Beginning Java 8 Language Features Lambda Expressions Inner Classes Threads Io Collections And Streams

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Java 8 New Features

Java 8 is a giant step forward for the Java language. In Project Lambda, Java gets a new closure syntax (lambda expressions), method-references, and default and static methods on interfaces. It manages to add many of the features of functional languages without losing the clarity and simplicity Java developers have come to expect. In addition, many of the existing Java core library classes have been enhanced with the new Streams API. This book will help you understand Java 8, including: Project Lambda, the new Date-Time API, Streams, default methods, the Nashorn Javascript engine, and more.

Java 13 Revealed

Lambda is thus far the biggest change introduced in the Java language since it’s inception. All About Java 8 Lambdas is a weekend read book, written concisely in a plain and simple text with easy to understand code examples and finely organised chapters. The aim of the book is to learn lambda expressions and related Java 8 features in a weekend. Along with lambdas, this book will demystify the other features such as interface unlocking, functional libraries, streams and parallelism just to name a few. This is a must read book if you want to learn the new features of lambda programming in Java 8. In this book, we will: *

* Learn and develop lambda expressions from ground up *
* Explore functional interfaces and function libraries in details *
* Unravel the Streams API *
* Understand the parallelism concepts
Beginning Java 8 Language Features

The introduction of functional programming concepts in Java SE 8 was a drastic change for this venerable object-oriented language. Lambda expressions, method references, and streams fundamentally changed the idioms of the language, and many developers have been trying to catch up ever since. This cookbook will help. With more than 70 detailed recipes, author Ken Kousen shows you how to use the newest features of Java to solve a wide range of problems. For developers comfortable with previous Java versions, this guide covers nearly all of Java SE 8, and includes a chapter focused on changes coming in Java 9. Need to understand how functional idioms will change the way you write code? This cookbook—chock full of use cases—is for you. Recipes cover: The basics of lambda expressions and method references Interfaces in the java.util.function package Stream operations for transforming and filtering data Comparators and Collectors for sorting and converting streaming data Combining lambdas, method references, and streams Creating instances and extract values from Java's Optional type New I/O capabilities The Date-Time API that replaces the legacy Date and Calendar classes Mechanisms for experimenting with concurrency and parallelism

Java APIs, Extensions and Libraries

Design Patterns

When you need quick answers for developing or debugging Java programs, this pocket guide provides a handy reference to standard features of the Java programming language and its platform. You'll find helpful programming examples, tables, figures, and lists, as well as Java 8 features such as Lambda Expressions and the Date and Time API. It's an ideal companion, whether you're in the office, in the lab, or on the road. This book also provides material to help you prepare for the Oracle Certified Associate Java Programmer exam. Quickly find Java language details, such as naming conventions, types, statements and blocks, and object-oriented programming Get details on the Java SE platform, including development basics, memory management, concurrency, and generics Browse through information on basic input/output, NIO 2.0, the Java collections framework, and the Java Scripting API Get supplemental references to fluent APIs, third-party tools, and basics of the Unified Modeling Language (UML)

Core Java, Volume II--Advanced Features

Android development is hot, and many programmers are interested in joining the fun. However, because this technology is based on Java, you should first obtain a solid grasp of the Java language and its foundational APIs to improve your chances of succeeding as an Android app developer. After all, you will be busy learning the architecture of an Android app, the various Android-specific APIs, and Android-specific tools. If you do not already know Java fundamentals, you will probably end up with a massive headache from also having to quickly cram those fundamentals into your knowledge base. Learn Java for Android Development, Second Edition teaches programmers of any skill level the essential Java language and foundational Java API skills that must be learned to improve the programmer's chances of succeeding as an Android app developer. Each of the book's 14 chapters provides an exercise section that gives you the opportunity to reinforce your understanding of the chapter's material. Answers to the book's more than 500 exercises are provided in an appendix. A second appendix provides a significant game-oriented Java application, which you can convert into an Android app. Once you complete this book, you should be ready to dive into beginning Android app development. Maybe, start that journey with Apress' Beginning Android.

Java 8 Pocket Guide

Pro Java 8 Programming covers the core Java development kit. It takes advantage of the finer points of the core standard edition (SE) and development kit version 8. You'll discover the particulars of working with the Java language and APIs to develop applications in many different contexts. You will also delve into more advanced topics like lambda expressions, closures, new I/O (NIO.2), enums, generics, XML, metadata and the Swing APIs for GUI design and development. By the end of the book, you'll be fully prepared to take advantage of Java's ease of development, and able to create powerful, sophisticated Java applications.
Java Concurrency in Practice

The Java® Tutorial, Fifth Edition, is based on Release 7 of the Java Platform Standard Edition. This revised and updated edition introduces the new features added to the platform, including a section on NIO.2, the new file I/O API, and information on migrating legacy code to the new API. The deployment coverage has also been expanded, with new chapters such as “Doing More with Rich Internet Applications” and “Deployment in Depth,” and a section on the fork/join feature has been added to the chapter on concurrency. Information reflecting Project Coin developments, including the new try-with-resources statement, the ability to catch more than one type of exception with a single exception handler, support for binary literals, and diamond syntax, which results in cleaner generics code, has been added where appropriate. The chapters covering generics, Java Web Start, and applets have also been updated. In addition, if you plan to take one of the Java SE 7 certification exams, this guide can help. A special appendix, “Preparing for Java Programming Language Certification,” lists the three exams available, details the items covered on each exam, and provides cross-references to where more information about each topic appears in the text. All of the material has been thoroughly reviewed by members of Oracle Java engineering to ensure that the information is accurate and up to date.

