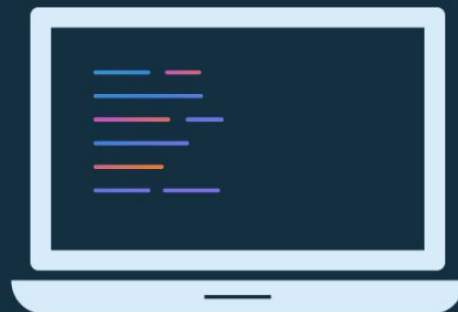




Android Development with Kotlin



About this course

Prerequisites

- Experience in an object-oriented programming language
- Comfortable using an IDE
- Familiar with using GitHub
- Access to a computer and internet connection
- (Optional) Android device and USB cable

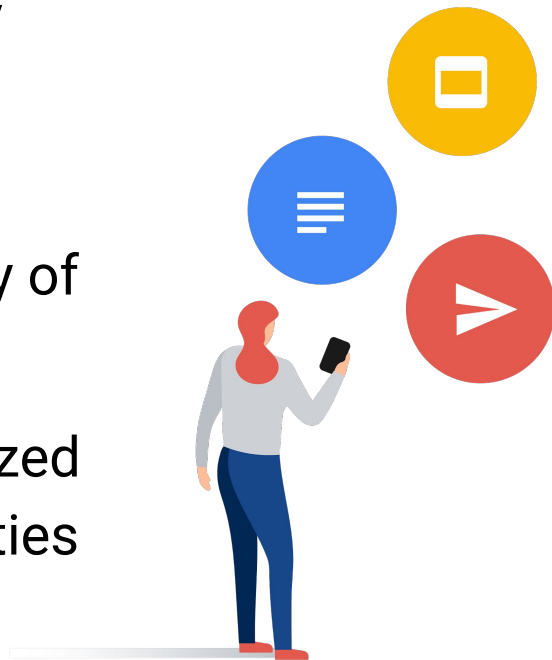
What you'll learn

- How to build a variety of Android apps in Kotlin
- Kotlin language essentials
- Best practices for app development
- Resources to keep learning



The opportunity

- Mobile devices are becoming increasingly commonplace
- Mobile apps connect users to information and services that can improve their quality of life
- Many industries have yet to be revolutionized through mobile, and offer great opportunities for new businesses and solutions

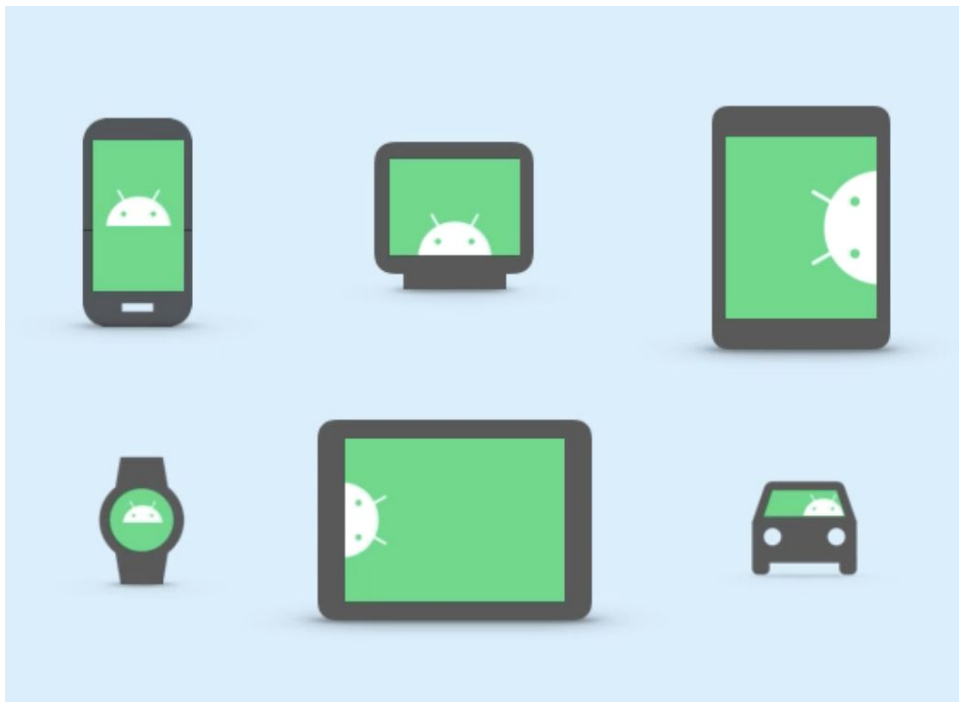


Android

- Open-source mobile platform
- 11 major platform releases so far
- 2.5 billion monthly active Android devices
- 2+ billion monthly active Google Play users



Available across different form factors



Build Android apps in Kotlin



Kotlin

A modern programming language that helps developers be more productive.



