



Basic Android Development

Course ID: ITG-MOB-100

ITG Software Engineering

Basic Android Development

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Course Overview:

This 5 day course gives students the fundamental basics of Android app development. This includes building a simple user interface and processing user input, working with the Android UI, creating SQL Databases, exploring content providers, storing and retrieving data, and working with maps and locations.

Prerequisites:

Basic Linux and Java experience.

Who Should Attend this course?

This interested in learning basic Android programming.

Topics:

• Android Introduction	• Android Overview
• Android Stack	• Introduction to the SDK
• Building your fist app	• Primary Building Blocks
• Basic Android UI	• Android OS
• Android UI in Depth (Part I)	• Android UI in Depth (Part II)
• Multimedia Content	• Working with SQL databases
• Primary Content Providers	• Maps & Location Bases Services
• Storing, Retrieving & Sharing data	• Background Tasks
• Optimizing UI Performance	• Working with Graphics
• Animation	• The Security Model

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DAY 01 MODULES:

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Module 01: Android Introduction

- The Beginnings
- The difference and importance of Android
- Native Android Apps
- Features of the Android SDK

Module 02: Android Overview

- The Android Development Environment
- SDK Components
- The Android Software Stack
- Architecture of Android Apps
- Introduction to Android Libraries

Module 03: The Android Stack

- Stack Overview
- The Linux kernel
- Native Libraries
- Dalvik
- Understanding app framework
- Overview of apps

Introduction to the SDK

- Various Platforms
- Exploring Tools
- Different versions

Module 05: Building your first app

- Your first app
- What is the manifest file
- Overview of the layout resource
- Using Emulator to launch your app

Module 06: Primary Building Blocks

- Activities: an overview
- Life cycle of an activity
- Intents
- Services: an Overview
- Introduction to content providers
- Broadcast receivers

Module 07: Basic Android UI

- XML compared to Java UI
- Various views and layouts
- Basic UI elements
- Processing User Events

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DAY 03 MODULES:

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Module 08: Introduction to the Android OS

- File System Overview
- Preferences
- Notifications
- The Security model

Module 09: Android UI in Depth (Part 1)

- Components of Selection
- Introducing Adapters
- Advanced UI components
- Optimizing UI performance

Module 10: Android UI in Depth (Part 2)

- Menus & Dialogs
- Working with Graphics
- Using Animation
- Demo of Advanced Android UI

Module 11: Multimedia Content

- Supported audio formats
- Basic Media Playback
- Supported video formats
- Basic video playback

Module 12: Working with SQL databases

- An introduction to SQLite
- SQLiteOpenHelper: How to create a database
- How to open and close databases
- Cursor inserts, updates, deletions

Module 13: Primary Content Providers

- Content Providers and MIME Types
- Content Search
- How to add, modify, and delete content
- Handling content files

Module 14: Storing, Retrieving, and Sharing data

- How Android saves data
- How to save basic application data
- How to create and save preferences
- How to retrieve shared preferences
- How to save states of activities
- How to create a preference page
- How to load and save files

Module 15: Maps & Location Based Services

- Location Based Services
- Configuring location-based services in Emulator
- Choosing a location provider
- How proximity alerts work
- Understanding Geocoder
- Creating map-based activities

Module 16: Background Tasks

- Services
- Background Threads
- How Notifications work
- How to use alarms