



Table of Contents

Introduction	xxv
--------------------	-----

PART 1: WEB PROGRAMMING CONCEPTS

Chapter 1: Introduction to Web Technologies	1
History of the Web.....	2
OSI Reference Model.....	2
Understanding Web System Architecture	4
Understanding 3-Tier Web Architecture	5
Layers in the TCP/IP Model.....	5
Physical	5
Link Layer.....	5
Internet Layer.....	6
Transport Layer	6
Application Layer.....	6
Web Browsers	6
Retrieving Documents on the Web: The URL and Domain Name System	7
Overview of HTTP.....	8
Sending the Request.....	8
The Server Response.....	9
Using Cookies to Remember User Information.....	9
Exploring Web Technologies	10
HTML	10
Introduction to XML	11
ASP.NET	12
Java	13
AJAX.....	13
PHP	13
Introduction to Web Services	14
About IIS.....	14
Services Supported by IIS 7.....	14
The ASP.NET Service.....	15
The File Transfer Protocol (FTP) Publishing Service.....	15
World Wide Web (WWW) Services	15
Simple Mail Transfer Protocol (SMTP) Service	15
Network News Transfer Protocol (NNTP) Service.....	15
Installation of IIS 7	15
Administer Web Server Remotely.....	23
Installation of Web Server (IIS 7) Management Services	23
Configuration of the Web Server (IIS 7) Management Services	26
Creating Web Sites.....	30
Summary	37
Quick Revise	37

Chapter 2: HTML and JavaScript Programming.....	41
HTML.....	42
Introducing HTML Document Structure	42
The <!DOCTYPE> Element	43
The <html> Element	43
The <head> Element.....	44
The <title> Element.....	44
The <body> Element.....	45
Creating Headings on a Web Page.....	48
Aligning the Headings	49
Working with Links.....	50
Creating a Hyperlink	50
Setting the Hyperlink Colors.....	51
Linking Different Sections of a Web Page.....	52
Creating a Paragraph.....	54
Working with Images.....	54
Inserting an Image on a Web Page.....	55
Displaying Alternate Text for an Image	56
Adding a Border to an Image.....	57
Aligning an Image.....	58
Using Images as Links.....	59
Creating Image Maps.....	60
Working with Tables	61
Creating a Table.....	62
Specifying a Caption to a Table.....	63
Adding a Table Heading.....	64
Setting the Table Border.....	65
Aligning a Table and Cell Content	66
Setting the Width of a Table and Table Columns	69
Changing the Background Color of a Table.....	71
Setting Cell Padding and Cell Spacing	72
Spanning Rows and Columns	75
Nesting Tables	77
Working with Frames.....	79
Creating a Frame	79
Creating Vertical and Horizontal Frames	80
Setting the Frame Border Thickness.....	83
Applying Hyperlink Targets to a Frame	84
Introduction to Forms and HTML Controls	87
Creating an HTML Form.....	87
Specifying the Action URL and Method to Send the Form.....	88
Using the HTML Controls	89
Introducing Cascading Style Sheets.....	98
Inline Styles	99
External Style Sheets	100
Internal Style Sheets.....	102
Style Classes	104
Multiple Styles.....	105
Introducing DHTML	106
Introducing JavaScript	107
Client-Side Benefits of using JavaScript over VB Script.....	107
Embedding JavaScript in an HTML Page	107
Handling Events.....	110
Using Variables in JavaScript	117
Using Array in JavaScript	121
Creating Objects in JavaScript.....	124

Using Operators.....	128
Working with Control Flow Statements.....	131
Working with Functions	143
Summary	153
Quick Revise	154

