Ruby on Rails Bible

Build and maintain Web sites and applications

Use Rails conventions to avoid redundant code

Learn advanced Rails techniques

The book you need to succeed!
Ruby on Rails® Bible
Ruby on Rails® Bible

Timothy Fisher
About the Author

Timothy Fisher has over 17 years of experience in the software development industry. He has served in a variety of roles including chief architect, technical team lead, and senior architect and developer. Tim is currently an architect with the Compuware Corporation Professional Services Group in Detroit, Michigan.

Ruby and the Ruby on Rails framework have consumed Tim’s interest and have led him to find the Southeastern Michigan Ruby Users Group, as well as owning and maintaining the Michigan Ruby Users Group Web site, www.rubymi.org. Tim is currently working on a large Ruby/Rails collaborative project management and planning application to be released as an open source project in 2008.

Tim is an experienced technical writer and author who has contributed to Java developer’s Journal and XML Journal and written the Java Phrasebook published by Pearson Ed. in 2006. In addition to his technical skills Tim holds a degree in electrical engineering and a masters degree in education with a specialty in instructional design for online learning. He lives in Flat Rock, Mich., with his wife, Kerry, and two sons, Timmy and Camden.
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This book is dedicated to my parents, Thomas and Betty Fisher. Throughout my life, my mom and dad made it possible for me to achieve anything that I set my heart and mind to. Without their love and guidance, an accomplishment such as this book would not be possible. I am thankful to be able to show this accomplishment to my dad, and I know that my mom has been with me as I wrote this book. I am sure she would be proud.
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Ruby on Rails is a large framework that has been the subject of many books, many web sites, and hundreds if not thousands of articles. There has been a great deal of knowledge and expertise baked into the Rails framework. It would be impossible for a single person to write a comprehensive Rails book without assistance others who review and provide feedback of the content. I’d like to acknowledge the contributions of Scott Deming for his work as the Technical Editor of this book. The job of a Technical Editor is at times more difficult than that of the author. It is the technical editor’s job to review everything I have written and correct the mistakes and faulty knowledge that may have passed through into the book. Scott’s advice and feedback have been invaluable in creating this book.

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Contents at a Glance

Ruby on Rails Quick Start................................................................. 1

Part I: First Steps with Rails ...................................................... 13
Chapter 1: Learning Ruby.............................................................. 15
Chapter 2: Getting Started with Rails.............................................. 67

Part II: Rails In Depth ................................................................. 105
Chapter 3: Using Active Record.................................................. 107
Chapter 4: Controller: In Depth.................................................... 147
Chapter 5: View: In Depth.............................................................. 173

Part III: Developing a Complete Rails Application ................. 203
Chapter 6: Developing Book Shelf: The Basic Framework............... 205
Chapter 7: Developing Book Shelf: Adding the Core Functionality ...... 249
Chapter 8: Developing Book Shelf: Social Support.......................... 291
Chapter 9: Testing the Book Shelf Application................................. 333

Part IV: Advanced Rails ............................................................. 379
Chapter 10: Using Prototype and script.aculo.us......................... 381
Chapter 11: Extending Rails.......................................................... 415
Chapter 12: Advanced Topics....................................................... 467

Part V: Appendixes ................................................................. 503
Appendix A: Ruby Quick Reference.............................................. 505
Appendix B: Ruby on Rails Guide.................................................. 535

Index ......................................................................................... 565
## Acknowledgments
ix

## Introduction
xi

### Ruby on Rails Quick Start
1

- Installing Instant Rails on Windows ................................. 2
- Installing Ruby and Rails on Mac OS X and Linux ............... 6
  - Installing on Linux .................................................. 6
  - Installing on Mac OS X ............................................. 7
- Setting up a Development Environment ............................. 7
  - Source code version control ...................................... 7
- IDE or Editor?
  - TextMate ................................................................. 8
  - E ............................................................................. 8
  - IntelliJ IDEA ........................................................... 9
  - NetBeans ................................................................. 9
  - Eclipse ..................................................................... 10
  - Heroku ..................................................................... 10
  - Aptana Studio .......................................................... 11
- Summary ......................................................................... 11

