Android Aspects and OHA

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Abstract - **Android is a powerful software development tool among many programming languages having the magical property that is platform independence. We can integrate android as an Operating system and application development platform. Android is a collection of software for mobile devices. It consists of Operating systems, Middleware, and Key applications. Android is rich with mind-blowing features that occupy the global coverage.**

keywords - **Operating System, Open Hand Set Alliance, Application Programming Interface, Mobile operating System, GUI**

I.   INTRODUCTION

When modernization covers the globe every one demands for easy access within limited period of time. People prefer everything possible on their mobile phone. All we need is to get everything at our fingertips. In order to implement this a greater demand for mobile application arises. Android is not only an Operating system but also a complete package of Application development. Mobile Application means a small software that developed to run on a mobile device which serves the normal offline transactions of a business or a private or public sector to online services. It is also referred as mobile app or just "apps". The apps was originally developed for simple assistance like e-mail, contacts, images editing etc, but the public demand for apps turned to mobile games, bank transactions, ticket booking, online purchase, government services. Because of these there is a million of applications are there. Apps are nothing but computer programs which are available in apps distribution areas like play store and warehouses from there we can download them. After successful installation we can use them based on our wish. Some apps are free to download where some are payable. A lot of apps are available in app store, it is area used to store apps apk files. Most of the apps has a peculiarity called manual installation. They cannot get installed themselves. For that manual help is needed. From app stores anyone can download the desired app and after accepting the terms and conditions of the app developer they can freely install them on their mobile devices. Among them some apps need internet support for its working some may not.

II.   ANDROID OPERATION SYSTEM

Android itself is a modern operating system designed for mobile devices. It is worked in accordance with Linux Kernel. During six months android OS get updated. Android OS is again referred as mobile operating system. As we know LINUX is open source which means its open for everyone. Anyone having some kind of programming skill can make updates on LINUX OS. One condition is that the source code is free to distribute. Likewise android is open source OS firstly designed for touch screen devices. It includes smart phones, tablet and desktop. The current owner on Android is GOOGLE and Open Hand Set Alliance (OHA). It depict that android is not a personal property. It's owned by a various group of developers. Now a days Android became the number one OS selling around the world. The source code is used for developing a variety of application and most of them has many users. From application developing platform stored apk file get downloaded. Android uses java language as its source code making language. To convert this source code it uses a special virtual machine called DALVIK Virtual Machine shown in Figure 1. After compiling, the java source code is converted to java byte code by with the help of Java Virtual Machine (JVM). JVM process the byte code. Similarly in android after compilation the source code is converted and saved to java byte code. Dex compiler is used for this purpose. The output of dex complier is the Dalvik Byte Code. These are executable codes which requires an additional virtual machine called DVM.

The following are the features that make android more attractive and a super mobile operating system throughout the world. This is the number one selling operating system all around globe. They are

- Platform Independence
- Robust
- Graphical User Interface
- Audio an Stereo
- OS updates through google play
- AVIF image support
- Multi Page widgets
- One-handed mode
- Video transcoding
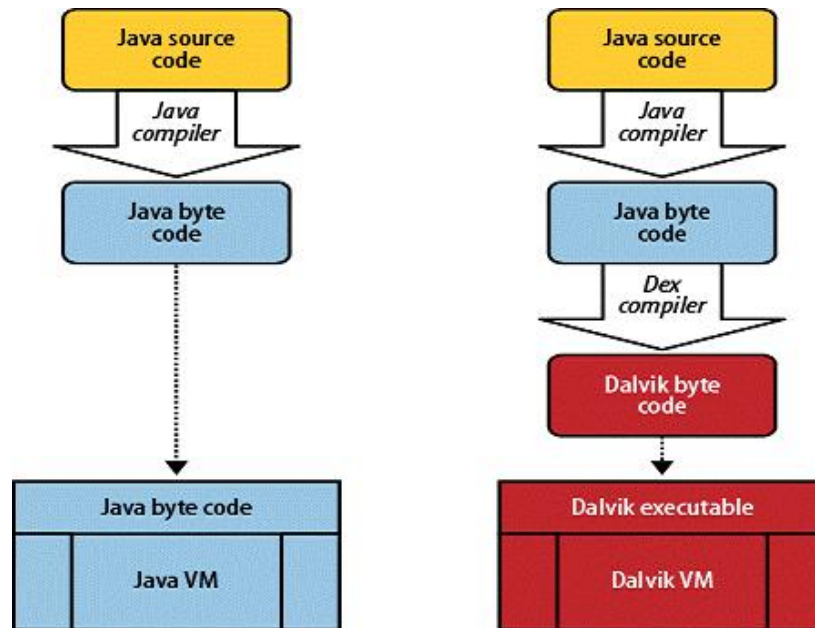- Redesigned page setting
- Audio source selection

