

## IntelliJ Idea JetBrains

A balance between implementing complex applications and optimizing performance is a present-day need. This book helps you achieve this balance while developing and deploying applications with Kotlin. You will learn how to use profiling tools to detect performance issues and discover bytecode that is generated to overcome performance bottlenecks.

Get started quickly with IntelliJ, from installation to configuration to working with the source code and more. This tutorial will show you how to leverage IntelliJ's tools to develop clean, efficient Java applications. Author Ted Hagos will first walk you through building your first Java applications using IntelliJ. Then, he'll show you how to analyze your application, top to bottom; using version control and tools that allow you to expand your application for big data or data science applications and more. You'll also learn some of the IDE's advanced features to fully maximize your application's capabilities. The last portion of the book focuses on application testing and deployment, and language- and framework-specific guidelines. After reading this book and working through its freely available source code, you'll be up to speed with this powerful IDE for today's Java development. What You Will Learn Use IntelliJ IDEA to build Java applications Set up your

IDE and project Work with source code Extend your Java application to data science and other kinds of applications Test and deploy your application and much more Who This Book Is For Programmers new to IntelliJ IDEA who may have some prior exposure to Java programming.

Use this in-depth guide to correctly design benchmarks, measure key performance metrics of .NET applications, and analyze results. This book presents dozens of case studies to help you understand complicated benchmarking topics. You will avoid common pitfalls, control the accuracy of your measurements, and improve performance of your software. Author Andrey Akinshin has maintained BenchmarkDotNet (the most popular .NET library for benchmarking) for five years and covers common mistakes that developers usually make in their benchmarks. This book includes not only .NET-specific content but also essential knowledge about performance measurements which can be applied to any language or platform (common benchmarking methodology, statistics, and low-level features of modern hardware). What You'll Learn Be aware of the best practices for writing benchmarks and performance tests Avoid the common benchmarking pitfalls Know the hardware and software factors that affect application performance Analyze performance measurements Who This Book Is For .NET developers concerned with the

performance of their applications

Summary Kotlin in Action guides experienced Java developers from the language basics of Kotlin all the way through building applications to run on the JVM and Android devices. Foreword by Andrey Breslav, Lead Designer of Kotlin. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Developers want to get work done - and the less hassle, the better. Coding with Kotlin means less hassle. The Kotlin programming language offers an expressive syntax, a strong intuitive type system, and great tooling support along with seamless interoperability with existing Java code, libraries, and frameworks. Kotlin can be compiled to Java bytecode, so you can use it everywhere Java is used, including Android. And with an efficient compiler and a small standard library, Kotlin imposes virtually no runtime overhead. About the Book Kotlin in Action teaches you to use the Kotlin language for production-quality applications. Written for experienced Java developers, this example-rich book goes further than most language books, covering interesting topics like building DSLs with natural language syntax. The authors are core Kotlin developers, so you can trust that even the gnarly details are dead accurate. What's Inside Functional programming on the JVM Writing clean and idiomatic code Combining Kotlin and Java Domain-specific

languages About the Reader This book is for experienced Java developers. About the Author Dmitry Jemerov and Svetlana Isakova are core Kotlin developers at JetBrains. Table of Contents PART 1 - INTRODUCING KOTLIN Kotlin: what and why Kotlin basics Defining and calling functions Classes, objects, and interfaces Programming with lambdas The Kotlin type system PART 2 - EMBRACING KOTLIN Operator overloading and other conventions Higher-order functions: lambdas as parameters and return values Generics Annotations and reflection DSL construction

Threads are a fundamental part of the Java platform. As multicore processors become the norm, using concurrency effectively becomes essential for building high-performance applications. Java SE 5 and 6 are a huge step forward for the development of concurrent applications, with improvements to the Java Virtual Machine to support high-performance, highly scalable concurrent classes and a rich set of new concurrency building blocks. In *Java Concurrency in Practice*, the creators of these new facilities explain not only how they work and how to use them, but also the motivation and design patterns behind them. However, developing, testing, and debugging multithreaded programs can still be very difficult; it is all too easy to create concurrent programs that appear to work, but fail when it matters most: in production, under heavy load. Java

Concurrency in Practice arms readers with both the theoretical underpinnings and concrete techniques for building reliable, scalable, maintainable concurrent applications. Rather than simply offering an inventory of concurrency APIs and mechanisms, it provides design rules, patterns, and mental models that make it easier to build concurrent programs that are both correct and performant. This book covers:

- Basic concepts of concurrency and thread safety
- Techniques for building and composing thread-safe classes
- Using the concurrency building blocks in `java.util.concurrent`
- Performance optimization dos and don'ts
- Testing concurrent programs
- Advanced topics such as atomic variables, nonblocking algorithms, and the Java Memory Model