### Part I: First Steps with Rails
13

#### Chapter 1: Learning Ruby
15

- The Nature of Ruby ......................................................... 15
  - Dynamic or static typing .......................................... 16
  - Duck typing ............................................................ 16
  - Compiled or scripting language ................................. 17
    - Compiled languages ........................................ 17
    - Scripted languages ............................................ 17
- Object Oriented Programming ........................................ 18
- The Basics of Ruby ......................................................... 19
  - Ruby’s interactive shell ......................................... 19
  - Ruby syntax basics ................................................ 20
    - Adding comments ............................................. 20
    - Using parentheses .......................................... 21
    - Using white space .......................................... 22
    - Using semicolons ............................................ 22
    - Running Ruby programs ................................. 23
- Classes, Objects, and Variables ...................................... 24
  - Using objects in Ruby ........................................... 24
    - Defining objects .............................................. 24
Contents

Rails Scripts ........................................................................................................................73
  Rails Console..................................................................................................................73
  WEBrick.....................................................................................................................74
  Generators.................................................................................................................74
  Migrations..................................................................................................................74

Your First Rails Application ............................................................................................74
  Create the project......................................................................................................75
  Set up the database....................................................................................................77
  Create the model.......................................................................................................79
  Create the controller and views.................................................................................82
    Implementing the index action........................................................................85
    Implementing the new action...........................................................................89
    Implementing the create action.....................................................................91
    Implementing the show action.....................................................................92
    Implementing the update action................................................................94
    What you have accomplished...........................................................................95
  Style the application.................................................................................................96
  WebScaffolding..........................................................................................................98
  More to get you started............................................................................................102

Summary .........................................................................................................................103

Part II: Rails In Depth ....................................................................................................105

Chapter 3: Using Active Record ...................................................................................107
  What is Active Record?............................................................................................108
  Active Record Basics...............................................................................................109
    Active Record classes and objects......................................................................109
    Active Record naming conventions..................................................................109
      Class and table names..................................................................................110
      Table keys..................................................................................................110
  Setting up a Model.....................................................................................................112
    Generate a Rails project and model.................................................................112
    Configure Active Record..................................................................................113
  Rails Development Environments...........................................................................114
  Using Migrations........................................................................................................115
    Schema versions...................................................................................................118
    Migration methods..............................................................................................119
      Tables........................................................................................................119
      Columns....................................................................................................120
      Indexes......................................................................................................120
    Inserting data with migrations...........................................................................120
  Create, Read, Update, and Delete............................................................................122
    Creating records.................................................................................................122
    Reading data....................................................................................................124
      Column metadata.......................................................................................124
      Accessing attributes....................................................................................125
## Contents

Using the find method ................................................................. 126
Dynamic finders .............................................................................. 127
Find using SQL ................................................................. 128
Creating and finding data with the Rails Console ........................ 128
Updating records ................................................................. 130
Deleting records ........................................................................ 130
Using development log files ....................................................... 130
Defining Relationships ............................................................... 131
One-to-one relationships ........................................................... 132
  Methods added by has_one .................................................... 133
  Methods added by belongs_to ................................................. 134
Many-to-one relationships ........................................................ 134
  Methods added by has_many .................................................. 135
  Methods added by belongs_to ................................................. 136
Many-to-many relationships ....................................................... 136
  Methods added by has_and_belongs_to_many ...................... 137
Implementing Validations .......................................................... 139
Custom Validations .................................................................... 141
Advanced Active Record .......................................................... 142
  Single table inheritance ......................................................... 142
  Composition ........................................................................ 144
  Transactions ....................................................................... 145
Summary ..................................................................................... 146