PART 2: CREATING PHP APPLICATIONS

Chapter 3: Introducing PHP.....	155
Versions of PHP	156
Features of PHP.....	156
Introduction to HTML and XHTML.....	157
HTML.....	157
XHTML	158
Advantages of PHP over Other Scripting languages.....	159
Active Server Pages.....	159
Cold Fusion	159
Practical Extraction and Report Language (Perl).....	159
Java Server Pages (JSP).....	159
Creating a PHP Script.....	159
Running a PHP Script	160
Handling Errors in a PHP Script	160
Escape Characters	161
Summary	161
Quick Revise	162
Chapter 4: Working with Variables and Constants	165
Using Variables	166
Naming Rules and Conventions.....	166
Assigning Values to Variables.....	166
Destroying Variables	168
Using Constants	168
Exploring Data Types in PHP.....	169
Determining Variable Data Type.....	170
Using Type Casting.....	171
Exploring Operators in PHP	172
Assignment Operators.....	172
Arithmetic Operators.....	172
String Operators	173
Comparison Operators	173
Logical Operators	174
Increment/Decrement Operators.....	174
Arithmetic Assignment Operators	175
Operator Precedence.....	175
Summary	176
Quick Revise	176
Chapter 5: Controlling Program Flow	181
Conditional Statements.....	182
Exploring Different Types of Conditional Statements.....	182
The if Statements	182
Defining the Nested if-else Statements.....	186
Combining Conditional Statements	187
Looping Statements	187
Exploring Different Types of Looping Statements.....	188

Table of Contents

Defining the Nested Looping Statement	191
Break, Continue, and Exit Statements	191
Break statement	191
Continue Statements	192
Exit statement.....	193
Summary	193
Quick Revise	194
Chapter 6: Working with Functions, Arrays, Files, and Directories.....	199
Introduction	200
User-Defined Functions in PHP	200
Naming Conventions.....	200
Creating and invoking a Function.....	200
Returning Value from a Function.....	201
Understanding the Variable Scope.....	201
Passing Arguments by Reference	202
Built-in Functions in PHP.....	202
String Manipulation Functions	202
Date and Time Functions in PHP	206
Mathematical Functions	208
Recursive, Variable, and Callback Functions	211
Introducing Arrays	212
Creating an Array.....	212
Accessing Array Elements	213
Types of Arrays	214
Numeric Arrays.....	214
Associative Arrays	214
Multidimensional Arrays.....	215
Traversing Arrays using Loops and ArrayIterators.....	215
The foreach Construct.....	215
The ArrayIterator	216
Built-in Array Functions	217
Getting the Size of an Array	217
Searching For the Occurrence of a Given Value.....	217
Sorting an Array	218
Working with Files and Directories	219
Working with Files	219
Opening a File	219
Closing a File.....	220
Reading a File.....	221
Writing a File.....	223
Retrieving File Status	224
Locking File Using the flock() Function.....	226
Working with Directories	227
Creating a Directory.....	227
Deleting a Directory.....	228
Locating the Current Working Directory	228
Changing a Directory.....	228
Listing Files in a Directory	228
Summary	229
Quick Revise	230
Chapter 7: Working with Forms and Database.....	235
Introduction to Web Forms	236
Working with the <form> Tag and Form Elements.....	236
Creating a Text Box	236

Creating a Radio Button.....	237
Creating a Check Box.....	237
Creating a Drop-Down Box.....	238
Processing a Web Form.....	238
Submitting the Form Data.....	239
Retrieving the Form Data.....	240
Validating a Form.....	243
Displaying an Error Message when a Field is Empty.....	243
Enforcing Data Rules.....	245
Introducing Databases.....	246
Exploring Relational Database Model, Records, and Primary Keys.....	247
Understanding Relationships and Foreign Keys.....	247
Working with SQL Statements.....	248
Using PHP and MySQL.....	250
Checking Configuration.....	250
Connecting to Database.....	251
Selecting a Database.....	252
Adding Table in a Database.....	252
Altering a Table in a Database.....	254
Inserting Data in a Table.....	255
Modifying Data in a Table.....	256
Retrieving Data.....	256
Summary.....	257
Quick Review.....	257
Chapter 8: Exploring Cookies, Sessions, and PHP Security.....	261
Working with Cookies.....	262
Exploring Cookie Attributes.....	262
Using Cookie Header.....	262
Creating Cookies.....	263
Reading Cookies.....	263
Removing Cookies.....	263
Storing Arrays in Cookies.....	264
Working with Sessions.....	264
Starting a Session.....	265
Adding Session Data.....	265
Reading Session Data.....	266
Removing Session Data.....	266
Ending a Session.....	266
Preventing Session Hijacking.....	267
Do not Trust Unknown or Unauthorized Users.....	269
Shared Hosting by Using session_save_path().....	269
Do not Pass Session Identifier in URLs.....	270
Differentiating Cookies and Sessions.....	270
Protecting Data.....	270
Data Encryption.....	270
Types of Encryption.....	270
Symmetric Encryption.....	271
Advanced Symmetric Encryption.....	271
Symmetric Decryption.....	272
Types of Encryption Algorithm.....	272
Types of Block Cipher Mode.....	273
Configuring PHP Security.....	274
The disable_functions Directive.....	275
The disable_classes Directive.....	275
The allow_url_fopen Directive.....	275

