

IntelliJ Idea JetBrains

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 Detail

JetBrains 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.

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.

IntelliJ IDEA Essentials Packt Publishing Ltd

Build Java Enterprise Applications and learn how Kotlin makes it easier to code them using components like JSF 2.3, Enterprise JavaBeans (EJB) 3.2, Contexts and Dependency Injection (CDI) 2.0, the Java API for WebSockets, JAX-RS 2.1, Servlet 4.0.

Key Features

- An in-depth guide updated with all the latest features of Kotlin 1.2 and Java EE 8
- Build microservices in Java EE with the help of Kotlin use cases
- Explore coroutines, garbage collection, multithreading, memory management and more

Book Description

Kotlin was developed with a view to solving programmers' difficulties and operational challenges. This book guides you in making Kotlin and Java EE work in unison to build enterprise-grade applications. Together, they can be used to create services of any size with just a few lines of code and let you focus on the business logic. Kotlin for Enterprise Applications using Java EE begins with a brief tour of Kotlin and helps you understand what makes it a popular and reasonable choice of programming language for application development, followed by its incorporation in the Java EE platform. We will then learn how to build applications using the Java Persistence API (JPA) and Enterprise JavaBeans (EJB), as well as develop RESTful web services and MicroServices. As we work our way through the chapters, we'll use various performance improvement and monitoring tools for your application and see how they optimize real-world applications. At each step along the way, we will see how easy it is to develop enterprise applications in Kotlin. By the end of this book, we will have learned design patterns and how to implement them using Kotlin. What you will learn

- Understand Kotlin syntax and appreciate why it's gaining in popularity
- Explore the Java EE ecosystem and the APIs in Java EE
- Implement applications using Kotlin
- Overcome the challenges of developing the Java EE system using Kotlin
- Gain insights into Java Message Services (JMS)
- Build RESTful MicroServices and secure applications
- Optimize applications with performance and monitoring tools
- Understand design patterns and implement them

Who this book is for

Kotlin for Enterprise Applications using Java EE is for Java EE developers who want to build their enterprise project or application with Kotlin or migrate from Java to Kotlin. Basic knowledge of programming is necessary to understand the key concepts covered in this book.

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.

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.

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.

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

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.

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

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

Kotlin is a powerful and pragmatic language, but it's not enough to know about its features. We also need to know when they should be used and in what way. This book is a guide for Kotlin developers on how to become excellent Kotlin developers. It presents and explains in-depth the best practices for Kotlin development. Each item is presented as a clear rule of thumb, supported by detailed explanations and practical examples.

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.

Develop more productive habits in dealing with your manager. As a professional in the business world, you care about doing your job the right way. The quality of your work matters to you, both as a professional and as a person. The company you work for cares about making money and your boss is evaluated on that basis. Sometimes those goals overlap, but the different priorities mean conflict is inevitable. Take concrete steps to build a relationship with your manager that helps both sides succeed. Guide your manager to treat you as a vital member of the team who should be kept as happy and productive as possible. When your manager insists on a course of action you don't like, most employees feel they have only two options: you can swallow your objections, or you can leave. Neither option gets you what you want, which is for your manager to consider your interests when making decisions. Challenging your boss directly is risky, but if you understand what really matters to your manager, you can build a balanced relationship that works for both sides. Provide timely "good enough" answers that satisfy the immediate need of the boss to move forward. Use a productive solution to the Iterated Prisoner's Dilemma to structure your interactions with management, going along when necessary and pushing back where appropriate, without threatening the loyalty relationship. Send the two most important messages to your boss: "I got this" and "I got your back," to prove your value to the boss and the organization. Analyze your manager's communication preferences so you can express your arguments in a way most likely to be heard and understood. Avoid key traps, like thinking of the boss as your friend or violating the chain of command unnecessarily.

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.

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.

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.

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.

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 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.

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.

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

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

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.

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.

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 Kotlin language and give examples of how to use it for the development of various applications, be it desktop, mobile or Web. Although our primary focus is on 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 the language and its ecosystem, which will give you an understanding of the key ideas behind the Kotlin design, introduce you to the Kotlin tooling and present you the basic language syntax and constructs. In the next chapters, we get to know the multi-paradigm nature of Kotlin which allows us 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 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 the 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 IS THIS BOOK FOR The book is primarily aimed at developers who are familiar with Java and JVM and are 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 the Java-to-Kotlin transition. Most of the material, however, is rather Java-agnostic and should be beneficial even without prior knowledge of Java. In general, experience in object-oriented or functional paradigm is a plus, but not required.

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The Unified Modeling Language has become the industry standard for the expression of software designs. The Java programming language continues to grow in popularity as the language of choice for the serious application developer. Using UML and Java together would appear to be a natural marriage, one that can produce considerable benefit. However, there are nuances that the seasoned developer needs to keep in mind when using UML and Java together. Software expert Robert Martin presents a concise guide, with numerous examples, that will help the programmer leverage the power of both development concepts. The author ignores features of UML that do not apply to java programmers, saving the reader time and effort. He provides direct guidance and points the reader to real-world usage scenarios. The overall practical approach of this book brings key information related to Java to the many presentations. The result is an highly practical guide to using the UML with Java.

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.

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

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>

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.

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.

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

Familiarize yourself with all of Kotlin's features with this in-depth guide *About This Book* Get a thorough introduction to Kotlin Learn to use Java code alongside Kotlin without any hiccups Get a complete overview of null safety, Generics, and many more interesting features *Who This Book Is For* The book is for existing Java developers who want to learn more about an alternative JVM language. If you want to see what Kotlin has to offer, this book is ideal for you. *What You Will Learn* Use new features to write structured and readable object-oriented code Find out how to use lambdas and higher order functions to write clean, reusable, and simple code Write unit tests and integrate Kotlin tests with Java code in a transitioning code base Write real-world production code in Kotlin in the style of microservices Leverage Kotlin's extensions to the Java collections library Use destructuring expressions and find out how to write your own Write code that avoids null pointer errors and see how Java-nullable code can integrate with features in a Kotlin codebase Discover how to write functions in Kotlin, see the new features available, and extend existing libraries Learn to write an algebraic data types and figure out when they should be used *In Detail* Kotlin has been making waves ever since it was open sourced by JetBrains in 2011; it has been praised by developers across the world and is already being adopted by companies. This book provides a detailed introduction to Kotlin that shows you all its features and will enable you to write Kotlin code to production. We start with the basics: get you familiar with running Kotlin code, setting up, tools, and instructions that you can use to write basic programs. Next, we cover object oriented code: functions, lambdas, and properties – all while using Kotlin's new features. Then, we move on to null safety aspects and type parameterization. We show you how to destructure expressions and even write your own. We also take you through important topics like testing, concurrency, microservices, and a whole lot more. By the end of this book you will be able to compose different services and build your own applications. *Style and approach* An easy to follow guide that covers the full set of features in Kotlin programming. Provides information on creating Web-based 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.

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.

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 consise 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!

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. 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

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

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