

JQUERY

NOVICE TO NINJA

BY EARLE CASTLEDINE
& CRAIG SHARKIE



RICH, FAST, VERSATILE — JAVASCRIPT THE WAY IT SHOULD BE!



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JQUERY: NOVICE TO NINJA

BY EARLE CASTLEDINE
& CRAIG SHARKIE

jQuery: Novice to Ninja

by Earle Castledine and Craig Sharkie

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About Earle Castledine

Sporting a Masters in Information Technology and a lifetime of experience on the Web of Hard Knocks, Earle Castledine (aka Mr Speaker) holds an interest in everything computery. Raised in the wild by various 8-bit home computers, he settled in the Internet during the mid-nineties and has been living and working there ever since.

A Senior Systems Analyst and JavaScript flâneur, he is equally happy in the muddy pits of .NET code, the dense foliage of mobile apps and games, and the fluffy clouds of client-side interaction development.

As co-creator of the client-side opus TurnTubelist,¹ as well as countless web-based experiments, Earle recognizes the Internet not as a lubricant for social change but as a vehicle for unleashing frivolous ECMAScript gadgets and interesting time-wasting technologies.

About Craig Sharkie

A degree in Fine Art is a strange entrance to a career with a passion for programming, but that's where Craig started. A right-brain approach to code and problem solving has seen him plying his craft for many of the big names of the Web—AOL, Microsoft, Yahoo!, Ziff-Davis, and now Atlassian.

That passion, and a fondness for serial commas and the like, have led him on a path from journalism, through development, on to conferences, and now into print. Taking up JavaScript in 1995, he was an evangelist for the “good parts” before Crockford coined the term, and now has brought that keenness to jQuery.

About the Technical Editor

Louis Simoneau joined SitePoint in 2009, after traveling from his native Montréal to Calgary, Taipei, and finally Melbourne. He now gets to spend his days learning about cool web technologies, an activity that had previously been relegated to nights and weekends. He enjoys hip-hop, spicy food, and all things geeky.

About the Chief Technical Officer

As Chief Technical Officer for SitePoint, Kevin Yank keeps abreast of all that is new and exciting in web technology. Best known for his book, *Build Your Own Database Driven Web Site Using PHP & MySQL*, he also co-authored *Simply JavaScript* with Cameron Adams and

¹ <http://www.turntubelist.com/>

Everything You Know About CSS Is Wrong! with Rachel Andrew. In addition, Kevin hosts the *SitePoint Podcast* and co-writes the *SitePoint Tech Times*, a free email newsletter that goes out to over 240,000 subscribers worldwide.

Kevin lives in Melbourne, Australia and enjoys speaking at conferences, as well as visiting friends and family in Canada. He's also passionate about performing improvised comedy theater with Impro Melbourne (<http://www.impromelbourne.com.au/>) and flying light aircraft. Kevin's personal blog is *Yes, I'm Canadian* (<http://yesimcanadian.com/>).

About SitePoint

SitePoint specializes in publishing fun, practical, and easy-to-understand content for Web professionals. Visit <http://www.sitepoint.com/> to access our blogs, books, newsletters, articles, and community forums.

For Amelia.

*I wanted to have a picture here of
me holding a boombox above my
head, but they wouldn't let me.*

Will you marry me?

—Earle

For Jennifer:

*People who've met me
Only since I've known you
Never understand the
Good you've lead me to*

Always

—Craig

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Preface

No matter what kind of ninja you are—a cooking ninja, a corporate lawyer ninja, or an actual *ninja* ninja—virtuosity lies in first mastering the basic tools of the trade. Once conquered, it's then up to the full-fledged ninja to apply that knowledge in creative and inventive ways.