Table of Contents

The open_basedir Directive	275
The error_reporting Directive	275
The display_errors Directive	275
The log_errors Directive	275
The expose_php Directive	275
The max_input_time Directive	275
The session.name Directive	276
Summary	276
Quick Revise	276

PART 3: CREATING JAVA WEB APPLICATIONS

Chapter 9: Getting Started with Web Applications in Java 281

Introduction to Web Applications	282
Exploring Java Based Web Technologies	282
Describing JDBC	283
Describing Servlets	284
Describing JavaServer Pages (JSP)	286
Introducing Web Architecture Models	287
Describing the Model-1 Architecture	287
Describing the Model-2 Architecture	288
Introducing the MVC Architecture	289
Describing the Model Component	290
Describing the View Component	290
Describing the Controller Component	291
Summary	291
Quick Revise	291

Chapter 10: Working with JavaBeans 293

Introducing JavaBeans	294
Advantages of JavaBeans	295
Introspection	295
Customizers	295
The JavaBeans API	296
Designing Programs Using JavaBeans	297
Creating a Java Bean	299
Creating a Bean Manifest File	300
Creating a Bean JAR File	300
Using the New Bean	300
Adding Controls to Beans	301
Giving a Bean Properties	302
Design Patterns for Properties	307
Simple Properties	307
Indexed Properties	308
Using the BeanInfo Interface	308
Creating Bound Properties	309
Giving a Bean Methods	309
Giving a Bean an Icon	311
Creating a BeanInfo Class	311
Bound and Constrained Properties	312
Persistence	314
Using Beans with JSP pages	315
Summary	315
Quick Revise	315

Chapter 11: Working with Servlet Programming.....	317
What's New in Servlet 2.5?	318
Features of Java Servlets	319
Servlet - A Request and Response Model	320
Servlet and Environment State.....	320
Security Features	321
HTML-Aware Servlets.....	322
HTTP-Specific Servlets	323
Performance Features	323
3-Tier Applications.....	324
Web Publishing System.....	325
Exploring the Servlet API	326
The javax.servlet Package	326
The javax.servlet.http Package.....	328
Introducing the Servlet Life-Cycle	330
The init() Method.....	331
The service() Method	331
The destroy() Method	332
Servlet Configuration	332
Servlet Configuration in web.xml.....	333
Working with ServletConfig and ServletContext.....	334
Creating a Sample Servlet.....	334
Directory Structure.....	335
Configuring the Servlet	336
Packaging, Deploying and Running the Web Application	337
Working with HttpServletRequest and HttpServletResponse	337
HttpServletRequest	337
HttpServletResponse	346
Request Delegation and Request Scope	351
Servlet Collaboration.....	354
Collaboration through the System Properties List.....	354
Collaboration through a Shared Object	355
Collaboration through Inheritance	362
Introducing Session Tracking	364
Session Tracking Mechanisms	365
Cookies.....	365
Hidden Form Fields	369
URL Rewriting.....	369
Session using Secure Socket Layer (SSL).....	372
Session Tracking and Java Servlet API.....	372
History of Session Tracking.....	372
Session Creation and Tracking.....	373
Login Application using Session Tracking	380
Directory Structure of Login Application	380
Building the Front-End.....	381
Creating and Managing Session	382
Configuring the Login Application.....	384
Running the Login Application	385
Summary	386
Quick Revise	386
Chapter 12: Working with JSP	389
Understanding JSP.....	390
Advantages of JSP over Servlets.....	391
Introducing the Tag-Based Approach.....	392
Describing the JSP Architecture	392