Java in 21 Days, Sams Teach Yourself (Covering Java 8)

Are you are worried you are missing out on the latest version of Java? When you hear a term such as lambda expressions - do you wonder what you are neglecting? If so, Java 8 New Features will squash your concerns and deliver a quick and easy-to-understand guide to what's new in Java 8. The latest version of Java offers numerous improvements and new features to better utilize Java. Streams, for example, supports a fluent approach to problem solving and lets the developer take advantage of concurrency with minimal effort, whilst Lambda Expressions offer new ways of expressing a solution that brings efficiency and succinct programming. Get up-to-speed here with this color book! - Learn how interface enhancements - such as default methods - affect new additions to Java 8 and their impact on multiple inheritance between interfaces - Use lambda expressions to simplify solutions to development problems - Discover how the new Stream interface supports query type problems - Explore the new support for concurrent processing including that supported by Streams - Find out why the new date and time enhancements make working with time so much easier than it used to be - Includes information on the Nashorn JavaScript Engine, File IO Enhancements, and Project Jigsaw

Functional Programming in Java

Are you looking for a deeper understanding of the Java™ programming language so that you can write code that is clearer, more correct, more robust, and more reusable? Look no further! Effective Java™, Second Edition, brings together seventy-eight indispensable programmer’s rules of thumb: working, best-practice solutions for the programming challenges you encounter every day. This highly anticipated new edition of the classic, Jolt Award-winning work has been thoroughly updated to cover Java SE 5 and Java SE 6 features introduced since the first edition. Bloch explores new design patterns and language idioms, showing you how to make the most of features ranging from generics to enums, annotations to autoboxing. Each chapter in the book consists of several “items” presented in the form of a short, standalone essay that provides specific advice, insight into Java platform subtleties, and outstanding code examples. The comprehensive descriptions and explanations for each item illuminate what to do, what not to do, and why. Highlights include: New coverage of generics, enums, annotations, autoboxing, the for-each loop, varargs, concurrency utilities, and much more Updated techniques and best practices on classic topics, including objects, classes, libraries, methods, and serialization How to avoid the traps and pitfalls of commonly misunderstood subtleties of the language Focus on the language and its most fundamental libraries: java.lang, java.util, and, to a lesser extent, java.util.concurrent and java.io Simply put, Effective Java™, Second Edition, presents the most practical, authoritative guidelines available for writing efficient, well-designed programs.

