Comparision of two different andriod versions i.e Lollipop and Marshmallow, and also development of campsys mobile Andriod Application - An Overview

Dev Baloni(Assistant Professor),Jyotsna(Student), Minakshi Mandoli(Student), Pawitra Kathait(Student),

Saumya Nautiyal(Student)

(Computer Science & Engineering,Women Institute of Technology, Dehradun)

Abstract

In the previous system, all the information has to view in a hard file, or in website [6]. At the same time while searching any information it is too difficult to access and takes a lot of time to search the particular website. Hence, in order to overcome this problem a smart phone based application using Android can be used to make this process easier, secure and less error prone. More efficient information's will be achieved through this system. Android

is an open source Linux based system developed by Google, and primarily aimed at mobile handsets and other portable devices. In short, we will be using them to accomplish our daily task. One application that falls into this category is the Android Application for College. This College application provides a wide range of useful information which split into several functionalities. These include: academics, news, events, facilities and all the college details. Users can install this application in their android mobile to view all of these college details and make use it.To improve mobile experience for users[17] android project aims to create successful real world products. Android is a mobile OS but it's not limited to mobile only. It's currently used in smart phones and televisions. There are many code name of android such as Lollipop, Kitkat, Jelly Bean, Ice cream Sandwich, Froyo, Ecliar, Donut etc. In this paper we are also discussing aboutcomparison of androidLollipop version, its features, and its issues with android Marshmallow versions and also the development of Campsys mobile application.

Keywords— Android, Smart Phones, Java, Eclipse platform, Android ADT, Android SD

I. Introduction

Android application for college provides one attractive environment where you can manipulate information's about college easily. In this students and other authorities get all the information in their hand. It is software which is helpful for students as well as the college authorities. The main principle behind the need of Android app for college is easy supervision of Institute. This software can help us to explore all the activities happening inside the college. It can handle the details of courses, events, news, etc. A smart phone based application using Android can be used to make this process easier, secure and less error prone[2]. More efficient information will be achieved through this system. Android is an open

source Linux based system developed by Google, and primarily aimed at mobile handsets and other portable devices development platform for applications .After studying and experiencing some previous android applications ,we decided to use the Java language, the Android Studio to develop the mobile application **campsys login** for **our institute (WIT) Dehradun**. This system has a nice interface and smooth operation. Besides that it won't steal any personal information and bring a wonderful user experience. The rest of the

paper is organized as follows. Section II gives a detailed description of android System

Architecture followed by Literature Review in Section III. The Existing System and Proposed System are given in Section IV and V respectively. Sample Screen Shots of the android app named **campsys login** is given in Section VI. Section VII is the Conclusion followed by References.
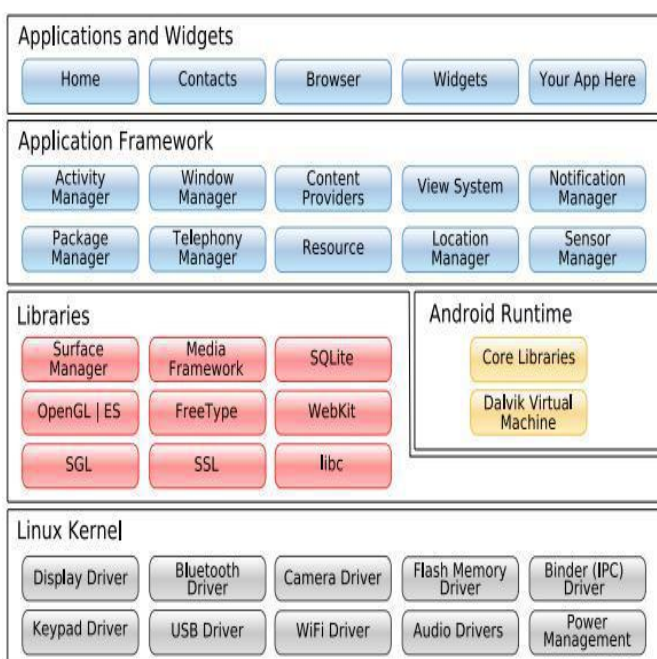
II. ANDROID SYSTEM ARCHITECTURE

Fig 1.