Table of Contents

Describing the JSP Life Cycle.....	393
The Page Translation Stage.....	393
The Compilation Stage.....	395
The Loading & Initialization Stage.....	395
The Request Handling Stage.....	396
The Destroying Stage.....	396
Creating Simple JSP Pages.....	396
Working with JSP Basic Tags and Implicit Objects.....	399
Exploring Scripting Tags.....	399
Exploring Implicit Objects.....	402
Exploring Directive Tags.....	408
Using JavaBeans and Action Tags in JSP.....	412
What is JavaBean?.....	413
Action Tags.....	413
Using a Bean in a JSP.....	426
Using the JSP Standard Tag Library (JSTL).....	430
Describing JSTL Core Tags.....	430
General-Purpose Tags.....	431
Conditional and Looping Tags.....	434
Networking Tags.....	440
Describing the JSTL SQL Tags.....	441
Types of JSTL SQL Tags.....	441
Using JSTL SQL Tags.....	443
JSTL Formatting Tags.....	446
Basic Formatting Tags.....	446
Number Formatting Tags.....	449
Date Formatting Tags.....	452
Time Zone Formatting Tags.....	455
JSTL XML Tags.....	457
XML Core Tags.....	457
XML Flow Control Tags.....	458
XML Transformation Tags.....	459
Implementing JSTL Tags.....	460
Summary.....	463
Quick Revise.....	463
Chapter 13: Java Database Programming.....	465
Introduction to JDBC.....	466
Components of JDBC.....	466
JDBC Specification.....	467
JDBC Architecture.....	467
JDBC Drivers.....	468
Describing the Type-1 Driver.....	468
Describing the Type-2 Driver (Java to native API).....	469
Describing the Type-3 Driver (Java to Network Protocol/ All Java Driver).....	471
Describing the Type-4 Driver (Java to Database protocol).....	472
Features of JDBC.....	473
New Features in JDBC 4.0.....	474
Describing the JDBC API's.....	476
The java.sql Package.....	476
The javax.sql Package.....	479
Describing the Major Classes and Interfaces.....	480
Understanding the DriverManager Class.....	480
Understanding the Driver Interface.....	481
Understanding the Connection Interface.....	482
Understanding the Statement Interface.....	484

Implementing JDBC Processes with java.sql Package	487
Basic JDBC Steps.....	488
Creating a Simple JDBC Application	490
Working with the PreparedStatement Interface	494
Working with the CallableStatement Interface	499
Working with ResultSets.....	507
Working with Batch Updates	517
Describing SQL 99 Data Types.....	521
Implementing JDBC Processes with the javax.sql Package.....	537
Using DataSource to Make a Connection.....	538
Describing Connection Pooling	538
Using RowSet Objects.....	542
Working with Transactions.....	556
Describing ACID Properties.....	556
Types of Transactions.....	557
Performing Transaction Management	557
Summary	560
Quick Review	561

PART 4: CREATING ASP.NET APPLICATIONS

Chapter 14: ASP.NET 3.5 Essentials	563
New Features in ASP.NET 3.5	564
ASP.NET AJAX Support	564
The ListView Control.....	564
The DataPager Control.....	564
Support for WCF Services.....	565
WCF Support for RSS, JSON, and Partial Trust	565
Support for Nested Master Pages at Design Time	565
Merge Tool in ASP.NET 3.5.....	565
Improved Support for JavaScript Debugging	565
Support for Microsoft Office 2007 Applications	566
The ASP.NET Life Cycle	566
Life Cycle of ASP.NET Applications on IIS 7.0	566
Life Cycle of an ASP.NET Web Page	568
Overview of Visual Studio 2008	570
New Features in Visual Studio 2008	570
Support for Multi-Targeting.....	570
Support for ASP.NET AJAX and JavaScript Intellisense	571
Support for Language Integrated Query.....	571
Improved Deployment.....	572
Support for Client Application Services.....	572
Support for Reporting Applications.....	572
Exploring a Sample ASP.NET 3.5 Web Application	573
Creating a Sample ASP.NET 3.5 Website.....	575
Summary	578
Quick Review	578
Chapter 15: Developing a Web Application	581
Specifying a Location for a Web Application.....	582
File System.....	582
HTTP	583
FTP	586
File Types in ASP.NET 3.5.....	587
Exploring ASP.NET 3.5 Web Pages	589
Code Render Blocks.....	590