Grails is an open-source, rapid web application development framework that provides a super-productive full-stack programming model based on the Groovy scripting language and built on top of Spring, Hibernate, and other standard Java frameworks. Ruby on Rails pioneered the innovative coupling of a powerful programming language and an opinionated framework that favors sensible defaults over complex configuration, but many organizations aren't yet ready to stray from the safety of Java or forgo their current Java investments. Grails makes it possible to achieve equivalent productivity in a Java-centric environment. Over the course of this book, the

reader will explore the various aspects of Grails and also experience Grails by building a Grails app. If you want to push your Java skills to the next level, this book provides expert advice from Java leaders and practitioners. You'll be encouraged to look at problems in new ways, take broader responsibility for your work, stretch yourself by learning new techniques, and become as good at the entire craft of development as you possibly can. Edited by Kevlin Henney and Trisha Gee, *97 Things Every Java Programmer Should Know* reflects lifetimes of experience writing Java software and living with the process of software development. Great programmers share their collected wisdom to help you rethink Java practices, whether working with legacy code or incorporating changes since Java 8. A few of the 97 things you should know: "Behavior Is Easy, State Is Hard"—Edson Yanaga "Learn Java Idioms and Cache in Your Brain"—Jeanne Boyarsky "Java Programming from a JVM Performance Perspective"—Monica Beckwith "Garbage Collection Is Your Friend"—Holly K Cummins "Java's Unspeakable Types"—Ben Evans "The Rebirth of Java"—Sander Mak "Do You Know What Time It Is?"—Christin Gorman

IntelliJ IDEA EssentialsPackt Publishing Ltd  
Use Kotlin to build Android apps, web applications, and more—while you learn the nuances of this popular language. With this unique cookbook, developers will

learn how to apply this Java-based language to their own projects. Both experienced programmers and those new to Kotlin will benefit from the practical recipes in this book. Author Ken Kousen (Modern Java Recipes) shows you how to solve problems with Kotlin by concentrating on your own use cases rather than on basic syntax. You provide the context and this book supplies the answers. Already big in Android development, Kotlin can be used anywhere Java is applied, as well as for iOS development, native applications, JavaScript generation, and more. Jump in and build meaningful projects with Kotlin today. Apply functional programming concepts, including lambdas, sequences, and concurrency See how to use delegates, late initialization, and scope functions Explore Java interoperability and access Java libraries using Kotlin Add your own extension functions Use helpful libraries such as JUnit 5 Get practical advice for working with specific frameworks, like Android and Spring

Build efficient HTML, CSS and JavaScript applications using the powerful WebStorm IDE About This Book • Get to grips with the newest features of WebStorm • Use WebStorm to simplify your web development process and improve its efficiency • Best practices and cutting-edge technologies for JavaScript development Who This Book Is For If you are a web developer who is new to WebStorm, this is the book for you. Knowledge of languages such as JavaScript, HTML, and CSS is assumed, with a reasonable understanding of frameworks such as AngularJS, Node.js, and Meteor. What You Will Learn • Install and configure

WebStorm to suit your workflow• Develop mobile applications using web technologies with WebStorm• Create simple web pages with the help of templates• Improve your web development efficiency with WebStorm's built-in features• Analyse and debug your code in WebStorm• Perform unit testing and debugging in WebStorm to test your applications• Get to grips with the latest version of WebStorm (WebStorm 10) to revolutionize your web development experience

In DetailJetBrains WebStorm is a commercial and powerful IDE, perfectly equipped for complex client-side development and server-side development with Node.js. It provides first-class support for JavaScript, Node.js, HTML, and CSS. WebStorm is the number one choice for developing web applications due to its advanced features and integration with a plethora of topical technologies such as Meteor and Gulp.This book will be your companion in building high-quality web applications using WebStorm, taking advantage of the newest features of Webstorm 10.You will start with an introduction to the latest features of WebStorm and its interface, followed by learning how to set up a new project with the help of templates. You will then build a web application using AngularJS, ReactJs, Node.js, Express, and Meteor. This book will also show you how to use pioneering HTML5 technologies in mobile application development and package managers, as well as how to build automation tools for your application. Finally, you will discover how to perform debugging, tracing, profiling, and code style checking activities directly in WebStorm, followed by testing your application

inside WebStorm, using some of the most popular testing libraries out there. By the end of this book, you will have a solid understanding of how to develop powerful web applications quickly and easily with WebStorm. Style and approach This book is a hands-on guide to getting to grips with WebStorm, complete with plenty of screenshots and tips. New features are introduced to you with the help of sample applications.

This book is for developers who want to work smarter so they can focus their efforts on the details that will give them the advantage. This book is tailor-made for developers who want to move from NetBeans and Eclipse to experience the power and functionality of IntelliJ IDEA.

Microservices and big-data increasingly confront us with the limitations of traditional input/output. In traditional IO, work that is IO-bound dominates threads. This wouldn't be such a big deal if we could add more threads cheaply, but threads are expensive on the JVM, and most other platforms. Even if threads were cheap and infinitely scalable, we'd still be confronted with the faulty nature of networks. Things break, and they often do so in subtle, but non-exceptional ways. Traditional approaches to integration bury the faulty nature of networks behind overly simplifying abstractions. We need something better. Join Spring Developer Advocate Josh Long for an introduction to reactive programming in the Spring ecosystem, leveraging the reactive streams specification, Reactor, Spring Boot, Spring Cloud and so much more. This book will cover important concepts in reactive programming including project Reactor and the reactive

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streams specification, data access, web programming, RPC with protocols like RSocket, testing, and integration and composition, and more.

Provides information on creating Web-based applications.

