





# **Jetpack Compose 1.7 Essentials**

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## 1. Start Here

Welcome to this comprehensive guide to building Android applications using Jetpack Compose 1.7, Android Studio Ladybug, Material Design 3, and the Kotlin programming language. This book has been designed to teach developers the essential knowledge and skills to create modern, dynamic, and visually compelling applications.

We begin with foundational steps, including the setup of your development environment in Android Studio, followed by a detailed introduction to Kotlin, the language underpinning Android development. This section covers core aspects of Kotlin, such as data types, operators, control flow, functions, lambdas, and coroutines, establishing a strong basis in object-oriented programming principles.

With this foundation in place, we turn to Jetpack Compose, Google’s innovative toolkit for building native user interfaces. This book presents an in-depth exploration of Compose components and layout structures, including rows, columns, boxes, flows, pagers, and lists, alongside an overview of Android project architecture and Android Studio’s Compose development mode.

The following sections delve into more advanced topics, such as state management, modifiers, and navigation components—key elements in designing smooth and intuitive user interfaces. We also guide you through creating reusable layout components, securing applications with biometric authentication, and incorporating Google Maps functionality to enrich user engagement.

Furthermore, we cover specialized techniques, such as graphics rendering, animations, transitions, Kotlin Flows, and gesture handling. Practical data management solutions, including view models, Room database access, live data, and the Database Inspector, are discussed in depth. For developers interested in monetization, this guide also includes a dedicated section on implementing in-app billing.

The concluding chapters provide a comprehensive overview of app packaging and the publication process on the Google Play Store. Throughout the book, each concept is solidified through detailed, hands-on tutorials, complemented by downloadable source code to facilitate real-world application and access to over 55 online knowledge test quizzes.

With a basic understanding of programming, access to Android Studio and the Android SDK, and a Windows, Mac, or Linux system, you will be well-prepared to embark on this journey. It is our aim that, upon completion, you will be equipped with the skills necessary to design, build, and deploy professional-grade Android applications.

### 1.1 For Kotlin programmers

This book addresses the needs of existing Kotlin programmers and those new to Kotlin and Jetpack Compose app development. If you are familiar with the Kotlin programming language, you can probably skip the Kotlin-specific chapters.

### 1.2 For new Kotlin programmers

If you are new to Kotlin programming, the entire book is appropriate for you. Just start at the beginning and keep going.

## 1.3 Downloading the code samples

The source code and Android Studio project files for the examples contained in this book are available for download at:

<https://www.payloadbooks.com/product/compose17-prag/>

The steps to load a project from the code samples into Android Studio are as follows:

1. Click on the Open button option from the Welcome to Android Studio dialog.
2. In the project selection dialog, navigate to and select the folder containing the project to be imported and click on OK.

## 1.4 Feedback

We want you to be satisfied with your purchase of this book. Therefore, if you find any errors in the book or have any comments, questions, or concerns, please contact us at [info@payloadbooks.com](mailto:info@payloadbooks.com).

## 1.5 Errata

While we make every effort to ensure the accuracy of the content of this book, inevitably, a book covering a subject area of this size and complexity may include some errors and oversights. Any known issues with the book will be outlined, together with solutions, at the following URL:

[https://www.payloadbooks.com/compose17\\_errata](https://www.payloadbooks.com/compose17_errata)

If you find an error not listed in the errata, email our technical support team at [info@payloadbooks.com](mailto:info@payloadbooks.com).

## 1.6 Take the knowledge tests



Look for this section at the end of most chapters and use the link or scan the QR code to take a knowledge quiz to test and reinforce your understanding of the covered topic. Use the following link to review the full list of tests available for this book:

<https://www.answertopia.com/p9jf>