### Chapter 4: Controller: In Depth ............................................ 147

What is ActionController? .......................................................... 147
All About Routing ....................................................................... 148
  Defining custom routes ......................................................... 149
  Defining a custom default route ............................................ 151
  Using named routes ............................................................ 152
  Constructing URLs with url_for ........................................... 153
Creating and Using Controllers ................................................ 155
  Generating controllers ......................................................... 155
  Action methods ................................................................. 157
    Using request parameters .................................................. 158
    Rendering templates ......................................................... 159
    Redirects ........................................................................ 160
    Sending feedback with flash .............................................. 160
    Sending other types of data to the browser ......................... 162
Using Filters ............................................................................... 163
  Before filters ...................................................................... 163
  After filters ........................................................................ 164
  Around filters ..................................................................... 164
  Protecting filter methods ..................................................... 166
Working with Sessions .............................................................. 167
  Using the ActiveRecord session storage .............................. 168
  Using MemCached session storage ...................................... 169
## Caching
- Page caching ................................................................. 169
- Action caching ............................................................. 170
- Fragment caching ......................................................... 171

## Chapter 5: View: In Depth ............................................. 173
- ActionView ........................................................................ 173
  - Getting to the view ....................................................... 174
  - Rendering options ..................................................... 175
  - Responding to different formats ............................... 176
- Embedded Ruby (ERb) .................................................... 179
  - Using the `<%- and -%>` delimiters ......................... 180
  - Commenting out embedded Ruby .......................... 181
- Layouts ............................................................................. 182
- Partials ........................................................................... 185
- Helpers ........................................................................... 186
  - Predefined Rails helpers .............................................. 187
    - HTML creation helpers ........................................ 188
    - Form creation helpers ......................................... 190
    - JavaScript creation helpers ................................. 192
    - Data Processing helpers ...................................... 193
    - Debugging helpers ............................................. 197
  - Creating your own block helpers ............................. 197
- JavaScript, Ajax, and RJS .............................................. 198
  - Prototype helpers .................................................... 198
  - RJS helpers ............................................................ 200
- Summary .......................................................................... 202

## Part III: Developing a Complete Rails Application .......... 203

## Chapter 6: Developing Book Shelf: The Basic Framework ...... 205
- Application Overview .................................................... 206
- Creating a Skeleton for the Book Shelf Application ........ 211
  - Begin the Book Shelf project .................................. 211
  - Setting up the databases ......................................... 213
  - Create the databases .............................................. 213
- Create a Home Page ...................................................... 214
  - Create the Home controller .................................. 215
  - Create a layout and view ........................................ 216
    - The HTML head ............................................... 217
    - The body header section ................................ 219
    - The body sidebar section ................................. 219
    - The body content section ................................. 220
    - Creating the index view template ..................... 221
Contents

Testing the home page .......................................................... 221
Add some style ........................................................................ 222
Set up a default route ......................................................... 225
Implementing Users ................................................................. 225
Create the user model .............................................................. 226
Securing user passwords ....................................................... 227
Generate the user model ............................................................ 227
Create the user migration ........................................................ 228
Add user model validations ..................................................... 229
Implement user registration .................................................... 232
Create a user controller .......................................................... 232
Handle the user password ...................................................... 234
Create a registration view ...................................................... 235
Create user home view .......................................................... 238
Implement login and logout ...................................................... 240
Create login action method .................................................... 241
Create the logout action method ............................................. 242
Create an application login partial ......................................... 242
Test the login and logout functionality .................................... 245
Using a before filter to protect pages ........................................ 246
Modify the application controller ............................................. 247
Add login form to the signup page ........................................... 248
Summary .................................................................................. 248

