

KLIC Mobile App Development Syllabus

Syllabus

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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