendix A</i>	<i>Installing ASP.NET AJAX</i>	<i>487</i>
<i>appendix B</i>	<i>Tools for debugging Ajax applications</i>	<i>499</i>
	<i>resources</i>	<i>521</i>
	<i>index</i>	<i>523</i>