KOENIG SOLUTIONS · COURSE OUTLINE

Google - Android Kotlin Fundamentals

Learn to build Android apps with Kotlin, from language basics to app architecture, navigation and background processing.

13	39
MODULES	TOPICS

COURSE OVERVIEW

This course begins with Kotlin fundamentals, covering basics, functions, classes and objects. It then introduces Android development, including building a first app, working with layouts and implementing app navigation. Further modules address Android application architecture, covering activity and fragment lifecycles, ViewModel and LiveData, Room persistence, RecyclerView lists, internet connectivity and WorkManager for background processing. The course concludes with app design topics such as styles, themes and Material Design.

WHO THIS COURSE IS FOR

- **Android Developers**
- **Kotlin Developers**
- **Mobile App Developers**
- **Software Engineers**
- **UI Designers**

LEARNING OBJECTIVES

- Apply Kotlin basics, functions, classes and objects
- Build a basic Android app with Android Studio
- Implement layouts using LinearLayout and ConstraintLayout
- Configure app navigation with fragments and external activities
- Explain activity and fragment lifecycle behaviour
- Implement app architecture with ViewModel, LiveData and Room
- Develop lists with RecyclerView and Data Binding
- Configure background processing with WorkManager

COURSE SYLLABUS

13 Modules, 39 Topics

Unit 1 – Get Started with Kotlin

01

Getting Started & Kotlin Basics

TOPICS

Getting Started & Kotlin Basics · Getting Started · Kotlin Basics

02

Functions

TOPICS

Functions

03

Classes and Objects

TOPICS

Object-oriented programming · Extensions

Unit 2 – Introduction to Android

04

Build Your First App

TOPICS

Install Android Studio · Get started · Basic app anatomy · Image resources and compatibility

05

Layouts

TOPICS

LinearLayout using the Layout Editor · Add user interactivity · ConstraintLayout using the Layout Editor · Data Binding basics

06

App Navigation

TOPICS

Create a fragment · Define navigation paths · Start an external Activity

Unit 3 – Android Application Architecture

07

Activity and Fragment Lifecycles

TOPICS

Lifecycles and logging · Complex lifecycle situations

08

App Architecture (UI Layer)

TOPICS

ViewModel and ViewModelFactory · LiveData and LiveData observers · Data binding with ViewModel and LiveData · LiveData transformations

09

App Architecture (Persistence)

TOPICS

Create a Room database · Coroutines and Room · Use LiveData to control button states

10

Displaying Lists with RecyclerView

TOPICS

RecyclerView fundamentals · DiffUtil and Data Binding with RecyclerView · GridLayout with RecyclerView · Interacting with RecyclerView items · Headers in RecyclerView

11

Connect to the Internet

TOPICS

- Getting data from the internet
- Loading and displaying images from the internet
- Filtering and detail views with internet data

12

WorkManager for Background Processing

TOPICS

Repository · WorkManager

Unit 4 – App Design

13

Designing for Everyone

TOPICS

Styles and themes · Material Design, dimens, and colors · Design for everyone

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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