

A Comparative study between Android & IOS

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Abstract-:

This paper discuss about Android OS advantages, iOS advantages, usage statistics and comparison .The Comparison is done on the basis of their platform, their performances and the growth in mobile land. The Salient new key Features introduced in Android and IOS are also described.

Android and iOS have been rivals from many years and still competing with each other. Nowadays there are more than a billion smartphone users who use Android or iOS based phones. Android claiming around 82.8% of the market share while iOS claiming 13.9% of the market share in 2015. The Key comparison features between the Android and IOS will be measures like Security, App Market Analysis, Hardware Requirements, Cross Platform App Development, Architectures and Frameworks, etc. Through this research paper, researcher is giving a brief comparison between Android and iOS mobile operating systems.

Keywords-:

Android, iOS, Applications, Google's Android, iPhone, Jelly Bean, Security, Comparison.

I. INTRODUCTION-:

In recent years, the emergence of smart phones has changed the definition of mobile phones. Phone is no longer just a communication tool, but also an essential part of the people's communication and daily life. Various applications added unlimited fun for people's lives. It is certain that the future of the network will be the mobile terminal. The most popular and best mobile platforms/operating systems are-:

- (i) Android (ii) iOS (iii) Symbian OS (iv) Windows Phone 7 (v) Blackberry (vi) Bada (vii) web OS (viii) MeeGo.

III. ANDROID-:

Android, Inc. was founded by Andy Rubin. In 2005, Google acquired it and then the team led by Rubin developed a mobile device platform powered by the Linux kernel. Finally, On the November 5, 2007 the Open Handset Alliance, a business alliance of several companies which include Google, HTC, Intel, LG and other 76 firms unveiled itself. On the same day, the Open Handset Alliance also unveiled their first product, Android, a mobile device platform which was built on the Linux kernel version 2.6 . And the first commercially available phone to run the Android operating system was the HTC Dream, released on 22 October 2008 .

Android is basically a software stack-set of software subsystems needed to deliver a fully functional solution for mobile devices. This stack includes an operating system, middleware that's partly based on Java, and key apps such as a web browser and a contact manager.

II. HISTORY OF ANDROID-:

2003 - Android was founded by Andy Rubin.

2005 - Google Bought the Android.

2007 - Google released the Android.

2008 - First android released for the Users.

Android Version-:

Alphabet	Android version
A	Alpha (1.0)
B	Beta (1.1)
C	Cupcake (1.5)
D	Donut (1.6)

E	Eclair (2.0 – 2.1)
F	Froyo (2.2 – 2.2.3)
G	Gingerbread (2.3 – 2.3.7)

H	Honeycomb (3.0 – 3.2.6)
I	Ice-cream sandwich (4.0 – 4.0.4)

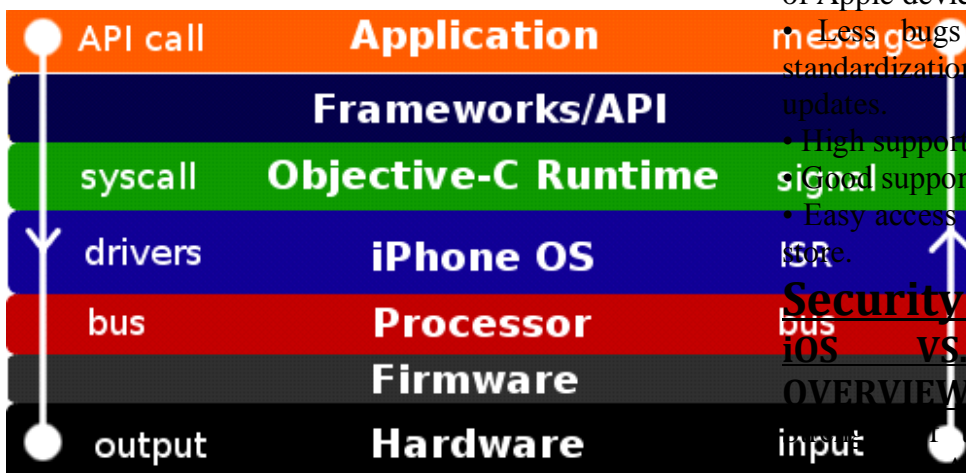
J	Jelly bean (4.1 – 4.3.1)
K	Kitkat (4.4 – 4.4.4)
L	Lollipop (5.0 – 5.1)

Features of Android:-

- Open Source Platform supported by a wide range of mobile device manufacturer.
- Easy access to lot of free and premium apps that support Android OS.
- Multitasking – Android OS is capable of running many applications at the same time.
- Tethering and a Massive External Storage Capability.
- Bluetooth, EDGE, 3G, and WiFi support, Camera, GPS, compass, and accelerometer support.
- The continuous development in looks and features might soon leave other mobile OS far behind in the long run. Dalvik virtual machine optimized for mobile devices.
- GSM Telephony support; Integrated browser based on the open source Web Kit engine.

