

Introduction

Are you ready to mix it up? There's a new breed of web services that are actually allowing users to mix, shape, and change what they provide, and del.icio.us is one of them.

What does this mean for you? It means that as a lone web developer, you can use the data and functionality provided by mainstream web services to develop your own ideas. Think of it this way: What would happen if all the great chefs in the world made available to the general public their recipes, kitchens, tools, and techniques, along with a free invitation to adapt, change, mutate, and release their original works into something new and perhaps even better? Obviously, a lot of very bad food would be made, but there's also the slim chance that there are some aspiring chefs out there who have never had access to such tools and techniques but have always had talent and good ideas and will make something truly great.

Of course, in the real world this would probably never happen. This is because most chefs want to keep their recipes and techniques secret. However, this same metaphor when applied to web services is actually pretty practical. Take, for example, the Google Maps service (<http://maps.google.com>). It's one thing for Google to provide Google Maps as a mapping and direction finding service via Google itself, but it's another thing for Google to make it available to developers for their own projects. Unlike with the chef metaphor, it's mutually beneficial for both you and Google for Google to allow you access to their data, tools, and techniques. Your usage of Google Maps in your own projects not only helps to promote and distribute the service itself, but also gives you access to a massive database of geographical information as well as unique and useful ways of exploring and interacting with that data. So, Google makes available Google Maps for programmers via an *Application Programming Interface*, or API.

Many other web services follow the same example, which then enables you to combine them together. You can quite literally layer multiple web services on top of each other—even if they are competitors—for your applications. For example, you can use maps from Google, and geographical data from Yahoo!, both at the same time. The more layers you add, typically the more sophisticated your web applications will become. del.icio.us can be one of these layers, and an extremely useful one at that.

What Is del.icio.us?

You'll learn plenty about del.icio.us throughout this book, but here's what you should know for starters. del.icio.us is a social bookmarking service. del.icio.us users save, organize, and share their favorite web links with del.icio.us. It's not the first social bookmarking services, but it is hands down one of the most advanced and popular.

del.icio.us was created by someone who knows good links. Before he made del.icio.us, Joshua Schachter was the co-maintainer of Memepool (www.memepool.com), one of the earliest weblog-like websites (started in 1998), and always a good starting place to find something funny, interesting, scary, or weird on a web. In 2003, Joshua started developing his own personal link-saving system on the web, meant to be a place to save bookmarks to his favorite websites. After a short while, he added a user account system and opened it up to the general public. It rapidly increased in popularity and, because of its excellent organizational system and social features, fast became the primary way that many Internet users saved and shared bookmarks.

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There was something deeper going on as well, and many began to recognize something truly unique and amazing in the way that del.icio.us organized and gathered interesting and useful metrics about what's good on the web. In the winter of 2005, it caught the attention of Yahoo! Inc. and was purchased for an undisclosed sum. Today, Joshua Schachter and his team continue to work on del.icio.us, adding new features and continuing to expand on its original ideas.

One of these original ideas was that del.icio.us should allow web and software programmers direct access to del.icio.us' data and function. This is where the mashup comes in.

What Is a Mashup?

The word *mashup* can apply to both the world of music and the world of web programming.

A musical mashup typically involves combining two or more different songs, often from very different musical genres, into one, resulting in an entirely different musical composition. Musical mashups have been around for a long time, arguably since the advent of modern mixing equipment. A famous musical mashup as of late is *The Grey Album* by DJ Danger Mouse. In this album, DJ Danger Mouse took musical and lyrical samples from The Beatles' famous *White Album* and combined them with the music and lyrics from hip-hop artist Jay-Z's *The Black Album*. The result was extremely controversial, but also surprisingly good.

A mashup in the computing world usually involves two or more web applications or parts of web applications combined to make something new, just like with *The Grey Album*. The end result is a *hybrid web application*.

Want to see an example mashup? Check out HousingMaps at www.housingmaps.com. HousingMaps takes the Google Maps web application (www.google.com/maps) provided by Google and combines it with home listings on the Craigslist service (www.craigslist.com). The result is an incredibly useful way to search, browse, and find homes and apartments for sale and rent that combines the easy to use interface that Google Maps provides with the data found at Craigslist.

One of the reasons that *The Grey Album* was controversial involved DJ Danger Mouse's illegal use of the copyrighted material from both the *White Album* and *The Black Album*. Unlike with music, though, you don't have to worry about breaking any laws because *mashable* web applications actually willingly allow their users to mashup their services, del.icio.us included. This book will explore in great detail just how this is done. It seems like a revolutionary concept, but del.icio.us and other web services actually believe to a certain extent that allowing users to access and alter their application and its data ultimately improves what they are offering.

Whom This Book Is For

This book is essentially for those interested in websites like del.icio.us and what they enable their users to do, not only in terms of what the service itself provides, but also how it can be extended.

You don't have to be a computer programming expert to understand the basic concepts behind extending del.icio.us and its peers to make something new and useful. This means that this book will ultimately appeal to anyone that uses del.icio.us and really wants to make the most of it, whether you're a

researcher, web programmer, software engineer, scientist, chef, designer, student, or whatever. The only requirement is that you want to be not only a del.icio.us user, but also a participant.

What You'll Need to Use This Book

Because of the nature of the projects in this book, many different programming languages and ideas are used in the examples. By no means do you need to be an expert in all of them. For the most part, this book will do its best to present every bit of programming in each project as a new idea. Much of the stuff you will see will not involve any in-depth technical knowledge of the web and web applications. In fact, some of the most successful del.icio.us hacks and mashups have come from people with little technical knowledge.