Beginning Java 7

Beginning Java 7 guides you through version 7 of the Java language and a wide assortment of platform APIs. New Java 7 language features that are discussed include switch-on-string and try-with-resources. APIs that are discussed include Threading, the Collections Framework, the Concurrency Utilities, Swing, Java 2D, networking, JDBC, SAX, DOM, StAX, XPath, JAX-WS, and SAAJ. This book also presents an introduction to Android app development so that you can apply some of its knowledge to the exciting world of Android app development. This book presents the following table of contents: Chapter 1 introduces you to Java and begins to cover the Java language by focusing on fundamental concepts such as comments, identifiers, variables, expressions, and statements. Chapter 2 continues to explore this language by presenting all of its features for working with classes and objects. You learn about features related to class declaration and object
creation, encapsulation, information hiding, inheritance, polymorphism, interfaces, and garbage collection. Chapter 3 focuses on the more advanced language features related to nested classes, packages, static imports, exceptions, assertions, annotations, generics, and enums. Additional chapters introduce you to the few features not covered in Chapters 1 through 3. Chapter 4 largely moves away from covering language features (although it does introduce class literals and strictfp) while focusing on language-oriented APIs. You learn about Math, StrictMath, Package, Primitive Type Wrapper Classes, Reference, Reflection, String, StringBuffer and StringBuidler, Threading, BigDecimal, and BigInteger in this chapter. Chapter 5 begins to explore Java's utility APIs by focusing largely on the Collections Framework. However, it also discusses legacy collection-oriented APIs and how to create your own collections. Chapter 6 continues to focus on utility APIs by presenting the concurrency utilities along with the Objects and Random classes. Chapter 7 moves you away from the command-line user interfaces that appear in previous chapters and toward graphical user interfaces. You first learn about the Abstract Window Toolkit foundation, and then explore the Java Foundation Classes in terms of Swing and Java 2D. Appendix C explores Accessibility and Drag and Drop. Chapter 8 explores filesystem-oriented I/O in terms of the File, RandomAccessFile, stream, and writer/reader classes. Chapter 9 introduces you to Java's network APIs (e.g., sockets). It also introduces you to the JDBC API for interacting with databases along with the Java DB database product. Chapter 10 dives into Java's XML support by first presenting an introduction to XML (including DTDs and schemas). It next explores the SAX, DOM, StAX, XPath, and XSLT APIs. It even briefly touches on the Validation API. While exploring XPath, you encounter namespace contexts, extension functions and function resolvers, and variables and variable resolvers. Chapter 11 introduces you to Java's support for SOAP-based and RESTful web services. As well as providing you with the basics of these web service categories, Chapter 11 presents some advanced topics, such as working with the SAAJ API to communicate with a SOAP-based web service without having to rely on JAX-WS. You will appreciate having learned about XML in Chapter 10 before diving into this chapter. Chapter 12 helps you put to use some of the knowledge you've gathered in previous chapters by showing you how to use Java to write an Android app's source code. This chapter introduces you to Android, discusses its architecture, shows you how to install necessary tools, and develops a simple app. Appendix A presents the solutions to the programming exercises that appear near the end of Chapters 1 through 12. Appendix B introduces you to Java's Scripting API along with Java 7's support for dynamically typed languages. Appendix C introduces you to additional APIs and architecture topics. Examples include Accessibility, classloaders, Console, Drag and Drop, Java Native Interface, and System Tray. Appendix D presents a gallery of significant applications that demonstrate various aspects of Java. Unfortunately, there are limits to how much knowledge can be crammed into a print book. For this reason, Appendices A, B, C, and D are not included in this book's pages. Instead, these appendices are freely distributed as PDF files. Appendices A and B are bundled with the book's associated code file at the Apress website (http://www.apress.com/9781430239093). Appendixes C and D are bundled with their respective code files at my TutorTutor.ca website (http://tutortutor.ca/cgi-bin/makepage.cgi?/books/bj7).

Effective Java

The upcoming Java 9 module system will affect existing applications and offer new ways of creating modular and maintainable applications. With this hands-on book, Java developers will learn not only about the joys of modularity, but also about the patterns needed to create truly modular and reliable applications. Authors Sander Mak and Paul Bakker teach you the concepts behind the Java 9 module system, along with the new tools it offers. You'll also gain learn how to modularize existing code and how to build new Java applications in a modular way. Understand Java 9 module system concepts Master the patterns and practices for building truly modular applications Migrate existing applications and libraries to Java 9 modules Use JDK 9 tools for modular development and migration

Modern Java Recipes

Provides information on building concurrent applications using Java.

Think Java

For nearly five years, one book has served as the definitive reference to Java for all serious developers: The Java Language Specification, by James Gosling, Bill Joy, and Guy Steele. Now, these world-renowned Java authorities (along with new co-author Gilad Bracha) have delivered a monumental update. This completely revised Second Edition covers the Java 2 Platform Standard Edition Version 1.3 with unprecedented depth and precision, offering the invaluable insights of Java's creators to every developer. There is no better source for learning everything about the Syntax and Semantics of the Java programming language. Developers will turn to this book again and again.
Learning a complex new language is no easy task especially when it's an object-oriented computer programming language like Java. You might think the problem is your brain. It seems to have a mind of its own, a mind that doesn't always want to take in the dry, technical stuff you're forced to study. The fact is your brain craves novelty. It's constantly searching, scanning, waiting for something unusual to happen. After all, that's the way it was built to help you stay alive. It takes all the routine, ordinary, dull stuff and filters it to the background so it won't interfere with your brain's real work--recording things that matter. How does your brain know what matters? It's like the creators of the Head First approach say, suppose you're out for a hike and a tiger jumps in front of you, what happens in your brain? Neurons fire. Emotions crank up. Chemicals surge. That's how your brain knows. And that's how your brain will learn Java. Head First Java combines puzzles, strong visuals, mysteries, and soul-searching interviews with famous Java objects to engage you in many different ways. It's fast, it's fun, and it's effective. And, despite its playful appearance, Head First Java is serious stuff: a complete introduction to object-oriented programming and Java. You'll learn everything from the fundamentals to advanced topics, including threads, network sockets, and distributed programming with RMI. And the new second edition focuses on Java 5.0, the latest version of the Java language and development platform. Because Java 5.0 is a major update to the platform, with deep, code-level changes, even more careful study and implementation is required. So learning the Head First way is more important than ever. If you've read a Head First book, you know what to expect--a visually rich format designed for the way your brain works. If you haven't, you're in for a treat. You'll see why people say it's unlike any other Java book you've ever read. By exploiting how your brain works, Head First Java compresses the time it takes to learn and retain--complex information. Its unique approach not only shows you what you need to know about Java syntax, it teaches you to think like a Java programmer. If you want to be bored, buy some other book. But if you want to understand Java, this book's for you.

