

## Android Programming

#### Audience Android Programming Course

The course Android Programming is intended for experienced Java developers who want to learn how apps can be programmed for Android with Java or Kotlin.

#### **Prerequisites Android Programming Course**

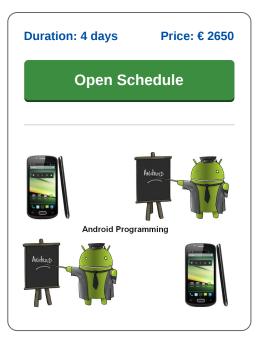
To participate in the course Android Programming knowledge of and experience with programming in Java or Kotlin is required.

#### **Realization Training Android Programming**

The theory is discussed on the basis of presentation slides. Demos provide an illustrative clarification of the discussed concepts. The theory is interspersed with exercises. The course material is in English.

#### **Certification Android Programming**

Participants receive an official certificate Android Programming after successful completion of the course.



### **Content Course Android Programming**

In the course Android Programming participants learn app development for the Android operating system for mobile devices. The course uses the latest version of Android and the apps are developed in Java or Kotlin.

#### **Android Overview**

The course Android Programming starts with a global overview of the Android operating system, which is based on a modified Linux kernel. Also discussed is how Android differs from other platforms.

#### **Main Building Blocks**

Subsequently the main building blocks of Android apps are covered such as activities, views, intents, services, content providers, fragments and the AndroidManifest.xml.

#### **Activities and UI**

The UI can be realized in Android using fragments and xml layout, but in the newer Android versions the UI is realized with composable functions. Both ways are treated in the course Android Programming with emphasis on the latter.

#### **Preferences and Files**

Preferences are also part of the course Android Programming including writing and reading shared preferences. Attention is also paid to reading and writing files to internal and external storage facilities.

#### **Advanced UI**

Advanced User Interfaces that make use of complex components and their interaction are covered as well. Design Patterns such as the MVVM or MVI Pattern and observable data types with live data are treated.

#### **Device Support**

Best practices, debugging and testing apps on devices are also on the schedule. The course Android Programming uses the latest version of the Android OS with Android Studio as IDE and emulators for devices.

#### **SQL** Database

Storing data locally in an SQLite database is also covered. This includes working with cursors for inserts and updates. Benefits of Design Patterns for data storage such as the DAO (Data Access Objects) Pattern and ViewHolder Pattern are explained.

#### **Content Providers and Multimedia**

Finally content providers with various MIME types and support for multimedia such as audio and video are discussed.

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# **Modules Course Android Programming**

Module 1 : Android Overview	Module 2 : Main Building Blocks	Module 3 : Activities and UI
Android Stack	Activities	Understand the Lifecycle Callbacks
Android Architecture	Activity lifecycle	Specify Your App's Launcher Activity
Java versus Kotlin	Destroy the Activity	Create a New Instance
Dissecting Android apps	Pause Your Activity	Start/Restart Your Activity
Building blocks	Resume Your Activity	XML Layout
Debugging and Testing	Stop Your Activity	Fragments
Android Security	Intents	Composable Functions
The manifest file	Services	Views and Layouts
Layout resource	Content Providers	Common UI Components
Running your app on Emulator	Broadcast Receivers	Handling User Events
Module 4 : Preferences and Files	Module 5 : Advanced UI	Module 6 : Device Support
Get a Handle to a SharedPreferences	Selection Components	Create Locale Directories
Write to Shared Preferences	Adapters	String Files
Read from Shared Preferences	Complex UI Components	Use the String Resources
Choose Internal or External Storage	MVVM and MVI Pattern	Create Different Bitmaps
Obtain Permissions for External Storage	Observable Data Types	Minimum and Target API Levels
Save a File on Internal Storage	Building UI for Performance	Debugging and Testing
Save a File on External Storage	Menus and Dialogs	Use Platform Styles
Query Free Space	Graphics and Animations	Use Platform Themes
Module 7 : SQL Database	Module 8 : Content Providers	Module 9 : Multimedia in Android
Introducing SQLite	Content provider MIME types	Multimedia Support
Creating a Database	Searching for Content	Audio formats
Opening and Closing a Database	Adding Content	Jet Player
Working with Cursors	Changing Content	Simple Media Playback
Inserts, Updates and Deletes	Removing Content	Supported Video Formats
DAO en ViewHolder Patterns	Working with Content Files	Simple Video Playback

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