

# KLIC Mobile App Development Syllabus

## Syllabus

- Introduction to Android
- About Android and Android Apps
- Fundamentals of Android Studio
- Introduction to Java
- Java Setup and Program structure
- Variables and Datatypes
- Control Statements and Program flow
- Object-Oriented Programming in Java
- Inheritance and Exception
- Handling Events
- Debugging
- Classifying the Activities
- Working with UI Elements
- Introduction to Classes
- Shared Preference
- Introduction to Internal Storage
- Recalling Basic Applications
- Classifying various layout and Animation
- Media Functions
- Advanced Android Features
- Processing with JSON Data
- Using Maps and Geolocation
- Permanent Data Storage
- SQLite and WebView
- The Extras
- Wear OS
- Creating Custom User Interface
- Advanced example of android
- Near By Places App
- Visitor Management App
- Online YouTube Player
- Chatting App

- Art Interest App
- Salon App
- Grocery Store Online Shopping App
- Hotel Booking App
- Submitting Apps in Play Store
- Strategies for Marketing and App Search Engine
- App Store Optimization
- Kotlin

## **Detailed Syllabus**

### **Introduction to Android**

- Introduction to Android
- Introduction to Google Play Store
- Booming Job Prospects
- Career Opportunities in Android
- Android Operating System
- Android versions
- Features of Android
- Android Architecture
- Android Devices
- History of Android

### **About Android and Android Apps**

- Android Apps
- In-Built Applications
- Applications by Google
- Social Networking Applications
- Types of Applications
- Paid and Free Apps
- Google Model
- Prerequisites
- Android Environment Setup
- Downloading JDK
- Setting Path of JDK
- Installation of Android Studio in Mac, Linux and Windows
- Setting up ADT Plug In
- Creating First Android Application
- Creation of App
- Android Studio Vs Eclipse

### **Fundamentals of Android Studio**

- Android Studio Fundamentals and Android Studio IDE
- Viewing and adding Java
- Compilation and Runtime
- Compilation Process

- Creating Hello Project
- Android Components
- Android Intent
- Types of Intent
- MVP Pattern
- Advantages of using MVP
- Android Services
- Types of Android Services
- Broadcast Receivers
- Android Content Provider
- Types of Views
- Overview of Android Widgets

## **Introduction to Java**

- History of Java
- Introduction to Java
- Java Development Structure
- Java Program Platform
- Features of Java Program
- Difference between POP and OOP
- Java Applications
- Java Virtual Machine
- JVM Architecture

## **Java Setup and Program structure**

- JDK Alpha and Beta
- J2SE
- Java SE version
- Setting up Java and Installation of JDK
- Setting Java Variable
- Java Program
- Program structure of Java
- Java Import Statements
- Java Class Definition
- Java Class Member Ordering
- Different styles of Print Statements
- Main Method Signatures

## **Variables and Datatypes**

- Java Identifiers
- Reserved Words
- Variables
- Datatypes
- Type Casting
- Operators
- If Statement

## **Control Statements and Program flow**

- Switch Statement
- While Loop
- Do-While Loop
- For Loop
- For Each Loop
- Java Break Statement
- Java Continue Statement
- Arrays
- Java Maps
- Program Flow

## **Object-Oriented Programming in Java**

- Introduction to Class and Object
- Working with Object Initialization
- Object Oriented Programming
- Constructors
- Overloading
- Packages
- Uses of Import

## **Inheritance and Exception**

- Access Modifiers of Java
- Inheritance of Java
- Uses of Inheritance
- Relationship between Class and Interface
- Polymorphism of Java

- Java Exceptions

## Handling Events

- Introduction to Event Handling
- Overview of Event Handlers
- Overview of Event Listeners
- Overview of Event Registration
- Declarative Event Handling
- Programmatic Event Handling
- Working with Event Handling

## Debugging

- Types of Errors
- Demonstration of Syntax Errors
- Runtime Exception
- Demonstration of Runtime Exception
- Logical Errors
- Demonstration of Logical Error

## Classifying the Activities

- Component Activation
- Android Lifecycle
- Demonstration of Activity Lifecycle
- Intent and its types
- Implementing the Intent
- Passing data to another Activity

## Working with UI Elements

- Introduction to Themes and Colors
- Working with Themes and Colors - Creating Project, Changing values of defined colors, Theme Colors, Styles
- Introduction to App Bar
- Working with App Bar - Adding items, working with Toolbar Activity
- Fragments
- Working with Fragment Design
- Working with Fragments Activity