270,000 iPhones were sold in first two days and more than a million units in month and a half. (Trebitowski, Allen & Appelcline 2001, 2.)

iOS Architecture:-



- Media support for common audio, video, and still image formats.
- Optimized graphics powered by a custom 2D graphics library, 3D graphics based on the OpenGL ES 1.0, 1.1, or 2.0 specification.

iOS :-

iOS (formerly known as iPhone OS) is a UNIX-based operating system built for Apple’s iPhone, iPod touch and iPad mobile devices. It is used for managing the hardware of a device and for providing technologies required to implement both native and web applications. Not many people know that IOS is originally Cisco’s core operating system which has been in use for almost 20 years. Cisco licensed the trademark “iOS” to Apple in March 2010. Cisco’s technology was not included in the license. (Carvell 2010.) iOS was first introduced and released as the operating system of iPhone when on 29th of June 2007.

Features of iOS:-

- Very stable and secure OS for mobile phones.
- Maybe the most loved interface for any mobile OS in the market. Beautifully Designed desktop and app icons which go hand to hand with the stunning looks of Apple devices.
- Less bugs and secure OS because of high standardization followed when developing Apps or updates.
- High support for latest web standards.
- Good support for cloud storage.
- Easy access to free and premium apps from Apple store.

Security:-

ios vs ANDROID SECURITY

OVERVIEW:-

The android is the remote removal android are using java & performing its

own secure role to preventing memory damage attacks. In android 46 malwares are present and 18 Android attacks may be possible in this OS.

layered secure OS, layer is the using of Address Space Layout Randomization (ASLR) and Data Execution Prevention (DEP).

SECURITY MODELS-:

It is component based OS & applications archived to be as a packages & those packages should be signed using valid certificates known as a Signing applications in android. Android —application permission used to be allowing/disallowing a requesting of mobile resources. There are four permissions levels normal, dangerous, signature, and signature-or-system.

SECURITY TECHNIQUES-:

- i. Application provenance
- ii. Application permissions
- iii. Isolation
- iv. Encryption

TECHNICAL SPECIFICATION -:

In the other things in IOS considered a high secured smartphone & Don't allow to using unofficial market in iOS. iOS provide security advantages of Apple, by mentioning it as a

Attributes	Android
Developers	Google
OS Family	Linux
Initial Release	Sep-23 2008
Programmed in	C, C++, java
Available On	Phones and Tablets (LG, Sams HTC, Micromax and others)
Available language(s)	32 Languages
Voice command	Google now
Source Model	Open Source
Latest stable/ Release	Android(5.0.1)Lollipop (Nover 2014)
Upcoming Releases	Unknown
Website	Android.com

Differences between Android and IOS-:

Attributes	Android
Developer	Google
OS Family	Linux
Widgets	Yes
Programmed in	C, C++, java
Messaging	Google Hangouts
Internet browsing	Google Chrome (or Android Browser on older versions)
Source model	Open source
Video chat	Google Hangouts
App store	Google Play – 1,000,000+ Apps. Other app stores like Amazon and Getjar also distribute Android apps.
Device manufacturer	Google, LG, Samsung, HTC, Sony, ASUS, and many more

Similarities between Android and

IOS-:

Attributes	Android	IOS
Dependent on a PC or a Mac	No	No

CONCLUSION-:

In this paper we have compared iOS vs Android platform and have found comparison between security techniques, models, app market analysis, unless the Device is Jail Broken while Android Apps can be tinkered with. Both OS have many other applications presents in their own app market. After a long introduction of the basic concept of Android and OIS it is very hard to predict that which is ahead in mobile market, both are looking towards

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Interface	Touch screen	Touch screen
Working state	Current	Current

software updates, etc. Both OS's uses encryption techniques but iOS considered a high secured smartphone as compared to Android. In iOS Applications Apple apps can only be developed on a Mac OS system while android can be developed on windows as well as Mac OS. Apple Apps are mostly Piracy free

the future providing us to more and more advances in our mobiles. So while choosing a Smartphone does not follow the trend but to understand the differences between Android and IOS about their advantages and disadvantages which is supposed to be important when purchasing a Smartphone.

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