

Android Application Developer

Course Guide

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Android Course Contents

Android curriculum follows the ATC Android Certified Application Developer standards which are designed to meet the requirements of next generation mobile programming needs.

Java Language Constructs

- Primitive Data Types
- Comments
- The for Statement
- The if Statement
- The while and do while Statements
- The switch Statement
- The break Statement
- The continue Statement
- Operators
- Casts and Conversions
- Keywords
- Arrays
- Keyboard Input Using a Buffered Stream

Object-Oriented Programming

Classes

Methods

Properties

Constructors/Destructors

Encapsulation

- Data Hiding
- Public and private Members

Inheritance & Polymorphism

- Inheritance Concepts
- Method Overriding
- Polymorphism

Abstract Classes and Interfaces

- Abstract Classes
- Interfaces

Exceptions

- Exception Handling
- The Exception Hierarchy
- The finally Block

Threads

- Threads vs. Processes
- Creating Threads by Extending Thread
- Creating Threads by Implementing Runnable
- Advantages of Using Threads

Android App Concepts

Android Framework and Android Studio

Introduction

- Android Software Layers
- Android Libraries
- Components of an Android Application
- Application Life-cycle
- Pre-requisites for Android Application Development
- Android Studio
- Gradle
- Lab 1: Creating Your First Application

Android SDK Tools and Activity Class

- Android Project Structure
- The Android Manifest File
- Structure of the Manifest File
- Android SDK Tools
- Activity
- Methods to Remember
- Lab 2: Controlling a Camera's Flash Light

Fragments, Views, and List View

- Fragments
- Views
- List Views and List Activity
- Methods to remember
- Lab 3: Creating a Simple To-Do List Application

Intents and Intent filters

- Intents
- Native Android Actions
- Data Transfer
- Intent to Call Activities
- Register an Intent Filter
- Methods to remember
- Lab 4: Creating Contacts Selection Application

Android Layouts and Custom Views

- Views
- Layouts
- Customized Views
- Modify Existing Views
- Lab 5: Custom View, Drawer Layout, and Fragments Application

Android Resources, Themes, and Material Design

- Android Resources
- Android Themes and Styles
- Android Material Design
- Methods to remember
- Lab 6: A To-Do List Application in Material Design

Android UI – Dialogs, Menus, and WebView

- User Interaction through Messages
- Dialogs
- Activities with Dialog Theme
- Toasts
- Menus
- Context Menus
- Additional Menu Item Options
- Popup Menu
- Web View
- Methods to Remember
- Lab 7: Wallpaper Application

Android Storage and Background Processing

- Android Storage Options
- File I/O
- Shared Preferences
- Connecting to the internet
- Background Processing
- Lab 8: Quotes Provider Application

Android Storage: SQLite and Content Providers

- Databases in Android
- Content Providers
- Native Android Content Providers
- Custom Content Provider
- Sync Adapters
- Methods to Remember
- Lab 9: SQLite Databases and Content Providers

Android Notifications

- Creating a notification
- Notification actions
- Expandable Notifications
- Notifications Layouts
- Notification Priority
- Notifications in Android 5.0 (Lollipop)
- Lab 10: Implementing Android Notifications

Final Project

Conclusion

Practical Approach

A real example will be given throughout the lectures.

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