In recent times, jQuery has proven itself to be a simple but powerful tool for taming and transforming web pages, bending even the most stubborn and aging browsers to our will. jQuery is a library with two principal purposes: manipulating elements on a web page, and helping out with Ajax requests. Sure, there are quite a few commands available to do this—but they're all consistent and easy to learn. Once you've chained together your first few actions, you'll be addicted to the jQuery building blocks, and your friends and family will wish you'd never discovered it!

On top of the core jQuery library is jQuery UI: a set of fine-looking controls and widgets (such as accordions, tabs, and dialogs), combined with a collection of full-featured behaviors for implementing controls of your own. jQuery UI lets you quickly throw together awesome interfaces with little effort, and serves as a great example of what you can achieve with a little jQuery know-how.

At its core, jQuery is a tool to help us improve the usability of our sites and create a better user experience. **Usability** refers to the study of the principles behind an object's *perceived efficiency or elegance*. Far from being merely flashy, trendy design, jQuery lets us speedily and enjoyably sculpt our pages in ways both subtle and extreme: from finessing a simple sliding panel to implementing a brand-new user interaction you invented in your sleep.

Becoming a ninja isn't about learning an API inside out and back to front—that's just called having a good memory. The real skill and value comes when you can apply your knowledge to making something exceptional: something that builds on the combined insights of the past to be even slightly better than anything anyone has done before. This is certainly not easy—but thanks to jQuery, it's fun just trying.

Who Should Read This Book

If you're a front-end web designer looking to add a dash of cool interactivity to your sites, and you've heard all the buzz about jQuery and want to find out what the fuss is about, this book will put you on the right track. If you've dabbled with JavaScript, but been frustrated by the complexity of many seemingly simple tasks, we'll show you how jQuery can help you. Even if you're familiar with the basics of jQuery, but you want to take your skills to the next level, you'll find a wealth of good coding advice and in-depth knowledge.

You should already have intermediate to advanced HTML and CSS skills, as jQuery uses CSS-style selectors to zero in on page elements. Some rudimentary programming knowledge will be helpful to have, as jQuery—despite its clever abstractions—is still based on JavaScript. That said, we've tried to explain any JavaScript concepts as we use them, so with a little willingness to learn you'll do fine.

What's in This Book

By the end of this book, you'll be able to take your static HTML and CSS web pages and bring them to life with a bit of jQuery magic. You'll learn how to select elements on the page, move them around, remove them entirely, add new ones with Ajax, animate them ... in short, you'll be able to bend HTML and CSS to your will! We also cover the powerful functionality of the jQuery UI library.

This book comprises the following nine chapters. Read them in order from beginning to end to gain a complete understanding of the subject, or skip around if you only need a refresher on a particular topic.

Chapter 1: *Falling in Love with jQuery*

Before we dive into learning all the ins and outs of jQuery, we'll have a quick look at why you'd want to use it in the first place: why it's better than writing your own JavaScript, and why it's better than the other JavaScript libraries out there. We'll brush up on some CSS concepts that are key to understanding jQuery, and briefly touch on the basic syntax required to call jQuery into action.

Chapter 2: *Selecting, Decorating, and Enhancing*

Ostensibly, jQuery's most significant advantage over plain JavaScript is the ease with which it lets you select elements on the page to play with. We'll start off

this chapter by teaching you how to use jQuery's selectors to zero in on your target elements, and then we'll look at how you can use jQuery to alter those elements' CSS properties.

Chapter 3: *Animating, Scrolling, and Resizing*

jQuery excels at animation: whether you'd like to gently slide open a menu, or send a dialog whizzing across the screen, jQuery can help you out. In this chapter, we'll explore jQuery's wide range of animation helpers, and put them into practice by enhancing a few simple user interface components. We'll also have a quick look at some animation-like helpers for scrolling the page and making elements resizable.

Chapter 4: *Images, Slideshows, and Cross-fading*

With the basics well and truly under our belts, we'll turn to building some of the most common jQuery widgets out there: image galleries and slideshows. We'll learn how to build lightbox displays, scrolling thumbnail galleries, cross-fading galleries, and even take a stab at an iPhoto-style flip-book.

