

# TECHGENX

Android+Kotlin

**Please Note: All below course content will be covered in practical scenarios and regular assignments will be shared. All sessions will be recorded and shared with student for future reference (free of cost). Along with below course.**

## 1. Kotlin Course Content

### a. **Getting Started**

- i. Basic Syntax
- ii. Idioms
- iii. Coding Conventions

### b. **Basics**

- i. Basic Types
- ii. Packages
- iii. Control Flow
- iv. Returns and Jumps

### c. **Classes and Objects**

- i. Classes and Inheritance
- ii. Properties and Fields
- iii. Interfaces
- iv. Visibility Modifiers
- v. Extensions
- vi. Data Classes
- vii. Generics
- viii. Nested Classes
- ix. Enum Classes
- x. Objects
- xi. Delegation
- xii. Delegated Properties

### d. **Functions and Lambdas**

- i. Functions
- ii. Lambdas
- iii. Inline Functions

### e. **Other**

- i. Destructuring Declarations
- ii. Collections
- iii. Ranges
- iv. Type Checks and Casts
- v. This expressions
- vi. Equality
- vii. Operator overloading
- viii. Null Safety
- ix. Exceptions
- x. Annotations
- xi. Reflection
- xii. Type-Safe Builders
- xiii. Dynamic Type

### f. **Interop**

- i. Calling Java from Kotlin
- ii. Calling Kotlin from Java

## **2. Basics of Android**

- What is Android
- History and Version
- Installing software
- Setup Eclipse
- Hello Android example
- Internal Details
- Dalvik VM
- Software Stack
- Android Core Building Blocks
- Android Emulator
- AndroidManifest.xml
- Android Basics in Kotlin
- Hide Title Bar
- Screen Orientation

## **3. UI Widgets**

- Working with Button
- Toast
- Custom Toast
- Button
- Toggle Button
- Switch Button
- Image Button
- CheckBox
- AlertDialog
- Spinner
- AutoCompleteTextView
- RatingBar
- DatePicker
- TimePicker
- ProgressBar
- Quick Contact Budge
- Analog Clock and Digital Clock
- Working with hardware
- Button File Download

## **4. Activity, Intent & Fragment**

- Activity Lifecycle

- Activity Example
- Implicit Intent
- Explicit Intent
- Fragment Lifecycle
- Fragment Example
- Dynamic Fragment

## **5. Android Menu**

- Option Menu
- Context Menu
- Popup Menu

## **6. Layout Manager**

- Relative Layout
- Linear Layout
- Table Layout
- Grid Layout

## **7. Adaptor**

- Array Adaptor
- ArrayList Adaptor
- Base Adaptor
- Recycler Adapter

## **8. View**

- GridView
- WebView
- ScrollView
- SearchView
- TabHost
- DynamicListView
- ExpandedListView

# **Advance Android**

## **9. Android Service**

- Android Service
- Android Service API
- Android Started Service
- Android Bound Service
- Android Service Lifecycle
- Android Service Example

## **10. Data Storage**

- Shared Preferences
- Internal Storage
- External Storage

## **11. SQLite**

- SQLite API
- SQLite Spinner
- SQLite ListView

## **12. XML & JSON**

- XML Parsing SAX
- XML Parsing DOM
- XML Pull Parser
- JSON Parsing

## **13. Content Provider**

- Content Provider Fundamental
- Contact Content Provider
- Other Built-in Content Providers
- Creating Custom Content Provider
- Understanding Content URI
- ContentResolver
- Sharing Information from custom content provider

## **14. Android Notification**

- Notification API
- Creating Notification Builder
- Setting Notification Properties
- Attaching Actions
- Issuing Notification
- NotificationCompat.Builder class
- Android Notification Examples

## **15. Multimedia**

- Wallpaper
- Live Wallpaper
- Multimedia API
- Playing Audio
- Creating Audio Player
- Playing Video
- Alarmmanager
- Gallery

## **16. Speech API**

- TextToSpeech API
- TextToSpeech Example
- Managing speed and pitch Speech To Text

## **17. Telephony API**

- Telephony Manager
- Get Call State
- Call State BroadcastReceiver
- Simple Caller Talker
- Making Phone Call
- Send SMS
- Send Email

## **18. Location API**

- Location API Fundamental
- Example of Android Location API
- Working with Google Maps

## **19. Animation**

- Android Animation API
- Android Drawable class
- Android Animation Example
- Android Rotate Animation
- Android Fade Animation
- Android Zoom Animation

## **20. Device Connectivity**

- Bluetooth Tutorial
- List Paired Devices
- Working with WiFi
- Working with Camera

## **21. Sensor**

- Sensor API
- Motion Sensor
- Position Sensor
- Environmental Sensor
- Sensor Values
- SensorManager class
- Sensor Class
- SensorEvent class
- SensorEventListener interface
- Compass Accelerometer and Orientation Sensors Sensor Examples

## **22. Android Graphics**

- Graphics API
- 2D Graphics
- Android.graphics.
- Canvas android
- Graphics.Paint class

## **23. Android P2P Communication**

- Introducing Instant Messaging
- Using the GTalk Service
- Monitoring the Roste for Changes
- Sending and Receiving Data Messages
- Transmitting Data Messages
- Receiving Data Messages

## **24. Android Web Services**

- What is web service
- Soap Vs Restful web service
- Android Restful web service example with java servlet
- Storing data into external oracle database
- Verifying data in android with external oracle database

## **25. Android Google Map**

- Android Map V2 API
- Adding Map
- Customising Map
- GoogleMap class
- Android Google Map Application