THETA SOLUTIONS
INNOVATION & EXCELLENCE

The Hub of Professional **IT** Trainings & Certifications

Groom your career as

ANDROID DEVELOPER

KOTLIN



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1. Training Plan

- Credit Hours: 48
- Lectures/Labs: 24
- Duration: 3 months
- Classes: Weekends Only

2. Description

- Groom your career in Android Application Development with Kotlin.
- Currently, billions of users use Android supported mobile devices; in fact, they prefer it, which is more than any other mobile operating system. Android is an open-source platform available on a multitude of different smartphones and tablets as well as wearables through the Android Wear operating system. That's why Android's market size being much more significant. It is an ever-growing market, and the demand for an Android app developer is high.
- Professionals and students can take this course in which both can have a crack at Android Development. Our step by step training will be based on 100% practical training.

3. Why Kotlin?

- Google announced official support for Kotlin. At Google I/O in May 2017. Just a year later, and Google told the audience at I/O 2018: "35% of pro developers use Kotlin … more and more Android development is going to Kotlin, and we're committed for the long term."
- Kotlin requires fewer lines of code to do the same things as other programming languages. It is an inherently concise language so it can solve many common development problems with just a few lines of code.
- Kotlin is 100% interoperable with Java so apps you've already built can be migrated to Kotlin incrementally. You don't need to stop using Java—you can use both! Extension functions give you a way to add functionality to existing classes (even Java classes) without a full rewrite to Kotlin.

4. Why Room Database?

- The room provides an abstraction layer over SQLite to allow fluent database access while harnessing the full power of SQLite.
- Apps that handle non-trivial amounts of structured data can benefit greatly from persisting that data locally. The most common use case is to cache relevant pieces of data. That way, when the device cannot access the network, the user can still browse that content while they are offline. Any user-initiated content changes are then synced to the server after the device is back online.
- Because Room takes care of these concerns for you, we highly recommend using Room instead of SQLite.

5. Training Requirements

- Basic knowledge of Computer Programming (irrespective of the language)
- A PC or a Laptop with tool supported OS, recommended Windows.
- Android Studio 3+
- No paid software or tools required.
- Your interest and cooperation.

6. Training Methodology

- 100% practical and jobs-oriented training with professionals.
- Regular assessments and lab assignments.
- One Complete Project is other than assessments and assignments.
- Theta Certifications and Job Referrals for Eligible Students.

7. Core Technologies to Focus on

- Android Studio
- JDK, Android SDK
- XML, Kotlin
- Room Database
- Firebase
- App analytics
- Android Architecture Components

8. Major Areas to Learn

- Responsive Apps
- Project Structure Management
- 100% OOP Based Kotlin Development
- Persistence using Room database
- GitHub Code Versioning
- Google APIs (Locations, Maps)
- Web Services using Retrofit
- External Libraries integration
- One Complete Android App
- Google Play Publish

9. Training Outline

9.1 Introduction to Android and Environment Setup

- Introduce the Android platform
- Android Developer Course Benefits and How to Use This Course
- Establishing the development Environment (Installing Java JDK, Installing Android Studio)

9.2 Introducing the Android Project Creation and its structure

- Creating Your Project
- Running your Own Hello World Application
- Overview of The Interface
- Some Things to Learn About Android Studio
- How to Create an Android Virtual Device
- Android Application Overview, Application Components, and Project Structure
- Version Controlling in Android Studio (intro to Git Hub)

9.3 Activities & States

- Understanding the concept of Activity
- Activity States (Activity Life Cycle)
- Example for Changing States

9.4 Kotlin Basics

- Programming fundamentals
- Object-oriented programming with Kotlin
- Lambdas, Constructors, Packages, etc.
- Data classes and Sharing data between classes
- Method overloading, overriding

9.5 Creating UI with simple Layouts

- Building the User Interface using XML
- Building User Interface Using Java
- Introduction to simple UI Layouts (Linear Layout, Relative Layout, Constraints Layout)
- Intro to res folder (String, drawable)

9.6 Widgets UI Controls

- Working with all kind of Text controls (text view, email, phone, password, etc.)
- Introduction to basic widgets (Button, Toggle Button, CheckBox, Radio Button, etc.)
- How to add images and Videos in your App (Image View, Image Button, Video View)
- How to Add Properties to Widgets
- How to Add Multiple Widgets
- Adding Date and Time picker in Android App (Colander view, Date Picker, Time picker, etc.)
- Intro to data binding

9.7 Events Handling

- How to Handle Events in Android using XML
- Learning How to Use Event Listener in Kotlin
- Intro to Lambdas with Events
- Introduction to Toast and Snack Bar

9.8 Material Designing in Android Apps

- Implementing Android in your project
- Working with Styles and Themes
- Designing your custom widgets (Buttons, Edit Text, Text view, etc.)
- Working with Card view
- Multi-Lingual and Responsive App

9.9 Working with Animations

- Creating Animations in XML
- Applying the Animations to UI Controls

9.10 Working with Multiple Activities in your App

- How to add multiple Activates to your App?
- Working with Intents (Explicit and implicit)
- Navigating between multiple Activities
- Introduction to Android Manifest file in detail (including an introduction to intent filters)
- Introduction to simple Splash Activities, Explain the best ways to create a splash Activity

9.11 More about using Intents

- Sending Emails, SMS, phone calls
- How to share data with other social apps using our app?

9.12 Advance Android Concepts

- Creating and inflating dialogs using Kotlin
- Dialog using custom XML layout
- Handling the events in Dialog Controls, Explain the best ways to handle the events
- Working with the broadcast receiver (communicating with other apps)
- Status Bar Notification
- Shared preferences

9.13 Assessment

9.14 Advance Android UI Controls and Containers Part-1

- Threads handling (when should be thread used?)
- Android system services, AsyncTask
- Introduction to Recycler View
- Creating the recycler view adapter
- Creating a custom Recycler view

9.15 Advance Android UI Controls and Containers Part-2

- Working with fragments, fragment Manager, Concepts of Back Stack
- Fragment life cycle with Activity
- Sharing data between activities and fragments
- Working with transitions (Image Switcher, Text switcher, etc.)
- Working with Tab layout and view pager using Fragment

9.16 Android Architecture Components

- Installing Architecture components to your App
- MVVM architecture for Android Apps
- Using Room lib to manipulating data from files and database

9.17 Android Hardware interaction

- Working with Camera, Audio and Bluetooth or Wi-Fi, etc.

9.18 Working with Android External Libraries

- Introducing how to add external project or libs in your android project?
- Introduction to using some famous Android designing libs

9.19 Android App with Internet and Web

- Using a Web view, web client
- Working with APIs (Google Maps API, Google places API)
- Web services (JSON parsing, intro to JSON / GSON)
- Social API Integration (Facebook login API etc.)
- Introduction to FCM, Firebase Android Push Notifications

9.20 Android App Testing

- Introduction to Expresso for GUI testing
- Running unit test cases programmatically

9.21 Publishing your App

- Introduction to google play store
- How to upload and publish an Android App in play store

9.22 Assessment 2

10. Instructor Profile



Salman Nazir
Senior Mobile Software Engineer
Senior Android Developer (Germany Office)
Android Instructor

With 6+ years of professional development experience of mobile applications development in international market, he has worked in various technologies and platforms and has professionally trained 100's of students who are serving the IT industry in various sectors across globe.



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