

Contents

| | |
|--|--------------|
| About the Authors | vii |
| Foreword | xi |
| Introduction | xxiii |
| Chapter 1: The Microsoft Application Platform and SharePoint | 1 |
| SharePoint Products and Technologies | 1 |
| Windows SharePoint Services | 2 |
| Microsoft Office SharePoint Server | 3 |
| The Microsoft Application Platform | 3 |
| Data Management | 5 |
| Workflow | 6 |
| Communications | 6 |
| Lifecycle Management | 7 |
| User Experience | 8 |
| A Service-Oriented View of the Microsoft Application Platform | 8 |
| Data Interchange Services | 10 |
| Data Management Services | 10 |
| Media Services | 12 |
| International Operation Services | 13 |
| Location and Directory Services | 13 |
| Network Services | 14 |
| Operating System Services | 15 |
| Software Engineering Services | 16 |
| User Interface Services | 17 |
| Security Services | 18 |
| System and Network Management Services | 19 |
| Summary | 20 |
| Chapter 2: MOSS 2007 Overview for Developers | 21 |
| Architectural Overview of SharePoint | 21 |
| SharePoint's Scopes of Configuration | 23 |
| SharePoint Farm Server Roles | 24 |
| SharePoint Farm Configurations | 26 |
| SharePoint Composition | 28 |
| SharePoint and ASPNET | 29 |

Contents

| | |
|--|-----------|
| Your Development Environment | 32 |
| Developer Tools | 33 |
| Host System Software | 34 |
| Building the Host Machine | 36 |
| Building the Server | 38 |
| Configure Remote Debugging | 50 |
| Summary | 51 |
| | |
| Chapter 3: The SharePoint User Experience | 53 |
| | |
| Site Design Starts with Web Applications | 54 |
| Content Is Stored in a Site Collection | 55 |
| Using SharePoint Lists and Libraries | 56 |
| Using Pages to Display Lists | 59 |
| Storing Data with Lists and Libraries | 60 |
| Managing Lists | 63 |
| Creating Custom Lists | 64 |
| Adding Document Libraries to Sites | 64 |
| Customizing List Columns | 67 |
| Setting Permissions | 68 |
| Understanding SharePoint List Views | 68 |
| Adding and Removing Lists and Libraries | 71 |
| List Notifications | 72 |
| Content Management Improvements | 73 |
| Improved Storage with Lists | 75 |
| Using Folders on All Lists Option | 75 |
| Indexing Lists | 75 |
| Using Cross-List Queries | 76 |
| Working with Site Columns | 78 |
| Creating Site Columns | 78 |
| Modifying a Column | 80 |
| Understanding Content Types | 80 |
| Using File Formats for Content Types | 81 |
| Creating Content Types | 81 |
| Assigning Settings to Content Types | 83 |
| Windows SharePoint Services Pages | 83 |
| Administrative Pages | 83 |
| User Pages | 83 |
| Master Pages | 84 |
| default.master | 84 |
| Editing SharePoint Master Pages | 86 |

Contents

| | |
|---|------------|
| Creating New Content Pages | 86 |
| Master Page Locations | 86 |
| Windows SharePoint Services Mobility | 88 |
| Defining a List as a Mobile List | 88 |
| Mobile Pages | 89 |
| Displaying the Default Pages | 91 |
| Displaying Columns on the Mobile Page | 92 |
| Displaying on a Small Device | 93 |
| Working with Large Lists | 93 |
| Creating Custom Mobile Pages | 93 |
| Creating Mobile Pages | 93 |
| Summary | 95 |
| | |
| Chapter 4: WSS v3 Platform Services | 97 |
| | |
| Site Definitions | 98 |
| Site Definition Files | 101 |
| Global Site Definition | 116 |
| Creating a Custom Site Definition | 116 |
| Custom Field Types | 124 |
| Custom Field Type Classes | 124 |
| Custom Field Value Classes | 127 |
| Custom Field Data Validation | 128 |
| Custom Field Type Definitions | 129 |
| Deploying Custom Field Types | 131 |
| Creating a Custom Field Type | 132 |
| Create a Custom Field Type class | 132 |
| Features | 138 |
| Feature Definition File | 139 |
| Feature Scope | 141 |
| Activation Dependencies and Scope | 144 |
| Feature Elements | 148 |
| Additional Feature Features | 152 |
| Installing and Activating Features | 153 |
| Creating a Feature | 154 |
| Solutions | 158 |
| Solution Schema | 159 |
| Deploying a Solution | 165 |
| Upgrading a Solution | 169 |
| Retracting a Solution | 170 |
| Creating a Solution | 171 |

