Android DAY 1

#Android Notes

Android Day 1

What is Android ?

- Android is an open – source software platform created by Google and the Open Handset Alliance.
- Android is a software stack for mobile devices that includes an operating system, middleware and key applications.
- The Android SDK provides the tools and the APIs necessary to begin developing applications on the Android platform using the Java and Kotlin Programming Language.

Founder of Android

- Initial release date
  - 23 September 2008

Android co-founder Andy Rubin

Features

- Android is a software environment built for mobile devices and not a Hardware platform.

- Features:-
  - Attractive UI
  - Provide Easy Connectivity
  - Storage:- SQLite,a lightweight relational database, is used for data storage purposes.
  - Resizable widgets
  - Multi-tasking etc…

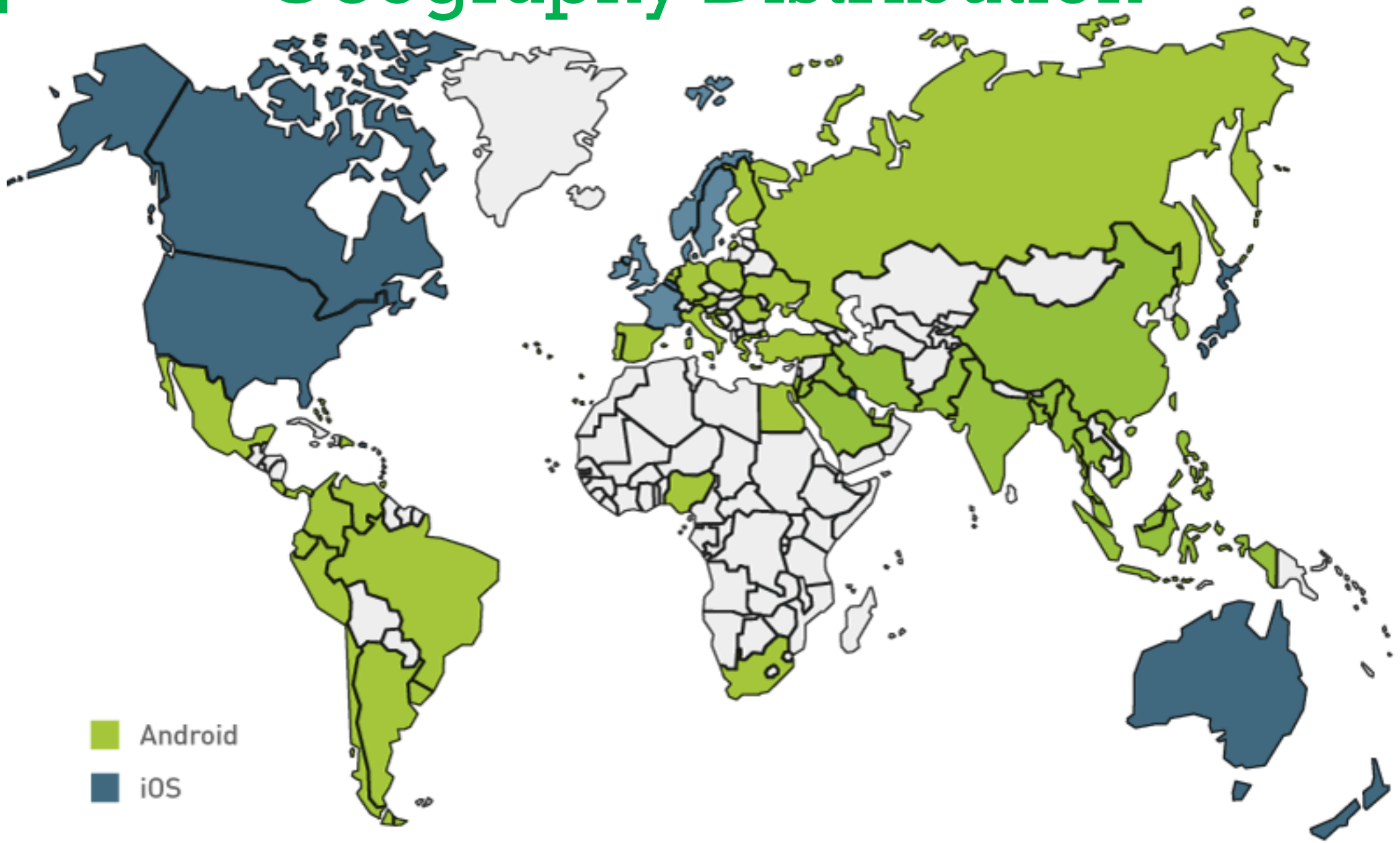
Advantages For Android Developer

- Open Source (Free to Download and Use)
- Source Code Freely available
- Customizable UI
- Easy App Approvals
- Multi-Network App Distribution
- Low Investment
- Constantly Updating with New Features
- 85% Users are Using Android Devices

