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# **ANDROID**

## **1: Introduction to Android Development**

### **1.1. What is Android?**

- 1.1.1. Introduction to the Android Ecosystem
- 1.1.2. Android Versions and History

### **1.2. Setting Up the Development Environment**

- 1.2.1. Installing Android Studio
- 1.2.2. Creating Your First Android Project

## **2: Android Fundamentals**

### **2.1. Activities and Intents**

- 2.1.1. Creating and Managing Activities
- 2.1.2. Intents and Navigation

### **2.2. Layouts and Views**

- 2.2.1. Building User Interfaces with XML
- 2.2.2. Handling User Input

## **3: User Interface Design in Android**

### **3.1. UI Elements and Widgets**

- 3.1.1. Buttons, Text Fields, and More
- 3.1.2. Custom Views and View Groups

### **3.2. Material Design Guidelines**

- 3.2.1. Principles of Material Design
- 3.2.2. Implementing Material Design in Android

## **4: Activities and Fragments**

### **4.1. Multiple Activities**

- 4.1.1. Creating and Managing Multiple Activities
- 4.1.2. Passing Data Between Activities

## **4.2. Fragments**

- 4.2.1. Understanding Fragments
- 4.2.2. Fragment Transactions and Communication

## **5: Data Storage and Persistence**

### **5.1. Shared Preferences**

- 5.1.1. Storing Key-Value Pairs
- 5.1.2. Shared Preferences API

### **5.2. SQLite Database**

- 5.2.1. Working with SQLite in Android
- 5.2.2. CRUD Operations with SQLite

## **6: Networking and Web Services**

### **6.1. HTTP Requests**

- 6.1.1. Making HTTP Requests
- 6.1.2. Handling JSON Responses

### **6.2. RESTful Web Services**

- 6.2.1. Consuming RESTful APIs
- 6.2.2. Retrofit Library for Networking

## **7: Location-Based Services**

### **7.1. Location Services**

- 7.1.1. Accessing Device Location
- 7.1.2. Geocoding and Reverse Geocoding

### **7.2. Google Maps Integration**

- 7.2.1. Embedding Maps in Android Apps
- 7.2.2. Markers, Polylines, and Circles

## **8: Multimedia and Camera**

### **8.1. Audio and Video Playback**

- 8.1.1. Playing Audio and Video
- 8.1.2. Media Player API

### **8.2. Using the Camera**

- 8.2.1. Capturing Photos and Videos
- 8.2.2. Camera2 API

## **9: Background Processing and Services**

### **9.1. Services in Android**

- 9.1.1. Creating and Managing Services
- 9.1.2. Foreground Services and Notifications

### **9.2. AsyncTask and Background Threads**

- 9.2.1. Performing Background Tasks
- 9.2.2. Handling Threads and Handlers

## **10: Android App Publishing**

### **10.1. App Signing and Release**

- 10.1.1. Signing Your Android App
- 10.1.2. Creating Release Builds

### **10.2. Google Play Store Submission**

- 10.2.1. Preparing App Listing and Screenshots
- 10.2.2. Uploading Apps to the Play Store

## **11: Advanced Topics in Android Development**

### **11.1. Background Services and Broadcast Receivers**

- 11.1.1. Building Background Services
- 11.1.2. Registering Broadcast Receivers

### **11.2. Dependency Injection and Dagger**

- 11.2.1. Introduction to Dependency Injection

- 11.2.2. Using Dagger for Dependency Injection

## **12: Building Real-World Android Apps**

### **12.1. Project Planning and Design**

- 12.1.1. Designing a Complex Android App
- 12.1.2. User Experience (UX) Design

### **12.2. Implementation and Testing**

- 12.2.1. Building the Android Project
- 12.2.2. Testing and Debugging

## **13: Kotlin for Android Development**

### **13.1. Kotlin Basics**

- 13.1.1. Syntax and Features of Kotlin
- 13.1.2. Kotlin vs. Java in Android

### **13.2. Migrating to Kotlin**

- 13.2.1. Converting Java Code to Kotlin
- 13.2.2. Kotlin Best Practices

## **14: Android App Security**

### **14.1. App Permissions**

- 14.1.1. Requesting and Handling Permissions
- 14.1.2. Permission Best Practices

### **14.2. Secure Coding Practices**

- 14.2.1. Protecting User Data
- 14.2.2. Handling Authentication and Encryption

## **15: Android App Monetization and Analytics**

### **15.1. Monetization Strategies**

- 15.1.1. In-App Advertising and Purchases
- 15.1.2. Subscription Models

## **15.2. App Analytics and User Engagement**

- 15.2.1. Tracking App Usage and User Behavior
- 15.2.2. Improving User Engagement

## **16: Final Project and Course Review**

### **16.1. Project Proposal and Planning**

- 16.1.1. Designing a Complex Android App
- 16.1.2. User Experience (UX) Design

### **16.2. Implementation and Presentation**

- 16.2.1. Building the Android Project
- 16.2.2. Final Project Presentation