ANDROID

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(For TIFR)

Introduction

- A complete freely downloadable software stack for mobile devices

- First project of Open Handset Alliance (OHA)

- Includes an operating system, middleware and some key applications based on Linux and Java

- Co-Founders- Chris White, Andy Rubin, Nick Sears and Rich Miner

Open Handset Alliance

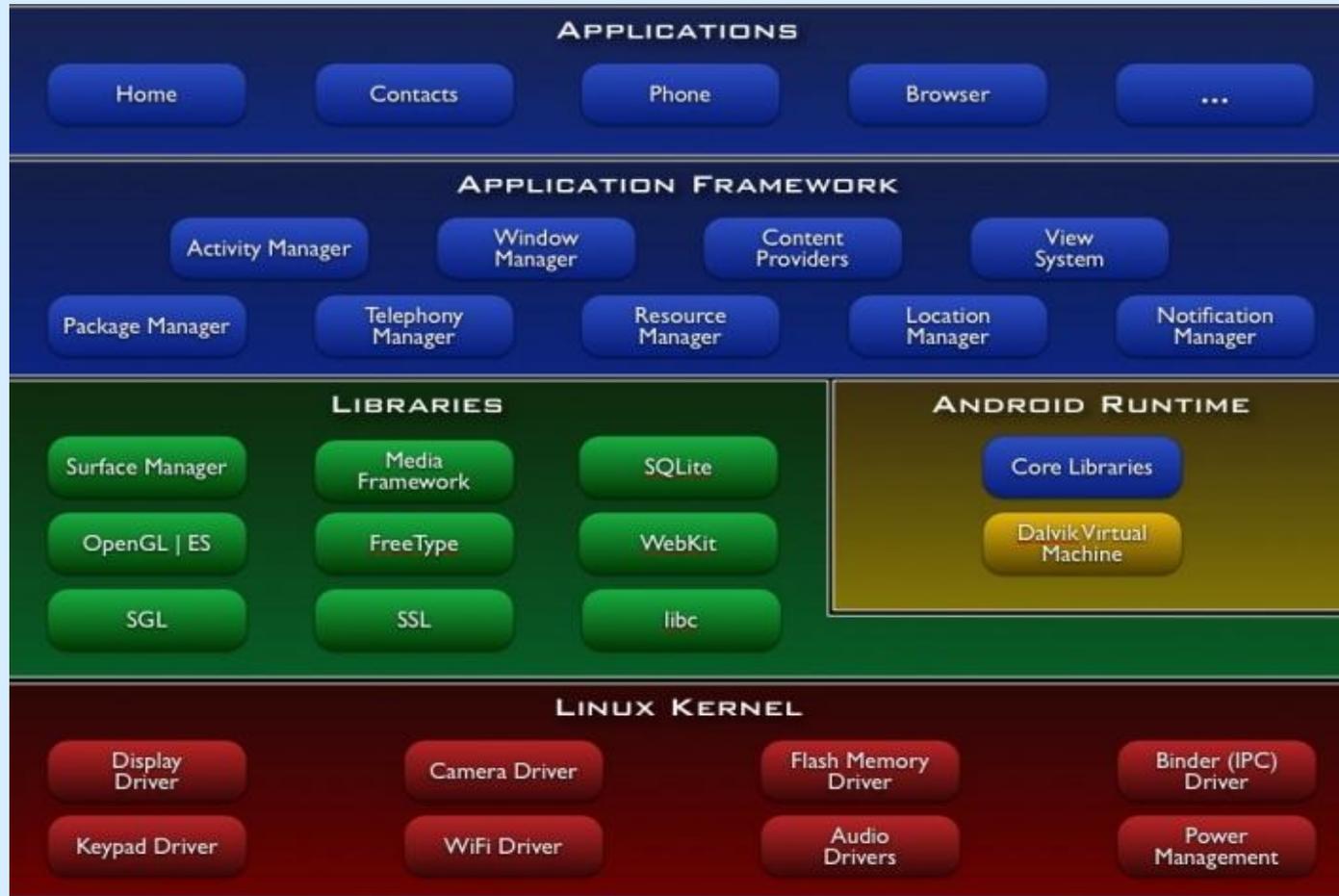- Devoted to advancing open standards for mobile devices

Versions

- 2.3.3, 2.3.4 Gingerbread- Refined the user interface, improved the copy/paste features and power management

- 3.0, 3.1, 3.2 Honeycomb- Provided support for extra input devices, USB host mode and high performance 2D and 3D graphics

- 4.0, 4.0.3 Ice Cream Sandwich- New favorites tray, lock screen actions, improved spell checking, face unlock