All about Java 8 Lambdas

Beginning Java 8 Fundamentals provides a comprehensive approach to learning the Java programming language, especially the object-oriented fundamentals necessary at all levels of Java development. Author Kishori Sharan provides over 90 diagrams and 240 complete programs to help beginners and intermediate level programmers learn the topics faster. Starting with basic programming concepts, the author walks you through writing your first Java program step-by-step. Armed with that practical experience, you'll be ready to learn the core of the Java language. The book continues with a series of foundation topics, including using data types, working with operators, and writing statements in Java. These basics lead onto the heart of the Java language: object-oriented programming. By learning topics such as classes, objects, interfaces, and inheritance you'll have a good understanding of Java's object-oriented model. The final collection of topics takes what you've learned and turns you into a real Java programmer. You'll see how to take the power of object-oriented programming and write programs that can handle errors and exceptions, process strings and dates, format data, and work with arrays to manipulate data.

OCP: Oracle Certified Professional Java SE 8 Programmer II Study Guide

This book concisely introduces Java 8's most valuable new features, including lambda expressions (closures) and streams. If you're an experienced Java programmer, the author's practical insights and sample code will help you quickly take advantage of these and other Java language and platform improvements.

Head First Java

Beginning Java 8 Games Development, written by Java expert and author Wallace Jackson, teaches you the fundamentals of building a highly illustrative game using the Java 8 programming language. In this book, you'll employ open source software as tools to help you quickly and efficiently build your Java game applications. You'll learn how to utilize vector and bit-wise graphics; create sprites and sprite animations; handle events; process inputs; create and insert multimedia and audio files; and more. Furthermore, you'll learn about JavaFX 8, now integrated into Java 8 and which gives you additional APIs that will make your game application more fun and dynamic as well as give it a smaller footprint; so, your game application can run on your PC, mobile and embedded devices. After reading and using this tutorial, you'll come away with a cool Java-based 2D game application template that you can re-use and apply to your own game making ambitions or for fun.
Beginning Java 8 Games Development

JR is an extension of the Java programming language with additional concurrency mechanisms based on those in the SR (Synchronizing Resources) programming language. The JR implementation executes on UNIX-based systems (Linux, Mac OS X, and Solaris) and Windows-based systems. It is available free from the JR webpage. This book describes the JR programming language and illustrates how it can be used to write concurrent programs for a variety of applications. This text presents numerous small and large example programs. The source code for all programming examples and the given parts of all programming exercises are available on the JR webpage. Dr. Ronald A. Olsson and Dr. Aaron W. Keen, the authors of this text, are the designers and implementors of JR.

What's New in Java 8

The Definitive Guide to Lambda Expressions Mastering Lambdas: Java Programming in a Multicore World describes how the lambda-related features of Java SE 8 will enable Java to meet the challenges of next-generation parallel hardware architectures. The book explains how to write lambdas, and how to use them in streams and in collection processing, providing code examples throughout. You'll learn how to use lambda expressions to take full advantage of performance improvements provided by today's multicore hardware. This Oracle Press book covers: Why lambdas were needed, and how they will change Java programming Syntax of lambda expressions The basic operation of streams and pipelines Using collectors and reduction to end pipelines Creating streams Spliterators, the fork/join framework, and exceptions Examining stream performance with microbenchmarking API evolution using default methods

Learn Java for Android Development

Learn the basics of Java 9, including basic programming concepts and the object-oriented fundamentals necessary at all levels of Java development. Author Kishori Sharan walks you through writing your first Java program step-by-step. Armed with that practical experience, you'll be ready to learn the core of the Java language. Beginning Java 9 Fundamentals provides over 90 diagrams and 240 complete programs to help you learn the topics faster. The book continues with a series of foundation topics, including using data types, working with operators, and writing statements in Java. These basics lead onto the heart of the Java language: object-oriented programming. By learning topics such as classes, objects, interfaces, and inheritance you'll have a good understanding of Java's object-oriented model. The final collection of topics takes what you've learned and turns you into a real Java programmer. You'll see how to take the power of object-oriented programming and write programs that can handle errors and exceptions, process strings and dates, format data, and work with arrays to manipulate data. This book is a companion to two other books also by Sharan focusing on APIs and advanced Java topics. What You'll Learn Write your first Java programs with an emphasis on learning object-oriented programming in Java Work with data types, operators, statements, classes and objects Handle exceptions, assertions, strings and dates, and object formatting Use regular expressions Work with arrays, interfaces, enums, and inheritance Deploy Java applications on memory-constrained devices using compact profiles Take advantage of the new JShell REPL tool Who This Book Is For Those who are new to Java programming, who may have some or even no prior programming experience.

