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Software Training, Out Sourcing & Solutions



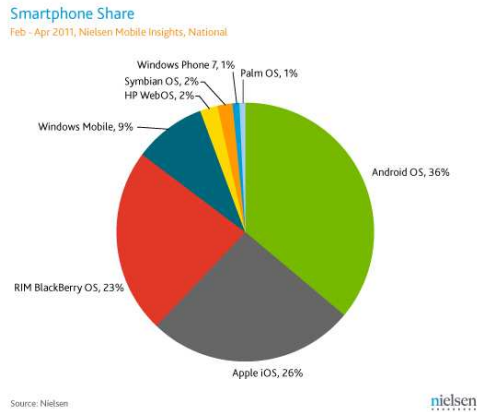
Course content for ANDROID training:

Part – 1: Core Java required for Android

1. Class & Object: Real world objects versus software objects
2. Design patterns: Bottom-up versus top-down approach
3. JVM architecture.
4. Memory architecture of a java program
5. OOPs programming basics
 - a. Messaging passing between objects
 - b. Abstraction
 - c. Inheritance – code reusability
 - d. Interfaces – abstract classes
6. Exception handling
7. Collections
8. Threads
9. Streams
10. Mock tests & Assignments on core Java

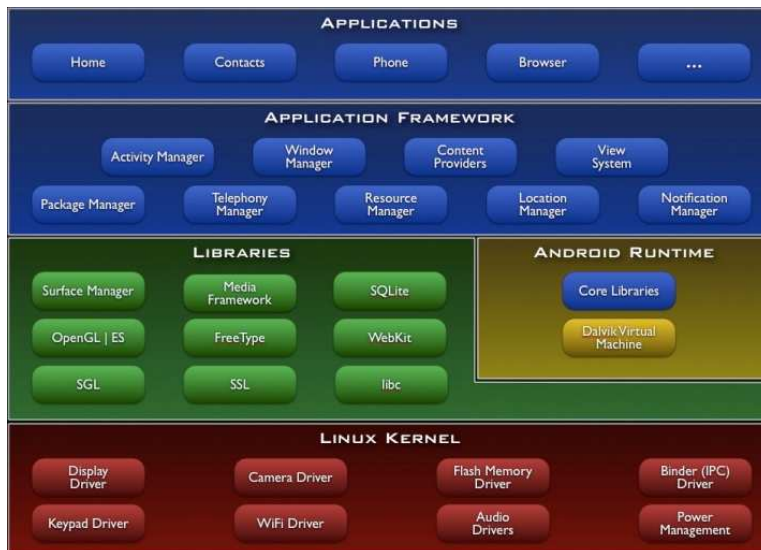
Part – 2: Basic Android

1. Android introduction and its history



2. Licensing

3. Android architecture



- i. Linux kernel
- ii. Glibc
- iii. Zygote
- iv. Android libraries
- v. Dalvik virtual machine (D.V.M)
- vi. Android framework
- vii. UI Layer

4. Android features

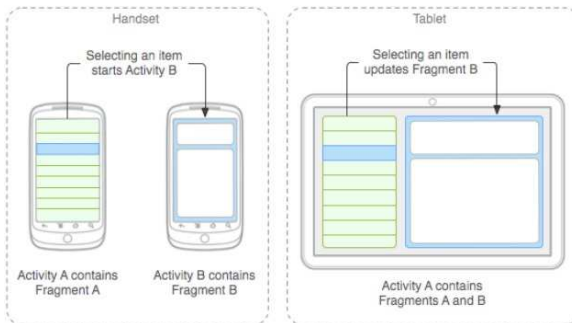
5. Android initializing process

6. Activities

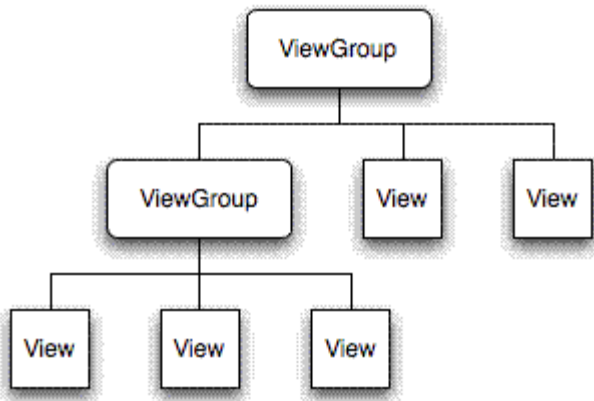


- a. Creating activity
- b. Activity life cycle
- c. Activity back stack

7. Fragments



8. Views, View hierarchy, and View groups



- a. Working with Views
- b. Writing custom views
- c. Working on view groups (covered more in Layouts)