What separates the traditional enterprise from the likes of Amazon, Netflix, and Etsy? Those companies have refined the art of cloud native development to maintain their competitive edge and stay well ahead of the competition. This practical guide shows Java/JVM developers how to build better software, faster, using Spring Boot, Spring Cloud, and Cloud Foundry. Many organizations have already waded into cloud computing, test-driven development, microservices, and continuous integration and delivery. Authors Josh Long and Kenny Bastani fully immerse you in the tools and methodologies that will help you transform your legacy application into one that is genuinely cloud native. In four sections, this book takes you through: The Basics: learn the motivations behind cloud native thinking; configure and test a Spring Boot application; and move your legacy application to the cloud Web Services: build HTTP and RESTful services with Spring; route requests in your distributed system; and build edge services closer to the data Data Integration: manage your data with Spring Data, and integrate distributed services with Spring's support for event-driven, messaging-centric architectures Production: make your system observable; use service brokers to connect stateful services; and understand the big ideas behind continuous delivery

Learn how to use the Akka framework to build effective

applications in Scala About This Book Covers a discussion on Lagom—the newest launched Akka framework that is built to create complex microservices easily The recipe approach of the book allows the reader to know important and independent concepts of Scala and Akka in a seamless manner Provides a comprehensive understanding of the Akka actor model and implementing it to create reactive web applications Who This Book Is For If you are a Scala developer who wants to build scalable and concurrent applications, then this book is for you. Basic knowledge of Akka will help you take advantage of this book. What You Will Learn Control an actor using the ContolAware mailbox Test a fault-tolerant application using the Akka test kit Create a parallel application using futures and agents Package and deploy Akka application inside Docker Deploy remote actors programmatically on different nodes Integrate Streams with Akka actors Install Lagom and create a Lagom project In Detail Akka is an open source toolkit that simplifies the construction of distributed and concurrent applications on the JVM. This book will teach you how to develop reactive applications in Scala using the Akka framework. This book will show you how to build concurrent, scalable, and reactive applications in Akka. You will see how to create high performance applications, extend applications, build microservices with Lagom, and more. We will explore Akka's actor model and show you how to incorporate concurrency into your applications. The book puts a special emphasis on performance improvement and how to make an application available for users. We also make a special

mention of message routing and construction. By the end of this book, you will be able to create a high-performing Scala application using the Akka framework. Style and approach This highly practical recipe-based approach will allow you to build scalable, robust, and reactive applications using the Akka framework.

Offers instructions on creating applications for Android tablets, covering such topics as coding, handling user input, data storage, and updating the Android status bar.

Kotlin is a statically typed programming language designed to interoperate with Java and fully supported by Google on the Android operating system. Based on Big Nerd Ranch's popular Kotlin Essentials course, this guide shows you how to work effectively with the Kotlin programming language through hands-on examples and clear explanations of key Kotlin concepts and foundational APIs.

Written for Kotlin 1.2, this book will also introduce you to JetBrains' IntelliJ IDEA development environment. Whether you are an experienced Android developer looking for modern features beyond what Java offers or a new developer ready to learn your first programming language, the authors will guide you from first principles to advanced usage of Kotlin. By the end of this book, you will be empowered to create reliable, concise applications in Kotlin.

Java developers will learn to unlock the power of the many integrated tools and features of IntelliJ IDEA in

this in-depth guide to the innovative IDE. Important product features, including the debugger, source code control, and the many code generation tools, are carefully explained and accompanied by tips and tricks that will leave even experienced IDEA users with "Eureka!" moments of informed programming. Coders just graduating from NOTEPAD and Java IDE veterans alike will profit from the powerful and timesaving expertise provided in this essential programmer's resource.

Learn to build a full-fledged application in Spring and Kotlin taking a reactive, microservice-based approach for scalability and robustness in the cloud

### Key Features

Build a full-fledged application in Spring and Kotlin Architect your application to take a microservice-based approach in the cloud Integrate your application with a variety of Spring components

### Book Description

Kotlin is being used widely by developers because of its light weight, built-in null safety, and functional and reactive programming aspects. Kotlin shares the same pragmatic, innovative and opinionated mindset as Spring, so they work well together. Spring when combined with Kotlin helps you to reach a new level of productivity. This combination has helped developers to create Functional Applications using both the tools together. This book will teach you how to take advantage of these developments and build robust, scalable and reactive applications with ease. In this book, you will

begin with an introduction to Spring and its setup with Kotlin. You will then dive into assessing the design considerations of your application. Then you will learn to use Spring (with Spring Boot) along with Kotlin to build a robust backend in a microservice architecture with a REST based collaboration, and leverage Project Reactor in your application. You'll then learn how to integrate Spring Data and Spring Cloud to manage configurations for database interaction and cloud deployment. You'll also learn to use Spring Security to beef up security of your application before testing it with the JUnit framework and then deploying it on a cloud platform like AWS. What you will learn Explore Spring 5 concepts with Kotlin Learn both dependency injections and complex configurations Utilize Spring Data, Spring Cloud, and Spring Security in your applications Create efficient reactive systems with Project Reactor Write unit tests for your Spring/Kotlin applications Deploy applications on cloud platforms like AWS Who this book is for Developers comfortable using Spring who have basic knowledge of Kotlin and want to take their development skills to the next level and build enterprise-grade applications will benefit from this book.

