

Java Programming



24-Hour Trainer

TABLE OF CONTENTS

INTRODUC	TION	(XXI
LESSON 1	Introducing Java	. 1
LESSON 2	Eclipse IDE.	. 9
LESSON 3	Object-Oriented Programming with Java	21
LESSON 4	Class Methods and Constructors.	37
LESSON 5	Java Syntax: Bits and Pieces	47
LESSON 6	Packages, Interfaces, and Encapsulation	61
LESSON 7	Programming with Abstract Classes and Interfaces	73
LESSON 8	Introducing the GUI with Swing.	83
LESSON 9	Event Handling in Swing GUI	99
LESSON 10	Error Handling	115
LESSON 11	Introduction to Collections	127
LESSON 12	Introduction to Generics	141
LESSON 13	Lambda Expressions and Functional Style Programming	151
LESSON 14	Working with I/O Streams	171
LESSON 15	Java Serialization	185
LESSON 16	Network Programming Basics	195
LESSON 17	Concurrency and Multithreading	209
LESSON 18	Introduction to GUI with JavaFX	233
LESSON 19	Developing JavaFX Calculator and Tic-Tac-Toe	251
LESSON 20	Stream API	281
LESSON 21	Working with Relational DBMS Using JDBC	297
LESSON 22	Rendering Tabular Data in the GUI	311
LESSON 23	Annotations and Reflection	321
LESSON 24	Remote Method Invocation	335

LESSON 25	Java EE 7 Overview	345
LESSON 26	Programming with Servlets	355
LESSON 27	JavaServer Pages.	379
LESSON 28	Developing Web Applications with WebSockets	395
LESSON 29	Introducing JNDI.	413
LESSON 30	Introducing JMS and MOM	423
LESSON 31	Introduction to Enterprise JavaBeans	445
LESSON 32	Overview of the Java Persistence API	463
LESSON 33	Working with RESTful Web Services	481
LESSON 34	Java Logging API.	499
LESSON 35	Introduction to Unit Testing with JUnit Framework	511
LESSON 36	Build Automation with Gradle	527
LESSON 37	Java Technical Interviews	551
INDEX		565

Java® Programming

24-Hour Trainer Second Edition

Yakov Fain



Java® Programming 24-Hour Trainer, Second Edition

Published by Wiley Publishing, Inc. 10475 Crosspoint Boulevard Indianapolis, IN 46256 www.wiley.com

Copyright © 2015 by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN: 978-1-118-95145-3 ISBN: 978-1-118-95146-0 (ebk) ISBN: 978-1-118-95157-6 (ebk)

Manufactured in the United States of America

10987654321

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate percopy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at http://www.wiley.com/go/permissions.

Limit of Liability/Disclaimer of Warranty: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Web site is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Web site may provide or recommendations it may make. Further, readers should be aware that Internet Web sites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services please contact our Customer Care Department within the United States at (877) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at http://booksupport.wiley.com. For more information about Wiley products, visit www.wiley.com.

Library of Congress Control Number: 2015930542

Trademarks: Wiley, the Wiley logo, Wrox, the Wrox logo, Wrox Programmer to Programmer, and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. Java is a registered trademark of Oracle, Inc. All other trademarks are the property of their respective owners. Wiley Publishing, Inc., is not associated with any product or vendor mentioned in this book.



