

Android with Kotlin Bootcamp

Day 5 - Special Topics



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Any questions from yesterday?

What are we
learning today?

Making Network Requests
Performing Asynchronous Work
How to Display Web Content
Bridging Between JavaScript & Kotlin
Managing Permissions
Testing Your Android Apps



Let's check in on our “want to learns”

Any Questions For
Our Final Day?

Making Network Requests with Volley



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Overview

Understand basic networking concepts

Explore Android networking tools

**Understand how to make a network request
using Volley**

Networking on Android

HttpURLConnection

Retrofit

Volley

Networking on Android



Volley

Volley

Volley is an HTTP library that makes networking for Android apps easier and most importantly, faster.

<https://developer.android.com/training/volley>

Volley

- Supports common request types out of the box
- Disk & memory response caching
- Support for retry and backoff
- Cancellation support

Performing Long-Running Tasks Using Services



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Overview

Understand the challenges of long-running tasks

Understand BroadcastReceivers

Understand Background Services

Understand Foreground Services

Using Work Manager



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Overview

- Understand the fundamentals of WorkManager**
- Understand when to use WorkManager**
- Understand how to configure a task**
- Understand how to schedule / constrain work**

Displaying Web Content in an Android App



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Overview

Explore different strategies for displaying web content in an Android app

Understand the fundamentals of WebView

Understand how to bridge between JavaScript and Kotlin

WebView

WebView objects allow you to display web content as part of your activity layout...A WebView is useful when you need increased control over the UI and advanced configuration options that will allow you to embed web pages in a specially-designed environment for your app.

<https://developer.android.com/reference/android/webkit/WebView>

Managing Permissions



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Overview

Understand permissions fundamentals

Understand permissions levels

Explore common permissions

Understand how to request permissions

Types of Permissions

Install-Time

Runtime

Special

Runtime Permissions

Also known as dangerous permissions, give your app additional access to restricted data, and they allow your app to perform restricted actions that more substantially affect the system and other apps

<https://developer.android.com/guide/topics/permissions/overview#types>

Runtime Permissions

Must be requested

Should be requested “in context”

May be denied or revoked



Lunch

Testing Your Android Apps



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Overview

Understand the challenges of testing Android apps

Understand how to write a unit test

Understand Android Instrumentation tests

Explore common Android testing tools

Android Testing



Unit

Integration

UI

Unit Tests

- Run locally on dev machine
- Run quickly
- Test small pieces of functionality
- Have limited external dependencies
- Located with “test” directory

Integration/UI Tests

- Located within “androidTest” directory
- Must be run on an Android device/emulator
- May test Android SDK apis without mocking
- Are slower to run
- Use Espresso for UI testing

Course Evaluation

<https://www.surveymonkey.com/r/HKVD97>

Releasing Your App



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Overview

Understand how to prepare apps for release

Explore Gradle build types / flavors

Understand app signing

Explore app store requirements

Explore common mobile CI practices

Course Recap



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Recap

Explored the Android / Kotlin ecosystem

Created our first Android app

Learned to write Kotlin

Built a fully-featured Android app using modern libraries and best practices