Take a practical approach to becoming a leading-edge Android developer, learning by example while combining the many technologies needed to create a successful, up-to-date web app. Practical Android

Projects introduces the Android software development kit and development tools of the trade, and then dives into building cool-looking and fun apps that put Android's amazing capabilities to work. Android is the powerful, full-featured, open source mobile platform that powers phones like Google Nexus, Motorola Droid, Samsung Galaxy S, and a variety of HTC phones and tablet computers. This book helps you quickly get Android projects up and running with the free and open source Eclipse, NetBeans, and IntelliJ IDEA IDEs. Then you build and extend mobile applications using the Android SDK, Java, Scripting Layer for Android (SL4A), and languages such as Python, Ruby, Javascript/HTML, Flex/AIR, and Lua.

Hello and welcome to Effective PyCharm. In this book, we're going to look at all the different features of one of the very best environments for interacting and creating Python code, PyCharm. PyCharm is an IDE (integrated development environment) and this book will teach you how you can make the most of this super powerful editor. The first thing we are going to talk about is why do we want to use an IDE in the first place? What value does a relatively heavyweight application like PyCharm bring and why would we want to use it? There are many features that make PyCharm valuable. However, let's begin by talking about the various types of editors we can use and what the trade-offs are there. We're going to

start by focusing on creating new projects and working with all the files in them. You'll see there's a bunch of configuration switches we can set to be more effective. Then we're going to jump right into what I would say is the star of the show--the editor. If you're writing code, you need an editor. You will be writing a lot of code. This includes typing new text and manipulating existing text. The editor has to be awesome and aid you in these tasks. We're going to focus on all the cool features that the PyCharm editor offers. We'll see that source control in particular, Git and Subversion are deeply integrated into PyCharm. There are all sorts of powerful things we can do beyond git, including actual GitHub integration. We are going to focus on source control and the features right inside the IDE. PyCharm is great at *\*refactoring\**. Refactoring code is changing our code to restructure it in a different way, to use a slightly different algorithm, while not actually changing the behavior of the code. There are many powerful techniques in PyCharm that you can use to do this. Because it understands all of your files at once, it can safely refactor. It will even refactor doc strings and other items that could be overlooked without a deep understanding of code structures. There is powerful database tooling in PyCharm. You can interact with most databases including SQLite, MySQL, and Postgres. You can edit the data, edit the schemes, run queries and

more. Because PyCharm has a deep understanding of your code, there is even integration between your database schema and the Python text editor. Note that PyCharm has a free version and a professional version. The database features are only available in the professional version. PyCharm is excellent at building web applications using libraries like Django, Pyramid, or Flask. It also has a full JavaScript editor and environment so you can use TypeScript or CoffeeScript. We'll look into both server-side and client-side features. PyCharm has a great visual debugger, and we are going to look at all the different features of it. You can use it to debug and understand your application. It has powerful breakpoint operations and data visualization that typically editors don't have. Profiling is a common task if you want to understand how your code is running. If your application is slow and you want it to go faster, you shouldn't guess where it is slow. PyCharm makes it easy to look at the code determine what it fast and slow, rather than relying on our intuition which may be flawed. PyCharm has some tremendous built-in visual types of tools for us to fundamentally understand the performance of our app. PyCharm has built-in test runners for pytest, unittest, and a number of Python testing frameworks. If you are doing any unit testing or integration testing, PyCharm will come to your aid. For example, one feature you can turn on is auto test execution. If

you are changing certain parts of your code, PyCharm will automatically re-run the tests. There are a couple of additional tools that don't really land in any of the above categories. There is a chapter with the additional tools at the end.

Learn how to program with Kotlin! Kotlin is the exciting modern language from JetBrains, creators of IntelliJ IDEA, the basis of many popular IDEs such as Android Studio and PyCharm. Since the adoption of Kotlin by Google as an official language for Android, the momentum behind Kotlin has gone off the charts. Kotlin supports many platforms, including Android, the web, the back-end, and even iOS. By reading this book, you'll be ready to use Kotlin on any and all of these platforms.

**Who This Book Is For** This book is for complete beginners to Kotlin. No prior programming experience is necessary!

**Topics Covered in Kotlin Apprentice**

**Kotlin Development Environment:** See how to setup a development environment for Kotlin using IntelliJ IDEA.

**Numbers and Strings:** These are the basic kinds of data in any app—learn how to use them in Kotlin.

**Making Decisions:** Your code doesn't always run straight through—learn how to use conditions and loops to control program flow.

**Functions and Lambdas:** Group your code together into reusable chunks to run and pass around.

**Collection Types:** Discover the many ways Kotlin offers to store and organize data into collections.

**Building Your Own Types:** Learn how to

model elements in your app using classes, objects, interfaces, and enumerations. **Functional Programming:** Learn how to use Kotlin in a functional style and how this can make your code clearer and more efficient. **Coroutines:** Asynchronous programming can be a complex topic on any platform, but Kotlin gives you a clear and concise approach with coroutines. **Kotlin Platforms and Scripting:** Learn about how Kotlin can be used on multiple platforms and see its use as a scripting language. **Kotlin/Native and Multiplatform:** See how to use Kotlin/Native to bring your apps to more than one platform. **One thing you can count on:** after reading this book, you'll be prepared to take advantage of Kotlin wherever you choose to use it! **The definitive resource on domain-specific languages:** based on years of real-world experience, relying on modern language workbenches and full of examples. **Domain-Specific Languages** are programming languages specialized for a particular application domain. By incorporating knowledge about that domain, DSLs can lead to more concise and more analyzable programs, better code quality and increased development speed. This book provides a thorough introduction to DSL, relying on today's state of the art language workbenches. The book has four parts: introduction, DSL design, DSL implementation as well as the role of DSLs in various aspects of software engineering. **Part I Introduction:**