CREDITS

EXECUTIVE EDITOR

Robert Elliott

PROJECT EDITOR

Adaobi Obi Tulton

TECHNICAL EDITORS

Chád Darby

Rajesuwer P. Singaravelu

Martijn Verburg

PRODUCTION MANAGER

Kathleen Wisor

COPY EDITOR

Charlotte Khugen

MANAGER OF CONTENT DEVELOPMENT &

ASSEMBLY

Mary Beth Wakefield

MARKETING DIRECTOR

David Mayhew

MARKETING MANAGER

Carrie Sherrill

PROFESSIONAL TECHNOLOGY & STRATEGY DIRECTOR

Barry Pruett

BUSINESS MANAGER

Amy Knies

ASSOCIATE PUBLISHER

Jim Minatel

PROJECT COORDINATOR, COVER

Brent Savage

PROOFREADER

Jennifer Bennett, Word One

INDEXER

Johnna VanHoose Dinse

COVER DESIGNER

Wiley

COVER IMAGE

©iStock.com/gpointstudio

ABOUT THE AUTHOR



Yakov Fain works as a software architect for Farata Systems, a company that provides consulting services in the field of development of enterprise applications. He has authored several technical books and lots of articles on software development. Sun Microsystems has awarded Mr. Fain with the title of Java Champion, which has been given to only 150 people in the world. He leads the Princeton Java Users Group. Yakov blogs at yakovfain.com, and his Twitter ID is @yfain.

ABOUT THE TECHNICAL EDITORS

Chád (shod) Darby is an author, instructor and speaker in the Java development world. As a recognized authority on Java applications and architectures, he has presented technical sessions at software development conferences worldwide (U.S., U.K., India, Italy, Russia and Australia). In his fifteen years as a professional software architect, he's had the opportunity to work for Blue Cross/Blue Shield, Merck, Boeing, Red Hat and a handful of startup companies.

Chád is a contributing author to several Java books, including Professional Java E-Commerce (Wrox Press), Beginning Java Networking (Wrox Press), and XML and Web Services Unleashed (Sams Publishing). Chád has Java certifications from Sun Microsystems and IBM. He holds a B.S. in Computer Science from Carnegie Mellon University.

Stay connected with Chád by visiting his blog: www.luv2code.com and his YouTube channel: www.luv2code.com/youtube.

Rajesuwer P. Singaravelu has been working with Java and web technologies since the late '90s, creating distributed enterprise systems for financial services industry in New York City. When he isn't hacking, he enjoys spending time with his wife Rohini and two kids- Hassini and Arvind. His interests are in cross platform mobile development using Appcelerator Titanium and he is a Titanium Certified Expert (TCE). He is @rajesuwerps at the usual hangouts.

Martijn Verberg is the CEO of jClarity, a performance analysis and machine learning start-up in London. He is involved in various Java and open source communities, and co-leads the London's Java User Group (LJC, a JCP EC member). Martijn was recognized as a Java Champion in 2012 for his services to the community. You can find him speaking regularly at conferences (Devoxx, JavaOne, OSCON, etc.) on Java, open source, and software development as the "Diabolical Developer."

ACKNOWLEDGMENTS

First of all I want to thank my family for understanding that stealing (once again) time from family to write a computer book is OK.

I'd also like to thank the technical editors, Rajesuwer P. Singaravelu and Martijn Verberg, for their valuable input.

My special thanks to Chad Darby for producing the awesome videos for this book.

I give particular thanks to my business partners and colleagues at Farata Systems. They didn't contribute to this book directly, but working in the same team with these top notch professionals makes me a better programmer day in and day out.

Big thanks to the Wiley editors for doing a great job of editing and for not cursing me for not meeting deadlines.

CONTENTS

INTRODUCTION	XXXI
LESSON 1: INTRODUCING JAVA	1
Why Learn Java?	1
Setting the Goals	2
The Life Cycle of a Java Program	2
JDK and JRE	2 3 3
Downloading and Installing Java SE	
Installing JDK 8 for MAC OS	3
Installing JDK 8 in Windows	4
Your First Java Program: Hello World	5
Compiling and Running Hello World	7
Try It	7
Lesson Requirements	8
Step-by-Step	8
LESSON 2: ECLIPSE IDE	9
Introducing Eclipse IDE	9
Downloading and Installing Eclipse	10
Creating Hello Project in Eclipse	11
Creating the HelloWorld Class in Eclipse	14
Java Packages	15
Completing Code Generation	16
Additional Materials	18
Try It	18
Lesson Requirements	19
Step-by-Step	19
LESSON 3: OBJECT-ORIENTED PROGRAMMING WITH JAVA	21
Classes and Objects	21