Android system is a Linux-based system which uses the software stack architecture design patterns. As shown in Figure 1, the android architecture consists of four layers: Linux kernel, Libraries and android runtime, Application framework and Applications[1]. Each lower layer provides a sort of encapsulation, while providing call interface to the upper layers.

A. APPLICATIONS: Android gives a set of core applications including client, SMS program, calendar, maps, browser, contacts, and so on, all developed in Java.

B. APPLICATION FRAMEWORK: The developer is allowed to access all the API framework of the core programs. The application framework simplifies the reuse of its components. Any other app can release its functional components and all other apps can access and use this component by following the security aspects of the framework. It's quite helpful for the developers to substitute the program components with this reuse mechanism.

C. LIBRARIES AND ANDROID RUN TIME: The library is divided into two components: Android Runtime and Android Library. Android Runtime is consists of a Java Core Library and Dalvik virtual machine. The Core Library provides Java core library with many functions. Dalvik virtual machine is a register virtual machine which makes some specific improvements for mobile device. Android system library is to support the application framework; it is also an important link connecting between application framework and Linux Kernel. This system library is developed in C or C++ language. These libraries can also be utilized by the different

components in the android system. They provide service for the developers through the application framework.

D. LINUX KERNEL: The kernel system service provided by android inner nuclear layer is based on Linux 2.6 kernel; operations like internal storage, process management, internet protocol, bottom-drive and other core service are all based on Linux kernel.

III. Literature Survey

The paper "A Research Paper on Comparision of two different andriod versions i.e Marshmallow andLollipop, and also development of campsys mobile Andriod Application - An Overview", this paper is aimed at developing an Online College Management System (CMS)[5] that is of importance to either an educational institution or a college. The system (CMS) is an Internet based application that can be accessed throughout the institution or a specified department. Students as well as staff and guest in may also access or can be search any of the information regarding college. This system (CMS) is being developed for an engineering college to maintain and facilitate easy access to information. For this the users must be registered with the system after which they can access as well as modify data as per the permissions given to them.

The paper "Android Application for College" this paper proposed that it is a simple yet powerful integrated platform that connects the various entities of the institution, namely Administration, Staff, Students and other specialized modules. It is a handy application that can be used by the students, staff and the administrator to facilitate communication. The

application introduces portability as it is used on a mobile device and can be carried anywhere. Since the application is used on a mobile device with Android OS, it improves connectivity between the students and the staff, thus helping the institution to provide a more transparent system altogether. Not only does the connectivity improve, the application also reduces a substantial amount of paperwork that is otherwise needed for the daily tasks in an institution. It is a useful tool that can be used by all the members of the institution, anywhere, anytime on an Android mobile device. Since all the tasks are done on a mobile device, there is no paperwork involved and it provides direct access to the staff and students. Direct access, here, means that the students can download assignments or they can put up queries and the faculty can upload assignments or answer queries irrespective of where they are at a given time. The application provides a portal to them that can be used in a very efficient manner to facilitate communication, improve connectivity and provide transparency.

The paper "A Research Paper on Comparision of two different andriod versions i.e Marshmallow andLollipop, and also development of campsys mobile Andriod Application - An Overview", this paper provides a generalized solution to monitor the various works that are carried out by a College for managing it. "CAMPSYS LOGIN" provides a simple interface for maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students. The creation and management of accurate, up-to-date information regarding a student'sacademic career is critically important in the university as well as colleges. Smart

Connect deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details and other resource related details too. It will also have details in all aspects, the various academic notifications to the staff and students updated by the college administration. It also facilitate us explore all the activities happening in the college. Different reports and queries can be generated based on vast options related to students and even for the entire college.