That said, it will help to have a basic familiarity with common web development languages and techniques like HTML/XHTML, CSS, and JavaScript, as many of the projects will involve them to some degree. It will also help to be familiar with PHP as that will be the primary scripting language used in many of the projects later in the book. If you begin to feel like you're losing your footing with the PHP in this book, you may want to read up on basic PHP before continuing. It also may help to be familiar with the MySQL database system. Still, all that said, everything in this book is presented clearly in a step-by-step fashion, so don't be afraid to do a little hands-on learning.

If you feel a little shaky in your web programming skills, check out Beginning Web Programming with HTML, XHTML and CSS by Jon Duckett (Wrox, 2004). For a quick glimpse into PHP and MySQL (or a fast refresher), try one of the many online tutorials available, like the one at www.freewebmasterhelp.com/tutorials/phpmysql, or take a look at what Wrox has to offer at www.wrox.com/WileyCDA/Section/id-131383.html.

In this book you will be implementing a local web development and database server on your computer. Instructions are included for both Windows XP and Mac OS X users, although Linux users will be directed to some helpful web tutorials to get their own setup in-line. Obviously, a prerequisite for this is that you have the ability to install software on your computer. Make sure you have an administrative account or the permission to do so otherwise.

In addition, you will want to have available on your computer a good source code editor. You might have one you already like, or you may not even know what that is. You will be directed towards a few good editors in a later chapter.

Finally, it will be necessary to install the cross-platform Firefox web browser (www.mozilla.com/firefox/), as well as a few extensions for Firefox, including Greasemonkey as well as one you will design yourself. Instructions for installing these applications are included in the book.

What You Will Learn

In this book you'll learn a lot about del.icio.us. You will not only learn much of what there is to know about del.icio.us and how it is used, but also a great deal about its inner workings.

You will also learn how to *mashup* del.icio.us, taking its concepts and finding new and useful ways to use and interact with it. To do this, you will learn a lot about the programming concepts and languages

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involved, including an in-depth look into the *del.icio.us API*. You will also learn about other web services like del.icio.us and how they can be combined with del.icio.us to create something new. The projects in this book will show you how to alter the way del.icio.us appears and works, and even demonstrate some ways you can make whole new web applications powered by del.icio.us.

By the book's end you will have created several projects that involve del.icio.us. Some of them will be tools that you might find pretty darn useful, and others may inspire you to create something even better. This will include projects that integrate del.icio.us with your weblog, remix del.icio.us' RSS feeds into something totally new, such as a music jukebox, copy and cache vital del.icio.us data, and even a project in which you roll your own, custom version of del.icio.us tailored towards a specific research project.

How This Book Is Organized

This book contains five parts. Part I gives a full overview of del.icio.us, including what you need to know to write a mashup. In addition, it discusses other mashable software, such as Flickr and Amazon Web Services, and how they compare with del.icio.us.

Part II further prepares you for mashup development by providing more detail on the technologies you need for this book's projects. It offers an overview of how to set up a web development environment and weblog, which you will need to complete the projects. Part II presents some very simple starting-out projects so you can get a feel for mashups and how they come together.

Parts III and IV walk you step-by-step through a variety of mashup projects. Some are more involved than others, but each one demonstrates a different approach to the del.icio.us mashup.

Part V describes some of the projects that have already been created by del.icio.us developers, as well as some predictions about the future of del.icio.us development.

This book follows the conventions found in other books in the Wrox Beginning series. Chapters follow a step-by-step process, with lots of example code if it applies. Most chapters include Try It Out sections that will let you get hands-on with the concepts involved. Additionally, each chapter includes some Exercises that you can try out to help further your del.icio.us mashup knowledge.

Conventions

To help you get the most from the text and keep track of what's happening, I've used a number of conventions throughout the book.

Try It Out

The *Try It Out* is an exercise you should work through, following the text in the book:

1. They usually consist of a set of steps.
2. Each step has a number.
3. Follow the steps through with your copy of the database.

How It Works

After each *Try It Out*, the code you've typed is explained in detail.

Boxes like this one hold important, not-to-be forgotten information that is directly relevant to the surrounding text.

Tips, hints, tricks, and asides to the current discussion are offset and placed in italics like this.

As for styles in the text:

- ❑ Important terms are in *italics* when first introduced.
- ❑ Keyboard strokes are shown like this: Ctrl+A.
- ❑ URLs and code within the text are shown like this: `persistence.properties`.
- ❑ Code is presented in two different ways:

In code examples new and important code has a grey background.

The grey highlighting is not used for code that's less important in the present context, or has been shown before.

Source Code

As you work through the examples in this book, you may choose either to type in all the code manually or to use the source code files that accompany the book. All of the source code used in this book is available for download at www.wrox.com. At this site, you simply locate the book's title (either by using the Search box or by using one of the title lists) and click the Download Code link on the book's detail page to obtain all the source code for the book.

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1. Go to p2p.wrox.com and click the Register link.
2. Read the terms of use and click Agree.
3. Complete the required information to join as well as any optional information you wish to provide and click Submit.
4. You will receive an email with information describing how to verify your account and complete the joining process.

You can read messages in the forums without joining P2P but in order to post your own messages, you must join.

After you join, you can post new messages and respond to messages other users post. You can read messages at any time on the web. If you would like to have new messages from a particular forum e-mailed to you, click the Subscribe To This Forum icon by the forum name in the forum listing.

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