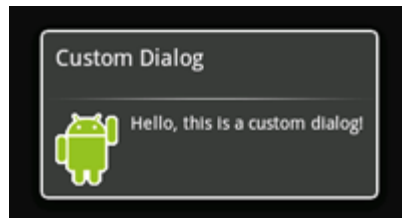
9. UI

- a. Layouts
- b. Menus



- Options menu
- Context menu
- Sub menu

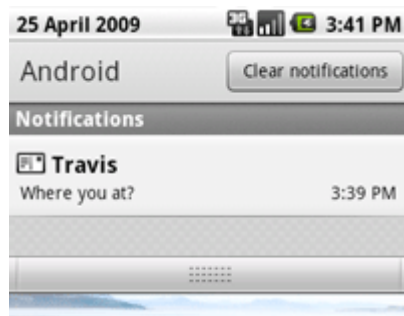
c. Dialogs



- Alert dialog
- Progress dialog
- Date picker dialog
- Time picker dialog

d. Event listeners

e. Notifications

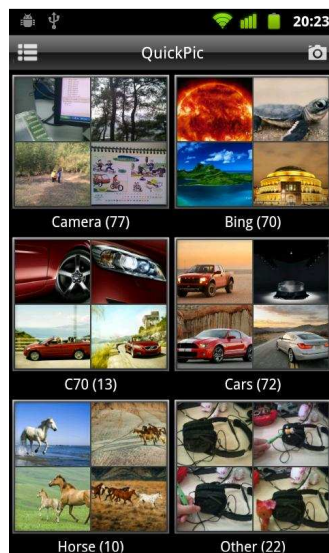


➤ Toasts

➤ Status bar notifications

f. Applying styles and themes to UI

g. Adapter views



➤ List views

➤ Gallery

➤ Grid view

➤ Spinner

➤ Expandable List View

h. Adapters (Adapter design pattern)

➤ Array adapter

➤ Cursor adapter

- Expandable list Adapters
- Custom adapter

10. Services

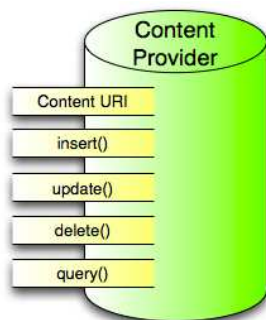
- Services overview
- Service life cycle
- Starting a service (Extending IntentService, Service)
- Binding a service
- Multi threading with services

11. Data storage



- Shared preferences
- Internal & External storages (Files)
- SQLite data bases & cursors – SQLite Browser
- Storing & Retrieving data from Cloud & servers

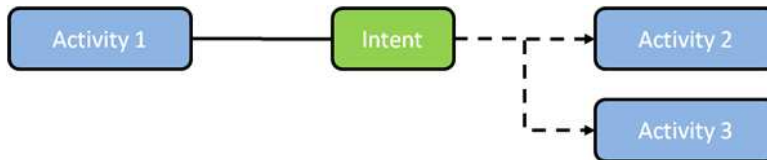
12. Content providers



- Content providers over view

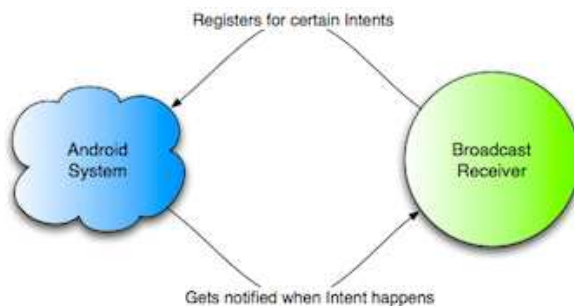
- b. Using existing Android content providers (Contacts, Gallery)
- c. Creating own content providers
- d. Using custom made content providers

13. Intents, Intent filters



- a. Overview (Action, Data, category, etc)
- b. How intent works and writing our own intent
- c. How intent filter works and writing our own i-f
- d. Intent resolution tests

14. broadcast receivers

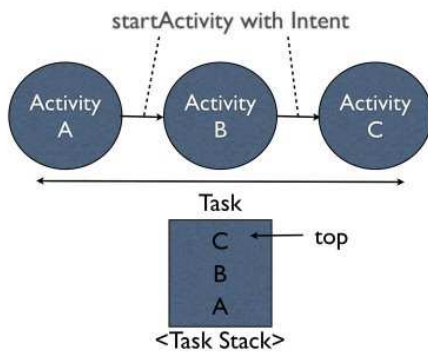


15. Alarms manager & Pending intents

- a. Alarm managers with Broadcast receivers

16. Saving activity states(Seamlessness of application)

17. Process & Threads



- a. Process life cycle
- b. Difference between process, thread, task, application
- c. Process priorities