Variables and Data Types	23
Declaring Variables	23
Final Variables	23
Primitive Data Types	24
Variable Scope	25
Wrappers, Autoboxing, and Unboxing	26
Program Comments	26
First Useful Program	27
Conditional Statement if	30
switch Statement	31
Inheritance	32
Method Overriding	33
Additional Materials	33
Try It	33
Lesson Requirements	33
Hints	34 34
Step-by-Step ESSON 4: CLASS METHODS AND CONSTRUCTORS	37
Method Overloading Constructors The Keyword super The Keyword this Passing by Value or by Reference Variable Scopes The Keyword static Try It	38 39 40 40 42 43
Lesson Requirements Step-by-Step	45 45 45
·	45 45
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays	45 45 45 47
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays More About Strings	45 45 45 47 47 49
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays More About Strings Loops	45 45 45 47 47 49 50
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays More About Strings Loops Debugging Java Programs	45 45 45 47 47 49 50 54
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays More About Strings Loops Debugging Java Programs More About if and switch Statements	45 45 45 47 47 49 50 54 57
Step-by-Step ESSON 5: JAVA SYNTAX: BITS AND PIECES Arrays More About Strings Loops Debugging Java Programs	45 45 45 47 47 49 50 54

Try It	59
Lesson Requirements	59
Step-by-Step	60
LESSON 6: PACKAGES, INTERFACES, AND ENCAPSULATION	61
Java Packages	61
Encapsulation	62
Access Levels	63
The Keyword final	63
final Variables	64
final Methods	64
final Classes	64
Interfaces	65
Marker Interfaces	66
Default Methods in Interfaces	67
Static Methods in Interfaces	68
Casting	68
Try It	70
Lesson Requirements	70
Step-by-Step	70
LESSON 7: PROGRAMMING WITH ABSTRACT CLASSES AND I	NTERFACES 73
Abstract Classes	73
Assignment	73
Solution with an Abstract Class	74
Polymorphism	76
Making the Interface Solution Polymorphic	77
Interfaces Versus Abstract Classes	78
Try It	79
Lesson Requirements	79
Step-by-Step	79
LESSON 8: INTRODUCING THE GUI WITH SWING	83
Swing Basics	83
Layout Managers	86
A Simple Calculator with FlowLayout	86
A Brief Introduction to Layout Managers	87

FlowLayout GridLayout BorderLayout Combining Layout Managers BoxLayout GridBagLayout CardLayout CardLayout Containers with Absolute Layout More About Swing Widgets Swing GUI Builders Try It Lesson Requirements Step-by-Step	88 88 90 90 93 94 95 96 96 97 97
LESSON 9: EVENT HANDLING IN SWING GUI	99
Introduction to Event Listeners Teaching the Calculator to Calculate Registering Components with ActionListener Finding the Source of an Event How to Pass Data Between Objects Design Pattern Model-View-Controller More Swing Listeners How to use Adapters Inner Classes Anonymous Inner Classes Try It Lesson Requirements Step-by-Step	99 100 101 102 104 107 107 109 110 111 112 112
LESSON 10: ERROR HANDLING	115
Stack Trace Java Exceptions Exception Hierarchy Try/Catch Blocks Using the throws Clause Using the finally Clause Try-With-Resources The throw Keyword Creating Your Own Exceptions	115 116 117 118 119 120 121 122

