

Pro SharePoint 2007 Development Techniques



Margriet Bruggeman and
Nikander Bruggeman

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The source code for this book is available to readers at <http://www.lcbridge.nl/download>.

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About the Authors



MARGRIET BRUGGEMAN began her professional career as a quality assurance engineer. She then became a software developer, architect, consultant, and trainer. Margriet is an independent consultant who specializes in building .NET applications using the latest Microsoft technologies. She has worked for companies such as Interpay, Ericsson, Ford, Corus, Interpolis, and SNS Reaal. Margriet has written numerous articles, coauthored multiple SharePoint books, and was awarded the prestigious Most Valuable Professional (MVP) award from Microsoft for her work on the SharePoint Portal Server platform. Margriet is very fond of animals, and when not busy doing IT-related activities, she can be found near dogs, cats, horses, rabbits, birds, and other fuzzy creatures. Margriet can be reached at info@lcbridge.nl.



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Acknowledgments

Writing a book is time-consuming and a lot of work, and we have seen many acknowledgments in books where the author feels guilty for neglecting his or her partner or family. In our case, we have not lost any time at all, as we wrote this book together, which made working on the book a lot of fun.

We have three cats and a rabbit, and normally we would say it is rather strange to thank an animal because the chances that the animal will read the acknowledgments section of the book are pretty slim. But in this case, we want to make an exception, because one of our cats has taken an unusual interest in this book. She spent many hours accompanying us during writing, sleeping on the test server, and urging us onward by standing guard over our computer room. So here goes: thanks to our cat, Wijfie.

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As a final note: we are extremely glad that the book is finished and we are finally able to book our vacation to West Pomerania.

Enjoy the book!

Introduction

We have been working with SharePoint technology since the beta release of SharePoint Portal Server 2001 and have seen the product evolve to SharePoint 2007. The sheer number of new features added to this product line is huge, and we are pleased to note how popular this product has become, since we love working with it.

You should read this book if you want to expand your knowledge about developing solutions for both Windows SharePoint Services 3.0 and Microsoft Office SharePoint Server 2007. A few sections only apply to MOSS 2007, but those have been clearly identified.

Unfortunately, nowadays SharePoint is such a big topic that you cannot cover every available topic and still provide in-depth information, so we had to choose which topics to include.

Since we have started working with Microsoft Office SharePoint Server 2007, we have noticed time and again that all SharePoint developers seem to share a common interest in four topics: building workflows, improving business intelligence, using InfoPath, and creating interactive web environments using Ajax techniques. Therefore, when we decided to write a new book about SharePoint 2007, it was crystal clear to us that we needed to dedicate a considerable portion to these Big Four topics.

That is not all we discuss in this book. With the passage of time, we have seen that new and interesting topics related to SharePoint technologies have arisen, and we have made sure to include a bunch of them. These topics will not be found in the typical SharePoint book you might have lying about, and we hope you will have fun learning about them.

What Does This Book Cover?

This book discusses different contemporary development techniques for doing SharePoint development. Every chapter is independent of the other chapters, so you can read the book from cover to cover or in any other order you see fit according to your personal interest.

Chapter 1, Incorporating ASP.NET 2.0 into Microsoft Office SharePoint Server 2007: This chapter discusses the ins and outs of building ASP.NET 2.0 web parts in a SharePoint 2007 environment, laying the foundation every SharePoint developer needs. You will learn how to use the new Visual Studio 2005 Extensions for Windows SharePoint Services to build web parts fast, as well as the drawbacks of this approach. The chapter also discusses how to configure web parts via properties, how to use resources in web parts, and how you can provide a better user interface by adding web part menu verbs. You will also see how to create editor parts that can be shown in the web part tool pane to enhance a web part's configurability. Then, we will discuss how to deploy a web part within a SharePoint server farm via a SharePoint solution file. The final topic of this chapter discusses how to enhance web part development using the Guidance Automation Toolkit.

Chapter 2, Creating Interactive Web Parts Using ASP.NET Ajax: This is a very complete chapter about doing Ajax development in web parts. Ajax is a framework for communicating client-side with servers in an asynchronous manner; this chapter starts with a discussion of Ajax and the ASP.NET Ajax framework. We dedicate a small portion of this chapter to an overview of all available Ajax frameworks for ASP.NET. After that, we show you how to add service virtualization to a web service to make sure the web service is able to run in a SharePoint context. Then, you will learn the ins and outs of using JavaScript within web parts, and you will see how to use JavaScript in the Content Editor web part, how to use web part tokens, and how to render JavaScript within a web part. We will discuss an advanced JavaScript technique called on-demand loading. We will talk

about debugging JavaScript and devote some attention to the impressive debugging capabilities of Visual Studio 2008 (code-named “Orcas”). You will learn how to issue remote calls within a browser from the client side via the XMLHttpRequest object and web service behavior. Then, a discussion is included of available web service message types, including plain text, HTML responses, XML messages, and JSON messages. ASP.NET Ajax—enabling a SharePoint site is a tricky manual task, but in this chapter, we will show you how to do it. Then, you will learn everything you need to know about using ASP.NET Ajax in web parts, with various useful examples including a company contact web part, a performance counter web part, an auto-completion web part, client-side connectable web parts, and creating a web part that uses client callbacks and the People Picker control.

