

Contents

About the Author	xiii
Acknowledgments	xv
Introduction	xvii

PART 1 ■ ■ ■ Introducing Java

■ LESSON 1	Your First Java Program	3
	Hello World of Abapers	3
■ LESSON 2	Object Orientation in a Nutshell	7
	The Nutshell—Encapsulation	7
	Inheritance and Polymorphism	8
	The Conceptual Model (A Glimpse of UML)	10
■ LESSON 3	The Primitive Data Types	13
	Boolean	13
	Byte	14
	Integer	14
	Long	14
	Short	15
	Float	15
	Double	15
	Char	15
	Data Types Summary	16
■ LESSON 4	Comments	17
	Block Comments	17
	Line Comments	18
	Javadoc Comments	18

■ LESSON 5	Naming Standards and Conventions	19
	Legal and Illegal Names	19
	Java Conventions	20
■ LESSON 6	The Java Operators	21
	Arithmetic Operators	21
	Relational Operators	22
	Increment Operators	22
	Logical Operators	23
	Bitwise Operators	24
	Block Scope	26
■ LESSON 7	Strings with Java	29
	Declaring a String	30
	Concatenating Strings	31
	Using the String Methods	31
	The charAt Method	31
	The substring Method	32
	The equals Method	32
	The length Method	32
	Using the StringBuffer Class	33
	The append Method	33
	The insert Method	33
	Using the StringTokenizer Class	34
■ LESSON 8	Control Flow	35
	Using the if Statement	35
	Using the ? and : Operators	36
	Using the switch Statement	37
	Looping	38
	The while Loop	38
	The for Loop	39
	The do Loop	40

■ LESSON 9	Jump Statements	41
	The break Statement	41
	The continue Statement	42
	The return Statement	42
■ LESSON 10	Arrays and Collections in Java	43
	Using Arrays	43
	The Array Index	44
	Declaring an Array	44
	Creating the Array	44
	Filling the Array	45
	Multidimensional Arrays	46
	The Vector Class	46
	Using Vectors	47
■ LESSON 11	Object Orientation in Java	49
	The Pillars of OO	49
	Java Class Structure	50
	Inheritance and Polymorphism	51
	Encapsulation	53
	Abstraction	56
■ LESSON 12	More OO in Java—Interfaces and Abstract Classes	57
	Abstract Classes	57
	Interfaces	59
■ LESSON 13	Inner, Nested, and Anonymous Classes	61
	Inner Classes	61
	Nested Classes	62
	Anonymous Classes	63
■ LESSON 14	Errors and Exceptions	65
	The Throwable Class	65
	Exception Handling	66
	The try . . . catch block	66
	The finally block	68
	Exception Throwing	69

■ LESSON 15	Threads, Daemons, and Garbage Collection	71
	Simple Threads	71
	Basic Related Threads	74
	Synchronized Threads	76
	Semaphoring Threads	77
	Daemon Threads and Garbage Collection	78
■ LESSON 16	Basic Swing Using Default Layouts	79
	Containers	79
	A Simple Swing Example	80
■ LESSON 17	Event Handling	83
	Listening	83
■ LESSON 18	Layout Managers and Other Components	87
	FlowLayout	87
	BorderLayout	87
	GridLayout	89
	Layout Design Example	90
	Other Atomic Components	91

PART 2 ■ ■ ■ Enterprise Java

■ LESSON 19	JDBC Technology	97
	JDBC Drivers	97
	Type 1 Drivers	97
	Type 2 Drivers	97
	Type 3 Drivers	98
	Type 4 Drivers	98
	Loading the Driver	98
	Connecting to the Database	98
	Creating Statements	100
	ResultSets	103

■ LESSON 20	The Java Connector (JCo)	107
	Downloading and Installing JCo	107
	A JCo Example	107
■ LESSON 21	Servlets	115
	Hypertext Transfer Protocol	115
	The Servlet Architecture	116
	Servlet Basics	116
	The Generic Servlet	117
	The HTTPServlet	120
	The web.xml File	125
	Initializing Servlets	126
	Global Initialization Parameters	129
	Preloading Servlets	130
	Servlet Timeout	131
	Tracking with Servlets	132
	Programming Cookies	132
■ LESSON 22	JavaServer Pages (JSP)	133
	The JSP Architecture	134
	The JSP Access Model	134
	The JSP Syntax	135
	Scripting Elements	135
	Comments	135
	Expressions	136
	Scriptlets	138
	Declarations	138
	Directives	139
	Action Elements	140
	Control Elements	140
	JavaBean Elements	141
	Custom Tags	143
■ LESSON 23	Extensible Markup Language (XML)	145
	The Sales Order Example	145
	Empty Elements	147
	Element Attributes	147

	The Document Header	148
	The Document Content	148
	Parsing the XML Document	151
	The ContentHandler Interface	153
	Constraining the XML Document	157
	Using DTDs	159
	Using Schemas	161
■ LESSON 24	Java Messaging Services	165
	JMS Scenarios	166
	SOAP	166
	JAXM	167
	Other Considerations When Using JMS	169
■ LESSON 25	Enterprise JavaBeans 3.0	171
	Working with EJB 2.x	171
	The Session Bean	171
	The Entity Bean	172
	The Message-Driven Bean	173
	EJB Clients	174
	Components in a 2.x EJB Scenario	174
	Naming Conventions for EJB Beans	174
	Creating a Simple EJB 2.x Project	175
	What's New in EJB 3.0?	187
	Annotations	187
	POJO Services	187
	Developing an EJB 3.0 Session Bean	188
	HelloLocal.java	188
	HelloBean.java	188
	HelloServlet.java	189
	Developing an EJB 3.0 Entity Bean	190
	The Entity Bean	190
	The Session Bean	191
	Conclusion	192
■ INDEX		193