Table of Contents

Understanding ASP.NET 3.5 Page Directives	591
The @ Page Directive	591
The @ Control Directive	591
The @ Import Directive	591
The @ Implements Directive	591
The @ Register Directive	592
The @ Assembly Directive	592
The @ Master Directive	592
The @ WebHandler Directive	592
The @ PreviousPageType Directive	592
The @ MasterType Directive	592
The @ OutputCache Directive	592
The @ Reference Directive	593
Working with Server Controls	593
Understanding ASP.NET 3.5 Provider Model	595
ASP.NET 3.5 Coding Models	596
Single-File Page Model	596
Code-Behind Page Model	598
Implementing Code Sharing	598
Using the Code Directory	599
Using the bin Directory	599
Using the Global Assembly Cache	600
Compilation in ASP.NET 3.5	600
Compiling on First Request	600
Recompiling on Change	600
Compilation Dependencies	600
Using the Merge Tool	601
Summary	601
Quick Revise	601
Chapter 16: Application Structure and State	603
Structure of an Application	604
The Application Domain	604
The Application Lifetime	605
The Application Directory Structure	605
The Global.asax Application File	606
Using States	608
Application State	608
Session State	608
View State	609
Using Application State, Session State, and View state	609
HTTP Handlers	611
Creating an HTTP Handler Application	611
Generic Handlers	612
Postback	614
Cross-Page Posting	614
Summary	617
Quick Revise	617
Chapter 17: Web Forms: Standard Controls	619
The Control Class	621
The WebControl Class	623
Using CSS in Web Applications	624
The Label Control	630
Working with Label Controls	631
The Button Control	632

Working with Button Controls.....	633
The TextBox Control.....	634
Working with TextBox Controls.....	635
The Literal Control.....	637
Working with Literal Controls.....	637
The Placeholder Control.....	639
Working with Placeholder Controls.....	639
The HiddenField Control.....	641
Working with Hidden Field Controls.....	641
The FileUpload Control.....	643
Working with FileUpload Control.....	644
The Image Control.....	645
Working with Image Controls.....	646
The ImageMap Control.....	648
Working with ImageMap Controls.....	649
The ListBox Control.....	652
Working with ListBox Controls.....	653
The DropDownList Control.....	657
Working with DropDownList Controls.....	657
The BulletedList Control.....	659
Working with BulletedList Controls.....	661
The HyperLink Control.....	663
Working with HyperLink Controls.....	663
The LinkButton Control.....	665
Working with LinkButton Controls.....	665
The CheckBox Control.....	667
Working with CheckBox Controls.....	668
The RadioButton Control.....	670
Working with RadioButton Controls.....	671
The Table Control.....	673
Working with Table Controls.....	674
The Wizard Control.....	677
Working with Wizard Controls.....	680
User Controls and Custom Controls.....	685
Working with User Controls.....	685
Working with Custom Controls.....	686
Summary.....	689
Quick Revise.....	689
Chapter 18: Navigation Controls: TreeView, Menu, and SiteMapPath.....	691
Using the TreeView Class.....	692
The TreeView Control.....	694
Adding Nodes to a TreeView Control Dynamically.....	695
Adding Nodes to a TreeView Control Using the DataSource Property.....	695
Adding Nodes to a TreeView Control at Design Time.....	696
Creating the TreeView Control.....	696
Generating TreeView from a Database.....	706
Using the Menu Class.....	711
The Menu Control.....	714
Using the XmlDataSource Class.....	714
Using the XmlDataSource Control.....	716
Menu Display Properties.....	716
Menu Styles.....	717
Creating Static Menus.....	717
Creating Dynamic Menus.....	719
Using the SiteMapPath Class.....	722