## **Introduction to Classes**

- Long Running Task
- Demonstration of the Long Running Tasks
- Introduction to AsyncTask
- Demonstration of the AsyncTask

## **Shared Preference**

- Introduction to Shared Preference
- Overview of Operating Mode
- Introduction to Editor
- Overview of Methods
- Storing Data
- Overview of Retrieving Data
- Clear and Delete
- Working with Shared Preference - xml File, Main Activity
- Verifying file

## **Introduction to Internal Storage**

- Internal Storage
- Difference between Shared Preference and Internal Storage
- Read and Write data to Internal Storage
- Syntax to Write a text file and Reading a text file
- Demonstration of Internal Storage

## **Recalling Basic Applications**

- App Number Shapes
- Working with Number Shapes App
- Fizzbuzz App
- Working with FizzBuzz App
- Multiplication Table
- Working with Multiplication Table App
- Outline Methods

## **Classifying various layout and Animation**

- Layout
- Understanding of Constraint and Linear Layout

- Understanding of Frame and Relative Layout
- Image View
- Demonstration of Image View
- Animation
- Demonstration of Animation

## **Media Functions**

- Working with Tic-Tac-Toe Game
- Working with Video
- Controlling Audio
- Audio Volume Seeking
- Grid Layout and working with Grid Layout
- App Basic Phrases
- Working with App Basic Phrases

## **Advanced Android Features**

- ListView
- Time Table App
- Working with Time Table App
- Egg Timer App
- Working with Egg Timer App
- Showing and Hiding UI Element
- Demonstration of Showing and Hiding UI Element
- Brain Trainer
- Working with Brain Trainer App
- Try and Catch Block

## **Processing with JSON Data**

- Java String Manipulation
- Java Classes
- Implementing Java String
- String Concatenation and its types
- Implementing Java String Methods
- Guessing Player App
- Processing JSON Data
- Working JSON Data
- Climatic Condition App



- Working with Climatic Condition App

## **Using Maps and Geolocation**

- Implementing Map Activity
- Working with Customize App
- Hikers Watch App
- Implementing Hikers Watch App
- Memorable Places App
- Implementing Memorable

## **Permanent Data Storage**

- Storing Data Permanently
- Demonstration of Splash Screen
- Working with Login Activity
- Adding Show Activity
- Introduction to Custom Action Bar
- Customizing Action Bar
- Alert Dialog
- Adding Alert Dialog
- Notes Application
- Creating Notes Application

## **SQLite and WebView**

- SQLite Database
- Implementing and working with SQLite Database
- SQLite Advance
- Working with SQLite Advance
- Webview
- Working with Webview

## **The Extras**

- Bluetooth
- Implementing Bluetooth
- Version Control
- Implementing Version Control
- Implementing the Firebase
- ADMob and Admob implementation

- Local Notification
- Implementing Local Notification
- Multi-Screen
- Working with Multi-Screen

## **Wear OS**

- Introduction to Wear OS
- Working with Hello Round World Project
- Working with different watch faces
- Working with People Counter App

## **Creating Custom User Interface**

- Working with Cards
- Understanding Card
- Making use of List
- Understanding List
- Working with Adapter Class
- Working with List
- Working with Voice Input
- Communicating with User Phone
- Working with Communication Wear Module
- Notification in Wearable OS
- Custom Watch Faces

## **Advanced example of Android**

- Creating Google Sign in
- Configuration for Google Sign in
- Demonstration of Google Sign in
- Building Facebook Login
- Demonstration of Facebook Login
- Working with OTP Verification

## **Case Study: Near By Places App**

## **Case Study: Visitor Management App**

## **Case Study: Online YouTube Player**

## **Case Study: Chatting App**

## **Case Study: Art Interest App**

## **Case Study: Salon App**

## **Case Study: Grocery Store Online Shopping App**

## **Case Study: Hotel Booking App**

## **Submitting Apps in Play Store**

- Strategies for Marketing and App Search Engine
- App Store Optimization
- Generating Signed APK
- Creating Play store account
- Updating Developer Profile
- Uploading App on the Play Store

## **Kotlin**

- Basics of Kotlin
- Difference between Kotlin and Java
- Demonstration of Weather App
- Exploring Kotlin Language