Chapter 7: Developing Book Shelf: Adding the Core Functionality . . . 249
Adding Support for Books .......................................................... 249
Refactor the Sidebar Code ......................................................... 250
Integrating with Amazon .......................................................... 252
Install Ruby/Amazon ................................................................. 254
Implement the Book Shelf-Amazon interface ............................ 256
The initialize method ............................................................... 256
The find_by_keyword method ............................................... 257
Implementing a Search ............................................................... 260
Create the book search form .................................................... 261
Generate the book controller and search action ......................... 264
Create the book model ............................................................. 264
Generate the book model class .................................................. 265
Create the book migration ....................................................... 265
Run the migration ................................................................. 266
Associate the book model and the user model ......................... 266
Implement search logic in the book model ............................... 267
Create the search results page ............................................... 269
Implement search results paging ............................................. 276
Implementing the Addition and Deletion of Books ...................... 279
Adding a book ........................................................................ 279
## Contents

Deleting a book .......................................................................................................284
Add the delete action ..............................................................................................284
Update the page with RJS .....................................................................................285
Displaying a User's Books ....................................................................................286
Implementing the Book Detail Page ........................................................................287
Summary ...................................................................................................................290

### Chapter 8: Developing Book Shelf: Social Support ................................. 291

Adding Social Support ............................................................................................291
Implementing Tagging .............................................................................................292
Installing a tagging plugin ......................................................................................292
Install the acts_as_taggable_redux plugin .........................................................293
Setting up the database for tagging support .......................................................294
Adding tagging support to the models .................................................................297
Adding tagging support to the controllers ............................................................298
Creating the view layer for tagging.......................................................................301
Implement the sidebar tag cloud view ....................................................................303
Implement tag_cloud_revised helper method ......................................................307
Generate the tagging style sheet .............................................................................310
Implement the static tag view ................................................................................311
Make the tags editable ............................................................................................313
Implement the show_for_tag view .......................................................................314
Using tags ...............................................................................................................314
Implementing Book Reviews ..................................................................................314
Implementing the review model ............................................................................315
Adding associations to the book and user models ...............................................317
Implementing the review view ...............................................................................317
Displaying reviews for a book ................................................................................318
Implementing the review entry form .....................................................................323
Implementing the review controller .......................................................................324
Adding some style .................................................................................................326
Adding a book review ............................................................................................327
Implementing Book Ratings ...................................................................................328
Extending the Application .....................................................................................329
Improving the user interface ..................................................................................329
Implementing an administrator interface .............................................................329
Adding RSS feeds to the application .....................................................................330
Adding support for other book information sources ............................................330
Implementing recommendations and suggestions .................................................330
Expanding user profiles and adding avatars .........................................................330
Summary ...................................................................................................................331

### Chapter 9: Testing the Book Shelf Application ........................................ 333

Why Test? ...............................................................................................................333
Using Test::Unit ....................................................................................................336
Test assertions .......................................................................................................336
Test fixtures ..........................................................................................................338
# Contents

- Test methods ........................................................................................................... 338
- Test runners ............................................................................................................ 340
- Test suites ............................................................................................................... 341
- Testing in Rails .......................................................................................................... 342
  - Rails test directory .......................................................................................... 342
  - Rails test lifecycle ......................................................................................... 343
- Setting up a Test Database ............................................................................................. 343
- Functional Tests ........................................................................................................ 345
  - Running a test .................................................................................................. 347
  - Creating a test .................................................................................................. 348
    - Setting up fixtures ....................................................................................... 349
    - Writing a test method .................................................................................. 351
    - More assertion methods ............................................................................. 353
    - Verifying your test ..................................................................................... 356
  - Adding more tests ............................................................................................... 356
    - Add some reviews ....................................................................................... 359
    - Verify the tests again .................................................................................. 360
- Unit Tests .................................................................................................................. 361
  - Setting up user fixtures .................................................................................... 363
  - Test authentication ............................................................................................ 363
  - Test validations .................................................................................................. 365
    - Test valid password ..................................................................................... 365
    - Test valid login ............................................................................................ 367
    - Test valid e-mail ......................................................................................... 368
- Integration Tests ........................................................................................................ 370
  - Running All Tests ............................................................................................... 374
  - Test Coverage ..................................................................................................... 374
  - Debugging Techniques .......................................................................................... 375
    - The Rails log files ....................................................................................... 375
    - Console-based ............................................................................................... 376
    - Using the debugger ....................................................................................... 376
- Summary ................................................................................................................... 377

