

# Microsoft Windows Communication Foundation Using Visual Basic 2008 Table of Contents

INTRODUCTION .....	INTRO-1
Prerequisites .....	INTRO-2
Installing the Practice Files .....	INTRO-3
Software Requirements .....	INTRO-3
Sample Database .....	INTRO-3
Security .....	INTRO-4
Installation .....	INTRO-5
Demonstration Applications .....	INTRO-5
About the Author .....	INTRO-6
INTRODUCTION TO WINDOWS COMMUNICATION FOUNDATION .....	1-1
What Is Windows Communication Foundation? .....	1-2
Distributed Applications .....	1-2
Service-oriented Applications .....	1-4
Windows Communication Foundation .....	1-6
Create Your First WCF Service .....	1-8
WCF Building Blocks .....	1-14
Service Contracts .....	1-14
Data Contracts .....	1-15
Endpoints .....	1-16
Bindings .....	1-18
Host and Call a WCF Service .....	1-21
Create the WCF Service .....	1-21
Host the WCF Service on a Web Server .....	1-31
Call the WCF Service from a Client .....	1-35
LAB 1: INTRODUCTION TO WINDOWS COMMUNICATION FOUNDATION .....	1-49
Lab 1 Overview .....	1-50
Create a WCF Service .....	1-51
Host the WCF Service .....	1-56
Call the WCF Service from a Client .....	1-59
HOSTING AND CALLING WCF SERVICES .....	2-1
Hosting a WCF Service .....	2-2

The Service Host .....	2-2
Options for Hosting a WCF Service .....	2-3
Host a WCF Service Using Internet Information Services .....	2-5
Run the Sample Application.....	2-5
Explore the WCF Service.....	2-8
Host the WCF Service .....	2-11
Call the WCF Service.....	2-12
Self-host WCF Services.....	2-15
Create the Host Application .....	2-15
Call the Service from the Client .....	2-19
Define Multiple Endpoints for a Service .....	2-27
Host More than One Service.....	2-30
Use Configuration Files to Define Endpoints .....	2-35
Explore the Sample Application .....	2-35
Create Configuration Files .....	2-38
Add a Service Reference to a Self-hosted Service.....	2-52
Host a WCF Service Using a Windows Service .....	2-62
Create the Windows Service Host .....	2-63
Install the Windows Service .....	2-66
Host a WCF Service Using Windows Process Activation Service .....	2-70
Install WAS and WCF Communication .....	2-70
Host the Service Using WAS and HTTP.....	2-73
Call the WCF Service from the Client .....	2-75
Host the Service Using WAS and TCP .....	2-76
LAB 2: HOSTING AND CALLING WCF SERVICES .....	2-85
Lab 2 Overview.....	2-86
Self-host a WCF Service .....	2-87
Define Endpoints in Configuration Files.....	2-96
Host a WCF Service in a Windows Service.....	2-107
BINDINGS AND CONTRACTS .....	3-1
Channels and Bindings.....	3-2
Channels.....	3-2
Bindings .....	3-3
Contracts .....	3-25
Service Contracts.....	3-25
Explore the Sample Application .....	3-27
Set Properties of the ServiceContract Attribute .....	3-30
Modify Methods in a Service.....	3-36

Data Contracts .....	3-51
Explore the Sample Application .....	3-55
Modify a Data Contract .....	3-61
LAB 3: BINDINGS AND CONTRACTS .....	3-79
Lab 3 Overview .....	3-80
Modify a Service Contract.....	3-81
Modify a Data Contract .....	3-89
EXCEPTIONS, DIAGNOSTICS, AND MESSAGE PATTERNS .....	4-1
Handling Exceptions .....	4-2
Throw Unhandled Exceptions .....	4-2
Throw FaultExceptions .....	4-8
Use FaultCodes and FaultReasons .....	4-12
Throw Strongly Typed SOAP Faults .....	4-17
Tracing and Message Logging .....	4-25
Configure Tracing and Message Logging .....	4-26
View the Message Logs.....	4-38
View the Trace Logs .....	4-45
One-way and Duplex Operations.....	4-52
One-way Operations .....	4-52
Duplex Operations .....	4-61
LAB 4: EXCEPTIONS, DIAGNOSTICS, AND MESSAGE PATTERNS .....	4-71
Lab 4 Overview .....	4-72
Exception Handling.....	4-73
One-way and Duplex Operations.....	4-87
SESSIONS AND TRANSACTIONS .....	5-1
Sessions .....	5-2
Sessions and Instancing .....	5-2
Control Sessions.....	5-14
Sessions and Concurrency .....	5-22
Transactions .....	5-28
Review the Sample Application .....	5-29
Explore the WCF Service.....	5-34
Add Transaction Support to a WCF Service .....	5-36
Create a Transaction in the Client .....	5-42
Transactions and Sessions.....	5-49

LAB 5: SESSIONS AND TRANSACTIONS.....	5-63
Lab 5 Overview.....	5-64
Sessions and Instancing.....	5-65
Transactions .....	5-71
SECURITY .....	6-1
WCF Security Basics .....	6-2
Transport Security and Message Security .....	6-3
Default Security Settings.....	6-4
Encryption .....	6-7
Authentication .....	6-21
Default Authentication.....	6-22
Windows Authentication Using the BasicHttpBinding Binding .....	6-25
Basic Authentication over HTTP .....	6-34
Authentication Using ASP.NET Membership.....	6-44
Membership Management in ASP.NET .....	6-45
Authenticate Using the ASP.NET Membership Provider .....	6-47
Configure the Binding .....	6-52
Call the Service from the Client .....	6-60
Authorization.....	6-63
Role-based Security.....	6-63
Authorize Using the Windows Identity .....	6-65
Authorize Using a Generic Identity .....	6-69
Authorization Using ASP.NET Roles.....	6-78
Authenticate Using the ASP.NET Role Provider.....	6-79
LAB 6: SECURITY.....	6-91
Lab 6 Overview.....	6-92
Authenticate Using Windows Credentials.....	6-93
Authorize Using Windows Groups.....	6-101
WORKFLOW SERVICES.....	7-1
Windows Workflow Foundation .....	7-2
What Types of Applications Might Benefit from Workflow Support?.....	7-5
Workflow Architecture .....	7-6
Two Types of Workflows.....	7-7
Workflow Services .....	7-8
The ReceiveActivity Activity .....	7-8

Hosting Workflow Services .....	7-9
The SendActivity Activity.....	7-25
Examine the Sample Application .....	7-26
Use a Send Activity .....	7-37
Use the Receive and Send Activity Together .....	7-46
Stateful Workflow Services .....	7-50
State Machine Activities.....	7-51
Workflow Persistence .....	7-54
Create a Stateful Workflow Service .....	7-56
LAB 7: WORKFLOW SERVICES .....	7-83
Lab 7 Overview.....	7-84
Use the ReceiveActivity Activity.....	7-85
Use the SendActivity Activity .....	7-104
RESTFUL SERVICES AND SYNDICATION.....	8-1
Building RESTful WCF Services.....	8-2
WCF and REST .....	8-3
Uploading Data .....	8-17
WCF Syndication .....	8-24
WCF and Syndication .....	8-24
Try It Out! .....	8-28
LAB 8: RESTFUL SERVICES AND SYNDICATION .....	8-43
Lab 8 Overview.....	8-44
Create a RESTful WCF Service .....	8-45
Publish a Syndication Feed .....	8-54
INDEX.....	INDEX-1

