

*Interactive Applications for the Web*



*The Definitive Guide*



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# Ajax: The Definitive Guide



Is Ajax a new technology, or the same old stuff web developers have been using for years? Both, actually. This book demonstrates not only how tried-and-true web standards make Ajax possible, but also how these older technologies can give sites a decidedly modern Web 2.0 feel.

*Ajax: The Definitive Guide* explains how to use standards such as JavaScript, XML, CSS, and XHTML, along with the XMLHttpRequest object, to build browser-based web applications that function like desktop programs. You'll gain a thorough understanding of what goes into today's web sites and applications, and learn how to leverage that knowledge with Ajax for advanced browser searching, web services, mashups, and more. Along the way, you'll discover why developing with Ajax is faster, easier, and cheaper. Additional topics include:

- Connecting server-side backend components to user interfaces in the browser
- Loading and manipulating XML documents, and how to replace XML with JSON
- Manipulating the Document Object Model (DOM)
- Designing Ajax interfaces for usability, functionality, visualization, and accessibility
- Site navigation layout
- Adding life to tables and lists, navigation boxes, and windows
- Animations, interactive forms, and data validation
- Applying Ajax to business communications
- Creating Internet games without plug-ins
- The advantages of modular coding, ways to optimize Ajax applications, and more

This book also provides references to XML and XSLT; popular JavaScript frameworks, libraries, and toolkits; and various web service APIs. By offering a much broader set of tools and options, Ajax gives developers a new way to create content on the Web, while throwing off the constraints of the past. *Ajax: The Definitive Guide* describes the contents of this unique toolbox, and how you can get the most out of it, in exhaustive detail.

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This technique has been around for some time, though it is still not used as much as it should be. Perhaps as more designers and developers cross paths making these new Ajax applications, the technique will begin to make more sense to both parties involved in the design process. The theory of abstracting structure to many containers or wrappers has working models on the Internet, where the structure and presentation are separated so that the same structure can be shaped into an endless number of possible presentations.

## The Proven Theory

Of course, the popular CSS Zen Garden site (<http://www.csszengarden.com/>), whose structure and presentation are completely separated, proved this theory. Dave Shea created the Zen Garden around 2001 after being inspired by Chris Casciano's Daily CSS Fun (<http://placenamehere.com/neuralustmirror/200202/>) and the Hack Hotbot contest in 2003 (<http://web.archive.org/web/20030406032202/http://hack.hotbot.com/>). The goal of the CSS Zen Garden was to demonstrate what could be accomplished with CSS from a design standpoint.

By taking some simple XHTML markup, graphic designers were invited to create a design relying on manipulating the CSS and not the XHTML. Figure 9-6 shows what the structure of this page looks like without any CSS attached to it.

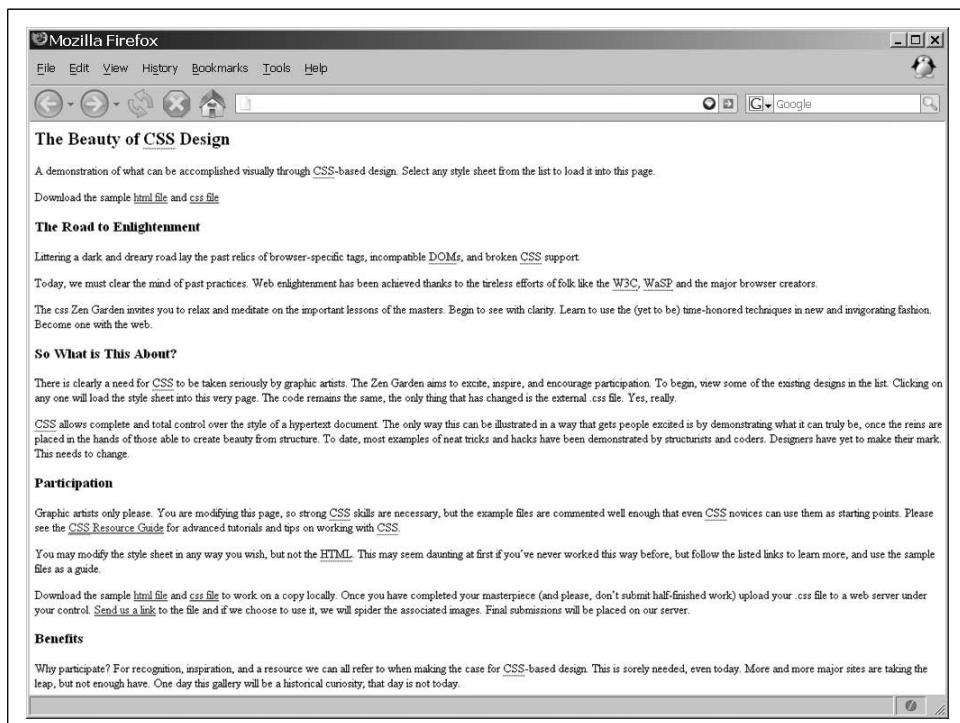


Figure 9-6. The unstyled CSS Zen Garden page

By adding CSS style rules to this basic structure, you really have no limitations on what you can accomplish visually with this method. As examples, Figure 9-7 shows what the CSS Zen Garden page looks like with the original style attached to it, and Figure 9-8 shows an excellent example of just how far CSS in design has come.



