

Introduction to Android

- Android Architecture
- Android platforms, versions and tools
- Introduction to Gradle

Languages

- Java / Kotlin
- XML

Case Study

- INSTAGRAM APP CLONE
 - Understanding the requirement and scope of project
 - Creating the project structure
 - Designing the screens
 - Introduction to Firebase notifications
 - Working on Chat system
 - Optimizing the application
 - Understanding PROGUARD
 - Generating release build
 - Publishing to Google Play Store

Getting started with Android

- Installing Android Studio and Sdk
- Creating a new project
- Understanding the project structure
- Running app on emulator
- Android Components
- Activities
- Services
- Broadcast Receivers
- Content Providers
- Understanding Intent

Introduction to Design Patterns

- MVC (Model-View-Controller)
- MVP (Model-View-Presenter)
- MVVM (Model-View-ViewModel)

APK

- Creating / Launching debug builds
- Understanding the generated APK

- Creating Keystore file
- Generating Release build

Debugging

- Setting breakpoints
- Viewing breakpoint information
- Observing logs and console
- Profiling

Advanced UI

- Using different layouts
 1. Linear Layout, Relative Layout
 2. Constraint Layout, Coordinator Layout
 3. Frame Layout,
- Adapter Views
 1. ListView, GridView, Spinner
 2. Details of RecyclerView, and it's usage
 3. RecyclerView architecture and internals
- UI performance
- Using Option Menu, Context Menu, ActionBar and Toolbar
- Custom Views

Material Designing

- CardView
- ScrollView
- FloatingActionButton
- Radio Buttons
- Using Third-Party Libraries

Styles And Themes

- Creating and Applying simple Style
- Inheriting built-in Style and User defined style
- Using Styles as themes

Notifications

- Toasts, Custom Toasts
- Dialogs (Alert, Progress, TimePicker, DatePicker)
- Custom Dialogs
- Status bar Notifications using Firebase

Fragments

- Introduction to Fragments

- Why and how to use fragments
- Fragment life cycle
- Creating fragments with and without UI
- Inter fragment communication
- Using fragment templates

Resources and Assets

- Android Resource types
- Using resources in XML and code
- Localization
- Handling Runtime configuration changes

Persistent Data Storage

- Shared Preferences
- Understanding Shared Preferences
- Writing and reading data from Shared Preferences
- Working with Internal Storage
- Working with External Storage
- Introduction to SQLite
- Creating database
- Using Cursor, ContentValues
- CRUD operations with SQLite
- Working with SQLiteOpenHelper
- Upgrading/Downgrading database
- Exploring ORMs

Content Providers

- Accessing built in content providers
- Content provider MIME types
- Searching for content
- Adding, changing, and removing content
- Creating content provider

Intent, Intent Filters and Broadcast Receivers

- What are Intent filters
- Intent-matching rules
- Using Intent filters to create usable components
- Filters in your manifest
- Filters in dynamic Broadcast Receivers
- Creating Broadcast receiver
- Receiving System Broadcast
- Understanding Broadcast action, category and data

- Registering Broadcast receiver through code and through XML
- Sending Broadcast

Services

- Overview of services in Android
- Implementing a Service
- Service lifecycle
- Inter Process Communication (AIDL Services)

Multithreading

- Using Java multithreading classes
- Using AsyncTask, Handler
- Post, runOnUiThread
- Managing UI thread, worker threads

Web Services and WebView

- Understanding HTTP Request Response model
- Consuming REST APIs
- Parsing JSON/XML
- Using Retrofit networking libraries
- Using WebView

Runtime Permission

- Using permissions in manifest
- Requesting run-time permissions
- Creating and applying permissions

Camera

- Taking pictures from Camera
- Storing captured images
- Applying Image Effects
- Accessing Images from Storage

Deploying App on Play Store

- Creating developer account
- Deployment process
- PUBLISH YOUR FIRST APP!

ADVANCED

- Android Animations
- App optimization techniques

- Working with location, GPS, maps
- Advance graphics and views
- Localization
- Using device sensors
- Guide to using manifest file for release builds
- Memory Profiling
- Working with Audio and Video
- Design patterns
- Room ORM