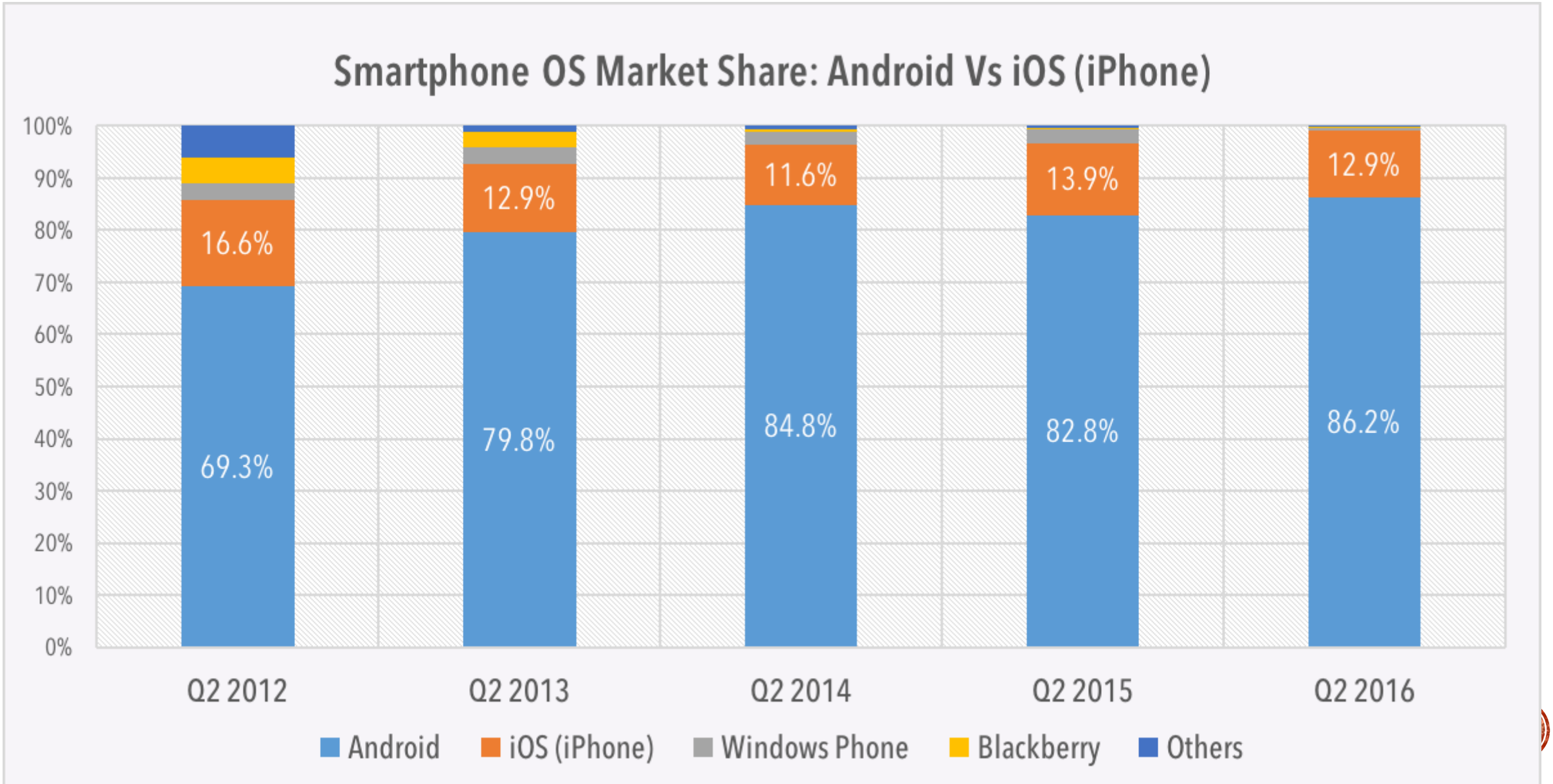
Disadvantages For Developer

- Few Devices Support Newer version
- Device Issues: Storage Limit; Drains Battery; Overheating
- Internal Apps Occupy more spaces
- Device Defects
- Defects in Apps and Play Store
- So Many Devices there so Developer need to Focus on it.