## Part IV: Advanced Rails

### Chapter 10: Using Prototype and script.aculo.us

- Prototype, script.aculo.us, and Rails ........................................................................... 381
  - Using Prototype and script.aculo.us from Rails .............................................. 382
  - Create a Rails project ......................................................................................... 383
  - Include the Prototype and script.aculo.us files ............................................. 383
- Prototype Overview .................................................................................................. 384
  - Ruby's influence on Prototype .......................................................................... 385
  - What is Prototype? ............................................................................................ 385
- Extensions to JavaScript ............................................................................................. 385
  - Simplifying JavaScript with the dollar sign ..................................................... 386
    - Selecting elements with $ ............................................................................ 386
    - Selecting elements with $$ ........................................................................... 387
### Contents

- Creating arrays with $A ................................................................. 388
- Splitting strings with $w ................................................................. 389
- Getting form field values with $F .................................................... 389
- Creating hashes with $H ................................................................. 389
- Creating ranges with $R ................................................................. 389
- More powerful arrays ................................................................. 389
- Enumerating an array ................................................................. 390
- JSON support ................................................................................. 391
- OOP with Prototype ......................................................................... 392
  - Defining classes and inheritance .................................................. 392
  - Implementing class inheritance with Prototype ......................... 393
- Event Handling ............................................................................... 393
- Ajax ................................................................................................. 394
  - Ajax links ...................................................................................... 394
  - Ajax link options ......................................................................... 395
- script.aculo.us Overview ............................................................... 396
- Visual Effects .................................................................................. 396
  - script.aculo.us effects ................................................................. 397
  - Effect options ............................................................................. 398
  - Using combination effects .......................................................... 399
- Controls ......................................................................................... 399
  - Sliders ......................................................................................... 399
  - Auto-completion ......................................................................... 401
  - In-place editing .......................................................................... 402
    - Implementing a single value in-place editor ......................... 403
- Drag and Drop .............................................................................. 406
  - Creating draggable elements ...................................................... 406
    - Draggable options ..................................................................... 407
  - Creating droppable elements ...................................................... 409
    - Droppable options .................................................................... 409
  - Sortable lists ............................................................................... 409
- JavaScript Testing ............................................................................ 411
  - Creating JavaScript unit tests ..................................................... 411
  - Running JavaScript unit tests ..................................................... 413
- Summary ......................................................................................... 413

### Chapter 11: Extending Rails ...................................................... 415

- Beyond the Core ............................................................................ 415
- Generators ..................................................................................... 416
  - The generator directory structure ............................................. 417
  - Writing generator code ............................................................. 418
  - Creating the templates ............................................................. 421
  - Running the new authentication generator ............................. 424
  - Extending Rails::Generator::NamedBase ..................................... 425
- Plugins .......................................................................................... 425
  - Using the Plugin script .............................................................. 426
Contents