Figure 1: Dalvik Virtual Machine

III. ANDRIOD INTERFACE

As mentioned above a range from simple to complex or small to confidential applications can made by using android. These applications used among various categories of users. Most of the users are common people. They didn't know any technical knowledge. So it's necessary to develop simple apps. Interface act as a middle layer between users and operating systems. Android uses a special interface called Graphical User Interface (GUI) which offers all graphical facilities to design front end of the apps. If a user want to communicate with the system or device an interface is needed. User Interface (UI) takes input from users and pass them to OS for processing, after that requested data will send back to the user as output. To create an interface android uses a collection of controls namely button, text field, edit text, radio button, image button, toggle button etc shown in Figure 2. By using those designers can create attractive user friendly app interface and users can do easy manipulation directly to their screen. Screens must has touch sensing capacity. Users can give input to the device by their touch. Robustness is the main attraction of android. It is a single device which provides both OS features and Apps features.

Figure 2: Android user Interface Controls

IV. OPEN HANDSET ALLIANCE

OHA is a unit responsible for the working of android operating system formed comes in existence from November 2007. It is a Googles product. This is a business group consists forty seven individual companies for developing mobile application in an open platform. There are mainly six members in OHA. They are

- Handset Manufactures
- Software Companies
- Mobile Operators
- Chip Makers
- Commercialization Companies

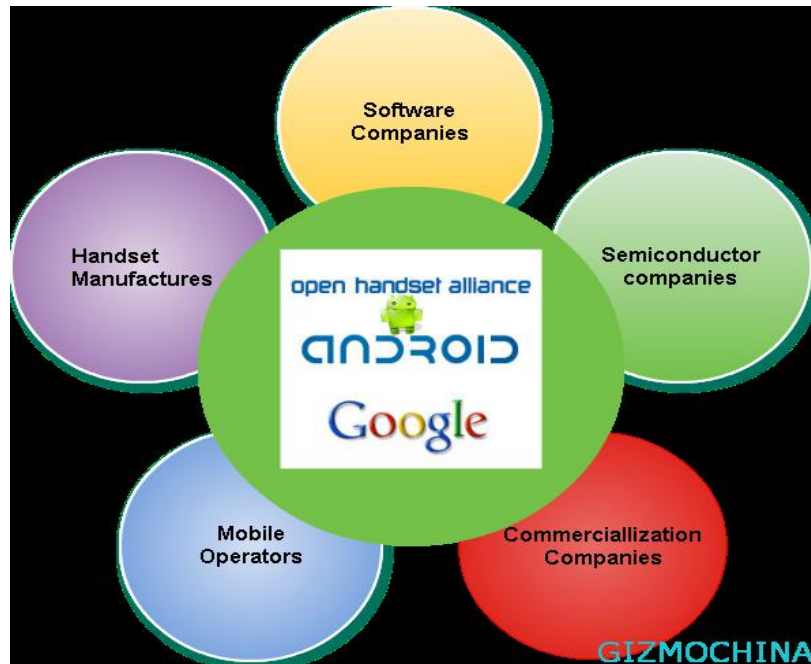The below figure demonstrate the structure of android OHA

Figure 3: Android OHA

Android OHA limb take-part a dedication to enlarge the commercial prominent of open source platform development. The reasons by which companies join to android OHA is

- Developer Friendly environment- Android offers a friendly working atmosphere to all of its developers enable them to work together as a team. These developers not work within an office at the same pace. They are independent developers who worked based on their interest. People from all round the world join this team as a developer.
- Post Development- In this reason many of people are attracted to android OHA. Because it offers a pre as well as post channel for expressing their ideas before developing and after developing of the product. It also provides full freedom for distribution also.
- Lower handset cost- As we said it is an open source platform, so that all the resources are open up that help to construct innovative applications with limited expenditure.