This part introduces DSLs in general and discusses their advantages and drawbacks. It also defines important terms and concepts and introduces the case studies used in the most of the remainder of the book. Part II DSL Design: This part discusses the design of DSLs - independent of implementation techniques. It reviews seven design dimensions, explains a number of reusable language paradigms and points out a number of process-related issues. Part III DSL Implementation: This part provides details about the implementation of DSLs with lots of code. It uses three state-of-the-art but quite different language workbenches: JetBrains MPS, Eclipse Xtext and TU Delft's Spoofox. Part IV DSLs and Software Engineering: This part discusses the use of DSLs for requirements, architecture, implementation and product line engineering, as well as their roles as a developer utility and for implementing business logic. The book is available as a printed version (the one your are looking at) and as a PDF. For details see the book's companion website at <http://dslbook.org>

The official book on the Rust programming language, written by the Rust development team at the Mozilla Foundation, fully updated for Rust 2018. The Rust Programming Language is the official book on Rust: an open source systems programming language that helps you write faster, more reliable software. Rust offers control over low-level details

(such as memory usage) in combination with high-level ergonomics, eliminating the hassle traditionally associated with low-level languages. The authors of The Rust Programming Language, members of the Rust Core Team, share their knowledge and experience to show you how to take full advantage of Rust's features--from installation to creating robust and scalable programs. You'll begin with basics like creating functions, choosing data types, and binding variables and then move on to more advanced concepts, such as:

- Ownership and borrowing, lifetimes, and traits
- Using Rust's memory safety guarantees to build fast, safe programs
- Testing, error handling, and effective refactoring
- Generics, smart pointers, multithreading, trait objects, and advanced pattern matching
- Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies
- How best to use Rust's advanced compiler with compiler-led programming techniques

You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded chapter on modules, and appendixes on Rust development tools and editions.

If you are a Java developer or a manager who has

experience with Apache Maven and want to extend your knowledge, then this is the ideal book for you. Apache Maven Cookbook is for those who want to learn how Apache Maven can be used for build automation. It is also meant for those familiar with Apache Maven, but want to understand the finer nuances of Maven and solve specific problems. For both beginning and experienced programmers! From the author of the multi-award-winning Thinking in C++ and Thinking in Java together with a member of the Kotlin language team comes a book that breaks the concepts into small, easy-to-digest "atoms," along with exercises supported by hints and solutions directly inside IntelliJ IDEA! No programming background necessary. Summaries for experienced programmers. Easy steps via very small chapters ("atoms"). Free accompanying exercises/solutions within IntelliJ Idea. Gives you a strong Kotlin foundation. Kotlin is cleaner, more consistent and far more powerful than Java. Increase programming productivity with Kotlin's clear, concise syntax. Produce safer, more reliable programs. Kotlin easily interacts with Java. Effortlessly migrate by adding pieces of Kotlin to an existing Java project. Support for Windows, Mac and Linux. Free version of IntelliJ IDEA includes extensive Kotlin support. Book resources, live seminars, workshops and consulting available at [AtomicKotlin.com](http://AtomicKotlin.com).

AngularJS is the leading framework for building dynamic JavaScript applications that take advantage of the capabilities of modern browsers and devices. AngularJS, which is maintained by Google, brings the power of the Model-View-Controller (MVC) pattern to the client, providing the foundation for complex and rich web apps. It allows you to build applications that are smaller, faster, and with a lighter resource footprint than ever before. Best-selling author Adam Freeman explains how to get the most from AngularJS. He begins by describing the MVC pattern and the many benefits that can be gained from separating your logic and presentation code. He then shows how you can use AngularJS's features within in your projects to produce professional-quality results. Starting from the nuts-and-bolts and building up to the most advanced and sophisticated features AngularJS is carefully unwrapped, going in-depth to give you the knowledge you need. Each topic is covered clearly and concisely and is packed with the details you need to learn to be truly effective. The most important features are given a no-nonsense in-depth treatment and chapters include common problems and details of how to avoid them.

Use the JavaFX platform to create rich-client Java applications and discover how you can use this powerful Java-based UI platform, which is capable of handling large-scale data-driven business

applications for PC as well as mobile and embedded devices. The expert authors cover the new more modular JavaFX 9 APIs, development tools, and best practices and provide code examples that explore the exciting new features provided with JavaFX 9, part of Oracle's new Java 9 release. *Pro JavaFX 9: A Definitive Guide to Building Desktop, Mobile, and Embedded Java Clients* also contains engaging tutorials that cover virtually every facet of JavaFX development and reference materials on JavaFX that augment the JavaFX API documentation. **What You'll Learn** Create a user interface in JavaFX Use SceneBuilder to create a user interface Build dynamic UI layouts in JavaFX and using the JavaFX UI controls Create charts in JavaFX Leverage JavaFX languages and markup **Who This Book Is For** Experienced Java programmers looking to learn and leverage JavaFX 9 for rich client-side Java development.