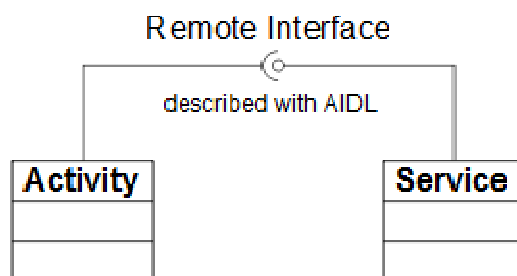
18. Threads & Async tasks



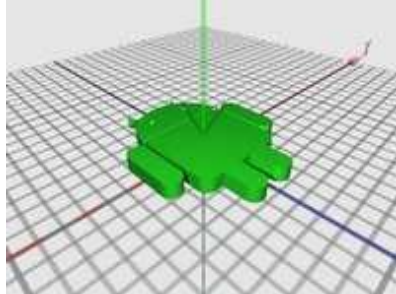
- a. Threads
 1. UI(Main) thread versus worker thread
 2. Loopers, handlers, and event flow from system
 3. Writing multi threading programs
- b. Async tasks
 1. Writing threading programs using Async tasks
 2. Updating UI from worker threads

19. Securities & permissions

20. Services – extended



- a. Exploring more on binder services
 - b. AIDL
21. Android Graphics (2D, Animations)
- a. Using Images
 - b. Tween, frame animation
 - c. Drawing directly on canvas

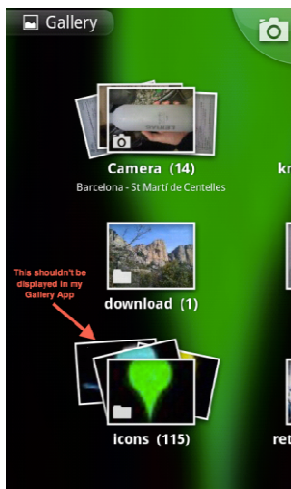


Part – 3: Android Mini-project covering all basic components

Note: This is mandatory for all the candidates.

Part – 4: Advanced Android

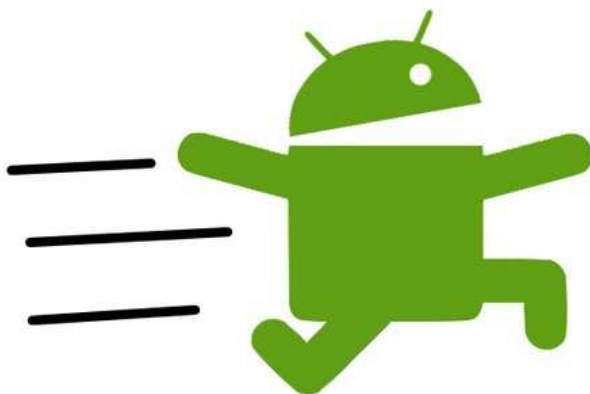
1. Media Framework



- a. How to access image gallery files

- b. How to access SD card files
- c. Exploring on other media APIs
- 2. How to use other system services
 - a. GPS, LBS, & Maps
 - b. Sensors (accelerometer)
 - c. Telephony, SMS Manager
 - d. Web services using HTTP
 - i. Basics of HTTP
 - ii. XML, JSON, & Name value Pairs (Data communication)
 - iii. Connecting to Gmail
 - iv. Connecting to Google cloud server
 - v. Connecting to Face Book server
- 3. Android widgets
- 4. Action bar
- 5. Demoing on one framework layer flow example
- 6. Binders
- 7. JNI & NDK
- 8. Exploring other android framework APIs if any

Part 5: WRITING EFFICIENT ANDROID APPLICATIONS



- Debugging and Various ways of debugging
- How to emulate calls, SMS, SD cards etc in emulator
- Best practices to write ANDROID programs
 - a. Compatibility issues
 - b. Issues related to supporting your app on multiple screens
 - c. UI guidelines
- Designing & performance related issues
 - a. How to use wake locks – sleep mode
 - b. Seamlessness
 - c. Causes of ANRs (Application Not Responding)
 - d. How to write optimized code
 - e. Avoiding memory leaks in ANDROID

Part 6: Android Market project

- a. Developing one android project for Google Play
- b. How to Sign application with private key

