# Android the Open Source for Mobile Application

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**Abstract:** Android is one of the most popular most popular open source operating system for mobile platforms. Contemplating Android application development is great choice as per current market scenario. Tough there are plenty of advantages of associated with it. The Android app ecosystem is rich and diverse and their usage is changing people's lives. Today's the world is moving towards mobility and we think all of us have Smartphone in our hand of android, IOS, windows. Over the year Smartphone have become an important part of the day to day life, today's era are more addicted for the Smartphone and it became basic need in all over the word. There are some advanced feature sin android Smartphone, with which user can easily share application via online market store i.e. Google market store. But still the security area is underdeveloped. This survey is about the current work done on the android operating system.

**Keywords**: Android**,** Linux Kernel Features.

## I. INTRODUCTION

Android, Inc. was founded in Palo Alto, California in October 2003 by Andy Rubin. Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for touch screen mobile devices. Android has the largest installed base of all operating systems of any kind. Initially developed by Android, Inc., which Google bought in 2005.

Android is an operating system for mobile devices. It is mostly used for Smartphone, likes Google's own Google pixel, as well as by other phone manufacturers like HTC, Samsung, LG, Sony etc. it has also been used for tablets such as the Motorola Xoom and Amazon kindle. A Modified Linux kernel is used as androids kernel.

Programs for android also called as ''apps'' comes from Google play store. The Android programs have an extension of apk. Android programs are built in python, c, c++, or java programming language but the UI is always made use in java and xml. There are over 1,600,000 apps available for android.

## II. LITERATURE SURVEY

Vikas Goyal, Anshul Bhatheja, Deepak Ahuja describe IOS mobile operating system of Apple Inc. provide more security by supporting its Sandbox architecture for the apps. Thus providing more confidentiality to the user data. Apple is also gaining the trust of its user through these functionalities. Also the increase in market revenue of Apple Inc. is due to their devices which offer high security to the user data. Android developers and Google Inc. have a lot of work to do on it so that they can compete with apple devices. [1]

Different apps are developed and used by farmers for their specific purpose. Many apps are being utilized for different kind of functionality regarding the farming activities like cropping information, pesticides, fertilizer, seed, selling of crop, irrigation information, estimation of crop production, weather information and information regarding the best practices of farming. They found that many of the apps are static. Instead of that dynamic apps will be better to use. Also if all such listed functionalities are bundle into the one single app and in the native language of the farmer, then it is easy to utilize it [2]

Ms. Loveena Lione, Ms. Manju Velumuthu Pandian ,Ms. Pachiammal Ganpati, Ms. Archana Wankhede proposed Android as a server platform system that enables the use of saving, recovering and sharing personal information into closed groups of Smartphone. They also showed the technical difficulty and approaches related to multitenant architecture for Android OS. They plan to develop a prototype system about proposed multitenant Android architecture. [3]

Smartphone are rapidly becoming a dominant computing platform. Our analysis specifications as enabling technologies that will open new doors for application certification. [4]

As per discussion of this paper, it provides all over security to contacts, call logs and location or phone identity, but still there are some issues while using this system.[6]

TABLE NO.1 VERSIONS OF ANDROID

| Code name | Version number | Release date | API level | Features |
|---|---|---|---|---|
| Alpha | 1.0 | September 23, 2008 | 1 | Android Market, Web Browser, Camera etc. |