List available plugins ................................................................. 427
List plugin sources ....................................................................... 427
Adding and removing plugin sources ............................................ 428
Discover new plugin sources ..................................................... 428
Installing, removing, and updating plugins .......................... 429
Writing a plugin ............................................................................. 430
  Write a new plugin ................................................................. 431
  Try out the new plugin ......................................................... 433
Common techniques used to develop plugins .................... 435
  Extending classes with mixins .............................................. 435
  Opening a class ........................................................................ 437
  Dynamic extension with callbacks and hooks .................. 437
  Using code generation ........................................................ 439
Managing plugins with Piston .................................................. 439
Summary of Useful Plugins ....................................................... 440
  acts_as_rateable .................................................................... 441
  Pagination ................................................................................. 442
    Installing will_paginate .................................................. 442
    Adding pagination to your application .......................... 442
  acts_as_state_machine ........................................................... 444
    Installing acts_as_state_machine .................................. 444
    Using acts_as_state_machine ......................................... 444
  annotate_models ................................................................... 446
    Installing annotate_models .............................................. 446
    Using annotate_models .................................................. 446
  exception_notifier ................................................................. 447
    Installing exception_notifier ........................................ 448
    Using exception_notifier .............................................. 448
  resource_controller ................................................................. 449
    Installing resource_controller ....................................... 449
    Using resource_controller ............................................ 449
Adding user authentication ...................................................... 451
  Installing restful_authentication ....................................... 451
  Using restful_authentication ............................................... 452
Enhanced scaffolding ............................................................... 452
  Streamlined .............................................................................. 453
  ActiveScaffold ......................................................................... 458
Implementing content tagging .................................................. 460
Handling file uploads ............................................................... 461
  attachment_fu ........................................................................ 461
Engines ..................................................................................... 463
  Install the Engines plugin .................................................. 464
  Generate the engine skeleton .............................................. 464
  Move your application files into the engine .................... 464
  Modify your environment .................................................... 465
  Include your engine in your application ......................... 465
Summary ..................................................................................... 465
Chapter 12: Advanced Topics ................................................................. 467
  Beyond the Basics .................................................................................. 467
  RESTful Rails .......................................................................................... 468
    Some advantages of RESTful architecture ........................................... 470
    REST as a Web service architecture ................................................. 471
    REST and representations ............................................................... 471
    Writing a RESTful application with Rails ....................................... 472
      Rails routing and REST ............................................................... 472
      PUT and DELETE full disclosure .................................................. 473
      Generate a RESTful resource ......................................................... 474
  Working with Legacy Databases ............................................................ 481
    Override database table and field names ........................................ 482
    Side by side with the legacy database ............................................. 484
  Using ActionMailer .................................................................................. 487
    Configuring a Rails application for e-mail support .......................... 488
    Generating a mailer model .............................................................. 488
    Writing code to send e-mail ............................................................ 489
    Writing code to receive e-mail ........................................................ 491
  ActiveResource and XML ...................................................................... 492
  Deploying with Capistrano .................................................................... 494
    Installing and setting up Capistrano ............................................... 495
    Running basic capistrano tasks ....................................................... 496
    Customizing Capistrano ................................................................... 499
  Summary ............................................................................................... 500

Part V: Appendixes .................................................................................. 503

Appendix A: Ruby Quick Reference ....................................................... 505
  Basic Ruby Syntax .................................................................................. 505
    Literal expressions ............................................................................. 506
      Arrays ............................................................................................. 506
      Boolean literals ............................................................................ 507
      Hashes .......................................................................................... 507
      Numbers ....................................................................................... 508
      Ranges ......................................................................................... 508
      Regular expressions ................................................................. 508
      Strings ........................................................................................ 510
      Symbols ....................................................................................... 511
      Variable and method names ....................................................... 512
    Operators ....................................................................................... 513
    Method calls ................................................................................... 515
    Special keyword expressions ....................................................... 516
      The if expression ........................................................................ 516
      The unless expression .............................................................. 518
      The case expression ................................................................. 518
      The for expression ................................................................. 519
Contents

The while expression ..................................................................................... 520
The until expression .................................................................................... 521
Loop control keywords ................................................................................ 521
Assignment ............................................................................................................ 521
File input and output ........................................................................................ 522
Exceptions .............................................................................................................. 523
Objects and Classes .......................................................................................... 524
Defining methods ................................................................................................ 524
Blocks ..................................................................................................................... 526
Defining classes and modules .......................................................................... 527
  Defining modules .............................................................................................. 527
  Defining classes ............................................................................................... 528
  Superclasses and self ....................................................................................... 529
  Including and extending with modules .......................................................... 529
Attributes ............................................................................................................... 531
Access control .................................................................................................. 531
Method lookup ..................................................................................................... 532