Contents

| | |
|---|------------|
| Web Parts | 175 |
| Web Part Infrastructure | 176 |
| Web Part Design | 178 |
| Creating and Deploying a Web Part | 178 |
| Testing and Debugging a Web Part | 188 |
| Additional Web Part Features | 189 |
| Summary | 190 |
| | |
| Chapter 5: Programming Windows SharePoint Services | 191 |
| | |
| Object Model | 191 |
| Microsoft.SharePoint | 194 |
| Microsoft.SharePoint.Workflow | 206 |
| Event Handling | 206 |
| Receiving SharePoint Events | 207 |
| Write Code to Cancel an Item Deletion | 209 |
| Create a Feature to Enable the Event Handler | 213 |
| Web Services | 216 |
| Deciding between the Object Model and Web Services | 240 |
| Summary | 240 |
| | |
| Chapter 6: A Sample Collaboration Solution | 243 |
| | |
| The Project | 243 |
| Designing a Solution | 244 |
| Creating Dedicated Site | 244 |
| Create a Department List | 246 |
| Create a Jobs List | 247 |
| Create the Applicant List | 248 |
| Create RSS Feeds | 250 |
| Set Up Management Email | 250 |
| Project Review | 259 |
| Summary | 260 |
| | |
| Chapter 7: RSS, Blogs, and Wikis | 261 |
| | |
| RSS | 261 |
| Overview of RSS | 262 |
| Uses of RSS within SharePoint | 265 |
| Configuring RSS Settings | 266 |
| Blogs | 268 |
| Overview of Blogs | 268 |

Contents

| | |
|--|------------|
| Creating a Blog Site with WSS 3.0 | 269 |
| Customizing a Blog and Adding Categories | 270 |
| Setting Blog Permissions | 271 |
| Creating and Managing Blog Posts | 272 |
| Configuring Content Approval for Blogs | 272 |
| Changing Skins of SharePoint Blogs | 273 |
| Changing RSS Settings for a Blog | 274 |
| Wikis | 275 |
| Implementing Wikis | 275 |
| Using Wiki Tools in SharePoint 2007 | 277 |
| Summary | 278 |
| | |
| Chapter 8: Building Personalized Solutions | 279 |
| | |
| Building Rich Portal Solutions on SharePoint | 280 |
| Membership and User Profiles | 280 |
| Managing a User Profile | 281 |
| Setting Up Connections | 283 |
| User Profile API | 283 |
| Building My Sites | 299 |
| SharePoint Audiences | 318 |
| Working with the Audiences API | 322 |
| Summary | 328 |
| | |
| Chapter 9: Using Enterprise Search | 331 |
| | |
| Introduction to Enterprise Search | 331 |
| SharePoint Server Enterprise Search Object Model Architecture | 332 |
| Working with Content Sources | 333 |
| Extending Enterprise Search | 334 |
| Working with the Query Object Model | 334 |
| Using the Enterprise Search Web Service | 335 |
| Configuring Enterprise Search | 336 |
| Adding a Content Source | 338 |
| Monitoring Crawl Status | 341 |
| Mapping Properties | 342 |
| Adding a Custom Tab for Search Results | 343 |
| Adding Search Pages to Custom Tabs | 345 |
| Recrawling the Content Source | 345 |
| Querying the Content Source | 345 |
| Summary | 346 |

Contents

| | |
|--|------------|
| Chapter 10: Using the Business Data Catalog | 347 |
| Business Data Catalog Architecture | 348 |
| Major Components of the Business Data Catalog | 348 |
| Hierarchy of the Metadata Model | 349 |
| The XML Application Definition File in Detail | 353 |
| Connecting to Databases | 361 |
| Connecting to Web Services | 362 |
| Adding a Custom Action to an Application Definition File | 386 |
| Working with Business Data Catalog in Web Parts | 390 |
| Programming Using the Runtime API | 390 |
| Summary | 394 |
| Chapter 11: Building Document Management Solutions | 397 |
| Understanding the Document Lifecycle | 398 |
| Defining Metadata Using Content Types | 400 |
| Declaring Content Types Using XML | 402 |
| Defining Content Types in Code | 407 |
| Managing Document Creation | 415 |
| Checking for Required Metadata | 416 |
| Checking Metadata Consistency | 419 |
| Postprocessing of Metadata | 420 |
| Managing the Document Revision Cycle | 422 |
| Building Custom Tools for Metadata Analysis | 422 |
| Developing XML-Driven Document Management Solutions | 425 |
| Developing a Proposal Management Policy Schema | 426 |
| Creating Policy Administration Tools | 438 |
| Summary | 440 |
| Chapter 12: Building Records Management Solutions | 441 |
| SharePoint Support for Records Management | 441 |
| The SharePoint Records Repository | 443 |
| Using the Official File Web Service | 444 |
| Using the SharePoint Object Model | 452 |
| Building a Custom Records Repository | 454 |
| Creating a Custom Router | 463 |
| Information Management Policy | 468 |
| Creating a Custom Policy Feature | 469 |
| Registering a Policy Feature in the Global Policy Catalog | 470 |
| Summary | 472 |