Benefits of Kotlin

- Expressive and concise
- Safer code
- Interoperable
- Structured Concurrency

Idiomatic Kotlin

- Kotlin is at its best when used idiomatically
- Avoid just translating Java into Kotlin
- As you learn more Kotlin, you'll find easier, more concise ways to do things
- For a list of common Kotlin idioms, refer to the Kotlin Language Guide on [Idioms](#)



Learning experience

Course structure

4 units with a total of 13 lessons across 13 weeks

Unit 1 (3 weeks)

Get Started with Kotlin

Basics, Functions,
Classes & Objects,
Extensions

Unit 2 (3 weeks)

Introduction to Android

First App, Layouts,
Navigation

Unit 3 (6 weeks)

Android App Architecture

App Architecture, Data
Persistence, Display
Lists, Connect to
Internet, Background
Work

Unit 4 (1 week)

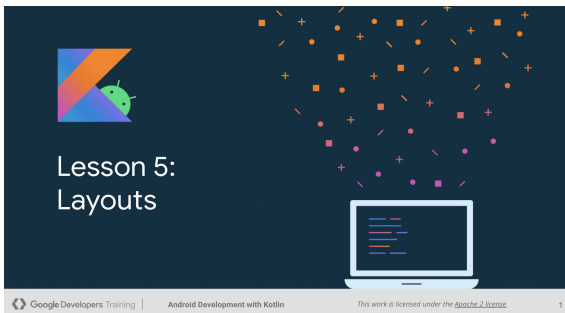
App Design

App UI Design



Lectures

We'll cover important topics together as a class.

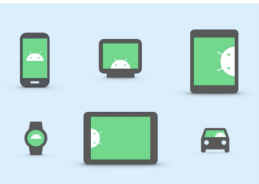


Lesson 5:
Layouts

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Android devices

- Android devices come in many different form factors.
- More and more pixels per inch are being packed into device screens.
- Developers need the ability to specify layout dimensions that are consistent across devices.



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Default parameters

Default values provide a fallback if no parameter value is passed.

```
fun swim(speed: String = "fast") {  
    println("swimming $speed")  
}
```

swim() → swimming fast
swim("slow") → swimming slow
swim(speed = "turtle-like") → swimming turtle-like

Use "=" after the type to define default values

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Learning pathways

After each class, complete the corresponding learning pathway with articles and codelabs to practice what you learned.

× Create an interactive Dice Roller app

- 1 Before you begin
- 2 Set up your app
- 3 Create the layout for the app
- 4 Introduction to Activities
- 5 Make the Button interactive
- 6 Add the dice roll logic
- 7 Adopt good coding practices
- 8 Solution code
- 9 Summary
- 10 Learn more
- 11 Practice on your own

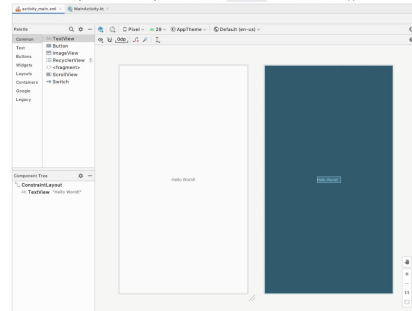
Report a mistake

Back

3. Create the layout for the app

Open the Layout Editor

1. In the **Project** window, double-click `activity_main.xml` (app > res > layout > activity_main.xml) to open it. You should see the **Layout Editor**, with only the "Hello World" `TextView` in the center of the app.