Try It	125
Lesson Requirements	125
Step-by-Step	125
LESSON 11: INTRODUCTION TO COLLECTIONS	127
Arrays Revisited	128
Collection Interfaces From java.util	128
Dynamic Arrays with ArrayList	129
Classes Hashtable and Hashmap	132
Class Properties	133
Classes Enumeration and Iterator	135
Class LinkedList	135
Class BitSet	137
Choosing the Right Collection	138
Try It	139
Lesson Requirements	139
Step-by-Step	139
LESSON 12: INTRODUCTION TO GENERICS	141
Generics with Classes	141
Declaring Generics	144
Wildcards	144
Creating Custom Parameterized Classes	146
Bounded Type Parameters	147
Generic Methods	149
Try It	150
Lesson Requirements	150
Step-by-Step	150
LESSON 13: LAMBDA EXPRESSIONS AND FUNCTIONAL STYLE	
PROGRAMMING	151
Imperative vs Functional Style	152
What's Lambda Expression	153
Functional Interfaces	154
Methods Versus Functions	157
Passing Functions to Methods	158
Iterating Collections with forEach()	160
Lambdas Versus Inheritance and Polymorphism	162

Eliminating Inheritance	165
Interfaces Function and BiFunction	167
Try It	169
Lesson Requirements	169
Step-by-Step	169
LESSON 14: WORKING WITH I/O STREAMS	171
Byte Streams	172
Buffered Streams	173
Character Streams	174
Bringing Together GUI and I/O Streams	175
Data Streams	178
Utility Classes for Working with Files	179
The Class File	179
NIO.2: Using Files, Path, and Paths	180
What NIO Is About	182
Try It	183
Lesson Requirements	184
Step-by-Step	184
LESSON 15: JAVA SERIALIZATION	185
The Class ObjectOutputStream	187
The Class ObjectInputStream	188
The Interface Externalizable	189
Class Versioning	191
Serializing into Byte Arrays	192
Try It	193
Lesson Requirements	193
Step-by-Step	194
LESSON 16: NETWORK PROGRAMMING BASICS	195
Reading Data from the Internet	196
Connecting Through HTTP Proxy Servers	198
How to Download Files from the Internet	199
Specifying Command-Line Parameters for FileDownload	200
The Stock Quote Program	200
Socket Programming	203
Why Use Sockets?	204

The Stock Quote Server with Sockets Try It Lesson Requirements Hints	204 207 207 207
Step-by-Step	207
LESSON 17: CONCURRENCY AND MULTITHREADING	209
The Class Thread	210
The Interface Runnable	211
Eliminating Inheritance	213
Sleeping Threads	213
How to Kill a Thread	215
Thread Priorities	217
Thread Synchronization and Race Conditions	217
Thread States	219 219
Wait and Notify Closures in Java	219
Joining Threads	222
Goodies From java.util.concurrent	224
ReentrantLock Versus Synchronized	224
Executor Framework	225
A Brief Review of Concurrent Collections	228
Swingworker Thread	229
Try It	232
Lesson Requirements	232
Step-by-Step	232
LESSON 18: INTRODUCTION TO GUI WITH JAVAFX	233
JavaFX Application Basics	233
Using the E(fx)clipse Plug-in	234
Layouts	236
A Sample Application with the HBox Layout	237
A Sample Application with the GridPane Layout	239
Skinning with CSS	240
Event Handling	244
Properties and Binding	246
Try It Lesson Requirements	249 250
Step-by-Step	250 250

LESSON 19: DEVELOPING JAVAFX CALCULATOR AND TIC-TAC-TOE	251
Designing a Calculator with Scene Builder	251
Designing the Calculator GUI with Scene Builder	254
Handling Events in the Controller Class	260
Recognizing the Source of the Event	261
Passing Data from View to Controller and Back	263
Programming Tic-Tac-Toe	265
The Game Strategy	265
Designing Tic-Tac-Toe GUI with FXML and CSS	266
Implementing Game Strategy in Tic-Tac-Toe Controller	273
Handling the Tic-Tac-Toe Menu Play	277
Tic-Tac-Toe: What to Try Next	277
JavaFX on the Web and Mobile Devices	278
Try It	278
Lesson Requirements	278
Step-by-Step	279
LESSON 20: STREAM API	281
Stream Basics	281
Intermediate and Terminal Operations	282
Parallel Versus Sequential Processing	285
Sorting Collections and Streams	285
Sorting Java Collections	286
Sorting Streams	289
Other Stream Sources	290
Creating Finite Size Streams	290
Creating Infinite-Size Streams	291
Short-Circuit Operations	293
Try It	294
Lesson Requirements	294
Step-by-Step	294
LESSON 21: WORKING WITH RELATIONAL DBMS USING JDBC	297
JDBC Driver Types	298
Installing Derby DB and Creating a Database	298
Sample JDBC Program	300
Processing Result Sets	302
The PreparedStatement Class	304