| Beta | 1.1 | February 9, 2009 | 2 | Ability to save attachments in messages. |
|---|---|---|---|---|
| Cup Cake | 1.5 | April 27, 2009 | 3 | Support for widget, video recording and play back in MPEG-4 etc. |
| Donut | 1.6 | September 15, 2009 | 4 | Support for WVGA screen resolutions etc. |
| Éclair | 2.0-2.1 | October 26, 2009 | 5-7 | Microsoft exchange email support, Bluetooth 2.1 etc. |
| Froyo | 2.2-2.2.3 | May 20, 2010 | 8 | Speed, memory and performance optimization, support for android cloud to device massaging, Wi-Fi, hotspot etc. |
| Ginger Bread | 2.3-2.3.7 | December 6, 2010 | 9-10 | Support for extra large screen sizes and resolution WXGA etc. |
| Honey Comb | 3.0-3.2.6 | February 22, 2011 | 11-13 | Simplified multitasking, redesign keyboard etc. |
| Ice Cream Sandwich | 4.0-4.0.4 | October 18, 2011 | 14-15 | Easier to create folders, pins to zoom etc. |
| Jelly Bean | 4.1-4.3.1 | July 9, 2012 | 16-18 | Smoother UI, expandable notification, Bluetooth data transfer etc. |
| KitKat | 4.4-4.4.4 | October 31, 2013 | 19 | Ability for application to use immersive mode , Wireless printing capability etc. |
| Lollipop | 5.0-5.1.1 | November 12, 2014 | 21-22 | Support for 64 bit CPUs, material design. |
| Marshmallow | 6.0-6.0.1 | October 5, 2015 | 23 | Introduction doze mode, apps stand by feature etc. |
| Nougat | 7.0-7.1.1 | August 22, 2016 | 24-25 | Ability to screen zoom, Daydream-virtual reality platform etc. |

## III.SYSTEM ARCHITECTURE
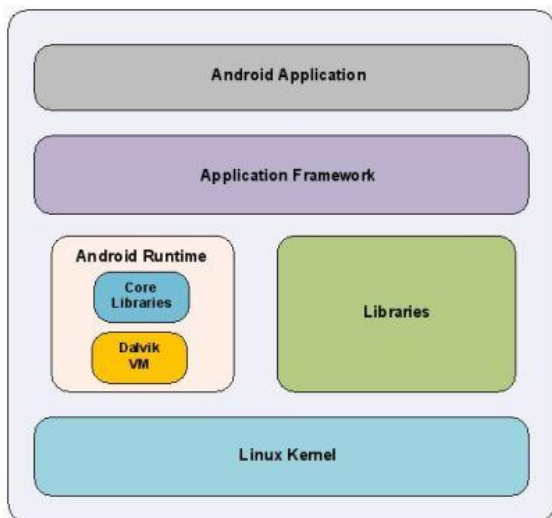


Fig. 1 Android Architecture

## IV.GOOGLE PLAY STORE

Google Play Shop for the android apps under the direct control of Google is known as Google Play or Play Store or Google Play Store. On it users can easily download it and use it in their smart phones. The apps present here are divided into various categories like productivity, games, news etc. Android apps also are free of cost and paid. Android apps also support some inapt purchases.

## V. ANDROID SECURITY

Nowadays nearly all of the tasks that you could only perform on a computer are achievable on mobile devices as well. Employees are even able to do work on their mobile devices, so there are more risks for proprietary information leaks as well. Additionally, the number of attempts of cybercrime has been increasing steadily in the recent years. This is even more important for Android because it is the most targeted platform due to its widespread usage and open source properties. The need for security is greater than ever for not only consumers, but large enterprises as well. As mobile devices become more and more advanced, they continue to have more uses and thereby more information stored on them. It is important for consumers and developers to understand the security risks surrounding the platform and what they can do to protect their information. Users need to be aware of what applications they are installing and developers need to take the proper countermeasures to prevent any security breaches or issues.

The Android operating system's goal is to protect user data, protect system resources, and provide application isolation. To achieve these goals the following security features are provided

- Robust security at the OS level through the Linux kernel
- Mandatory application sandbox for all applications
- Secure interprocess communication

- Application signing
- Application-defined and user-granted permissions

## V. CONCLUSION

We have seen an outstanding Growth in Android Technology. A substantial amount of group of people deal with android Smartphone. The android industry is not compromising on development it is working hard to make the life of people easy and secure.

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