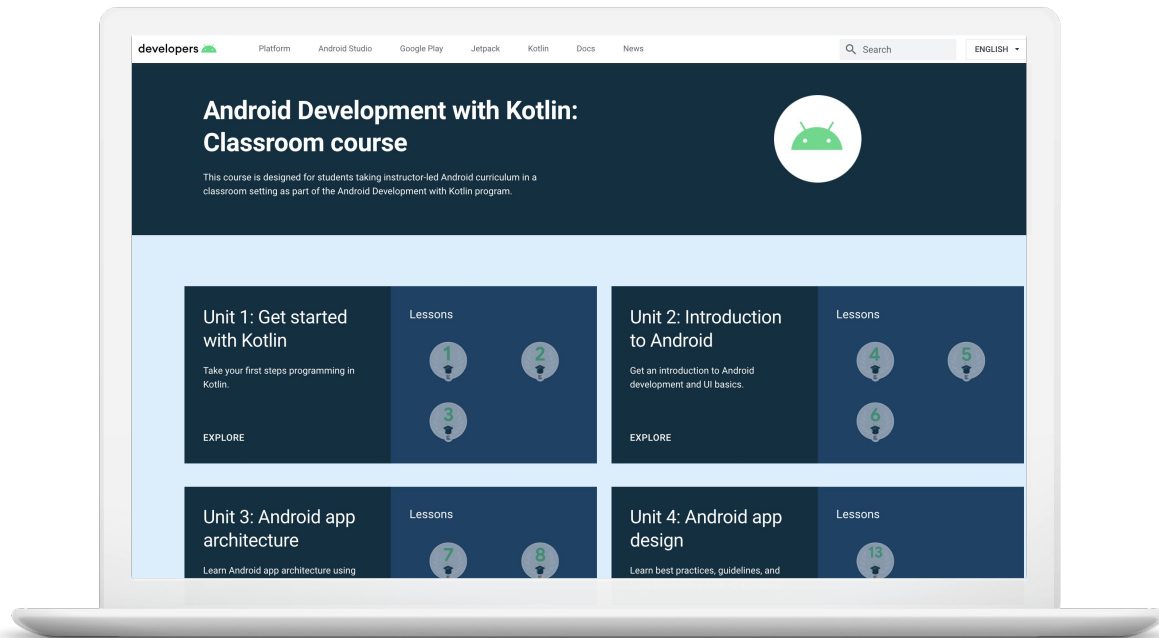
Next you will add a `Button` to your app. A `Button` is a user interface (UI) element in Android that the user can tap to perform an action.

