ANDROID CURRICULUM

Introduction to Android

Overview of Android Java Editions and comparison with Android Android Apps – Design, Vendor, Behavioral Classification

Android Architecture Overview

Android Architecture Application Frameworks Android Libraries, Run time, Dalvik Virtual Machine

Setup of Android Development Environment

System Requirements
Java, Eclipse and Android SDK Installation
Android SDK and Tools
Android Virtual Devices & Device Definitions

Your First Android Application

Creating Android Application



Creating Configurations
Testing the app: AVD, Active Device
Android Project Structure and Manifest file

5 Publishing to the Play Store

Release process and Release build of Android Application
Signing the .apk file
Preparing the Store Listing page
Content Rating
Distributing the Application
Merchant Registration for Paid Applications

Publishing to the Play Store

About XML – approach to design layouts
Views and Layouts
View properties
Linear Layout vs. Relative Layout vs. Frame
Layout vs. Absolute Layout
Localization of UI
Best practices for targeting various form
factors: phone, tablet, TV
Best practices when working designing Android UI

Android Testing



Creating a Test Project for Android project Working with Test Packages Writing test cases

Fragments

Designing fragments
Fragments life cycle
Fragment management and integration

User Interfaces

Creating the Activity
XML versus Java UI
Selection Widgets, Using fonts
Common UI components
Handling UI events: a bit about listeners

Advanced UI

Adapters
Complex UI components
Menus and Dialogs
Tabbed Activities
Navigation Drawer
Animations
Create activity layouts programmatically
Testing and optimizing UI

Android Material Design

What is material?
Material properties and Styling / Animations
Material Patterns

🕦 Resources

Overview of Android Resources Creating Resources Using Resources Drawable Resources Animation Resources

Broadcast Receivers

Broadcast receiver usage patterns: when and why to use them Implementing a broadcast receiver Registering a broadcast receiver via the manifest file and Programmatically

Background Services

Overview of Android services Service lifecycle Declaring a service



Registering a service
Starting and stopping a service
Threads and other concurrency considerations
with services
Bound versus unbound services
Remote versus local services

14 Intents

Working with Intents
Explicit and implicit intents
Using Intents as messaging objects
Intents to start components expecting results

Storing and Retrieving Data

Storage Model selection criteria Shared preferences Internal Storage – Files External Storage – SD Card Testing the created files, tools

SQLite Database

Introducing SQLite SQLiteOpenHelper and creating a database



Opening and closing a database Working with cursors Inserts, updates, and deletes

Native Content Providers

Content provider types
Searching for content
Adding, changing, and removing content
Native Android Content Providers
Accessing Contact Book, Calendar

Custom Content Providers

Custom Content Provider classes
Publishing content providers

Web Services

Understanding Web Services
Web Services Architecture
Building Server side components
Publishing web services
REST based web services
Accessing Web Services
Integrating Web Services with mobile client



Telephony background
Accessing telephony information
Monitoring data activity and connectivity
Working with messaging SMS

Multimedia in Android

Playing Audio & Video Recording Audio & Video Customizing Camera & Capturing Photos Voice Recognition Text To Speech

Bluetooth

Controlling local Bluetooth device
Discovering and bonding with Bluetooth devices
Managing Bluetooth connections
Communicating with Bluetooth

Social Networking Integrations

Facebook Integration

Debugging and Testing Android Apps

Logcat Debugger





Firebase

Realtime Database Cloud Storage Authentication **Cloud Messaging** AdMah Crash Reporting

Social Solutions Pyt. Lid. Google Cloud Messaging

What is GCM? GCM Architecture **GCM Services Instant Messaging** TTL (Time to Live) **Group Messaging** Server Communication





















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