The CallableStatement Class The ResultSetMetaData Class Scrollable Result Sets and Rowset Transactional Updates Connection Pools and DataSource	304 305 307 308 308
Try It	309
Lesson Requirements	309
Hint	309
Step-by-Step	309
LESSON 22: RENDERING TABULAR DATA IN THE GUI	311
JTable and the MVC Paradigm	311
The Model	312
Mandatory Callbacks of Table Models	313
Optional Callbacks of Table Models	316
Introduction to Renderers	318
Summary	320
Try It	320
Lesson Requirements	320
Step-by-Step	320
LESSON 23: ANNOTATIONS AND REFLECTION	321
Javadoc Annotations	321
Java Annotations Basics	322
@Override	323
@Deprecated	324
@Inherited	324
@FunctionalInterface	324
@Documented	325
Custom Annotations	325
Reflection	328
Run-Time Annotation Processing	330
Summary	332
Try It	332
Lesson Requirements	332
Step-by-Step	332

LESSON 24: REMOTE METHOD INVOCATION	335	
Developing Applications with RMI	336	
Defining Remote Interfaces	336	
Implementing Remote Interfaces	337	
Registering Remote Objects	338	
Writing RMI Clients	339	
Security Considerations Finding Pemete Objects	340 341	
Finding Remote Objects Try It	341	
Lesson Requirements	342	
Hints	342	
	342	
Step-by-Step	342	
LESSON 25: JAVA EE 7 OVERVIEW	345	
The Big Picture	345	
JCP, JSR, and Other Acronyms	346	
Tiers of Java EE Applications	346	
Containers Versus Application Servers	348	
Profiles and Pruning	350	
Why Java EE?	350	
Try It	352	
Lesson Requirements	352	
Step-by-Step	352	
LESSON 26: PROGRAMMING WITH SERVLETS	355	
TI D' D' A	0.5.5	
The Big Picture	355	
The Thin Client	357	
How to Write a Servlet	357	
How to Deploy a Servlet	358	
Configuring Glassfish in Eclipse IDE	359	
How to Create a Servlet in Eclipse	362	
Deploying a Web Application as WAR	366	
Browser-Servlet Data Flow	366	
HTTP Get and Post Requests	367	
Session Tracking	368	
Cookies	368	
URL Rewriting	369	
Server-Side HttpSession	370	
Filters	373	

Asynchronous Servlets	375
Try It	376
Lesson Requirements	376
Step-by-Step	377
LESSON 27: JAVASERVER PAGES	379
Embedding Java Code into HTML	380
Implicit JSP Objects	383
Overview of the JSP Tags	383
Directives	384
Declarations	384
Expressions	384
Scriptlets	385
Comments	385
Standard Actions	385
Error Pages	386
Java Beans	387
Using JavaBeans in JSP	388
How Long Does a Bean Live?	388
Loading JSP from Servlets	389
Tag Libraries	390
JSTL 	392
Try It	393
Lesson Requirements	393
Step-by-Step	393
LESSON 28: DEVELOPING WEB APPLICATIONS WITH WEBSOCKETS	395
HTTP Drawbacks	396
HTTP Hacks for Server-Side Data Push	396
Client-Server Communication with Websockets	397
Web Browser as a WebSocket Client	397
Communication with the Server Using WebSockets	399
Sending Messages	403
Receiving Messages Using @OnMessage	404
Encoders and Decoders	405
Publishing to All Clients	409
Try It	412
Lesson Requirements	412
Step-by-Step	412