Table of Contents

The SiteMapPath Control	723
Data Retrieval Using the SiteMapPath Control.....	724
SiteMapPath Behaviors	724
SiteMapPath Appearance.....	725
SiteMapPath Style	725
SiteMapPath Templates.....	725
Creating SiteMapPath	725
Summary	729
Quick Revises	729
Chapter 19: Validation Controls.....	731
Introduction	732
The BaseValidator Class	732
The RequiredFieldValidator Control.....	733
Using the RequiredFieldValidator Control	733
The RangeValidator Control	735
Using the RangeValidator Control.....	735
The RegularExpressionValidator Control.....	737
Using the RegularExpressionValidator Control	738
The CompareValidator Control.....	740
Using the CompareValidator Control	740
The CustomValidator Control	742
Using the CustomValidator Control.....	743
The ValidationSummary Control.....	745
Using the ValidationSummary Control	746
Summary	747
Quick Revise	747
Chapter 20: Introducing Web Parts Controls	749
The WebPartManager Control.....	750
Using the WebPartManager Class	759
Creating the WebPartManager Control in Code.....	759
The ProxyWebPartManager Control	761
The WebPartZone Control.....	762
Creating the WebPartZone Control in Code	765
The CatalogZone Control	767
Creating the CatalogZone Control in Code.....	769
The DeclarativeCatalogPart Control.....	771
The PageCatalogPart Control	773
Creating the PageCatalogPart Control in Code	774
The ImportCatalogPart Control.....	776
The EditorZone Control.....	778
Creating the EditorZone Control in Code	781
The LayoutEditorPart Control	783
The AppearanceEditorPart Control.....	784
The PropertyGridEditorPart Control.....	786
Creating the PropertyGridEditorPart Control in Code	787
The BehaviorEditorPart Control.....	789
The ConnectionsZone Control.....	791
Creating the ConnectionsZone Control in Code	793
Summary	795
Quick Revise	795
Chapter 21: Working with Database Controls	797
The GridView Control.....	798
Using the GridView Control	802

The DataList Control	804
Using the DataList Control.....	806
The DetailsView Control	808
Using the DetailsView Control.....	812
The FormView Control	814
Using the FormView Control.....	817
The ListView Control	819
The Repeater Control	823
Using the Repeater Control.....	825
The DataPager Control.....	827
Using the ListView and DataPager Controls	829
The SqlDataSource Control	833
Using the SqlDataSource Control.....	836
The AccessDataSource Control.....	841
Using the AccessDataSource Control	843
The LinqDataSource Control	846
Using the LinqDataSource Control	850
The ObjectDataSource Control	853
Using the ObjectDataSource Control.....	857
The XmlDataSource Control	860
Using the XmlDataSource Control.....	862
The SiteMapDataSource Control.....	865
Summary	867
Quick Revise	867
Chapter 22: Introducing Login Controls	869
Introducing the Membership Service	870
The Login Control.....	871
The LoginView Control	873
The LoginStatus Control.....	874
The LoginName Control.....	876
The PasswordRecovery Control.....	876
The CreateUserWizard Control.....	879
The ChangePassword Control	883
Implementing Authentication in ASP.NET Using Login Controls	887
Summary	893
Quick Revise	893
Chapter 23: Inside Master Pages and Themes	895
Need for Master Pages and Themes	896
Understanding Master Pages.....	896
Simple Master Page.....	897
Creating Master Pages	897
Simple Master Pages	897
Nested Master Pages.....	901
Creating Nested Master Pages	901
Configuring Master Pages	902
Modifying Content on the Master Page from the Content Page.....	903
Displaying Properties and Methods Using a Master Page	905
Loading Pages Dynamically.....	907
Understanding ASP.NET AJAX Master Pages.....	910
Understanding Themes.....	910
Types of Themes in ASP.NET 3.5	911
Creating Themes	911
Applying Themes at Control and Runtime Levels.....	913
Applying Themes to a Single Page	916

Table of Contents

Understanding the StyleSheetTheme Attribute	918
Using the StyleSheetTheme Attribute	918
Summary	919
Quick Revise	920
Chapter 24: Managing Web Applications.....	921
Need to Manage Applications	922
The ASP.NET Configuration File	922
Verifying the Configuration Settings.....	923
The Process Model Configuration.....	925
Reactive Process Recycling.....	926
Proactive Process Recycling.....	926
The ASP.NET MMC Snap-In Tool	926
The ASPNET_REGIIS Tool.....	927
Using the ASPNET_REGIIS Tool	928
Using the ProtectSection Method.....	929
The Web Site Administration Tool.....	931
Using the Web Site Administration Tool	931
Using the Security Tab.....	932
Using the Application Tab.....	936
Using the Provider Tab	939
The Aspnet_regsql Tool.....	939
Using the Aspnet_regsql Tool.....	940
Configuring ASP.NET Applications in IIS	941
Summary	943
Quick Revise	943
Chapter 25: Application Globalization	945
Globalization.....	946
Internationalization	948
Localization	949
Listing the Available Cultures	949
Working with Resources.....	951
Working with Local Resources	951
Working with Global Resources	952
Using Localization Expression.....	953
Implicit Expression	953
Explicit Expression.....	967
Performing Localization	978
Elements of HTML.....	978
Static Content	978
Localizing Script Files	985
Deploying Resources	989
Summary	989
Quick Revise	989
Chapter 26: Developing Rich-Interactive Applications with Silverlight.....	991
Main Features of Silverlight.....	992
Improved Programming Model.....	992
Comprehensive UI Framework	993
Support for Deep Zoom Technology	993
Support for 2-D Graphics, Animations, and Multimedia	993
Support for Networking.....	993
Architecture of Silverlight	994
The .NET Framework for Silverlight.....	994
The Core Presentation Framework.....	994