- 4.1 Jelly Bean- Bi- directional text and other language support, stores high resolution contact photos
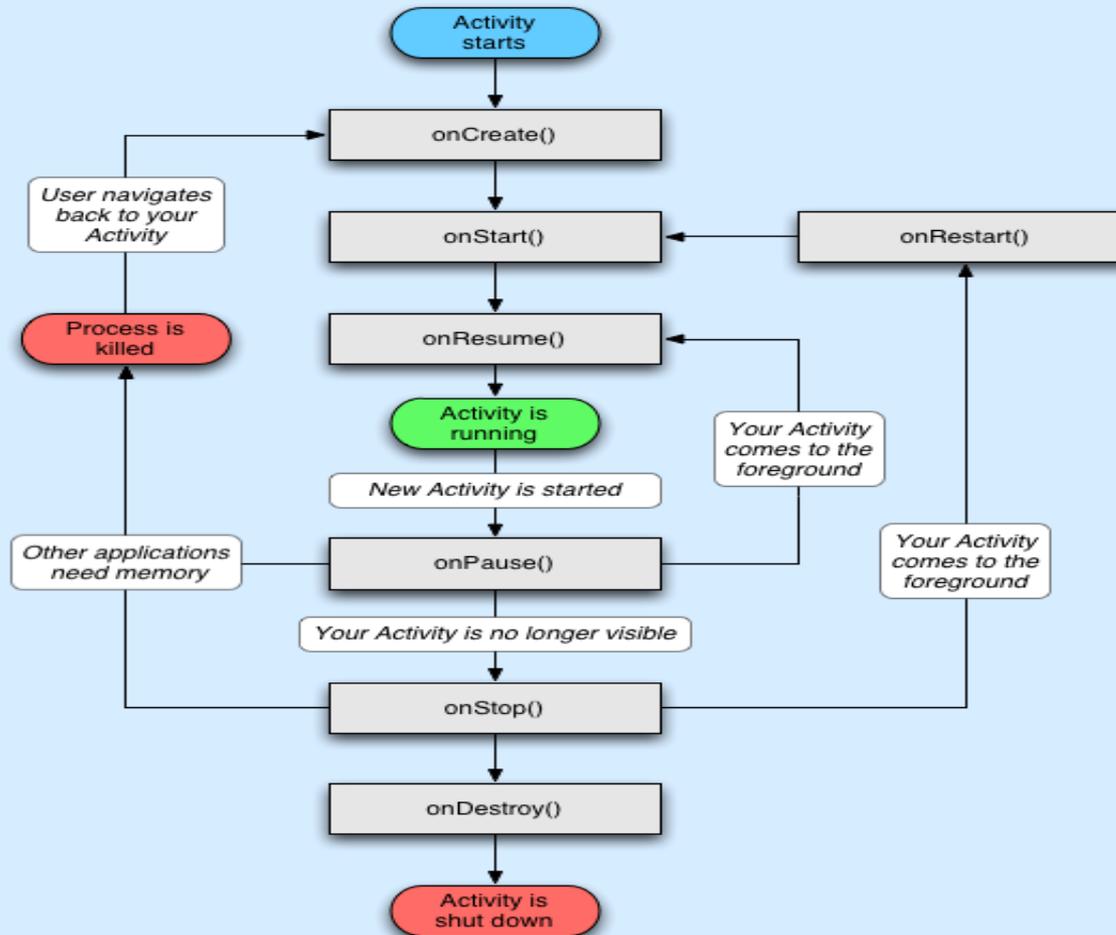
Architecture

Features

- Application Framework

- Dalvik Virtual Machine

- Optimized Graphics

- SQLite and Data Storage

- Connectivity and Messaging

- Media Support

- Development Environment

Building Blocks Of Android Application

- Activity

- Intent Receiver

- Service

- Content Provider

Life Cycle Of Android Application

Essential Requirements for Android Development

- JDK 6 or greater

- Android Software Development Kit

- Eclipse Integrated Development Environment

- ADT Plug-ins for Eclipse

Android SDK

- Android SDK consists of packages necessary for running android apps

- Such packages can be downloaded separately using Android SDK Manager

- Different packages available are- SDK Tools, SDK Platform tools, SDK Platform

Android SDK Tools

- Includes variety of tools to develop mobile applications

- Tools are classified into SDK Tools and Platform Tools

- Different SDK Tools- android, ddms, emulator, layoutopt, sqlite3

- Most important Platform Tool- adb

Android AVD- Emulator

- AVD stands for Android Virtual Device

- Behaves like a real Android device and allows you to test the application without having a real device

Eclipse IDE

- Recommended Version- Eclipse 3.7 (Indigo)

- After creating a project in Eclipse, different folders and files (src, gen, assets, res, values, android version) for the project are created automatically

- src contains .java files, res contains all xml files, gen contains resources.java file

Tools to be Used

- Front-End

Android (Java Programming)

- Back-End

MySql

Core Functionality

- Simple Search

- Advanced Search

- Additional Functions for Call, SMS and Email are also present

Simple Search

- Search based on Name

- Results returned are Name, Department, Official Mobile Number, Personal Mobile Number, Email Id

Advanced Search

- More Detailed and specific search as compared to Simple Search

- Results returned are similar to Simple Search but are more fine tuned

How to run readymade .apk file in emulator

- Copy .apk file in tools directory

- Open emulator and create a new virtual device

- Open cmd and set your path to tools directory

- Then type adb install "name of your apk file" and after pressing enter, enjoy the application

How to deploy Android Application in Mobile

- From the home screen of the phone, choose Menu -> Settings, Choose Applications.

- Select Unknown Sources checkbox, Choose Development and select USB Debugging option

- Plug the phone into computer through USB cable

- When the phone is detected on the system, run the application

- Choose the phone from the list and click OK button

How to publish an Application in Android Market

- First of all, create your Android Market Account

- On Android developer homepage, click Upload Application button

- Upload the apk file created for the application

- We can add screenshots, promo shot, title, description, promo text, application type, category of the application

Continued…

- Save your application if you do not want to publish it now itself

- When you are ready to publish the application, just go to Android developer homepage, choose your application and click on publish

Conclusion

- Google Android stepping into the next level of Mobile Internet

- Android is going to play a major role because all API's are easy to understand and can be implemented for various applications

- Android will find itself competing with iPhone

THANK YOU!!!!!!