IV. Existing System

In the existing system, all the information does have to maintain in a hard file, or in website. While searching any information it is too difficult to access and takes lot of time.
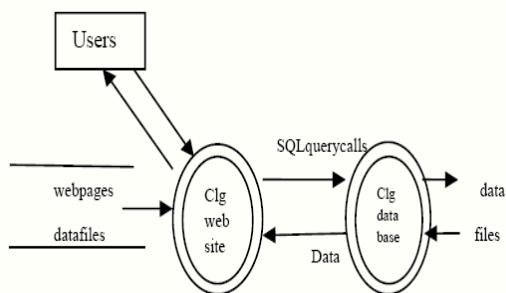

Fig 2.Existing System Flow Diagram

Disadvantages

- It takes a lot of time.
- It is very difficult to search a particular website.
- Complicated procedure.
- Searching for a information in a website is very difficult.

V. Proposed System

The proposed system is an application that is designed to manage and handle the operation of an institution [5]. It is a handy application that can be used by the all users to facilitate communication. The application introduces portability as it is used on a mobile device and can be carried anywhere. Since the application is used on a mobile device with Android OS, it improves connectivity between the all users, thus helping the institution to provide a more transparent system altogether. It is a useful tool that can be used by all the members from anywhere, at anytime on an Android mobile device

a. Advantages of proposed system:

- User Friendly interface.
- Functionality is easy.
- Easy to handle and feasible.
- Easy to operate.
- Cost reduction.
- Fast and convenient.
- Globally accessible
- Central place for all tasks
- 24 Hour accessible
- Secure and Personalized
- Faster and Better Communication
- Saving of time and man power

b. CHALLENGES AND ISSUES:

Some of the major challenges and issues that we have experienced while developing this app **CAMPSYS LOGIN** is mentioned here. The major challenge was to make the app appealing to the major crowd by making its interface simple, user-friendly and attractive and at the same time useful for the purpose. Since a number of versions of android are there and it keeps coming with new software and hardware features also which one to focus for developing the app was quite difficult to finalize. Finding mostly used version was time consuming. Same way the software/hardware integration was also a major issue. Unable to fix the errors and security issues was also quite difficult to manage. Despite these difficulties the when the app comes to realization the satisfaction we gain is amazing.

To improve mobile experience for users android project aims to create successful real world products. Android is a mobile OS but it's not limited to mobile only. It's currently used in smart phones, tables and televisions. There are many code name of android such as Lollipop, Kitkat, Jelly Bean, Ice cream Sandwich, Froyo, Ecliar, Donut etc. In this application we are using Lollipop, its features, its issues and comparison [25] it with newer versions marshmallow:

I. Android Marshmallow v/s Android Lollipop: App permissions:

With Android Marshmallow, there is finally an integrated way to manage app permissions. In Lollipop you had to allow all app permissions before you downloaded the app from the Play Store. In Android Marshmallow, this is no longer the case. Instead, you can allow or deny app permissions individually, as and when you want a specific function to work (e.g. access to the microphone). In addition, you now have the option to revoke individual app permissions after you've granted them.

II. Android Marshmallow v/s Android Lollipop: Battery life:

With Lollipop's Project Volta, Google laid the foundations for longer battery life. Android Marshmallow goes one step further, with a battery saving function known as Doze. Doze uses the device's motion sensors to detect if a Smartphone is being used or not, and sends the handset will be sent into a deeper standby state. We don't have any long-term Doze data yet, but initial tests have found that battery life has reportedly been doubled compared with Lollipop.

III. Android Marshmallow v/s Android Lollipop: Google Now on Tap:

Google Now has undergone a minor revolution on Android Marshmallow. Now, by simply long-pressing the Home button, Google Now scans whatever is on the screen, be it from a webpage, third-party app, anything, and offers contextual information on what it determines the key words to be.So, for example, if someone sends you a message mentioning a restaurant, Google Now on Tap will offer a map, or Yelp reviews. It is not without flaws, but it could well evolve into the kind

of feature that you eventually you wonder how you managed without.