Java 8 in Action

The Java Tutorial

Capturing a wealth of experience about the design of object-oriented software, four top-notch designers present a catalog of simple and succinct solutions to commonly occurring design problems. Previously undocumented, these 23 patterns allow designers to create more flexible, elegant, and ultimately reusable designs without having to rediscover the design solutions themselves. The authors begin by describing what patterns are and how they can help you design object-oriented software. They then go on to systematically name, explain, evaluate, and catalog recurring designs in object-oriented systems. With Design Patterns as your guide, you will learn how these important patterns fit into the software development process, and how you can leverage them to solve your own design problems most efficiently. Each pattern describes the circumstances in which it is applicable, when it can be applied in view of other design constraints, and the
consequences and trade-offs of using the pattern within a larger design. All patterns are compiled from real systems and are based on real-world examples. Each pattern also includes code that demonstrates how it may be implemented in object-oriented programming languages like C++ or Smalltalk.

**Mastering Lambdas**

Scripting in Java teaches you how to use the Java Scripting API and JavaScript to execute scripts and take advantage of the features of a scripting language while developing Java applications. The book also covers topics that enable scripting languages to take advantage of Java features and the Java class library, including the new Java Collections and JavaFX 8 APIs. Most of the examples in this book use JavaScript on the Nashorn engine. Author Kishori Sharan will show you scripts in JavaScript to demonstrate its power and use in your Java applications. Some of the examples use the jrunscript and jjs command-line tools. Furthermore, debugging is discussed to equip you for situations when or if you encounter any issues with this kind of Java scripting. After reading and using this book, you will have most of what you need to do scripting in Java.

**Beginning Java 8 Fundamentals**

Complete, trusted preparation for the Java Programmer II exam OCP: Oracle Certified Professional Java SE 8 Programmer II Study Guide is your comprehensive companion for preparing for Exam 1Z0-809 as well as upgrade Exam 1Z0-810 and Exam 1Z0-813. With full coverage of 100% of exam objectives, this invaluable guide reinforces what you know, teaches you what you don't know, and gives you the hands-on practice you need to boost your skills. Written by expert Java developers, this book goes beyond mere exam prep with the insight, explanations and perspectives that come from years of experience. You'll review the basics of object-oriented programming, understand functional programming, apply your knowledge to database work, and much more. From the basic to the advanced, this guide walks you through everything you need to know to confidently take the OCP 1Z0-809 Exam and upgrade exams 1Z0-810 and 1Z0-813. Java 8 represents the biggest changes to the language to date, and the latest exam now requires that you demonstrate functional programming competence in order to pass. This guide has you covered, with clear explanations and expert advice. Understand abstract classes, interfaces, and class design Learn object-oriented design principles and patterns Delve into functional programming, advanced strings, and localization Master IO, NIO, and JDBC with expert-led database practice If you're ready to take the next step in your IT career, OCP: Oracle Certified Professional Java SE 8 Programmer II Study Guide is your ideal companion on the road to certification.

**Pragmatic Unit Testing in Java 8 with JUnit**

"Java 8 in Action is a clearly written guide to the new features of Java 8. It begins with a practical introduction to lambdas, using real-world Java code. Next, it covers the new Streams API and shows how you can use it to make collection-based code radically easier to understand and maintain. It also explains other major Java 8 features including default methods, Optional, CompletableFuture, and the new Date and Time API This book/course is written for programmers familiar with Java and basic OO programming.”-- Resource description page.

**The JR Programming Language**

In arenas ranging from enterprise development to Android app programming, Java remains one of the world's most popular programming languages. Sams Teach Yourself Java in 21 Days helps the serious learner gain true mastery over the new Java 8. In this book's straightforward, step-by-step approach, each lesson builds on everything that's come before, helping readers learn Java's core features and techniques from the ground up. Friendly, accessible, and conversational, Sams Teach Yourself Java in 21 Days offers a practical grounding in the language, without ever becoming overwhelming or intimidating. Week 1 introduces the basic building blocks of the Java programming language: keywords, operators, class and object definitions, packages, interfaces, exceptions, and threads. Week 2 covers the Swing graphical user interface class libraries and the important classes that support data structures, string handling, dates and times. Week 3 ventures into the hottest areas of Java programming: web services, Java servlets, network programming, database programming and Android development.