Figure 9-7. The default CSS Zen Garden site created by Dave Shea

I know the CSS Zen Garden is about visual style, but it has applications in the Ajax world as well. Remember that Ajax allows for any part of a site to be changed dynamically, and there is no reason to be stuck in the same square world with Ajax that we inhabited not so long ago with frames and iframes.

## Let CSS Be Your Guide

The CSS Zen Garden demonstrates the importance of separating our structure from our presentation, simply by showing the number of ways we can lay out the same structure using CSS rules. Everything about the CSS Zen Garden teaches us that structure does not dictate an application so much as style does. Anyone who develops a web application must expect it to be dynamic, and the easiest way to make it dynamic is to rely on CSS. However, that is not the only lesson I want you to learn regarding CSS. The important lesson to take away is focused more on the structure and not on all of the fancy presentation.

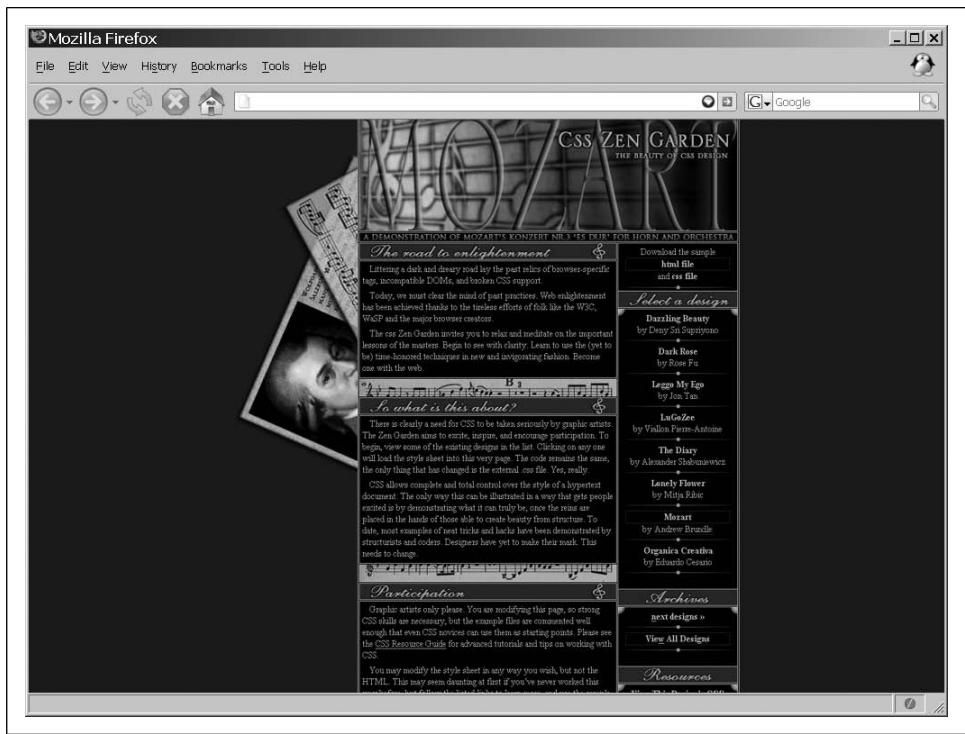


Figure 9-8. The CSS Zen Garden styled with Mozart by Andrew Brundle

The structure that was used for all of the CSS examples available on the site is broken down into smaller components. By using and manipulating these smaller components, you begin to see the leverage you can wield. In the case of the CSS Zen Garden, the components were used to move around the structure of the page for whatever presentation purposes were required. But for Ajax, using the same technique of separating the structure into more manageable and smaller components—what we were calling *wrappers* or *containers* earlier—will allow us to dynamically control small, individual portions of the application from within our Ajax and JavaScript framework.

Presentation is important for the application, so when a developer begins a new Ajax application project she must be aware of presentation, but she must also be aware of the keys to manipulation when smaller components are used. The CSS Zen Garden teaches us a lot. It is a fine example of compartmentalizing structure into more useful pieces. This is the same approach that every Ajax application must take. If it does not, a developer will find it difficult to manipulate the pieces that she wishes, and she may have to rely on hacks to get effects that could have been more readily available had the program or application been created that way in the first place. As we move on in this book, we will let CSS be our guide. We will look at everything in the application, not as a whole but as individual pieces, paving the way for the most fluid and dynamic applications possible today.