Installation of Silverlight	995
Silverlight Applications in Visual Studio 2008	999
Changing the Size of the Silverlight Plug-in	1004
Controls in Silverlight Applications.....	1006
Using Silverlight Controls	1009
Using the DatePicker Control.....	1010
Using the GridSplitter Control.....	1013
Using the MediaPlayer Control to Embed Media.....	1014
Silverlight and ASP.NET	1016
ASP.NET Server Controls for Silverlight	1018
Using the Silverlight Control.....	1020
Using the MediaElement Control	1022
Summary	1025
Quick Revise	1025

PART 5: CREATING XML APPLICATION

Chapter 27: Working with XML.....	1027
Introduction to XML.....	1028
XML Basics	1028
XML Syntax	1029
XML Declaration	1029
XML Elements.....	1030
XML Attributes	1031
Valid XML Documents	1032
Viewing XML.....	1032
XML Parser.....	1034
Parameter Entities and Conditional Sections	1041
Advanced XML	1043
XML Namespaces.....	1043
XML CDATA	1047
XML Encoding.....	1048
XML on the Server	1049
XML Application	1049
XMLHttpRequest Object	1051
XML Technologies	1051
Extensible HTML (XHTML).....	1051
Converting HTML to XML	1052
Java API for XML Processing.....	1053
The JAXP APIs	1054
An Overview of the Packages	1054
Document Object Model (DOM)	1054
Parsing XML Documents Using DOM	1056
Simple API for XML (SAX).....	1058
Parsing XML Documents Using SAX.....	1060
Extensible Stylesheet Language Transformation (XSLT)	1064
XSLT Stylesheet	1066
XSLT Functions.....	1075
Transforming an XML Document Using XSLT	1079
XPath	1083
Functionality of XPath.....	1083
XPath Functions.....	1085
XML Linking Mechanism.....	1101
Linking with XLink and XPointer	1101
Working with XLink.....	1102
Working with XPointer	1102

Table of Contents

Summary 1103
Quick Revise 1103

PART 6: CREATING AJAX APPLICATIONS

Chapter 28: AJAX: A New Approach 1107

Evolution of Web Application 1108
Common Gateway Interface (CGI)..... 1108
Applets 1109
JavaScript..... 1109
Servlets 1110
JavaServer Pages (JSP) 1110
Active Server Pages (ASP) 1111
PHP 1111
Dynamic HTML (DHTML)..... 1111
XML 1112
Problems with Technologies 1114
AJAX – The Solution 1115
Creating a Sample AJAX Application..... 1117
Creating the **XMLHttpRequest** Object..... 1119
Opening **XMLHttpRequest** Object for Asynchronous Downloads 1120
Summary 1122
Quick Revise 1122

Chapter 29: Understanding JavaScript for AJAX..... 1125

Introduction to **JavaScript**..... 1126
Basics of **JavaScript**..... 1128
What is Document Object Model?..... 1141
Methods Available in **DOM** for Accessing Objects 1143
DOM Levels..... 1144
Creating a JavaScript Application without AJAX 1148
JavaScript and AJAX..... 1150
Creating a JavaScript Application with AJAX 1151
Summary 1154
Quick Revise 1154