 Contents

| | |
|--|------------|
| Chapter 13: Building Web Content Management Solutions | 473 |
| WCM in Office SharePoint Server 2007 | 474 |
| The SharePoint Publishing Object Model | 474 |
| The SharePoint Publishing Architecture | 476 |
| Customizing the Authoring Experience | 483 |
| Web-Based Authoring | 483 |
| Smart-Client Authoring | 489 |
| Creating and Using Field Controls | 495 |
| Using Variations | 503 |
| Summary | 504 |
| Chapter 14: Electronic Forms in MOSS 2007 | 507 |
| The Structure of an InfoPath Form | 508 |
| The Form Definition File (XSF) | 509 |
| The Form Schema (XSD) | 510 |
| The Form Views (XSL) | 514 |
| The Data File (XML) | 515 |
| Form Templates and Form Data | 515 |
| Working with Data Sources | 516 |
| Connecting to SharePoint Data | 518 |
| Working with Existing Content Types | 523 |
| Understanding InfoPath Security | 524 |
| Restricted Security Mode | 524 |
| Domain Security Mode | 525 |
| Full Trust Security Mode | 525 |
| Form Programming | 525 |
| Using Script | 526 |
| Using Visual Studio Tools for Applications | 527 |
| Using Visual Studio Tools for Office | 529 |
| The Logic Inspector | 530 |
| Form Deployment and Distribution | 531 |
| How Form Publishing Works | 531 |
| Publishing to a SharePoint Site | 532 |
| Publishing to a Content Type | 533 |
| Using Browser-Based Forms | 535 |
| Configuring InfoPath Forms Services | 538 |
| Managing Form Templates | 538 |
| Handling Forms Authentication | 539 |
| Summary | 540 |

Contents

| | |
|--|------------|
| Chapter 15: Building Workflow Solutions | 541 |
| Workflow Foundation Basics | 541 |
| Types of Workflows | 542 |
| Workflow Activities | 545 |
| Workflow Security | 556 |
| Workflow in MOSS | 556 |
| The WSS Workflow Architecture | 556 |
| The SharePoint Workflow Lifecycle | 557 |
| The SharePoint Workflow Object Model | 559 |
| The SharePoint Workflow Service APIs | 563 |
| The MOSS Workflow Implementation | 567 |
| Workflow Development | 571 |
| Plan the Workflow | 572 |
| Model the Workflow | 573 |
| Create and Bind Forms | 575 |
| Identify/Create Activities | 585 |
| Implement the Workflow | 585 |
| Deploy to the Server | 585 |
| Test and Debug | 587 |
| Building Declarative Workflows Using SharePoint Designer 2007 | 587 |
| Creating a Workflow | 587 |
| Adding Steps, Conditions and Actions | 589 |
| Branching and Parallelism | 592 |
| Putting It All Together | 593 |
| Things to Watch Out For | 595 |
| Building Reusable Workflows Using Visual Studio 2005 | 596 |
| The ECM Starter Kit | 599 |
| Understanding Correlation Tokens | 604 |
| Creating Custom Activities for Use with SharePoint Designer | 606 |
| Summary | 610 |
| Chapter 16: Business Intelligence and SharePoint Server 2007 | 613 |
| Business Intelligence Overview | 613 |
| Key Business Intelligence Concepts | 614 |
| Introducing Microsoft's Business Intelligence Offering | 615 |
| Building a Business Intelligence Portal | 616 |
| Using Excel and Excel Services in Business Intelligence | 626 |
| Microsoft Office Excel 2007 | 626 |

Contents

| | |
|---|------------|
| What Is Excel Services? | 627 |
| Excel Services Architecture | 627 |
| Excel Services Benefits | 627 |
| Build an Excel Workbook | 628 |
| Heat Map | 628 |
| Programming with the Excel Services API | 639 |
| Dashboards and Report Center | 642 |
| Dashboards | 642 |
| Report Center Site Template | 644 |
| KPI And KPI List Web Parts | 645 |
| SharePoint Filter Web Parts | 650 |
| Dashboard Applications | 659 |
| Summary | 660 |
| | |
| Appendix A: Using the Microsoft Visual Studio 2005 Extension for Windows SharePoint Services 3.0 | 661 |
| | |
| Installation Requirements | 662 |
| Building a Custom Solution Using the VSeWSS | 662 |
| Architecture of and Extending VSeWSS Item and Project Templates | 663 |
| Using VSeWSS to Build Site Definitions and Custom Modules | 669 |
| Differences Between Team Site Definition and Blank Site Definition Project | 669 |
| \$Resources Strings and Custom .resx Files | 670 |
| Creating a .NET Resources File for a Site Definition | 670 |
| Using VSeWSS to Build Content Types | 677 |
| Building a Custom Content Type Using VSeWSS | 679 |
| Event Handlers | 682 |
| Event Handlers Provisioned By Default by VSeWSS | 682 |
| Using VSeWSS to Build List Definitions | 684 |
| Creating a Custom List Definition | 685 |
| Creating a New List Instance | 685 |
| Event Receivers | 686 |
| Using VSeWSS to Build Web Parts | 686 |
| Leveraging the SharePoint Solution Generator | 690 |
| Using the SharePoint Solution Generator to Reverse Engineer an Existing Site | 690 |
| Using the SharePoint Solution Generator to Reverse an Existing List | 692 |
| Summary | 693 |
| | |
| Index | 695 |