

Android Dev.Certification Course

Course Duration : 90 Days

Topics & Details

Introduction to Android Development:

★ Introduction to Android Development

- Overview of Android platform and architecture.
- Setting up Android development environment (Android Studio, SDK installation).
- Understanding Android components (Activities, Services, Broadcast Receivers, Content Providers).
- Introduction to Android Jetpack components

★ Java/Kotlin Programming Basics (if necessary)

- Variables, data types, operators.
- Control flow (if, else, loops).
- Functions, classes, objects, inheritance, polymorphism.
- Exception handling.

★ User Interface Design (XML and Layouts)

- XML layout files and views.
- Common layout types (ConstraintLayout, LinearLayout, RelativeLayout).
- Styling and themes.
- Handling user input (EditText, Button, CheckBox, etc.)

★ Activities and Fragments

- Lifecycle of activities and fragments.
- Creating and managing activities.
- Communicating between activities.
- Fragment lifecycle and management.

★ Views and ViewGroups

- ListView, RecyclerView for displaying lists.
- GridView, ViewPager for displaying collections.
- Custom views and ViewGroups

★ Intents and Intent Filters

- Implicit and explicit intents.
- Passing data between activities.
- Handling intents with intent filters.

★ Data Storage

- SharedPreferences for saving small amounts of data.



- SQLite database for structured data storage.
- Working with Content Providers

★ **Networking and Web Services**

- Making network calls using Retrofit or Volley.
- Parsing JSON and XML responses.
- Handling network operations asynchronously

★ **Background Processing and Threading**

- AsyncTask for simple background tasks.
- Using Loaders for managing long-running tasks.
- Executors and ThreadPools for more complex threading scenarios.

★ **Notifications and Broadcasts**

- Creating and displaying notifications.
- Handling broadcast receivers.
- Local and system-wide broadcasts

★ **Working with Multimedia**

- Playing audio and video.
- Capturing images and video using Camera API.
- Media playback controls and notifications.

★ **Location-Based Services**

- Getting user's location using GPS and network providers.
- Geocoding and reverse geocoding.
- Using Google Maps and integrating map features.

★ **Security and Permissions**

- Understanding Android security model.
- Handling runtime permissions (Android 6.0+).
- Securing data storage and communication.

★ **App Deployment and Publishing**

- Generating signed APKs.
- Uploading apps to Google Play Store.
- App distribution strategies.

★ **Advanced Topics (optional)**

- Android Jetpack components (ViewModel, LiveData, Room).
- MVVM architecture pattern.
- Dependency Injection with Dagger Hilt.
- Testing Android apps (JUnit, Espresso)



★ **Project Work**

- Developing a complete Android application from scratch.
- Applying learned concepts and best practices.
- Iterative development and debugging.

★ **Review and Assessment**

- Recap of key concepts and techniques.
- Assessments and quizzes.
- Practical applications and real-world examples.

CIA