Get started with Kotlin programming for building real world applications **Key Features** Start programming with Kotlin Explore Kotlin language syntax, standard libraries and Java Interoperability Builds an example application with what you learn **Book Description** Kotlin is a general purpose, object-oriented language that primarily targets the JVM and Android. Intended as a better alternative to Java, its main goals are high interoperability with Java and increased developer productivity. Kotlin is still a new language

and this book will help you to learn the core Kotlin features and get you ready for developing applications with Kotlin. This book covers Kotlin features in detail and explains them with practical code examples. You will learn how to set up the environment and take your first steps with Kotlin and its syntax. We will cover the basics of the language, including functions, variables, and basic data types. With the basics covered, the next chapters show how functions are first-class citizens in Kotlin and deal with the object-oriented side of Kotlin. You will move on to more advanced features of Kotlin. You will explore Kotlin's Standard Library and learn how to work with the Collections API. The book finishes by putting Kotlin in to practice, showing how to build a desktop app. By the end of this book, you will be confident enough to use Kotlin for your next project. What you will learn

- Programming in Kotlin language
- syntax, basic types, control flow, classes, and OOP
- Writing functions and functional programming in Kotlin
- Defining and importing from packages in Kotlin
- Running Kotlin on JVMs and Android runtimes
- Working with the Kotlin Standard Library and advanced features of Kotlin programming
- Setting up a Kotlin development environment with JetBrains tools
- Building real-world applications with Kotlin

Who this book is for This book is intended for anybody who wants to learn the most important Kotlin features. No experience of Kotlin is expected.

Master the concise and expressive power of a pragmatic multi-paradigm language for JVM, Android and beyond

**DESCRIPTION** The purpose of this book is to guide a reader through the capabilities of the Kotlin language and give examples of using it for development of various applications be it desktop, mobile or Web. Although our primary focus is on the JVM and Android, the knowledge we're sharing here to various extents applies to other Kotlin-supported platforms such as JavaScript, native and even multi-platform applications. The book starts with an introduction to language and its ecosystem that will give you an understanding of the key ideas behind Kotlin design, introduce you to the Kotlin tooling and present you the basic language syntax and constructs. In the next chapters we'll get to know the multi-paradigm nature of Kotlin which allows you to create powerful abstractions by combining various aspects of functional and object-oriented programming. We'll talk about using common Kotlin APIs such as the standard library, reflection, and coroutine-based concurrency as well as the means for creating your own flexible APIs based on domain-specific languages. In the concluding chapters, we'll give examples of using Kotlin for more specialized tasks such as testing, building Android applications, Web development and creating microservices.

**KEY FEATURES** - Language fundamentals - Object-oriented and functional programming with Kotlin -

Kotlin standard library - Building domain-specific languages - Using Kotlin for Web development - Kotlin for Android platform - Coroutine-based concurrency

**WHAT WILL YOU LEARN** By the end of the book, you'll obtain a thorough knowledge of all basic aspects of Kotlin programming. You'll be able to create a flexible and reusable code by taking advantage of object-oriented and functional features, use Kotlin standard library, compose your own domain-specific languages, write asynchronous code using Kotlin coroutines library as well. You'll also have a basic understanding of using Kotlin for writing test code, web applications and Android development. This knowledge will also give you a solid foundation for deeper learning of related development platforms, tools and frameworks.

**WHO THIS BOOK IS FOR** The book is primarily aimed at developers familiar with Java and JVM and willing to get a firm understanding of Kotlin while having little to no experience in that language. Discussion of various language features will be accompanied, if deemed necessary, by comparisons with their Java's analogs which should simplify Java-to-Kotlin transition. Most of the material, however, is rather Java-agnostic and should be beneficial even without prior Java knowledge. In general, experience in object-oriented or functional paradigm is a plus, but not required.

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Use PyCharm with fluid efficiency to write idiomatic python code About This Book Understand how PyCharm works and how you can leverage its strength to develop applications quickly Master PyCharm's editor to get a fast workflow Full of examples and illustrations that focus on the practical aspects of using PyCharm Who This Book Is For If you know PyCharm but want to understand it better and leverage its more powerful but less obvious tool set, this is the book for you. Serving as a launch pad for those who want to master PyCharm and completely harness its best features, it would be helpful if you were familiar with some of Python's most prominent tools such as virtualenv and Python's popular docstring formats such as reStructuredText and EpyType. What You Will Learn Understand the internal workings of the IntelliJ Platform Leverage PyCharm's powerful search tools, and learn which ones are the best for you and your workflow Customize PyCharm's enhanced Python interpreter and its inbuilt terminal Develop web applications quickly and easily with different frameworks such as Flask and Django Understand how code completion works in PyCharm for Python and JavaScript In Detail PyCharm is addictive, with powerful and configurable code completion, superb

