Enjoying Web Development with Wicket

By

Kent Ka lok Tong
Copyright © 2015
TipTec Development

Publisher: TipTec Development Author's email: kent@ttdev.com

Book website: http://www.ttdev.com

Notice: All rights reserved. No part of this publication may be

reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior

written permission of the publisher.

ISBN: 978-1-329-49604-0

Edition: Fourth edition April 2015

Foreword

How to create web-based applications easily?

If you would like to create web-based applications easily, then this book is for you. More importantly, it shows you how to do that with joy and feel good about your own work! You don't need to know servlet or JSP while your productivity will be much higher than using servlet or JSP directly. This is possible because we are going to use a library called Wicket that makes complicated stuff simple and elegant.

How does it do that? First, it allows the web designer to work on the static contents and design of a page while allowing the developer to work on the dynamic contents of that page without stepping on each other's toes; Second, it allows developers to work with high level concepts such as objects and properties instead of HTTP URLs, query parameters or HTML string values; Third, it comes with powerful components such as calendar, tree and data grid and it allows you to create your own components for reuse in your own project.

However, do not take our word for it! This book will quickly walk you through real world use cases to show you how to use Wicket and leave it up to you to judge.

How this book can help you learn Wicket?

- It has a tutorial style that walks you through in a step-by-step manner.
- It is concise. There is no lengthy, abstract description.
- Many diagrams are used to show the flow of processing and high level concepts so that you get a whole picture of what is happening.
- Free sample chapters are available on http://www.ttdev.com. You can judge it vourself.
- The manuscript of book has been used to train up a team of programmers who had not used Java or written any program at all. The training took only a few months (six hours per week). Now they are developing a core application for their organization using Wicket, Spring and Hibernate.

Unique contents in this book

This book covers the following topics not found in other books on Wicket:

Works with Wicket v7 (and v6).

- Full coverage of JPA/Hibernate and Spring including conversions (extended sessions).
- How to make a jQuery UI component into a Wicket component supporting self-contained client-server callbacks.
- How to unit test Wicket pages with the Wicket Page Test library (supporting AJAX).

Target audience and prerequisites

This book is suitable for those learning how to develop web-based applications and those who are experienced in servlet, JSP, Struts and would like to see if Wicket can make their jobs easier.

In order to understand what is in the book, you need to know Java, HTML and some simple SQL. However, you do NOT need to know servlet, JSP, Tomcat, Spring, JPA or Hibernate.

Acknowledgments

I would like to thank:

- The Wicket team for creating Wicket.
- Helena Lei for proofreading previous versions of this book.
- Eugenia Chan Peng U for doing book cover and layout design.

Table of Contents

Foreword	3
How to create web-based applications easily?	3
How this book can help you learn Wicket?	3
Unique contents in this book	3
Target audience and prerequisites	
Acknowledgments	4
Chapter 1 Getting Started with Wicket	11
What's in this chapter?	12
Developing a Hello World application with Wicket	
Installing Eclipse	12
Installing Tomcat	
Downloading the jar files easily	
Creating the Hello Word application	
Installing Wicket	
Creating the Hello World page	
Displaying the Hello World page	
Generating dynamic content	
Exact behavior of the Label	
Common errors in Wicket applications	
Supporting badly structured HTML files	
Debugging a Wicket application	42
Summary	43
Chapter 2 Using Forms	
What's in this chapter?	
Developing a stock quote application	46
Implementing the OK button	
Getting the stock symbol	
Using a single tag as a slot	
Displaying the result page	
Using a combo box to present the stock symbol	
Displaying a "no selection" entry	
Inputting a date	
Impact of the preferred language	
Displaying feedback messages	
Marking input as required	
Letting the user choose a date from a calendar	72

Using a DateField	/6
Summary	
Chapter 3 Using Forms: More Techniques	79
What's in this chapter?	
Presenting a Size object to the user	
Creating the property models automatically	84
Making sure the page is serializable	
What if the input is invalid?	89
Validating the material code for the furniture	92
Displaying the error messages in red	95
Displaying invalid fields in red	
Discovering of the type of the model value	99
Enabling validation on condition	
Validating a combination of multiple input values	
Summary	
Chapter 4 Creating an e-Shop	
What's in this chapter?	
Creating an e-shop	
Listing the products	
Creating the links to show the product details	
Implementing the DetailsPage	
Implementing a shopping cart	
How Tomcat and the browser maintain the session	
Checking out	132
Making the DetailsPage bookmarkable	132
Using a bookmarkable link for page transition	
Using a non-callback link	
Not saving the CatalogPage to the session	
Not saving the DetailsPage	
Persisting the session object	
Summary	
Chapter 5 Creating a Forum	
What's in this chapter?	
Creating a forum	
Logging in a user	
Creating the posting page	
Checking if the user can post	
Protecting many pages	
Declarative authorization rules	161