IV. Android Marshmallow v/s Android Lollipop: Fingerprint sensors:

With Android Marshmallow, Google has finally created a uniform standard for fingerprint sensors. That's good, because before Android Marshmallow, each manufacturer had its own software solution implemented into the system: uniform access to fingerprint sensors was therefore not possible. This is a big step forward.

V. Android Marshmallow v/s Android Lollipop: Android Pay:

Here is Google's solution for secure mobile payment. With Android Pay, Android does not store your real payment data, such as credit card numbers, but creates a virtual number for each payment method, meaning your data is always protected. Android Pay functions even with Android 4.4 KitKat, and when you combine it with Android Marshmallow's fingerprint scanning features, it looks as though this new mobile payment process is going to be more than capable of taking on Apple Pay.

VI. Android Marshmallow v/s Android Lollipop: USB Type-C:

This feature is more related to hardware than software, but in Android Marshmallow, Google has paved the way for the new USB standard: USB Type-C. With USB Type-C, you can use the USB connector in either direction inside the unit (it

flips both ways), and use your Smartphone to charge other, compatible devices. Expect to see this on a plethora of new smart phones and tablets in the future.

Comparison of Android Lollipop with Android Marshmallow:

Android version	Version name	Feature
5.0	Lollipop	• Material Design • Improved Notification • Better Battery Life • Project Volta • Continuity • Security • Performance Improvements
6.0	Marshmallow	• USB Type C • Adopted storage • Android play • Now on tap • System UI Tuner • Improve copy and Pasting • Custom Google tabs • clear permission system • Better security • Fingerprint sensors

Table 1. Comparison of Android Lollipop with Android Marshmallow

VI. System Implementation

Implementation is stage of the project when the theoretical design is turned out into a working system. Thus it can be considered to be the most critical stage in achieving a successful new system and in giving the user, confidence that the new system will work and be effective. The implementation stage involves careful planning, investigation of the existing system and its constraints on implementation, designing of methods to achieve changeover and evaluation of change over methods. This project will be the platform independent, i.e., project will be run on any operating system. Because any one can be access the project and upload it of their use. The application is implemented according to three tier architecture. Three tier architecture is commonly known as Client-Server architecture, where Client is the consumer of the services, also the requester of services whereas the server side is the provider of services. The third layer is the middle layer that converts user's requests into server understandable form. The system developed contains Android application in its front end that is the client side.

VI. SAMPLE SCREEN SHOTS

About Home Screen:-Home screen is the front screen of our application.It gives you information about the courses i.e computer science& engineering, electronics and communication engineering, mechanical engineering, electrical and electronics engineering and mechanical engineering .The front screen gives you the detail description of the student fees of each and every course. Gallery provide the

images of each events which occur every year. About us gives the description of the college.

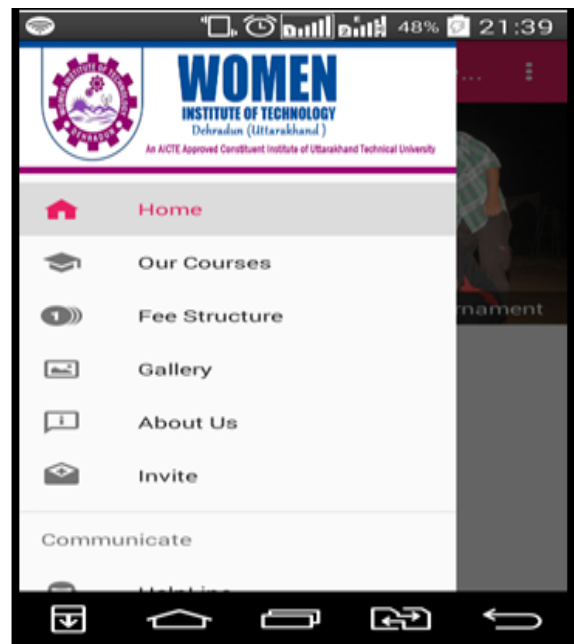**FIG 3.HOME SCREEN**

FIG 4.ABOUT US SCREEN

About us- On this screen the user can view brief description of the institute. Women Institute of Technology, Dehradun is one of the four constituent colleges of Uttarakhand Technical University that