Appendix B: Ruby on Rails Guide ................................................................. 535
Getting Started .................................................................................................. 535
Standard Rails application .............................................................................. 536
Generators .......................................................................................................... 538
Controllers and Helpers .................................................................................. 540
  Traditional routing .......................................................................................... 540
  RESTful routing .............................................................................................. 541
Controller variables .......................................................................................... 543
Filters .................................................................................................................... 544
Rendering and redirecting ................................................................................ 544
Respond to ........................................................................................................... 546
Helpers ................................................................................................................ 547
Views ...................................................................................................................... 548
  ERb ..................................................................................................................... 548
  RJS ..................................................................................................................... 549
Models .................................................................................................................. 550
  Creating ............................................................................................................ 551
  Reading ............................................................................................................. 553
  Updating ............................................................................................................ 554
  Deleting ............................................................................................................ 555
  Relationships ................................................................................................. 555
    belongs_to ................................................................................................. 556
    has_one ...................................................................................................... 557
    has_many .................................................................................................... 557
    has_and_belongs_to_many .......................................................................... 559
Database Migrations .......................................................................................... 560
Plugins ................................................................................................................ 562
Index .................................................................................................................. 565
In 2006, I wrote a book called the Java Phrasebook, something like a cookbook for Java. While I was writing that, my interest and love of Ruby and the Rails framework grew tremendously. Often during my writing, I would think how much nicer it would be to be writing a Ruby- or Rails-related book. Early in 2007, I had to pass up my first opportunity to step into the world of Ruby and Rails writing. The book that I was asked to write at the time, Professional Ruby on Rails, has since been written by a very capable writer, Noel Rappin, who also contributed content to this book.

Jump ahead a few months, and the opportunity to write this book, Ruby on Rails Bible, came along. I knew it would be a tight fit working on this book along with a full-time job and the holidays coming up, especially having two young children, but I took it! That is how you ended up holding this book now.

Like many who consider themselves users and, more importantly, fans of the Ruby language, I was pulled into the world of Ruby by the Rails framework. Prior to Rails, I had heard of Ruby but had not used it. I first became aware of it through the writing and speaking of Dave Thomas, a tireless advocate of Ruby well before Rails made it a marketable skill. Ruby had been around for quite awhile before Rails but had not been able to grab the attention of the masses here in the United States. Rails has not only brought Ruby to the masses, but it has had a tremendous influence on the entire Web development industry. Rails clones have sprung up in many languages, including Java, Perl, Python, and PHP. Many of the patterns and methods of Rails have influenced other frameworks in other languages as well.

By the time you read this book, you'll have a choice of many books on the subject of Ruby on Rails. I hope that you find this book was worth your energy!

Who the book is for

This book is for any Web developers who are interested in learning how to create Web applications using the Ruby on Rails framework. You do not have to know Ruby to use this book. In part I of the book, you can get an introduction to Ruby and learn enough about it to effectively create basic Rails applications. You should have some experience with common Web development technologies such as HTML, JavaScript, and preferably some server-side language such as Java, .net, Perl, PHP, Ruby, or any other language that you might use to write the server-side of a Web application. Although not required, basic knowledge of DOM and CSS would also prove helpful as you write Rails applications shown in this book.
Introduction

How the book is organized
This book is organized into five main parts:

- Part I: First Steps with Rails
- Part II: Rails In Depth
- Part III: Developing a Complete Rails Application
- Part IV: Advanced Rails
- Part V: Appendixes

Each of these parts is broken down into several chapters.

Part I
This part of the book will teach you the underpinnings that you need to effectively develop a Ruby on Rails application. You can learn the basics of Ruby and get your first introduction to the Rails framework.

Part II
After you’ve been exposed to the basics of Ruby and Rails, you can immerse yourself in the details of each of the main components that make up the Rails framework, the Model, Controller, and View layers.