Implementing the delete post function	166
Disabling the Delete button if the user is not authorize	d167
Authorizing access to a component instance	169
Allowing users to delete their own posts	170
Showing the Delete button for authorized users only	
Checking the authorization when the user clicks Delet	
Implementing logout	
Summary	
Chapter 6 Creating Custom Components	
What's in this chapter?	
Displaying the current year	
Reusing the logic in multiple pages	
Creating a TimeLabel component	
Construction time vs. render time	
Creating a component accepting a child component	
Creating a component that handles callbacks	196
Creating a component to serve as a reusable form	
Creating a component to display an object for editing.	
Summary	
Chapter 7 Building Interactive Pages with AJAX	
What's in this chapter?	
A simple AJAX page	
Implementing the AJAX page	
Refreshing the result as the user types	
AJAX without form field values	214
Turning the Help button into a link	
Using HTML code in the help content	
Hiding the help content	
Creating a form that changes	
Using an auto completing text field	
Popping up a dialog	232
Summary	246
Chapter 8 Using Hibernate/JPA and Spring	249
What's in this chapter?	
A human resource management system	
Setting up a database server	
Creating an EntityManager	
Using an EntityManager	
Creating the tables automatically	

Loading an Employee object	260
Storing the EntityManager into the thread	.263
Saving an Employee object	
Assigning the ID automatically	.272
Many-to-one association	
Lazy loading of the Set elements	.275
The danger with detached entities	278
Using Hibernate and Spring in a web application	.280
Accessing Spring services in Wicket pages	283
Marking the service as a service	
Dealing with detached entities in Wicket applications	.285
Demonstrating the lazy loading problem	
Implementing the first method: Preloading	
Implementing the second method: Reloading	
Implementing the third method: Keeping the EntityManager	
open	
Supporting editing with the first method	
Supporting editing with the third method	
Wrapping up the ugly code	
Summary	
Chapter 9 Using the DataTable Component	
What's in this chapter?	
Searching and displaying the products	
Listing the entries in alternating colors	
Sorting the products	
Setting the styles of tool bars	
Using markups in a cell	
Using a lighter alternative to Panel	
Moving the navigator to the bottom	
Customizing the message in the navigation tool bar	
Summary	
Chapter 10 Supporting Other Languages	
What's in this chapter How can a page render to different languages	
Supporting multiple languages in domain models	
Displaying a logo	
Translating static text mixed with component slots	
Translating static text mixed with component slots	
Creating a custom component supporting multiple language	
orealing a custom component supporting multiple language	. 3

	360
Filtering unsupported languages	363
Using a model to load the text	365
Providing translated text to all pages in a package	
Providing global translated text	
Translating the whole template	
Letting the user change the locale	
Changing the locale without the Change button	
Summary	
Chapter 11 Working with the Back Button	
What's in this chapter?	
An incrementing counter	
What happens if you use the Back button?	
How Wicket could support the Back button	
What if the browser caches and displays the old page a	
Llaurta allaurtha maght malli an hagi	
How to allow the user to really go back?	
Is the page instance really loaded from the hard disk?	
Will changes done in an AJAX request change the page	
Summary	
Chapter 12 Handling File Downloads and Uploads	
What's in this chapter?	
Downloading a photo	
Configuring caching of the resource	
Reading the bytes from other common sources	
Generating an resource on the fly	
Getting the resource from an arbitrary source	
Displaying an image	
Making the image bookmarkable	
Using a resource reference to generate a response	
Uploading a photo	
Summary	418
Chapter 13 Providing a Common Layout	421
What's in this chapter?	
Providing a common layout	
Two varying parts?	424
Creating BookmarkalePageLinks automatically	
Summary	429

Chapter 14 Using Javascript	431
What's in this chapter?	432
Are you sure to delete it?	432
Reusing the confirm button	435
Using a namespace for the Javascript	
Putting the Javascript into a file	
Using a jQuery UI widget	
Loading data from the server side	
Untangling the Javascript	
Turning the jQuery widget into a Wicket component	
Summary	
Chapter 15 Unit Testing Wicket Pages	457
What's in this chapter?	
Unit testing a Wicket page	458
Testing the form submission	
Testing AJAX functions	
Locating Wicket generated elements easily	469
Testing without a browser	
Replacing a Spring bean with a mocked bean	
Other functions of Wicket Page Test	475
Summary	
Chapter 16 Deploying a Wicket Application	477
What's in this chapter?	478
Distributing your application	
Deploying it in Tomcat	
Putting the application into deployment mode	479
Configuring logging	
Specifying the database in production	484
Switching between multiple sets of configurations	486
Logging the actions of the users	490
Summary	
References	
Alphabetical Index	496

Chapter 1

Getting Started with Wicket