LESSON 29: INTRODUCING JNDI	413	
Naming and Directory Services	413	
Using the Class InitialContext	414	
Getting a Reference to InitialContext	414	
Injecting JNDI Resources	415	
Administering JNDI Objects in Glassfish	416	
Datasource and JNDI	417	
Lightweight Directory Access Protocol	419	
Try It	421	
Lesson Requirements	421	
Step-by-Step	421	
LESSON 30: INTRODUCING JMS AND MOM	423	
Messaging Concepts and Terminology	423	
Two Modes of Message Delivery	425	
Introducing OpenMQ MOM	426	
JMS API Overview	429	
Types of Messages	429	
How to Send a Message Directly to MOM	430	
How to Receive a Message Directly from MOM	431	
How to Publish a Message	433	
How to Subscribe for a Topic	434	
Message Acknowledgments and Transactions Support	435	
Message Selectors	436	
Sending Messages from Java EE Containers	437	
Administering JMS Objects in GlassFish	438	
Try It	441	
Lesson Requirements	442	
Hints	442	
Step-by-Step	442	
LESSON 31: INTRODUCTION TO ENTERPRISE JAVABEANS	445	
Who Needs EJB Containers?	445	
Types of EJBs	446	
Stateless Session Beans	447	
The Bean	447	
The Client's View	447	
Asynchronous Methods and Concurrency	453	

Stateful Session Beans	454
Singleton Beans	455
Deploying EJB	456
Message-Driven Beans EJB and Transactions	458 459
Timer Service	459 460
Summary	460
Try It	461
Lesson Requirements	461
Hint	461
Step-by-Step	461
LESSON 32: OVERVIEW OF THE JAVA PERSISTENCE API	463
The Dig Dicture	463
The Big Picture Mapping Objects to Database Tables	464
Querying Entities	466
JPQL	466
Criteria API	467
Entity Manager	468
Bean Validation	471
Try It	473
Lesson Requirements	473
Step-by-Step	473
LESSON 33: WORKING WITH RESTFUL WEB SERVICES	481
The Soap Web Services	481
The RESTful Web Services	482
Working with JSON-Formatted Data	483
Reading JSON with the Streaming API	484
Writing JSON with the Streaming API	485
Writing JSON with the Object Model API	486
The RESTful Stock Server	487
Creating the Application	487
Creating the Java Bean Stock	488
Creating the Endpoint StockService	489
Creating RESTFful Clients	493
Contexts and Dependency Injection	493
Try It	495
Lesson Requirements	495

Hints Step-by-Step	496 496
LESSON 34: JAVA LOGGING API	499
Java Logging API Hello World with the Java Logging API Using Handlers and Setting Log Levels	500 500 502
Formatters and Filters Logging Frameworks Try It Lesson Requirements Stan by Stan	506 508 509 509 510
Step-by-Step LESSON 35: INTRODUCTION TO UNIT TESTING WITH JUN	
Introduction to JUnit	512
Installing JUnit	512
Changing the Default Directory Structure in Eclipse	513
Your First JUnit Test Case	514
JUnit Annotations	517
Applying Annotations for Testing Tax	518
Test Suites	520
JUnit Test Runners	523
Try It	524
Lesson Requirements	524
Step-by-Step	524
LESSON 36: BUILD AUTOMATION WITH GRADLE	527
Hello World in Ant	528
Hello World in Maven	529
Gradle Basics	532
Hello World in Gradle	532
Changing Gradle Conventions	536
Managing Dependencies with Gradle	538
Repositories	540
Dependencies and Configurations	541
Using Gradle in Eclipse IDE	547
Gradle Eclipse Plug-ins	547

Eclipse IDE and Gradle	548	
Try It	549	
Lesson Requirements	550	
Step-by-Step	550	
LESSON 37: JAVA TECHNICAL INTERVIEWS	551	
Getting the Interview	551	
Doing Well at the Interview	552	
Considering the Offer	553	
Interviewing Enterprise Developers	554	
To Get or Not to Get Certified?	555	
Technical Questions and Answers	555	
Epilogue	563	
INDEX		