was established in December 2011 with the approval of uttarakhand Government. The government order vide 1193/XLI/2011-56/10, dated 15.11.2011 constitute the frame of college. Thereby, WIT started functioning w.e.f September 1st 2012 at dehradun campus. W.I.T provides an excellent opportunity exclusively for diploma & B.Sc. holder women.
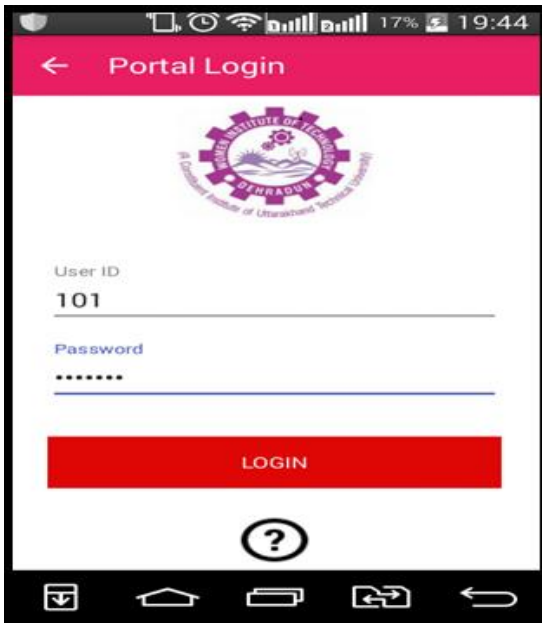
FIG 5. LOGIN SCREEN

Login Screen - On this screen the register user can login.
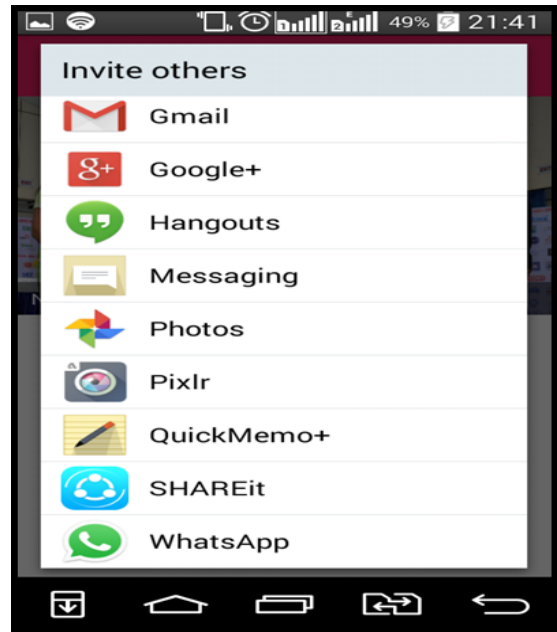
FIG 6. INVITE OTHERS

Invite Others Screen - On this screen the user can invite more users to use this application.

VII. Conclusion

This paper describesAndroid application for college through mobile devices is a very effective tool which can be used to a great extent. The application is portable and can be easily installed and used on any mobile phones supporting Android OS. The use of this application in a mobile can result in a reduction of number of hours spent than in PC. It also provides an interface which is easy to understand by the users. An Android based mobile application for college offers reliability, time savings and easy control. Not only the institution members, but also the other users can also view the college details through this application.And Android Marshmallow v/s Android Lollipop comparison has quickly made it clear that the changes

are significantly smaller than they were between the Lollipop update and KitKat. But that is not surprising; Google can't be expected to release a *huge* update every year. The improvements that have been made with Android Marshmallow are sorely needed, because Lollipop still feels like a prematurely released product and still poses problems for many users.Android Marshmallow acts as a more mature OS, and we're looking forward to what's to come.