Geography Distribution



Geography Distribution



ANDROID VERSION UNTIL NOW !!!

OREO

Alpha

A

Beta

B

Cupcake

C

Donut

D

Eclair

E

Froyo

F

Gingerbread

G

Honeycomb

H

Ice Cream Sandwich

I

Jelly Bean

J

KitKat

K

Lollipop

L

Marshmallow

M

Nougat

N

History Of Android

- The code names of android ranges from A to N currently, such as
- Aestro,
- Blender,
- Cupcake,
- Donut,
- Eclair,
- Froyo,
- Gingerbread,
- Honeycomb,
- Ice Cream Sandwitch,
- Jelly Bean,
- KitKat,
- Lollipop,
- Marshmallow
- Nougat.
- Oreo
- Pie

History Of Android

- Now Number ☺
- Android 10 (API 29)
- Android 11

Codenames, Tags, and Build Numbers

- Android development happens around families of releases that use code names ordered alphabetically after tasty treats.

Codenames, Tags, and Build Numbers

Oreo	8.1.0	API level 27
Oreo	8.0.0	API level 26
Nougat	7.1	API level 25
Nougat	7.0	API level 24
Marshmallow	6.0	API level 23
Lollipop	5.1	API level 22
Lollipop	5.0	API level 21
KitKat	4.4 - 4.4.4	API level 19
Jelly Bean	4.3.x	API level 18
Jelly Bean	4.2.x	API level 17
Jelly Bean	4.1.x	API level 16

Codenames, Tags, and Build Numbers

Ice Cream Sandwich	4.0.3 - 4.0.4	API level 15, NDK 8
Ice Cream Sandwich	4.0.1 - 4.0.2	API level 14, NDK 7
Honeycomb	3.2.x	API level 13
Honeycomb	3.1	API level 12, NDK 6
Honeycomb	3.0	API level 11
Gingerbread	2.3.3 - 2.3.7	API level 10
Gingerbread	2.3 - 2.3.2	API level 9, NDK 5
Froyo	2.2.x	API level 8, NDK 4
Eclair	2.1	API level 7, NDK 3
Eclair	2.0.1	API level 6
Eclair	2.0	API level 5
Donut	1.6	API level 4, NDK 2
Cupcake	1.5	API level 3, NDK 1
(no code name)	1.1	API level 2
(no code name)	1.0	API level 1