editing tools, top-notch support, diverse plugins, and a vibrant ecosystem to boot. Learning how PyCharm works and maximising the synergy of its powerful tools will help you to rapidly develop applications. From leveraging the power of the editor to understanding PyCharm's internals, this book will give you a comprehensive view of PyCharm and allow you to make your own choices about which workflow and tools are best for you. You will start by getting comfortable with PyCharm and making it look exactly like you want. You can customize the tools and taskbars to suit individual developers' coding styles. You also learn how to assign keyboard shortcuts. You will master debugging by inserting breakpoints, collecting runtime data, and debugging from the console. You will understand how PyCharm works underneath and how plugins such as Codemap, Vim, Bitbucket, Assets compressor, markdown, bash file, shortcut translator, and .gitignore leverage the power of the IntelliJ platform. You will become comfortable using the VCS interface in PyCharm and see the benefits of using it for some simple tasks as well as some more complex tasks such as partial commits using changelists. You will take an in-depth look at the various tools in PyCharm, improving your workflow drastically. Finally, you will deploy powerful PyCharm tools for Django, Flask, GAE, and Pyramid Development, becoming well acquainted with

PyCharm's toolset for web development with popular platforms. Packed with insider tricks, this book will help you boost productivity with PyCharm. Style and approach An easy-to-follow guide with plenty of examples and screenshots. Each topic starts off with the goal of enhancing or changing a part of PyCharm to make it suit your needs.

What will you learn from this book? Head First Kotlin is a complete introduction to coding in Kotlin. This hands-on book helps you learn the Kotlin language with a unique method that goes beyond syntax and how-to manuals and teaches you how to think like a great Kotlin developer. You'll learn everything from language fundamentals to collections, generics, lambdas, and higher-order functions. Along the way, you'll get to play with both object-oriented and functional programming. If you want to really understand Kotlin, this is the book for you. Why does this book look so different? Based on the latest research in cognitive science and learning theory, Head First Kotlin uses a visually rich format to engage your mind rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multisensory learning experience is designed for the way your brain really works.

This book, written by one of the designers of generics, is a thorough explanation of how to use generics, and particularly, the effect this facility has

on the way developers use collections.

Transition smoothly from Java to the most widely used functional JVM-based language – Clojure

About This Book Write apps for the multithreaded world with Clojure's flavor of functional programming

Discover Clojure's features and advantages and use them in your existing projects The book is designed

so that you'll be able put to use your existing skills and software knowledge to become a more effective

Clojure developer Who This Book Is For This book is intended for Java developers, who are looking for a

way to expand their skills and understand new paradigms of programming. Whether you know a

little bit about functional languages, or you are just getting started, this book will get you up and running

with how to use your existing skills in Clojure and functional programming. What You Will Learn

Understand the tools for the Clojure world and how they relate to Java tools and standards (like Maven)

Learn about immutable data structures, and what makes them feasible for everyday programming

Write simple multi-core programs using Clojure's core concepts, like atoms, agents and refs

Understand that in Clojure, code is data, and how to take advantage of that fact by generating and

manipulating code with macros Learn how Clojure interacts with Java, how the class loaders work and

how to use Clojure from Java or the other way around Discover a new, more flexible meaning of

polymorphism and understand that OOP is not the only way to get it In Detail We have reached a point where machines are not getting much faster, software projects need to be delivered quickly, and high quality in software is more demanding as ever. We need to explore new ways of writing software that helps achieve those goals. Clojure offers a new possibility of writing high quality, multi-core software faster than ever, without having to leave your current platform. Clojure for Java developers aims at unleashing the true potential of the Clojure language to use it in your projects. The book begins with the installation and setup of the Clojure environment before moving on to explore the language in-depth. Get acquainted with its various features such as functional programming, concurrency, etc. with the help of example projects. Additionally, you will also, learn how the tooling works, and how it interacts with the Java environment. By the end of this book, you will have a firm grip on Clojure and its features, and use them effectively to write more robust programs. Style and approach An easy to follow, step-by-step, guide on how to start writing Clojure programs making use of all of its varied features and advantages. As this is a new language, certain new concepts are supported with theoretical section followed by simple projects to help you gain a better understanding and practice of how Clojure works. 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 through 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.

Summary Java's much-awaited "Project Jigsaw" is finally here! Java 11 includes a built-in modularity framework, and The Java Module System is your guide to discovering it. In this new book, you'll learn how the module system improves reliability and maintainability, and how it can be used to reduce tight coupling of system components. Foreword by Kevlin Henney. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. You'll find registration instructions inside the print book. About the Technology Packaging code into neat, well-defined units makes it easier to deliver safe and reliable applications. The Java Platform Module System is a language standard for creating these units. With modules, you can closely control how JARs interact and easily identify any missing dependencies at

startup. This shift in design is so fundamental that starting with Java 9, all core Java APIs are distributed as modules, and libraries, frameworks, and applications will benefit from doing the same. About the Book The Java Module System is your in-depth guide to creating and using Java modules. With detailed examples and easy-to-understand diagrams, you'll learn the anatomy of a modular Java application. Along the way, you'll master best practices for designing with modules, debugging your modular app, and deploying to production. What's inside The anatomy of a modular Java app Building modules from source to JAR Migrating to modular Java Decoupling dependencies and refining APIs Handling reflection and versioning Customizing runtime images Updated for Java 11 About the Reader Perfect for developers with some Java experience. About the Author Nicolai Parlog is a developer, author, speaker, and trainer. His home is [codefx.org](http://codefx.org). Table of Contents PART 1 - Hello, modules First piece of the puzzle Anatomy of a modular application Defining modules and their properties Building modules from source to JAR Running and debugging modular applications PART 2 - Adapting real-world projects Compatibility challenges when moving to Java 9 or later Recurring challenges when running on Java 9 or later Incremental modularization of existing projects Migration and modularization strategies PART 3 -