Chapter 30: Asynchronous data transfer with XMLHttpRequest 1157

XMLHttpRequest Object..... 1158
Synchronous and Asynchronous Pages 1159
XMLHttpRequest Properties 1160
XMLHttpRequest Methods..... 1163
Browser Differences..... 1164
Reading a File Synchronously..... 1165
Reading a File Asynchronously..... 1168
Using Basic AJAX Techniques 1170
Performing Validation..... 1170
Reading Response Headers 1174
Loading Dynamically List Boxes 1176
Auto Refreshing Page..... 1180
Dynamic Progress Bar 1183
Providing Auto Complete..... 1187
XMLHttpRequest Object Vs **IFrames**..... 1192
Using **IFrames**..... 1193
Summary 1194
Quick Revise 1195

Chapter 31: Implementing AJAX Frameworks	1197
Working with JQuery Framework	1198
Working with Prototype Framework	1202
Working with Script.aculo.us Framework.....	1205
Working with Dojo Toolkit Framework.....	1206
Working with DWR Framework	1213
Working with JPSpan Framework	1214
Working with Rico Framework.....	1216
Working with Spry Framework.....	1222
Commonly used frameworks for AJAX	1228
Summary	1229
Quick Revise	1229
Chapter 32: Developing ASP.NET AJAX Applications	1231
AJAX – A New Approach.....	1232
Exploring JavaScript	1232
Introducing XHTML.....	1233
Introducing CSS.....	1233
Exploring DOM	1233
Introducing XMLHttpRequest Object.....	1234
Need for AJAX	1235
AJAX and Other Technologies.....	1235
ASP.NET AJAX Architecture	1236
Client-Side Architecture	1236
Server-Side Architecture	1238
AJAX Server or Extension Controls	1239
The ScriptManager Control	1239
Differentiating Between AJAX and Non-AJAX Applications	1242
Creating a Simple non-AJAX Application	1242
Creating a simple AJAX Application	1244
The ScriptManagerProxy Control.....	1246
The Timer Control.....	1246
The UpdatePanel Control	1247
Using AJAX Server Controls.....	1248
Timer Control.....	1248
The UpdateProgress Control.....	1250
UpdateProgress Control.....	1251
ASP.NET AJAX Control Toolkit Extenders and Controls	1254
Installing the ASP.NET AJAX Control Toolkit	1258
Using the ASP.NET AJAX Control Toolkit.....	1261
Using AlwaysVisibleControlExtender.....	1254
Summary	1264
Quick Revise	1264
Chapter 33: Integrating PHP and AJAX.....	1267
Introducing PHP	1268
Building Blocks.....	1268
Installing PHP Server	1271
Sending Data to Server.....	1271
AJAX-PHP Frameworks	1272
Performing Validation	1274
Polling Application.....	1276
Suggestions Application.....	1279
Handling XML Data using PHP and AJAX.....	1282
Fetching Records from Database using AJAX.....	1286

Table of Contents

Summary	1289
Quick Revise	1289
Chapter 34: Consuming Web Services in AJAX.....	1291
Web Services Technologies	1292
SOAP	1292
SOAP Message	1292
SOAP Message Elements	1293
SOAP Example.....	1295
WSDL	1296
UDDI	1299
REST	1299
REST Web Services Characteristics	1300
Elements of REST Architecture	1301
Rules of REST Web Service Design	1303
REST Views	1303
Design Decisions.....	1304
Service Interaction Layer Design	1305
Processing Layer Design	1308
Other Technologies	1308
Java API for XML based RPC (JAX-RPC).....	1308
Java Architecture for XML Binding (JAXB)	1309
Java API for XML Messaging (JAXM)	1309
Java API for XML Registries (JAXR)	1309
Java API for XML Parsing.....	1309
Creating a Web Service.....	1310
Invoking a Web Service.....	1313
Cross Domain Web Services	1314
Using APIs	1315
javax.xml	1315
javax.xml.bind.....	1315
javax.xml.datatype	1315
javax.xml.registry	1316
javax.xml.rpc	1316
javax.xml.soap.....	1316
javax.xml.transform	1317
javax.xml.validation.....	1317
Summary	1318
Quick Revise	1318
Appendix A: Installing Java Software Development Kit.....	1321
Appendix B: Struts 2–Advancement in Web Technology	1329
Appendix C: Understanding EJB 3.0.....	1341
Index	1349
About the CD.....	1355