Chapter 3, Enhancing Business Intelligence via SQL Server 2005 Reporting Services: This chapter contains the most extensive information about using SQL Server 2005 Reporting Services in a SharePoint 2007 environment we have seen, including a thorough discussion of the new SharePoint 2007 capabilities offered by SQL Server 2005 Service Pack 2.0. You will learn how to run Reporting Services in native mode and SharePoint integration mode, see how to build a report, explore the available reporting services web parts, and learn how to use Report Center. Then, you will see how to build reports in SharePoint and how to develop a custom reporting services extension.

Chapter 4, Building Human-Oriented Workflows Using Windows Workflow Foundation: Building workflows using Windows Workflow Foundation is quite a large topic. Because of this, we have written a large chapter that includes all the information you need to start being prolific in building workflows in a SharePoint environment. The chapter starts with a discussion of the basics of Windows Workflow Foundation, including discussions about activities, components, and workflow styles. Then, the chapter guides you through the creation of a basic workflow using SharePoint Designer 2007. After that, you will see how to build advanced workflows using Visual Studio 2005 Designer, including the creation of initiation forms and custom task forms. After building such a workflow, you will learn how to deploy and debug workflows. Then, we discuss how to use forms to capture and automate your business processes. The final topic of the chapter discusses how to create and use a custom activity in a workflow.

Chapter 5, Building a Domain-Specific Language for Connectable Web Parts: This chapter combines two interesting topics: building connectable web parts and creating a domain-specific language. First, the chapter provides more background on the topic of software factories and the development of domain-specific languages. Then, we go into further detail about the available Microsoft DSL tools that can help you build a domain-specific language. The next part of the chapter discusses everything you need to know about building connectable web parts. The chapter starts with a little history lesson discussing connectable web part techniques that have preceded the SharePoint 2007 web part connection framework. You will learn how to create a connection for web parts implementing a custom interface. You will learn about the available predefined web part connection interfaces, the use of transformers, and the available set of predefined transformers. After that, you will create a custom transformer. The final part of this section shows how to create field, row, table, and parameters connections. The next part of this chapter explains how to use the Web Part Connection Language (WPCL), a freely downloadable domain-specific language that makes creating connectable web parts significantly easier. The final part of this section discusses in detail how we created the WPCL.

Chapter 6, Reusing Presentation Layers via Web Services for Remote Portlets: The Web Services for Remote Portlets (WSRP) protocol is a web services protocol for aggregating content and interactive web applications from remote sources. In this chapter, we will discuss what WSRP is and how this specification can be of help in portal implementations. After that, we will look deeper into the WSRP specification. Also, we explain how to configure a generic WSRP consumer web part in SharePoint and how to build WSRP producers.

Chapter 7, Changing Code Privileges Using Impersonation, Elevation, and Delegation: Code is executed under a given identity. There are several techniques available for you to do this. You can use the LogonUser and RevertToSelfWin32 API calls to access resources that are not controlled by the SharePoint object model, or you can use new techniques offered by the SharePoint 2007 API to

access SharePoint resources. These techniques include the use of the `SPUserToken` object, the `RunWithElevatedPrivileges` method, and the `CodeToRunElevated` delegate. All techniques will be discussed extensively. In impersonation scenarios, you will typically need a place to store the user credentials used during impersonation. Passwords need to be stored in a safe place; this chapter shows you how to encrypt sensitive data in an application configuration file and discusses how to use SharePoint Single Sign-on to store user credentials in a safe and encrypted way, although you will need Microsoft Office SharePoint Server 2007 to use the latter technique. In cases when you need to access resources located on other computers on the network, you need to use delegation. This chapter discusses how to set this up. The final topic of this chapter discusses how to impersonate identities using Windows Communication Foundation (WCF).

Chapter 8, Working with InfoPath in a MOSS 2007 Environment: This chapter starts out with a discussion of InfoPath itself. Along the way, you will learn what InfoPath Trust levels are and how to use an InfoPath form as a SharePoint site content type. You will see how to share data connection files in a data connection library, and how to use data coming from a SharePoint list. Then, we will discuss how to update and save an InfoPath form programmatically. You will also learn how to implement InfoPath Submit buttons, providing an alternative way to store the data in InfoPath forms. After that, we will show you how to use one of the exciting new features of SharePoint 2007: Forms Services 2007. The final part of this chapter contains a detailed overview of the use of the BizTalk Windows SharePoint Services adapter in a SharePoint 2007 environment.

Chapter 9, Deep Traversal of SQL Full-Text Extensions: The final chapter of this book discusses an important topic that seldom gets the attention it deserves. This chapter explains how to work with SQL Full-Text Extensions. You will learn how to fire a SQL Full-Text Extensions query via the SharePoint object model, the SharePoint web services API, and the MOSS Query Tool. Then, we will take a close look at the elements of the SQL Full-Text query language. The final part of the chapter discusses common pitfalls and answers common questions that arise when working with SQL Full-Text Extensions.

Who Is This Book For?

This book is targeted toward SharePoint 2007 developers who want to expand their knowledge about the shape of the landscape of SharePoint 2007 by discussing a large range of interesting topics that help provide quality SharePoint solutions. The book will provide information and insight about contemporary development techniques that will help you in your daily activities as a SharePoint developer.

Source Code

The code listings in this book are available on the Apress web site and can be downloaded from our web site at <http://www.lcbriidge.nl/download>.

What Do You Need to Use This Book?

Each chapter discusses the requirements for testing the techniques and examples described in the chapter. In general, you will need to have access to SharePoint 2007 and Visual Studio 2005. Other requirements will be discussed on a per-chapter basis.