Chapter 5: *Menus, Tabs, Tooltips, and Panels*

Now that we're comfortable with building cool UI widgets with jQuery, we'll dive into some slightly more sophisticated controls: drop-down and accordion-style menus, tabbed interfaces, tooltips, and various types of content panels. We're really on a roll now: our sites are looking less and less like the brochure-style pages of the nineties, and more and more like the Rich Internet Applications of the twenty-first century!

Chapter 6: *Construction, Ajax, and Interactivity*

This is the one you've all been waiting for: Ajax! In order to make truly desktop-style applications on the Web, you need to be able to pass data back and forth to and from the server, without any of those pesky refreshes clearing your interface from the screen—and that's what Ajax is all about. jQuery includes a raft of convenient methods for handling Ajax requests in a simple, cross-browser manner, letting you leave work with a smile on your face. But before we get too carried away—our code is growing more complex, so we'd better take a look at some best practices for organizing it. All this and more, in Chapter 6.

Chapter 7: Forms, Controls, and Dialogs

The bane of every designer, forms are nonetheless a pivotal cornerstone of any web application. In this chapter, we'll learn what jQuery has to offer us in terms of simplifying our form-related scripting. We'll learn how to validate forms on the fly, offer assistance to our users, and manipulate checkboxes, radio buttons, and select lists with ease. Then we'll have a look at some less conventional ways of allowing a site's users to interact with it: a variety of advanced controls like date pickers, sliders, and drag and drop. We'll round it off with a look at modal dialogs in the post-popup world, as well as a few original nonmodal notification styles. What a chapter!

Chapter 8: Lists, Trees, and Tables

No matter how "Web 2.0" your application may be, chances are you'll still need to fall back on the everyday list, the humdrum tree, or even the oft-derided table to present information to your users. This chapter shows how jQuery can make even the boring stuff fun, as we'll learn how to turn lists into dynamic, sortable data, and transform tables into data grids with sophisticated functionality.

Chapter 9: Plugins, Themes, and Advanced Topics

jQuery is more than just cool DOM manipulation, easy Ajax requests, and funky UI components. It has a wealth of functionality aimed at the more *ninja-level* developer: a fantastic plugin architecture, a highly extensible and flexible core, customizable events, and a whole lot more. In this chapter, we'll also cover the jQuery UI theme system, which lets you easily tailor the appearance of jQuery UI widgets to suit your site, and even make your own plugins skinnable with themes.

Where to Find Help

jQuery is under active development, so chances are good that, by the time you read this, some minor detail or other of these technologies will have changed from what's described in this book. Thankfully, SitePoint has a thriving community of JavaScript and jQuery developers ready and waiting to help you out if you run into trouble. We also maintain a list of known errata for this book, which you can consult for the latest updates; the details are below.

The SitePoint Forums

The SitePoint Forums¹ are discussion forums where you can ask questions about anything related to web development. You may, of course, answer questions too. That's how a discussion forum site works—some people ask, some people answer, and most people do a bit of both. Sharing your knowledge benefits others and strengthens the community. A lot of interesting and experienced web designers and developers hang out there. It's a good way to learn new stuff, have questions answered in a hurry, and have a blast.

The JavaScript Forum² is where you'll want to head to ask any questions about jQuery.

The Book's Web Site

Located at <http://www.sitepoint.com/books/jquery1/>, the web site that supports this book will give you access to the following facilities:

The Code Archive

As you progress through this book, you'll note a number of references to the code archive. This is a downloadable ZIP archive that contains each and every line of example source code that's printed in this book. If you want to cheat (or save yourself from carpal tunnel syndrome), go ahead and download the archive.³

Updates and Errata

No book is perfect, and we expect that watchful readers will be able to spot at least one or two mistakes before the end of this one. The Errata page⁴ on the book's web site will always have the latest information about known typographical and code errors.

