



JUMP START

Sinatra

by Darren Jones

GET UP TO SPEED WITH SINATRA IN A WEEKEND



JUMP START SINATRA

BY DARREN JONES

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Dedication

To Mum and Dad ... thanks for being awesome!

About the Author

Darren Jones has been playing around with programming and building websites for over a decade. In 2007, he discovered Ruby and Rails; they were both great, but then he found Sinatra and fell in love with its classy approach to web development. At the start of 2010, Darren started the “I Did It My Way” blog, detailing his quest to master Sinatra, and at the end of that year he used Sinatra to build the Cards in the Cloud website.¹

Darren writes Sinatra tutorials for RubySource,² and lives in the city of Manchester, where he enjoys playing water polo and teaching mathematics.

About the Expert Reviewer

As maintainer of Sinatra, Konstantin Haase is an Open Source developer by heart. Ruby has become his language of choice since 2005. He regularly contributes to widespread projects, including Rubinius, Rack, Rails, and MRI. In 2012, he received the Ruby Hero Award for his outstanding contributions to the community. He now works on Open Source projects at Travis CI in Berlin, Germany.

About SitePoint

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About Jump Start

Jump Start books provide you with a rapid and practical introduction to web development languages and technologies. Typically around 150 pages in length, they can be read in a weekend, giving you a solid grounding in the topic and the confidence to experiment on your own.

¹ <http://cardsinthecloud.com/>

² <http://rubysource.com/>

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Preface

Jump Start Sinatra is a short book, but I see it as being like Sinatra itself—packing a punch despite its size. The book you hold in your hands will take you on a roller-coaster tour of Sinatra, demonstrating various tasks by example. We jump straight into using Sinatra in Chapter One, before going on to build a fully modular, database-driven dynamic website that even has some Ajax thrown in for good measure!

I first started using Sinatra about three years ago, and very quickly fell for its classy approach to web development. I was a complete beginner, and despite there being few tutorials around, I quickly picked up the basics to enjoy the flexibility that using Sinatra gave me.

This book is everything I've learned about Sinatra collected together in one place. In my opinion, Sinatra is as close to perfect as a piece of software can be. It does everything it needs to and nothing more; there isn't a single line of bloat anywhere in its source code, which weighs in at fewer than 2,000 lines!

Sinatra applications often have a certain finesse, with code that's easy to read and follow. Sinatra puts you in the driver's seat, allowing you to make the application as simple or as complicated as it needs to be; all the decisions are down to you. Sinatra's direct simplicity makes it easy for you to implement those decisions with minimal fuss.

Opinions abound that Sinatra can only be used for small applications or simple APIs, but this simply isn't true. While it is a perfect fit for these tasks, Sinatra also scales impressively, demonstrated by the fact that it's been used to power some big production sites.

Sinatra is only small, but it is powerful and flexible. You're really only limited by what Ruby can do ... and Ruby can do pretty much anything you can imagine! It is my hope that by the time you finish reading this book, you'll have learned enough to go forward with Sinatra and start building exciting web applications, big or small.

Whatever you do, I'd love to hear how you get along.

Who Should Read This Book

Jump Start Sinatra is aimed at all levels of Ruby programmers, particularly those who have used Ruby on Rails. While learning Ruby falls outside the scope of this book, a beginner should be able to follow along with the examples. It should also be of interest to anyone who has used other web development languages or frameworks such as PHP or Django. The book assumes no familiarity with Sinatra, and so begins with installing it and creating a very basic application.