Advanced module system features Using services to decouple modules Refining dependencies and APIs Reflection in a modular world Module versions: What's possible and what's not Customizing runtime images with jlink Putting the pieces together IntelliJ IDEA (hereafter referred to as IntelliJ) is one of the most powerful and popular Integrated Development Environments (IDE) for Java. It was developed and is maintained by JetBrains, and is available in the community and ultimate edition. This feature-rich IDE enables rapid development and helps in improving code quality. This book starts with a basic introduction and slowly dives deep into the advanced features. The book is divided into 2 parts: beginners can start from the first 4 chapters. Others can skip over directly to Chapter-5. This book is targeted at first-time learners, as well as moderate users of IntelliJ. Beginners will get a fair understanding of IntelliJ and its functioning, and others will be able to take their knowledge on this subject to the next level. This book requires that the readers have some preliminary knowledge of the software development process, along with Java programming language. In the later sections of this book, we will discuss integration with build tools, unit testing frameworks, debugger, profiling, version control system, and database. It is assumed that the required tools are installed and configured on the system and the reader is familiar with those tools.

With Gradle, you can efficiently build automation framework along with some flexible alternatives to customized build logic. This book starts with sound basics about build automation and how Gradle fits into this automation. It then moves on to give you a good exposure on Groovy—a scripting language used to write Gradle—and helps you understand a key elements of Groovy programming language. In the following chapters, you will deal with task management and learn how to integrate Ant tasks into build scripts. Furthermore, you will learn dependency management, plugin management, and its configuration techniques in Gradle. You will also get hands-on with building and testing projects using Gradle. You will then begin to cover diverse topics, such as Continuous Integration with Jenkins and TeamCity, Migration strategies, and Deployment, which enables you to learn concepts useful for Agile software development. Finally, you will also learn how to create a simple mobile application using Android and explore how Gradle can help you to build and test the application.

How often do you hear people say things like this? "Our JavaScript is a mess, but we're thinking about using [framework of the month]." Like it or not, JavaScript is not going away. No matter what framework or "compiles-to-js" language or library you use, bugs and performance concerns will always be an issue if the underlying quality of your

JavaScript is poor. Rewrites, including porting to the framework of the month, are terribly expensive and unpredictable. The bugs won't magically go away, and can happily reproduce themselves in a new context. To complicate things further, features will get dropped, at least temporarily. The other popular method of fixing your JS is playing "JavaScript Jenga," where each developer slowly and carefully takes their best guess at how the out-of-control system can be altered to allow for new features, hoping that this doesn't bring the whole stack of blocks down. This book provides clear guidance on how best to avoid these pathological approaches to writing JavaScript: Recognize you have a problem with your JavaScript quality. Forgive the code you have now, and the developers who made it. Learn repeatable, memorable, and time-saving refactoring techniques. Apply these techniques as you work, fixing things along the way. Internalize these techniques, and avoid writing as much problematic code to begin with. Bad code doesn't have to stay that way. And making it better doesn't have to be intimidating or unreasonably expensive.

Learn how to make Android development much faster using a variety of Kotlin features, from basics to advanced, to write better quality code. About This Book Leverage specific features of Kotlin to ease Android application development Write code based on both object oriented and functional programming

to build robust applications Filled with various practical examples so you can easily apply your knowledge to real world scenarios Identify the improved way of dealing with common Java patterns Who This Book Is For This book is for developers who have a basic understanding of Java language and have 6-12 months of experience with Android development and developers who feel comfortable with OOP concepts. What You Will Learn Run a Kotlin application and understand the integration with Android Studio Incorporate Kotlin into new/existing Android Java based project Learn about Kotlin type system to deal with null safety and immutability Define various types of classes and deal with properties Define collections and transform them in functional way Define extensions, new behaviours to existing libraries and Android framework classes Use generic type variance modifiers to define subtyping relationship between generic types Build a sample application In Detail Nowadays, improved application development does not just mean building better performing applications. It has become crucial to find improved ways of writing code. Kotlin is a language that helps developers build amazing Android applications easily and effectively. This book discusses Kotlin features in context of Android development. It demonstrates how common examples that are typical for Android development, can be simplified using Kotlin. It also shows all the

benefits, improvements and new possibilities provided by this language. The book is divided in three modules that show the power of Kotlin and teach you how to use it properly. Each module present features in different levels of advancement. The first module covers Kotlin basics. This module will lay a firm foundation for the rest of the chapters so you are able to read and understand most of the Kotlin code. The next module dives deeper into the building blocks of Kotlin, such as functions, classes, and function types. You will learn how Kotlin brings many improvements to the table by improving common Java concepts and decreasing code verbosity. The last module presents features that are not present in Java. You will learn how certain tasks can be achieved in simpler ways thanks to Kotlin. Through the book, you will learn how to use Kotlin for Android development. You will get to know and understand most important Kotlin features, and how they can be used. You will be ready to start your own adventure with Android development with Kotlin.

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