**Pro Java 8 Programming**
This concise book empowers all Java developers to master the complexity of the Java thread APIs and concurrency utilities. This knowledge aids the Java developer in writing correct and complex performing multithreaded applications. Java's thread APIs and concurrency utilities are among its most powerful and challenging APIs and language features. Java beginners typically find it very difficult to use these features to write correct multithreaded applications. Threads and the Concurrency Utilities helps all Java developers master and use these capabilities effectively. This book is divided into two parts of four chapters each. Part 1 focuses on the Thread APIs and Part 2 focuses on the concurrency utilities. In Part 1, you learn about Thread API basics and runnables, synchronization and volatility, waiting and notification, and the additional capabilities of thread groups, thread local variables, and the Timer Framework. In Part 2, you learn about concurrency utilities basics and executors, synchronizers, the Locking Framework, and the additional capabilities of concurrent collections, atomic variables, and the Fork/Join Framework. Each chapter ends with select exercises designed to challenge your grasp of the chapter's content. An appendix provides the answers to these exercises. A second appendix explores how threads are used by various standard class library APIs. Specifically, you learn about threads in the contexts of Swing, JavaFX, and Java 8's Streams API. What You Will Learn• How to do thread runnables, synchronization, volatility, waiting and notification, thread groups, thread local variables, and the Timer Framework• How to create multithreaded applications that work correctly. • What are concurrency utilities basics and executors• What are synchronizers, the Locking Framework, concurrent collections, atomic variables, and the Fork/Join Framework and how to use them• How to leverage the concurrency utilities to write more complex multithreaded applications and achieve greater performance• How to apply thread usage in Swing, JavaFX, and Java 8 Streams API contexts Audience The primary audience is Java beginners and the secondary audience is more advanced Java developers who have worked with the Thread APIs and the Concurrency Utilities.

Java SE 8 for the Really Impatient

Intermediate level, for programmers fairly familiar with Java, but new to the functional style of programming and lambda expressions. Get ready to program in a whole new way. Functional Programming in Java will help you quickly get on top of the new, essential Java 8 language features and the functional style that will change and improve your code. This short, targeted book will help you make the paradigm shift from the old imperative way to a less error-prone, more elegant, and concise coding style that's also a breeze to parallelize. You'll explore the syntax and semantics of lambda expressions, method and constructor references, and functional interfaces. You'll design and write applications better using the new standards in Java 8 and the JDK. Lambda expressions are lightweight, highly concise anonymous methods backed by functional interfaces in Java 8. You can use them to leap forward into a whole new world of programming in Java. With functional programming capabilities, which have been around for decades in other languages, you can now write elegant, concise, less error-prone code using standard Java. This book will guide you though the paradigm change, offer the essential details about the new features, and show you how to transition from your old way of coding to an improved style. In this book you'll see popular design patterns, such as decorator, builder, and strategy, come to life to solve common design problems, but with little ceremony and effort. With these new capabilities in hand, Functional Programming in Java will help you pick up techniques to implement designs that were beyond easy reach in earlier versions of Java. You'll see how you can reap the benefits of tail call optimization, memoization, and effortless parallelization techniques. Java 8 will change the way you write applications. If you're eager to take advantage of the new features in the language, this is the book for you. What you need: Java 8 with support for lambda expressions and the JDK is required to make use of the concepts and the examples in this book.

Java 8 Lambdas

If you're a developer with core Java SE skills, this hands-on book takes you through the language changes in Java 8 triggered by the addition of lambda expressions. You'll learn through code examples, exercises, and fluid explanations how these anonymous functions will help you write simple, clean, library-level code that solves business problems. Lambda expressions are a fairly simple change to Java, and the first part of the book shows you how to use them properly. Later chapters show you how lambda functions help you improve performance with parallelism, write simpler concurrent code, and model your domain more accurately, including building better DSLs. Use exercises in each chapter to help you master lambda expressions in Java 8 quickly Explore streams, advanced collections, and other Java 8 library improvements Leverage multicore CPUs and improve performance with data parallelism Use techniques to “lambdafy” your existing codebase or library code Learn practical solutions for lambda expression unit testing and debugging Implement SOLID principles of object-oriented programming with lambdas Write concurrent applications that efficiently perform message passing and non-blocking I/O

Introduction to Programming Using Java

The revised edition of the classic Core Java™, Volume II–Advanced Features, covers advanced user-interface programming and the enterprise features of the Java SE 6 platform. Like Volume
I which covers the core language and library features, this volume has been updated for Java SE 6 and new coverage is highlighted throughout. All sample programs have been carefully crafted to illustrate the latest programming techniques, displaying best-practices solutions to the types of real-world problems professional developers encounter. Volume II includes new sections on the StAX API, JDBC 4, compiler API, scripting framework, splash screen and tray APIs, and many other Java SE 6 enhancements. In this book, the authors focus on the more advanced features of the Java language, including complete coverage of Streams and Files Networking Database programming XML JNDI and LDAP Internationalization Advanced GUI components Java 2D and advanced AWT JavaBeans Security RMI and Web services Collections Annotations Native methods For thorough coverage of Java fundamentals—including interfaces and inner classes, GUI programming with Swing, exception handling, generics, collections, and concurrency—look for the eighth edition of Core Java™, Volume I–Fundamentals (ISBN: 978-0-13-235476-9).