Part III
I hope you’ll enjoy reading and following along with this part of the book as much as I enjoyed writing it! In this part, you can follow along with the development of a complete Rails application. You’ll go from nothing up to a usable application that you can use within any group or organization to share information about a collection of books.

Part IV
This part of the book covers more advanced Rails topics, such as extending Rails through plugins, generators, and engines. You’ll also get an introduction to the Prototype and Scriptaculous JavaScript libraries in this part.

Part V
If you need extra resources on the Ruby language or references for Rails, these appendixes can offer you a quick place to look up facts in a hurry.

How to use this book
This book is organized such that it can be read from cover to cover. If you’re a new Rails developer reading it from cover to cover is the best way to learn about Rails. If you are new to Rails but know
Ruby already, you can skip the Ruby introduction and just read the chapters that discuss Rails. As you read through the book, your knowledge of Rails will build with each chapter.

If you know Rails already, you may want to skip ahead to Chapter 6 and read about the development of the Book Shelf Web application. I think you’ll find the development of that application will interest even a seasoned Rails developer.

After you’ve read the book, it is also suitable as a Rails reference that you’ll want to keep within reach on your bookshelf. The two appendixes at the end of the book provide a thorough reference to both the Ruby language and the Rails API.
Before you can get started doing Ruby on Rails development, you have to set up the software that you will need to develop, run, and test your applications. There are at least three pieces of software that you will need. They are:

- The Ruby language runtime
- The Rails framework
- A database (such as MySQL, PostgreSQL, SQLite, Oracle, and DB2)

If you install those three components, you will have all that you need on your computer to write, run, and test Ruby on Rails Web applications. If you have past experience writing Web applications, you might be thinking that something is missing from that list, some type of HTTP and/or application server. You would be correct in that every Web application needs a server to run; however, the Rails framework includes a server that works very well for developing your applications. The server bundled with Rails is called WEBrick, and it serves as both an HTTP and an application server. This makes it very easy to set up a local development environment without having to install and configure a potentially large and complex server environment.

Sometimes, it’s easier to see how the technologies fit together from a visual perspective. Figure QS.1 shows the technology stack that makes up a Web application built with the Rails framework. Each item in the stack has a dependency on what lies beneath it. The middle three layers of the diagram are the three components that you will install software for Rails, Ruby, and the database.

Actually, to be completely accurate, a database is not required to write a Rails Web application. It is possible to write Web applications with the Rails framework that do not use a database. However, without a database to store data, you are very limited in the types of applications that you can create.
One of Rails’ greatest strengths is its ability to make working with a database extremely simple, and so without a database, you are also not taking advantage of one of the best features of the Rails framework.

FIGURE QS.1
The Rails Application Stack

<table>
<thead>
<tr>
<th>Your Web Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruby on Rails</td>
</tr>
<tr>
<td>Ruby</td>
</tr>
<tr>
<td>Database</td>
</tr>
<tr>
<td>OS (Windows, Linus, Macintosh)</td>
</tr>
</tbody>
</table>

For this book, the database of choice will be MySQL. MySQL is a popular open source database that is available to everyone at no cost, and it is probably the database that most people are familiar with. MySQL is also a database that Rails supports out-of-the-box with no extra software or libraries required. It is probably the most widely used database on the Internet today. It provides a full-featured and robust database for your applications that is easy to set up and use. Commercial support and commercial versions of MySQL are also available through the company MySQL AB, which was recently acquired by Sun Microsystems.

The next three major sections provide instructions for installing the required components on the three most popular operating systems for Rails development, Windows, Linux, and Macintosh. If you already have these components installed, you are welcome to skip these sections.

### Installing Instant Rails on Windows

If you are developing on the Windows platform, there is an installer available that installs all three of the components that you need to begin Rails development. Instant Rails provides you with installs of:

- Ruby
- Ruby on Rails
- MySQL database
- Apache Web server