BUTTON

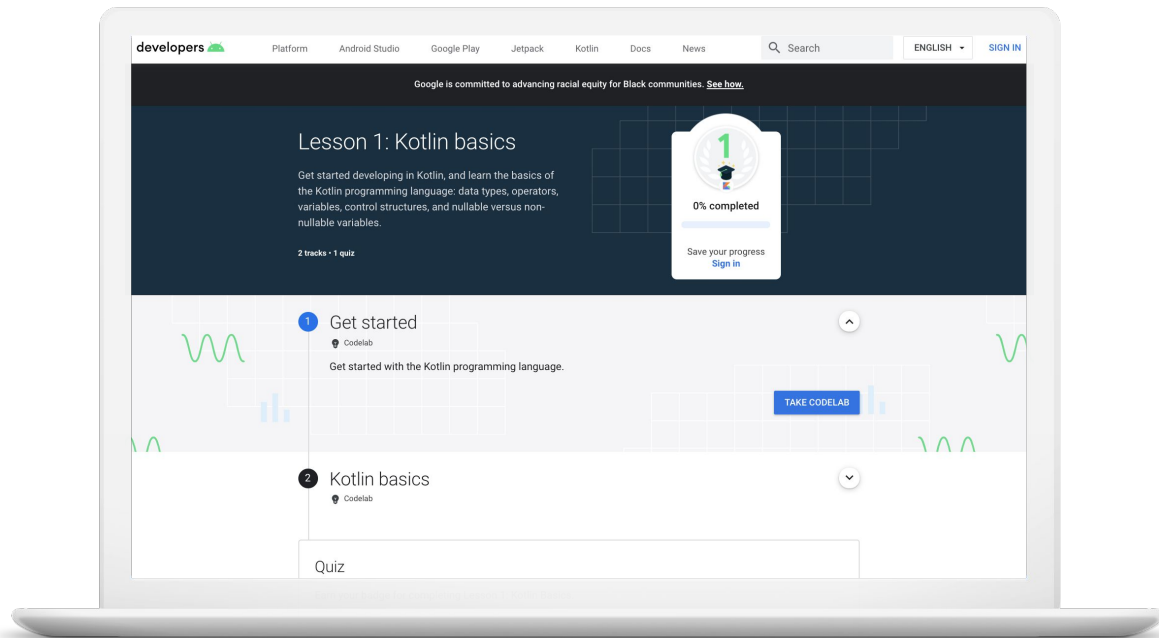
Next

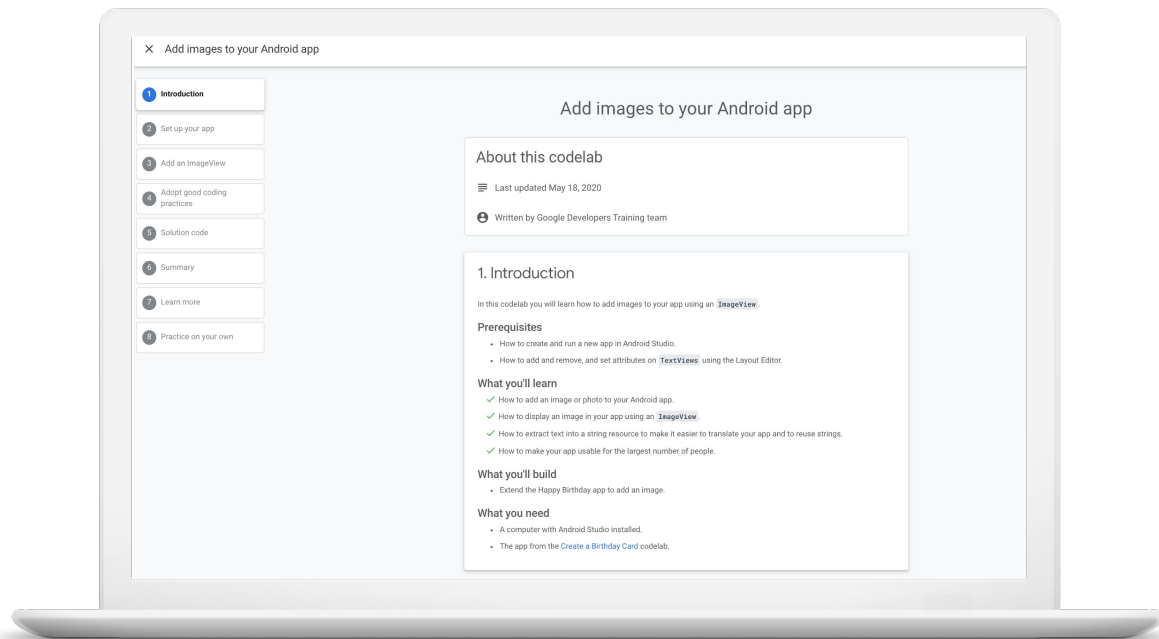


Accessing the pathways

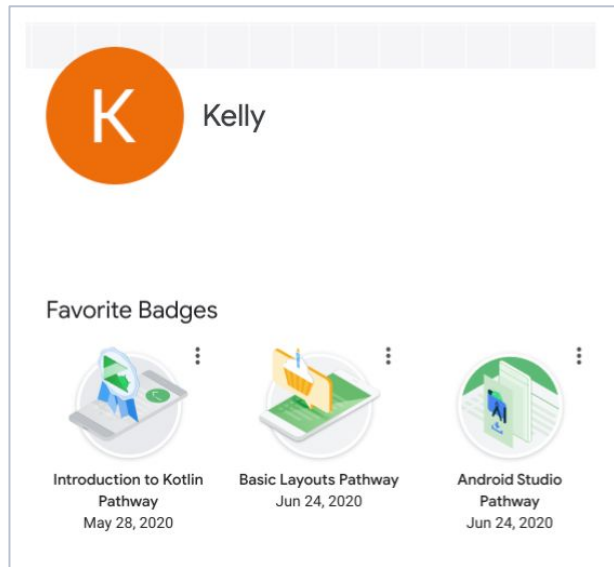


Pathway





Earn badges for your developer profile



What you need

To work through the Kotlin and Android examples in the *Android Development with Kotlin* labs you'll need to install the following software on your computer:

- Java Development Kit
- Java Runtime Engine (Windows only)
- IntelliJ IDEA
- Android Studio

Resources

Kotlin resources

- [Learn Kotlin](#) for a list of official reference materials
- [Kotlin Language Documentation](#) (downloadable PDF)
- [Kotlin Koans](#) for more snippets to practice with
- [Coding Conventions](#) for a coding style guide for the Kotlin language
- [Learn Kotlin by Example](#) for a set of small and simple annotated examples

Android and other resources

- [Official Android developer website](#)
- [Android Developers Blog](#)
- [Android Developers Medium blog](#)
- [Android Developers YouTube channel](#)
- [@AndroidDev on Twitter](#)
- [Android Developer Newsletter](#)
- [Stack Overflow](#)
- Offline documentation through [SDK Manager](#)