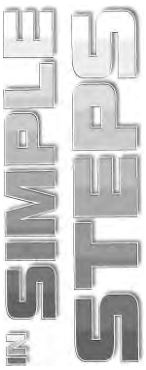


CONTENTS

Chapter 1 ■ Introducing .NET Framework 3.5 and Visual Studio 2008 1

Introduction 2
Benefits of .NET Framework 2
Architecture of .NET Framework 3.5 3
Components of .NET Framework 3.5 3
- Common Language Runtime (CLR) 4
- Common Type System (CTS) and Common Language Specification (CLS) 4
- .NET Framework Class Library 5
- Assemblies and Metadata 5
- Windows Forms 5
- ASP.NET and ASP.NET AJAX 6
- ADO.NET 6
- Windows Presentation Foundation (WPF) 6
- Windows Communication Foundation (WCF) 6
- Windows Workflow Foundation (WF) 7
- Windows CardSpace 7
- Language-Integrated Query (LINQ) 7

Main Features of Visual Studio 2008 7
- Support for Multi-targeting 7
- Support for ASP.NET AJAX and JScript Intellisense 8
- Support for Language-Integrated Query (LINQ) 9
- Improved Deployment of .NET Applications 9

Installation of Visual Studio 2008 9
Visual Studio 2008 Integrated Development Environment (IDE) 12
- Opening Visual Studio 2008 IDE 12
- Exploring the Visual Studio 2008 IDE 14

Types of Visual Studio 2008 Applications 20
- Console Applications 20
- Windows Applications 22

Summary 26

Chapter 2 ■ Getting Started with C# 2008 27

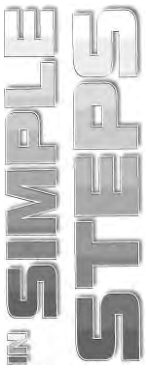
Introduction 28
Features of C# 2008 28
- Implicitly Typed Local Variables 28
- Auto-Implemented Properties 28
- Extension Methods 29
- Query Keywords 29
- Partial Method Definitions 30
- Object and Collection Initializers 30
- Anonymous Types 30
- Lambda Expressions 31

Keywords in C# 2008 31
Data Types 32

Value Types 32
Reference Types 34
Pointer Types 35
Variables and Constants 35
Declaring Variables 36
Assigning Values to Variables 36
Declaring Constants 36
Declaring Nullable Type Variables 37
Expressions and Operators 37
Using Arithmetic Operators 40
Concatenating Strings 41
Manipulating Strings 41
Using the Scope Resolution Operator 41
Understanding/Demonstrating Operator Precedence 42
Type Conversions 43
Implicit Conversion 43
Explicit Conversion 44
Creating Enumerations 44
Arrays 45
Creating Single-Dimensional Arrays 46
Creating Multidimensional Arrays 47
Summary 48

Chapter 3 ■ Working with Control Flow Statements and Exceptions 49

Introduction 50
Working with Statements 50
Commenting a Statement 50
The Selection Statements 51
Using the if Statement 51
Using the Switch Statement 54
Iteration Statements or Loops 55
Using the while Loop 56
Using the do…while Loop 57
Using the for Loop 58
Using the foreach Loop 59
The Jump Statements 60
Using the break Statement 60
Using the continue Statement 61
Exception Handling 62
Using the try…catch…finally Statement 62
Using the throw Statement 63
Summary 64

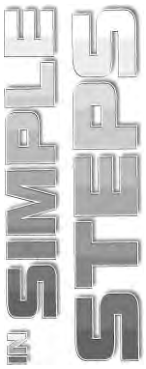


Chapter 4 ■ Understanding Object-Oriented Programming Concepts 65

Introduction 66
Working with Classes and Objects 66
Introducing Access Modifiers 67
Working with Methods 68
Working with Constructors and Destructors 69
Working with Partial Classes 71
Working with Static Classes 72
Using Extension Methods 73
Encapsulation 74
Inheritance 75
Defining a Derived Class 76
Accessing Members of the Base Class 76
Working with Abstract Classes 78
Working with Sealed Classes 79
Implementing Polymorphism 79
Implementing Compile Time Polymorphism 80
Runtime Polymorphism 83
Structures 84
Using a Structure 85
Working with Properties 86
Using a Property 86
Using an Anonymous Type for Read-only Properties 87
Interfaces 88
Defining an Interface 88
Implementing an Interface 88
Inheriting an Interface 89
Namespaces 90
Creating Namespaces 90
Referencing Namespaces 91
Summary 92

Chapter 5 ■ Introducing Windows Forms 93

Introduction 94
Common Operations on Windows Form 94
Changing the Title of a Windows Form 94
Showing and Hiding the Maximize, Minimize, and Close Buttons 95
Specifying the Initial State and Position of Windows Form 96
Creating Multiform Windows Applications 97
Setting the Startup Form in a Multiform Windows Application 98
Using the MessageBox.Show() Method 99
Adding a Control to a Windows Form 101
Anchoring and Docking a Control 101
Hiding and Displaying Controls 103
Specifying the Tab Order of Controls 104



