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Android Syllabus

Pre-requisite:
C, C++, Java Programming
SQL & PL SQL

Chapter 1: Introduction to Android
Introduction to android operating system
History of android operating system
Features of Android OS
    Architecture of Android
    Application Environment of Android
        Overview of Android Studio
        Android SDK
    Application workflow

Chapter 2: Programming Paradigms and Application Components
Introduction to Application Components
What is Activity
    Operations on Activity
Overview of Android Manifest File
Intent and Intent filter
    Broadcast Receivers
    Content Providers
    Services

Chapter 3: Introduction to UI Design
Introduction to UI Design
Overview of Views &View Groups
    Layouts
    Linear Layout
    Relative Layout

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List View
Grid View
Table View
Web View
Recycler View
Card View

Adapters
Views

Button
Floating Action Button
TextField
RadioButton
ToogleButton/Switch
CheckBox
Spinner
ImageView
ImageSwitcher, etc..

Event Handling

Listeners

Menus
Sliding Menu with navigation drawer
Action Bars
Notifications

Status
Toast and Snackbar
Dialog

Styles and themes
How to create custom widget
Focus Event
Touch mode
Working on screen orientations
Android design principals
Material Design

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Animation
Components
Style
Layout
Patterns
Usability

Chapter 4: Resources, Assets, Localization and Designing for tablets

Fragments
Designing for Tablets
Developing Apps for Different Android Platform Versions, Languages And Screens
Manipulating Objects with Drag and Drop
Optimizing Applications for High Screen Resolution
Multi-Pane and Flexible UI
Resources and Assets
    Creating Resources
    Managing Application Resources and Assets o Resource switching in Android
Localization Strategies
    Testing Localized Applications
    Publishing Localized Applications

Chapter 5: Introduction to Content Providers and Storage

Content Provider
    Content URI
    CRUD Access
Standard Content providers
    Contact
    Browser
    Calllog
    Calendar
    Media Store

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Settings

Storage Options

Shared Preferences

Internal and External Storage

Databases

Network Connections

Chapter 6: Data Access and SQLite

Introduction to SQLite

SQLiteDatabases

Saving Data

Key-Value Sets

Files

SQL Databases

Content Sharing

Sharing Simple Data

Sharing Files

Sharing Files with NFC

Chapter 7: Native Capabilities - Camera, Audio, Sensors and Bluetooth

Introduction to Camera API

Taking Photos

Recording Videos

Controlling Camera

Android Media API

Playing Audio/Video

Managing Audio Playback

Focus and Output Hardware

Media Recording

Media Router

Printing Content

Sensors

Android Gestures

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Connectivity
Bluetooth
NFC
USB
Wi-Fi

Chapter 8: Map and Location-based Services
Introduction To Map And Location API
Working With Location Manager
Working With Google Maps Extensions
Maps Via Intent And Map Activity
Location Based Services
Location Updates
Location Providers
Finding Your Location
Map - Based Activities
How To Load Maps
To Finding Map API Key
Google Play Services

Chapter 9: Services and Parsing of data
Bound and Unbound Services
Starting and stopping services
Android Interface Definition Language
Handler and Messenger
Scheduling of Services
Parsing of data
JSON parsing
XML parsing

Chapter 10: Graphics and Multimedia
Graphics
Introduction to Graphics

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Drawing into a view
Surface view
Surface Holder
Animation
- Tween animation
  - Scale
  - Alpha
  - Rotate
  - Translate
- Frame by Frame animation
- Interpolation

Chapter 11: Integrating with Embedded App and 3rd party App

Integrating with Embedded App
- Telephony
- SMS
  - SMS Broadcasting

Integrating with 3rd party App
- Facebook integration
- Twitter integration

Chapter 12: Others

Application Widget
- Application Widget overview
- AppWidget provider info
- AppWidget Layout
- AppWidgetLayout
- AppWidgetProvider
- AppWidgetManager
- RemoteViews

GCM
InApp billing

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Lazy loading
Ad Integration-AdMob
Support for pre lollipop OS
Marshmallow- Runtime permission

Chapter 13: Testing the Application
Testing Applications
Basics of Testing
Test Case Classes
Testing from an IDE
Activity Testing
Service Testing
Content Provider Testing
Debugging Using DDMS
Automating UI Tests
Building Effective Unit Tests

Chapter 14: Commercializing and Monetizing your Application
How to get Your App On The play Store
Application level Security
Using permissions
Designing for Performance & Designing for Performance.
Security with HTTPS and SSL, Security with Device Management Policies