Learn JavaFX 8

Explore the new Java programming language features and APIs introduced in Java 10 through Java 13. Java 13 Revealed is for experienced Java programmers looking to migrate to Java 13. Author Kishori Sharan begins by covering how to use local variable type inference to improve readability of your code and time-based release versioning of the Java platform to understand the Java release strategy. This book provides extensive coverage of the new HTTP Client APIs, which were introduced in Java 9 as a preview and was made a standard feature in Java 11. New Java features such as launching a single-file source code program and new switch syntax are discussed in detail. What You Will Learn Use local variable type inference to declare local variables using the var restricted type name introduced in Java 10 Take advantage of application class data sharing among JVMs for faster application startup Create HTTP requests, responses, and web sockets with the new HTTP Client APIs Run a single-file Java source code program using the java command without compiling it Apply the new switch statement and expressions to write compact and less error-prone code Work with text blocks in Java code About new APIs, deprecated APIs, and deprecated tools Who This Book Is For Java developers who want to update their Java skills from Java 9 to Java 13.

Java 9 Modularity

Work with essential and advanced features of the Java programming language such as Java modules development, lambda expressions (closures), inner classes, threads, I/O, Collections, garbage collection, and more. Author Kishori Sharan provides over 50 diagrams and 290 complete programs to help you visualize and better understand the topics covered in this book. Java Language Features, Second Edition starts with a series of chapters on the essential language features provided by Java, including annotations, reflection, and generics. These topics are then complemented by details of how to use lambda expressions, allowing you to build powerful and efficient Java programs. The chapter on threads follows this up and discusses everything from the very basic concepts of a thread to the most advanced topics such as synchronizers, the fork/join framework, and atomic variables. This book contains unmatched coverage of Java NIO, the Stream API, the Path API, the FileVisitor API, the watch service, and asynchronous file I/O. With this in-depth knowledge, your data- and file-management programs will be able to take advantage of every feature of Java's powerful I/O framework and much more. Additionally, three appendices are available for free via the Download Source Code on apress.com. These appendices will give you a head start on the most important features of Java 10 and the new Java versioning scheme. What You'll Learn Use essential and advanced features of the Java language Code Java annotations and inner classes Work with reflection, generics, and threads Take advantage of the garbage collector Manage streams with the Stream API Who This Book Is For Those new to Java programming and continues the learning Java journey; it is recommended that you read an introductory Java programming book first, such as Beginning Java Fundamentals, from Apress.

The Java Language Specification

Enhance your development skills with Java's state-of-the-art features and projects to make your applications leaner and faster Key Features Overcome the challenges involved in migrating to new versions of Java Discover how Oracle has bridged the gap between Java and native code Make the best use of new Java features and libraries in your applications Book Description With its new six-monthly release cadence, Java is moving forward faster. In addition to planned version releases, a lot of work is currently being undertaken on various Java projects at Oracle. In order to make best use of the new features in their applications and libraries, you must be well-versed with the most recent advancements. Java 11 and 12 – New Features will take you through the latest developments in Java, right from variable type inference and simplified multithreading through to performance improvements, which are covered in depth to help you make your
applications more efficient. This book explains the relevance and applicability of Java’s new features, and answers your questions on whether to invest in migrating to new Java versions and when to migrate. You’ll also get to grips with platform features, such as AppCDS and new garbage collectors, to tune and optimize your application—from reduced launch time and latency to improved performance and throughput. By the end of this book, you will be equipped with a thorough understanding of the new features of Java 11, 12, and Project Amber, and possess the skills to apply them with a view to improving your application's performance. What you will learn Study type interference and how to work with the var type Understand Class-Data Sharing, its benefits, and limitations Discover platform options to reduce your application’s launch time Improve application performance by switching garbage collectors Get up to date with the new Java release cadence Define and assess decision criteria for migrating to a new version of Java Who this book is for If you’re an executive or solutions architect responsible for technology selection or Java migration decisions, this Java book is for you. You’ll also benefit from this book if you’re a computer science enthusiast curious to learn about the latest and upcoming Java features. This book will help you migrate your solutions from Java 8 or older to the latest Java release.

Beginning Java 8 APIs, Extensions and Libraries

This book completes the Apress Java learning journey and is a comprehensive approach to learning Java APIs, extensions, and modules such as Java EE integration, mobile Java modules, JavaFX, and JDBC. In this book, you’ll learn how to build user interfaces with Swing and JavaFX as well as how to write network programs with the new Java 9 and much more. Java APIs, Extensions, and Libraries is for Java programmers who are familiar with the fundamentals of the Java language and Java programming, who are now ready to call upon the power of extended Java functionality available from the huge array of Java APIs, extensions, and libraries. After reading and learning from this book you’ll be ready to become a professional Java programmer. What You’ll Learn Extend your Java skills beyond the fundamental object-oriented concepts and core language features Apply Java Swing for building Java front ends Get started with Java networking programming Connect to databases and access data from Java programs using the JDBC API Work with JavaFX, RMI (Remote Method Invocation), and JNI (Java Native Interface) Use the new scripting features of Java Who This Book Is For Java programmers who are familiar with the fundamentals of the Java language and Java programming.