The SitePoint Newsletters

In addition to books like this one, SitePoint publishes free email newsletters, such as the *SitePoint Tech Times*, *SitePoint Tribune*, and *SitePoint Design View*, to name

¹ <http://www.sitepoint.com/forums/>

² <http://www.sitepoint.com/forums/forumdisplay.php?f=15>

³ <http://www.sitepoint.com/books/jquery1/code.php>

⁴ <http://www.sitepoint.com/books/jquery1/errata.php>

a few. In them, you'll read about the latest news, product releases, trends, tips, and techniques for all aspects of web development. Sign up to one or more SitePoint newsletters at <http://www.sitepoint.com/newsletter/>.

The SitePoint Podcast

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Your Feedback

If you're unable to find an answer through the forums, or if you wish to contact us for any other reason, the best place to write is books@sitepoint.com. We have a well-staffed email support system set up to track your inquiries, and if our support team members are unable to answer your question, they'll send it straight to us. Suggestions for improvements, as well as notices of any mistakes you may find, are especially welcome.

Acknowledgments

Earle Castledine

I'd like to thank the good folks at Agency Rainford for running Jelly (and getting me out of the house), Stuart Horton-Stephens for teaching me how to do Bézier Curves (and puppet shows), Andrew Tetlaw, Louis Simoneau, and Kelly Steele from SitePoint for turning pages of rambling nonsense into English, the Sydney web community (who do truly rock), the jQuery team (and related fellows) for being a JavaScript-fueled inspiration to us all, and finally, my awesome Mum and Dad for getting me a Spectravideo 318 instead of a Commodore 64—thus forcing me to read the manuals instead of playing games, all those years ago.

Craig Sharkie

Firstly, I'd like to thank Earle for bringing me onto the project and introducing me to the real SitePoint. I'd met some great SitePointers at Web Directions, but dealing

with them professionally has been a real eye-opener. I'd also like to thank my wonderful wife Jennifer for understanding when I typed into the wee small hours, and my parents for letting me read into the wee small hours when I was only wee small. Lastly, I'd like to thank the web community that have inspired me—some have inspired me to reach their standard, some have inspired me to help them reach a higher standard.

Conventions Used in This Book

You'll notice that we've used certain typographic and layout styles throughout the book to signify different types of information. Look out for the following items.

Code Samples

Code in this book will be displayed using a fixed-width font, like so:

```
<h1>A Perfect Summer's Day</h1>
<p>It was a lovely day for a walk in the park. The birds
were singing and the kids were all back at school.</p>
```

If the code is to be found in the book's code archive, the name of the file will appear at the top of the program listing, like this:

```
example.css
.footer {
  background-color: #CCC;
  border-top: 1px solid #333;
}
```

If only part of the file is displayed, this is indicated by the word *excerpt*:

```
example.css (excerpt)
border-top: 1px solid #333;
```

If additional code is to be inserted into an existing example, the new code will be displayed in bold:

```
function animate() {  
    new_variable = "Hello";  
}
```

Also, where existing code is required for context, rather than repeat all the code, a vertical ellipsis will be displayed:

```
function animate() {  
    :  
    return new_variable;  
}
```

Some lines of code are intended to be entered on one line, but we've had to wrap them because of page constraints. A **↵** indicates a line break that exists for formatting purposes only, and should be ignored:

```
URL.open("http://www.sitepoint.com/blogs/2007/05/28/user-style-she  
↵ets-come-of-age/");
```

Tips, Notes, and Warnings



Hey, You!

Tips will give you helpful little pointers.



Ahem, Excuse Me ...

Notes are useful asides that are related—but not critical—to the topic at hand. Think of them as extra tidbits of information.



Make Sure You Always ...

... pay attention to these important points.



Watch Out!

Warnings will highlight any gotchas that are likely to trip you up along the way.

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