4.1 Software Companies
This is a group of software developing companies all around the globe. Android makes a tie-up with these companies. Based on these software of licenced companies will be installed in android devices. They can be either pre-installed or manual installed. Some companies get connected with android for free. Some demands payment. Mail, WhatsApp, Facebook, Calculator, Calendar are examples.

4.2 Handset Manufactures.
It is a group of hand set manufacturing companies in associates with android for developing android handset devices like Mobile Phone, Tablet, smart T.V, and Desktop. They make all the handsets as smart.

4.3 Mobile Operators
Without internet nothing is possible in this new technical era. A proper internet connection is required for all activities. This is one of the main component of android OHA. All handsets needs a mobile operator for its functioning. The companies or agents which provide internet is called Internet Service Providers. Idea, BSNL, Jio, Airtel etc, are examples

4.4 Chip Makers
Chip makers are also a group of companies who responsible for developing smart chips for android devices. The performance, capacity and life time of a handset device depends on the chip installed inside in it. Intel, Pentium are examples

V.   CONCLUSION
Android Operating system became more powerful in these days. The demand for them is increases day-by-day. In this modern era people can't live without internet. All there life activities are connected with internet. Because of the browser, connectivity, endless personalization, more over open source attribute android became world's most selling operating system. Its features and aspects make it dominant than other operating systems. Android is a small package that come with both OS and device. There is no need to install separate OS for them. So that we can conclude that the future depends on internet. The future of Internet devices is android. Android is the first and last word of all mobile devices. Android is based on Linux kernel. Most of the world popular phones like Google Nexus, Sony Xperia and Samsung are android devices.

REFERENCES
[1] https://en.wikipedia.org/wiki/Mobile_app
[2] https://en.wikipedia.org/wiki/Android_(operating_system)
[3]https://www.google.com/search?q=dalvik+virtual+machine+android&tbm=isch&ved=2ahUKEwid_PjAr4XvAhWTCSsK
HakqCDEQ2-
cCegQIABAA&oq=dalvik+virtual+machine+android&gs_lcp=CgNpbWcQAzIGCAAQCBAeOgQIABAeOgYIABAFEB46

BAgAEBhQ8YgDWM-
WA2D2mgNoAHAAeACAAawBiAGYCZIBAzAuOJgBAKABAaoBC2d3cy13aXotaW1nwAEB&sclient=img&ei=5MQ3Y
J36OJOTrAGp1aCIAw&bih=625&biw=1366#imgrc=EEekPw5yBw28BM

[4]https://www.google.com/search?q=android+user+interface&tbm=isch&ved=2ahUKEwis6aLbr4XvAhWjISsKHSI0BcYQ
2-
cCegQIABAA&oq=android+user+interface&gs_lcp=CgNpbWcQAzICCAAyAggAMgIIADIGCAAQCBAeMgYIABAIEB4
yBggAEAgQHjIGCAAQCBAeMgYIABAIEB4yBggAEAgQHjIGCAAQCBAeOgcIIxDqAhAnOgQIIxAnOgQIABBDOgUI
ABCxAzoHCAAQsQMQQ1CFxQ1Yn_0NYLSBDmgBcAB4BIABhQSIAZgokgEMMC4yOS4xLjEuMC4xmAEAoAEBqg
ELZ3dzLXdpei1pbWWewAQrAAQE&sclient=img&ei=HMU3YKzrCKPDrAGi6JSwDA&bih=625&biw=1366#imgrc=ArVF
yUgrmCiWfM

[5] https://en.wikipedia.org/wiki/Open_Handset_Alliance

[6]https://www.google.com/search?q=Image+of+Android+OHA&sxsrf=ALeKk03yFrzvuSGF1ErxuOAIj9zv6g6TKw:16142
69755431&source=lnms&tbm=isch&sa=X&ved=2ahUKEwj09d-
6t4XvAhXo73MBHU1RC4YQ_AUoAXoECA0QAw&biw=1366&bih=568#imgrc=DIZ0ZhzsJE9BQM

[7] https://www.techopedia.com/definition/16273/open-handset-alliance-oha

[8] https://indianexpress.com/article/technology/tech-news-technology/9-new-features-on-android-12-that-you-need-to-know-
about-7197260/

[9] https://www.amazon.in/Android-P-K-Dixit-ebook/dp/B01HI93NFY

[10]http://www.hackr-io.cdn.ampproject.org