Java Threads and the Concurrency Utilities

Currently used at many colleges, universities, and high schools, this hands-on introduction to computer science is ideal for people with little or no programming experience. The goal of this concise book is not just to teach you Java, but to help you think like a computer scientist. You’ll learn how to program—a useful skill by itself—but you’ll also discover how to use programming as a means to an end. Authors Allen Downey and Chris Mayfield start with the most basic concepts and gradually move into topics that are more complex, such as recursion and object-oriented programming. Each brief chapter covers the material for one week of a college course and includes exercises to help you practice what you’ve learned. Learn one concept at a time: tackle complex topics in a series of small steps with examples Understand how to formulate problems, think creatively about solutions, and write programs clearly and accurately Determine which development techniques work best for you, and practice the important skill of debugging Learn relationships among input and output, decisions and loops, classes and methods, strings and arrays Work on exercises involving word games, graphics, puzzles, and playing cards

Scripting in Java

Beginning Java 8 Language Features covers essential and advanced features of the Java programming language such as the new lambda expressions (closures), inner classes, threads, I/O, Collections, garbage collection, streams, and more. Author Kishori Sharan provides over 60 diagrams and 290 complete programs to help you visualize and better understand the topics covered in this book. The book starts with a series of chapters on the essential language features provided by Java, including annotations, inner classes, reflection, and generics. These topics are then complemented by details of how to use lambda expressions, allowing you to build powerful and efficient Java programs. The chapter on threads follows this up and discusses everything from the very basic concepts of a thread to the most advanced topics such as synchronizers, the fork/join framework, and atomic variables. This book contains unmatched coverage of Java I/O, including NIO 2.0, the Path API, the FileVisitor API, the watch service and asynchronous file I/O. With this in-depth knowledge, your data- and file-management programs will be able to take advantage of every feature of Java’s powerful I/O framework. Finally, you’ll learn how to use the Stream API, a new, exciting addition to Java 8, to perform aggregate operations on collections of data elements using functional-style programming. You’ll examine the details of stream processing such as creating streams from different data sources, learning the difference between sequential and parallel streams, applying the filter-map-reduce pattern, and dealing with optional values.
Beginning Java 9 Fundamentals

Learn JavaFX 8 shows you how to start developing rich-client desktop applications using your Java skills and provides comprehensive coverage of JavaFX 8's features. Each chapter starts with an introduction to the topic at hand, followed by a step-by-step discussion of the topic with small snippets of code. The book contains numerous figures aiding readers in visualizing the GUI that is built at every step in the discussion. The book starts with an introduction to JavaFX and its history. It lists the system requirements and the steps to start developing JavaFX applications. It shows you how to create a Hello World application in JavaFX, explaining every line of code in the process. Later in the book, author Kishori Sharan discusses advanced topics such as 2D and 3D graphics, charts, FXML, advanced controls, and printing. Some of the advanced controls such as TableView, TreeTableView and WebView are covered at length in separate chapters. This book provides complete and comprehensive coverage of JavaFX 8 features; uses an incremental approach to teach JavaFX, assuming no prior GUI knowledge; includes code snippets, complete programs, and pictures; covers MVC patterns using JavaFX; and covers advanced topics such as FXML, effects, transformations, charts, images, canvas, audio and video, DnD, and more. So, after reading and using this book, you'll come away with a comprehensive introduction to the JavaFX APIs as found in the new Java 8 platform.

On Java 8

The Pragmatic Programmers classic is back! Freshly updated for modern software development, Pragmatic Unit Testing in Java 8 With JUnit teaches you how to write and run easily maintained unit tests in JUnit with confidence. You'll learn mnemonics to help you know what tests to write, how to remember all the boundary conditions, and what the qualities of a good test are. You'll see how unit tests can pay off by allowing you to keep your system code clean, and you'll learn how to handle the stuff that seems too tough to test. Pragmatic Unit Testing in Java 8 With JUnit steps you through all the important unit testing topics. If you've never written a unit test, you'll see screen shots from Eclipse, IntelliJ IDEA, and NetBeans that will help you get past the hard part--getting set up and started. Once past the basics, you'll learn why you want to write unit tests and how to effectively use JUnit. But the meaty part of the book is its collected unit testing wisdom from people who've been there, done that on production systems for at least 15 years: veteran author and developer Jeff Langr, building on the wisdom of Pragmatic Programmers Andy Hunt and Dave Thomas. You'll learn: How to craft your unit tests to minimize your effort in maintaining them. How to use unit tests to help keep your system clean. How to test the tough stuff. Memorable mnemonics to help you remember what's important when writing unit tests. How to help your team reap and sustain the benefits of unit testing. You won't just learn about unit testing in theory—you'll work through numerous code examples. When it comes to programming, hands-on is the only way to learn!