# Beginning Spring 2

## From Novice to Professional

Dave Minter

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**Beginning Spring 2: From Novice to Professional**



ISBN-13 (pbk): 978-1-59059-685-2

ISBN-10 (pbk): 1-59059-685-4

ISBN-13 (electronic): 978-1-4302-0493-0

ISBN-10 (electronic): 1-4302-0493-1

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1



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Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013. Phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders-ny@springer-sbm.com, or visit http://www.springeronline.com.

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The source code for this book is available to readers at http://www.apress.com.

*To my parents*

# Contents at a Glance

# Contents

# About the Author

**DAVE MINTER** has adored computers since he was small enough to play in the boxes they came in. He built his first PC from discarded, faulty, and obsolete components, and considers that to be the foundation of his career as an integration consultant. Dave lives in London, where he helps large and small companies build systems that "just work." Currently he is developing a bizarre new type of web application server for FatMoggy Ltd. He is a co-author of three other Apress books: *Building Portals with the Java Portlet API*, *Pro Hibernate 3*, and *Beginning Hibernate*.

# About the Technical Reviewer

From the moment his parents gave him a Spectrum 48K for his seventh birthday, it became clear that **KRIS LANDER** was always going to be an early adopter when it came to technology. Upon leaving school, with a computer addiction and a mild vitamin A deficiency, he decided to turn his childhood passion into a serious vocation, embarking on a degree in software engineering from the University of Wales.

Kris's constant thirst for emerging Java technologies has become a trademark throughout his professional career. A Java Web Enterprise (J2EE) specialist from day one and developer of applications using Spring since 2003, Kris has worked on many large-scale IT projects for corporate blue chip and successful new technology companies on both sides of the Atlantic. Based and brought up in London, in his spare time he enjoys good food and music production.

# Acknowledgments

I would like to thank the staff at Apress, who as always have displayed their impeccable efficiency and good humor throughout the creative process. Particular thanks are due to Kylie Johnston for keeping the book on schedule, to Sharon Wilkey for knocking my errant grammar back into shape, and to Steve Anglin for accepting the proposal (and listening to my tiresome complaints about marketing jargon).

I am very pleased that my erstwhile colleague Kris Lander could spare the time to perform the technical review of this book. He's an expert Spring consultant, and the book would be far poorer without his corrections and suggestions. Thanks, Kris.

Thanks also to Luke Taylor for assistance with the chapter on Spring (Acegi) Security and supplying tea-related remote banter via Internet messenger.

Finally, I am particularly grateful to Manville Harris Photography for supplying the author's photograph.

# Introduction

The Spring framework is a stunningly good piece of software. Building enterprise software is a difficult exercise at the best of times, and there are numerous common problems that developers consistently encounter. Spring smooths over or eliminates a remarkable number of these problems.

Spring's clean design and accommodating approach to existing standards and libraries has resulted in a spectacular rise in its popularity among Java developers. Spring can be retrofitted to old projects and is now often used as the foundation for new development. If you haven't yet encountered Spring, you probably will do so very soon.

Although Spring is well designed and documented, getting bootstrapped in the basics of the framework can still be difficult. This book aims to get Java developers up and running with Spring as quickly as possible by tying the abstract and conceptual discussions to concrete examples in code.

## Who This Book Is For

This book assumes an understanding of the basic Java technologies; you must know the core Java Standard Edition (JSE) libraries and you should also be reasonably experienced in working with XML files in order to follow the configuration examples. It will be helpful if you are already familiar with the Maven build tool, but experience with this is not essential.

You are not expected to have any prior knowledge of Spring. The reader I had in mind when writing the book is someone who is about to start work on a Spring-based project, who has just joined a Spring-based project, or who has heard about some of the good things that Spring has to offer and is contemplating using Spring. This book should help you get your bearings and get cracking.

You will not need to purchase any commercial software in order to learn or use Spring because the framework is open source software.

Experienced users of Spring should still find some useful information in the later chapters, and I think even expert developers may find Chapter 7 on Acegi security helpful.

# How This Book Is Structured

The first three chapters of this book cover the basic introductory matter. Complete newcomers to Spring should read these chapters in detail before embarking on any of the other examples or investigating the code samples.

The rest of the chapters cover the basic components of Spring that most developers will use regularly. Developers who have already worked with Spring and are looking for more information on the subject will find these to be of more immediate interest than the first three introductory chapters. Readers who are familiar with Spring 1.*x* but not Spring 2 should probably at least skim through Chapter 3 because there are some additions to the XML configuration syntax in Spring 2.

Expert developers are not really the target of this book, but they may find some items of interest in the later chapters, particularly Chapter 7 and the appendix. The chapter contents in more detail are as follows:

- Chapter 1 outlines the basic purpose and architecture of the Spring framework, and introduces inversion of control (IOC) and aspect-oriented programming (AOP) techniques. This chapter also provides a whirlwind tour of the basic components discussed in this book.

- Chapter 2 introduces the sample application. It presents a rationale for the application, a simplified specification for it, and walks you through the build process. This chapter also introduces the Maven 2 build tool.

- Chapter 3 provides a detailed explanation of inversion of control and loose coupling, and explains why they are such useful techniques. This chapter also explains some of the core Spring classes and Spring's XML configuration file syntax.

- Chapter 4 explains how Spring can be used to create interchangeable DAO classes based on different persistence mechanisms. Complete examples are provided for plain JDBC-based and Hibernate-based database access.

- Chapter 5 shows how various Spring features can be used to create an application's service layer. The use of AOP is explained both in enforcing transaction management and for other purposes.

- Chapter 6 introduces the use of Spring to build the web tier of an application. The Spring Model View Controller (Spring MVC) and Spring Web Flow libraries are explained with examples.

- Chapter 7 introduces Spring Security (also known as Acegi security). The various filters and other components used in a Spring Security–protected application are explained. The example demonstrates how to provide authentication, authorization, and channel security services.

- Chapter 8 shows how Spring can be used to send e-mail, a common task that is relatively difficult without the advantages of the Spring framework. The examples demonstrate the use of Spring to send plain text, formatted (HTML) text, and formatted text with attachments.

- Chapter 9 explains how Spring can be used to make an application's service layer remotely accessible over the network. Client and server examples are provided using various protocols, including remote method invocation (RMI) and SOAP.

- Chapter 10 demonstrates the best ways to unit-test your Spring-based application code. It demonstrates an approach to unit-testing the DAO classes created in Chapter 4, explains the use of the EasyMock mock control library, and introduces some of the Spring mock classes provided to ease your testing.

- The appendix is an installation guide and introduction to the Spring IDE plug-in for the Eclipse development environment. The support for editing XML files, including autocompletion features, are explained, as are the various file creation wizards, and the graphical views and editors for other configuration files.

# Downloading the Code

The source code for this book is available from the Apress website (`www.apress.com`). The source code is provided as a complete Maven project (see Chapter 2).

# Contacting the Author

I strive for accuracy and clarity, but of course I don't always attain them. If you don't understand something that I've written, you think I've made a mistake, or you think I've omitted some important material. please feel free to send a note to me directly at `dave@paperstack.com`.

You can read articles on Spring and Java technologies, including occasional code samples and useful libraries, on my blog at `geeklondon.com`.