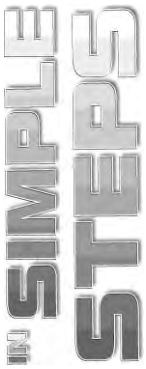
Handling Common Events for Windows Forms and Controls 105
Controls in Windows Forms 107
Using the Button Control 107
Using the Label Control 108
Using the TextBox Control 108
Using the RichTextBox Control 110
Using the RadioButton Control 111
Using the CheckBox Control 112
Using the ListBox Control 113
Using the ComboBox Control 114
Using the ListView Control 116
Using the TabControl Control 117
Using the GroupBox Control 118
Using the PictureBox Control 119
Using the ProgressBar Control 121
Using the Timer Control 121
Summary 122

Chapter 6 ■ Working with Tool Strips, Menus, and Dialog Boxes in Windows Forms 123

Introduction 124
Tool Strips and Menus in C# 2008 124
Using the ToolStrip Control 124
Using the MenuStrip Control 130
Using the StatusStrip Control 135
Dialog Boxes in Visual C# 2008 138
Using the FolderBrowserDialog Control 139
Using the OpenFileDialog Control 141
Using the SaveFileDialog Control 143
Using the Printing Controls 145
Summary 148

Chapter 7 ■ Introducing Windows Presentation Foundation 149

Introduction 150
The Architecture of WPF 3.5 150
The PresentationFramework Component 151
The PresentationCore Component 151
The WindowsBase Component 151
The MIL or Milcore Component 151
Types of WPF Applications 151
Standalone WPF Applications 151
XAML Browser Applications 153
The WPF 3.5 Designer 154
The Design View 155
The XAML View 158
The Split View Bar 158
The Tag Navigator 159



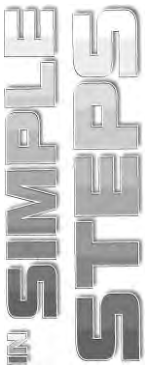
XAML and WPF 159
XAML Elements and Attributes 160
Namespaces and XAML 161
Markup Extensions 162
Common Controls in WPF 3.5 162
Using the Grid Control 163
Using the Button Control 165
Using the TextBox Control 166
Using the PasswordBox Control 167
Using the TextBlock Control 169
Using the Border Control 170
Using the GridSplitter Control 171
Using the Canvas Control 172
Using the StackPanel Control 173
Resources and Styles 174
Using a Static Resource 175
Using a Dynamic Resource 176
Setting Style Through a Resource 177
Summary 178

Chapter 8 ■ Working with Data and ADO.NET 179

Introduction 180
Introducing ADO.NET 180
New Features in ADO.NET 180
Components of ADO.NET 180
Basic Operations in ADO.NET 182
Types of Data Binding in Windows Forms 193
Simple Data Binding 194
Complex Data Binding 197
Data Binding in Windows Presentation Foundation 199
Data Flow Directions 199
Declaration of Data Binding in WPF 199
Binding Sources in WPF 203
Summary 210

Chapter 9 ■ Introducing Language-Integrated Query 211

Introduction 212
LINQ Queries 212
Executing a Simple LINQ Query 212
The Standard Query Operators 214
The Sorting Operators 214
The Set Operators 215
Filtering Operator 216
The Quantifier Operators 216
The Projection Operators 217
The Partitioning Operators 218
The Join Operators 218



The Grouping Operators 219
The Generation Operators 220
The Element Operators 221
The Conversion Operators 221
The Aggregate Operators 221
LINQ to ADO.NET 221
LINQ to SQL 221
LINQ to DataSet 225
Anonymous Methods 227
Lambda Expressions 227
Summary 228

Chapter 10 ■ Deploying Visual C# 2008 Applications 229

Introduction 230
Deploying Applications by Using Windows Installer 230
Deploying Applications by Using ClickOnce 238
Summary 242

Chapter 11 ■ Windows Workflow Foundation 243

Introduction 244
Workflow Principles 244
Workflows Coordinate Work Performed by People and Software 244
Workflows are Long Running and Stateful 244
Workflows are based on Extensible Models 244
Workflows are Transparent and Dynamic throughout their Lifecycle 244
Components of Windows Workflow Foundation 245
Workflow 245
Base Activity Library 246
Custom Activities 248
Host Process 248
Runtime Engine 248
Runtime Services 248
Developing a Simple Workflow Application 248
Implementing Conditions in Workflows 250
Using Workflows with Other Applications 254
Summary 258

Chapter 12 ■ Web Service and WCF Service 259

Introduction 260
Using a Web Service 260
Using a WCF Service 266
Summary 270