

Android Course Syllabus

Part 1.Tools and Basics

Chapter 1 Your Toolkit

- Installing the Android SDK and Prerequisites
- Test Drive: Confirm That Your Installation Works
- Components of the SDK
- Keeping Up-to-Date

Chapter 2 Java for Android

- Android Is Reshaping Client-Side Java
- The Java Type System
- Scope
- Idioms of Java Programming
- Effective Java for Android

Chapter 3 The Ingredients of an Android Application

- Traditional Programming Models Compared to Android
- Activities, Intents, and Tasks
- Other Android Components
- Static Application Resources and Context
- Resources
- Component Life Cycles
- Packaging an Android Application: The .apk File

Chapter 4 Getting Your Application into Users' Hands

- Application Signing
- Placing an Application for Distribution in the Android Market
- Google Maps API Keys
- Specifying API-Level Compatibility
- Compatibility with Many Kinds of Screens

Part 2.About the Android Framework

Chapter 7 Building a View

- Android GUI Architecture
- Assembling a Graphical Interface
- Wiring Up the Controller
- The Menu

Chapter 8 Fragments and Multiplatform Support

- Creating a Fragment
- Fragment Life Cycle

- The Fragment Manager
- Fragment Transactions
- The Compatibility Package

Chapter 9 Drawing 2D and 3D Graphics

- Rolling Your Own Widgets
- Bling

Chapter 10 Handling and Persisting Data

- Relational Database Overview
- SQLite
- The SQL Language
- SQL and the Database-Centric Data Model for Android Applications
- The Android Database Classes
- Database Design for Android Applications
- Using the Database API: MJAndroid

Part 3.A Skeleton Application for Android

Chapter 11 A Framework for a Well-Behaved Application

- Visualizing Life Cycles
- Visualizing the Fragment Life Cycle
- The Activity Class and Well-Behaved Applications
- Life Cycle Methods of the Application Class
- A Flowing and Intuitive User Experience Across Activities

Chapter 12 Using Content Providers

- Understanding Content Providers
- Defining a Provider Public API
- Writing and Integrating a Content Provider
- File Management and Binary Data
- Android MVC and Content Observation
- A Complete Content Provider: The SimpleFinchVideoContentProvider Code
- Declaring Your Content Provider

Chapter 13 Exploring Content Providers

- Developing RESTful Android Applications
- A “Network MVC”
- Summary of Benefits
- Code Example: Dynamically Listing and Caching YouTube Video Content
- Structure of the Source Code for the Finch YouTube Video Example
- Stepping Through the Search Application
- Step 1: Our UI Collects User Input
- Step 2: Our Controller Listens for Events

- Step 3: The Controller Queries the Content Provider with a managedQuery on the Content Provider/Model
- Step 4: Implementing the RESTful Reques

Part 4. Advanced Topics

Chapter 14 Multimedia

- Audio and Video
- Playing Audio and Video
- Recording Audio and Video
- Stored Media Content

Chapter 15 Location and Mapping

- Location-Based Services
- Mapping
- The Google Maps Activity
- The MapView and MapActivity
- Working with MapViews
- MapView and MyLocationOverlay Initialization
- Pausing and Resuming a MapActivity
- Controlling the Map with Menu Buttons
- Controlling the Map with the Keypad
- Location Without Maps

Chapter 16 Sensors, NFC, Speech, Gestures, and Accessibility

- Sensors
- Near Field Communication (NFC)
- Gesture Input
- Accessibility

Chapter 17 Communication, Identity, Sync, and Social Media

- Account Contacts
- Authentication and Synchronization
- Bluetooth

Chapter 18 The Android Native Development Kit (NDK)

- Native Methods and JNI Calls
- The Android NDK
- Android-Provided Native Libraries
- Building Your Own Custom Library Modules
- Native Activities.