Conventions Used

You'll notice that we've used certain typographic and layout styles throughout this 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 `:` 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://rubysource.com/rails-or-sinatra-the-best-of-both-w
↪orlds/");
```

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.

Supplementary Materials

<http://www.sitepoint.com/books/sinatra1/>

The book's website, containing links, updates, resources, and more.

<http://www.sitepoint.com/books/sinatra1/code.php>

The downloadable code archive for this book.

<http://www.sitepoint.com/forums/forumdisplay.php?227-Ruby-amp-Rails>

SitePoint's Ruby and Rails forum, for help on any tricky Ruby problems. If you have Sinatra problems, try <http://www.sinatrarb.com/>.

books@sitepoint.com

Our email address, should you need to contact us for support, to report a problem, or for any other reason.

Challenge Yourself

Once you've mastered Sinatra, test yourself with our online quiz. With questions based on the book's content, only true Sinatra virtuosos can achieve a perfect score. Head on over to <http://quizpoint.com/#categories/SINATRA>.

Friends of SitePoint

Thanks for buying this book. We really appreciate your support! We now think of you as a "Friend of SitePoint," and so would like to invite you to our special page: <http://sitepoint.com/friends>. Here you can SAVE up to 43% on a range of other super-cool SitePoint products, just by using the password: **friends**.

Acknowledgments

Thanks to Aaron Osteraas for getting the process started. Thanks to Simon for making it happen. Thanks to Di and Kelly for spotting all the gaffes I made. Thanks to Glenn for all his support at RubySource. Big thanks to Konstantin for making Sinatra what it is today and for all his great help and advice. Thanks to Bailly for getting me into this web development thing. And a special thank you to Helen for always being there for me.

Chapter 1

Sinatra Takes to the Stage

Congratulations for picking up and reading this little book about Sinatra. Since its release in 2007, Sinatra has quickly gained in popularity in the Ruby web community due to its elegant simplicity and classy syntax. Everybody who uses it falls in love with its elegant simplicity and classy syntax. This book will introduce you to Sinatra from installation right through to building your own web application and hosting it on the Internet. So, without further ado, let's get on with the show!

What is Sinatra?

You might be wondering what Sinatra is. Here's what the Sinatra website has to say: "Sinatra is a DSL for quickly creating web applications in Ruby with minimal effort."¹

What does that mean? Well, a DSL (domain-specific language) is a language that's designed to be implemented in a particular domain; that's in contrast to general-purpose languages that are created to solve problems in several domains. Sinatra is a lightweight Ruby library that makes access to HTTP much easier. Ruby is a

¹ <http://www.sinatrarb.com/intro>

simple but powerful object-oriented programming language; its elegant syntax makes it both expressive and powerful. HTTP is the protocol that powers the Web.



Hypertext Transfer Protocol

HTTP is the Hypertext Transfer Protocol, and it's what makes the Web go round. This network protocol allows communication over the Internet between clients and servers. A client (such as a web browser) will request a resource (usually a web page) from a server, which processes the request and sends back a response to the client. This response contains a status code (usually 200, which indicates that everything is okay), and the requested resource that's usually in the form of a web page. The requests and responses are messages sent via HTTP. Figure 1.1 shows how that works.

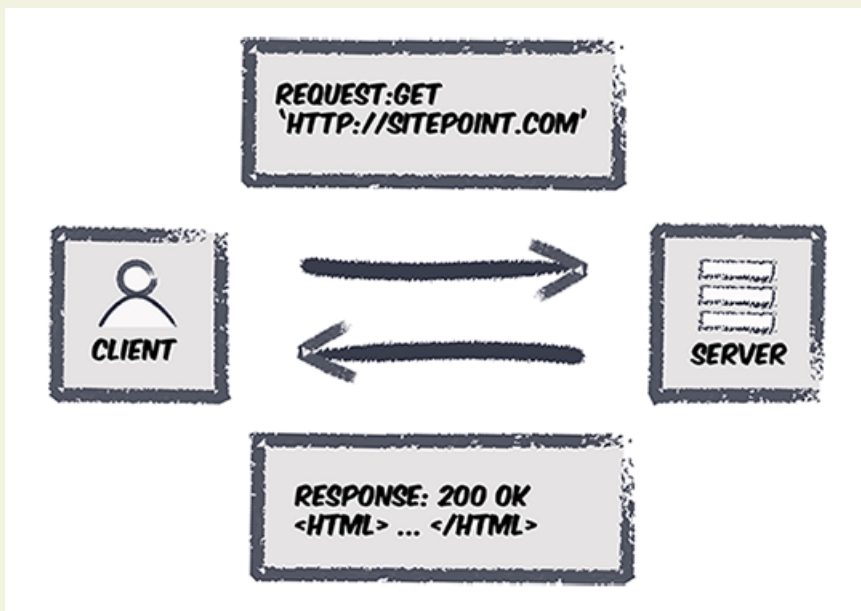


Figure 1.1. Traditional client-server model

Sinatra makes it easy—trivial almost—to build sites, services, and web apps using Ruby. A Sinatra application is basically made up of one or more Ruby files. You don't need to be an expert Rubyist to use Sinatra, but the more Ruby you know, the better you'll be at building Sinatra apps. And besides, Ruby is such a brilliantly expressive language that it would be a shame not to learn it! On the flip side, learning Sinatra and studying other people's code will definitely help to improve