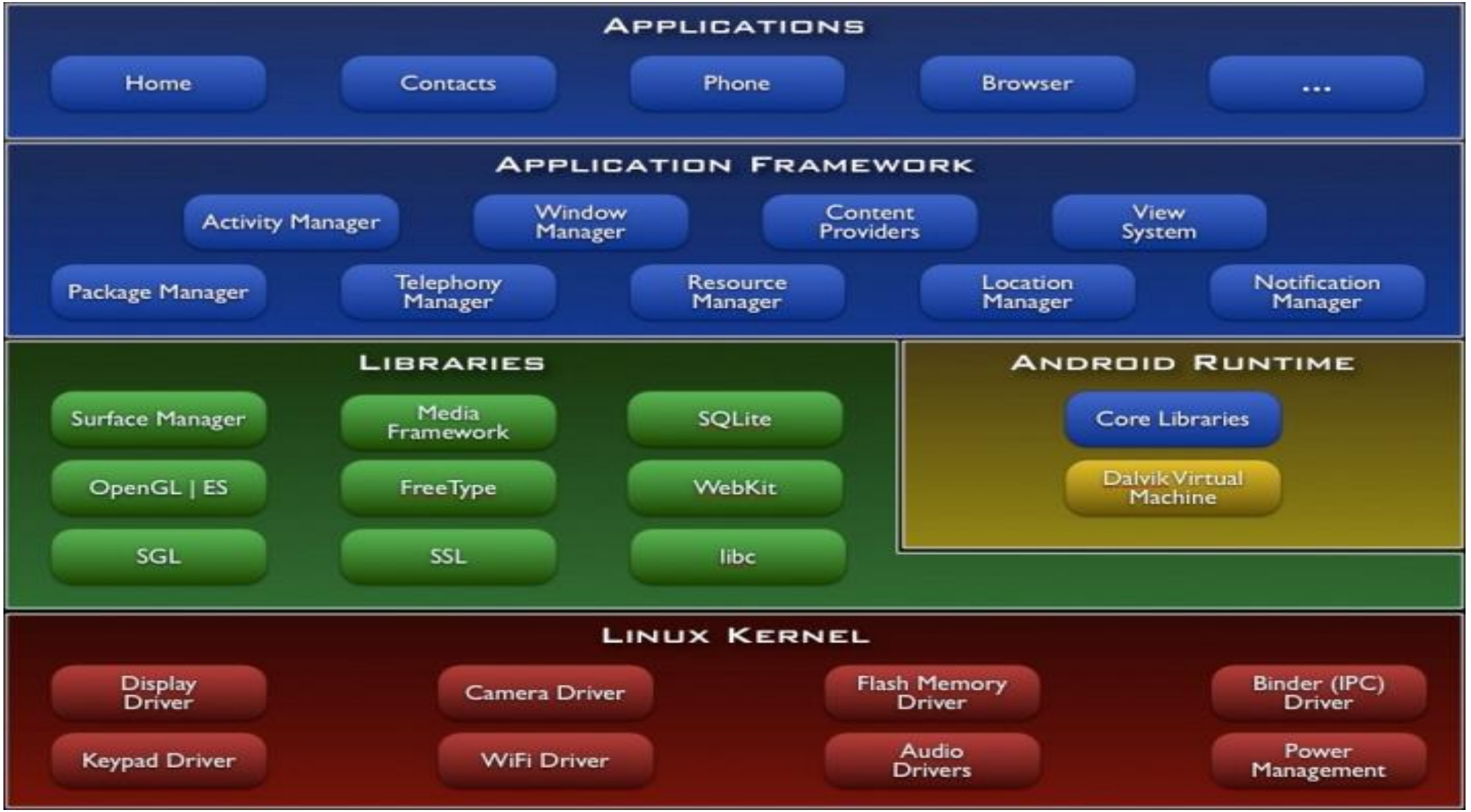
Hardware Requirement

- 8GB RAM
- I3 Processor

Tools Required to Start Development

- Android Studio 3.6
- JDK
- Genymotion (Android emulator for developers)

Android Architecture



Applications

- Android will ship with a set of core applications including an email client, SMS Program, Calendar, Maps, Browser, Contacts and others.
- All applications are written using the Java Programming Language.

Application Component

- Application components are loosely coupled by the application manifest file ***AndroidManifest.xml*** that describes each component of the application and how they interact.

- There are following four main components that can be used within an Android application.

Cont..

No.	Name	Description
1	Activities	They dictate the UI and handle the user interaction to the smart phone screen.
2	Services	They handle background processing associated with an application.
3	Broadcast Receivers	They handle communication between Android OS and applications.
4	Content Providers	They handle data and database management issues.

Application Framework

- Android offers developers the ability to build extremely rich and innovative applications.
- Developers are free to take advantage of the device hardware, access location information, run background services and much more.
- The Application architecture is designed to simplify the reuse of components.
- Any applications can publish its capabilities and any other application may then make use of those capabilities.

Libraries

- Android includes a set of C/C++ libraries used by the various components of the Android System.

Android Runtime

- Android includes a set of core libraries that provides most of the functionality available in the core libraries of the Java Programming Language.
- Every Android Application runs in its own process, with its own instance of the Dalvik virtual machine.
- Dalvik has been written so that a device can run multiple VMs efficiently.
- The Dalvik VM executes files in the Dalvik Executable(.dex) format which is optimized for minimal memory footprint.
- The VM is register-based.
- It runs classes and compiles by Java Language Compiler.
- It transforms these classes into the .dex format by included “dx” tool.

Linux Kernal

- Android relies on Linux version 2.6.
- It provides the core system services such as security, memory management, process management, networks and driver models.
- The kernel also acts as an abstraction layer between the hardware and the rest of the software stack.

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