your Ruby skills. I mentioned earlier that Sinatra is a lightweight library, with under 2,000 lines of Ruby code. This is well worth knowing, as it will help you understand how Sinatra works—and you’ll also see lots of examples of great Ruby code!

Sinatra was written in 2007 by Blake Mizerany, and has steadily gained in popularity. At the time of writing, there have been over 3.5 million downloads of Sinatra on the RubyGems website² since it was hosted there in 2010. It has simplicity at its heart, but is capable of creating large database-driven websites and is used by sites such as the BBC, GitHub, LinkedIn, and even Apple to power its Podcast Library.³ It has also spawned numerous clones for different languages, including Express (Node) <https://github.com/visionmedia/express>, Slim (PHP) <https://github.com/codeguy/Slim>, Flask (Python) <http://flask.pocoo.org/>, Spark (Java) <http://www.sparkjava.com/>, and Nancy (.NET) <http://nancyfx.org/>.

Unlike Ruby on Rails, Sinatra is definitely not a framework. It’s without conventions and imposes no file structure on you whatsoever. Sinatra apps are basically just Ruby programs; what Sinatra does is connect them to the Web. Rather than hide behind lots of magic, it exposes the way the Web works by making the key concepts of HTTP verbs and URLs an explicit part of it. This means that you can build big and powerful database-driven sites with Sinatra, doing it your way without being constrained by any enforced conventions. Having said that, we know that with great power comes great responsibility, so having free rein to do anything you like can also be a pitfall. Sinatra won’t stop you from writing bad code!

Sinatra is built on top of Rack,⁴ which is a low-level interface that communicates between an HTTP server and a Ruby object. Most Ruby web frameworks such as Rails, Ramaze, Rango, Camping, and Halcyon also sit on top of Rack. This makes Sinatra easy to extend using its own extension API, RubyGems (libraries written in Ruby—Sinatra is one!), and Rack Middleware. This opens up a world of possibilities for extending your application and avoids you having to reinvent the wheel.

Oh ... and in case you were wondering, it is named after Frank Sinatra, apparently because he had “so much class he deserves a web-framework named after him.”⁵

² <http://rubygems.org/>

³ <http://www.sinatrarb.com/wild.html>

⁴ <http://rack.github.com/>

⁵ <http://www.sinatrarb.com/about>

Why should you use Sinatra?

Sinatra lets you write simple yet elegant code that produces amazing results. Its simplicity means that you can create a fully functional web app in just one file. There are no complicated setup procedures or configuration to worry about. You can just open up a text editor and get started with minimal effort, leaving you to focus on the needs of your application. There's also little waste, with code restricted to just what is needed to kick off.

Developing in Sinatra is perfect for prototyping ideas and sites. Its syntax is basic enough to pick up, yet very powerful. Sinatra is extremely flexible—it gets out of your way and lets you do things how you want. If you can build it in Ruby, you can make it into a Sinatra app. For anything from the smallest of microsites to a full-scale web application, it's the perfect choice for API implementations, Middleware, widgets, Facebook apps, and more.

And last but by no means least, you'll find an amazingly supportive community around Sinatra. The online documentation⁶ is first rate and there are always helpful people on the Google Groups page⁷ willing to pass on their knowledge. There's also the #sinatra channel on the Freenode IRC network, and numerous articles that appear on the RubySource website⁸ (some of them written by yours truly!) that can help develop your Sinatra skills.

Installing Sinatra

Before installing Sinatra, make sure you have Ruby and RubyGems installed on your system. This is fairly straightforward, but differs depending on which operating system you use. Below are instructions for Windows, Linux, and Mac OS X.

Windows

The easiest way to install Ruby and RubyGems if you use Windows is to use the Ruby Installer.⁹ Once you have installed Ruby using the installer, it's simply a case of installing Sinatra with the following line:

⁶ <http://www.sinatrarb.com/intro.html>

⁷ <https://groups.google.com/forum/?fromgroups#!forum/sinatrarb>

⁸ <http://rubysource.com/>

⁹ <http://rubyinstaller.org/>