Future Work

Our main aim with this project to give simpler, better and interactive interface to the user and a good android Marshmallow platform. In the future work, it will also work with android new version with better performance and accuracy. It will also come with its new interface.

References

[1] Lalit Mohan Joshi, "A Research Paper on College Management System", International Journal of Computer Applications (0975–8887) Volume 122 – No.11, July 2015.

[2] Ma, Li, Lei Gu, and Jin Wang. "Research and Development of Mobile Application for android Platform." (2014).

[3]http://www.gottabemobile.com/2014/11/20/android-5-0-vs-android-4-4-walkthrough/

[4] http://techtradition.blogspot.in/2014/11/pros-and-cons-of-android-50-lollipop.html

[5] Purvi Sankhe, Hardik Punamiya, Vassal Prasad, Raj Shrivastav, "Android Application for College Management System", International Journal for Scientific Research & Development| Vol. 2, Issue 02, 2014.

[6] Amita Dhale, Madhav Mistry, Tushar Zore, "A Survey on "SMART CONNECT" an Android and Web Based Application for College Management System", International Journal of Science, Engineering and Technology Research (IJSETR), Volume 3, Issue 11, November 2014.

[7] Yang, Zhilong, et al. "Research and Design of a Real-Time Interactive Application Development Model Based on the android Platform." *Computational Intelligence and Design (ISCID), 2013 Sixth International Symposium on*. Vol. 1. IEEE, 2013.

[8] N. M. Z. Hashim and S. N. K. S. Mohamed, "Development of Student Information System", University Teknikal Malaysia Melaka, vol. 2, pp. 256 -260, August 2013.

[9] S.R.Bharamagoudar, Geeta R.B., S.G.Totad,"Web Based Student Information Management System", International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 6, June 2013.

[10] Parada, Abilio G., and Lisane B. de Brisolara. "A model driven approach for android applications development." *Computing System Engineering (SBESC), 2012 Brazilian Symposium on*. IEEE, 2012.

[11] Jin Mei-shan1 Qiu Chang-li 2 Li Jing 3. "The Designment of student information management system based on B/S architecture". 978-1-4577-1415-3/12 2012 IEEE.

[12] Peng, Bin, Jinming Yue, and Chen Tianzhou. "The android Application Development College Challenge." *High Performance Computing and*

Communication & 2012 IEEE 9th International Conference on Embedded Software and Systems (HPCC-ICESS), 2012 IEEE 14th International Conference on. IEEE, 2012.

[13] Zhi-An, Yi, and Mu Chun-Miao. "The development and application of sensor based on android." *Information Science and Digital Content Technology (ICIDT), 2012 8th International Conference on*. Vol. 1. IEEE, 2012.

[14] Grgurina, Robi, Goran Brestovac, and Tihana Galinac Grbac. "Development environment for android application development: An experience report." *MIPRO, 2011 Proceedings of the 34th International Convention*. IEEE, 2011.

[15] Liu, Jianye, and Jiankun Yu. "Research on Development of android Applications." *Fourth International conference on Intelligent Networks and Intelligent Systems*. 2011.

[16] "Portable Lab: Implementation of Mobile remote laboratory for Android platform", an IEEE paper by Macro Andre Guerra, Claudia Mariline Francisco, RuiNeves Madeira, Portugal.

[17] K. B. Lee, "Developing Mobile Collaborative Learning Application for Mobile Users." International Journal of Interactive Mobile Technologies, Vol 5, No 4, 2011, pp. 42-48.

[18] Ramez Elmasri and Shamkant B. Navathe,"Fundamentals of Database Systems", Pearson Education, 5th edition.

[17] http://www.ijsrp.org/research-paper-0214/ijsrp-p26114.pdf.

[20]http://www.ijarcsse.com/docs/papers/Volume_3/6_June2013/V3I6-0134.pdf

[21]http://www.sersc.org/journals/IJMUE/vol9_no4_2014/20.pdf

[22] http://www.theijes.com/papers/v2i3/Part.Vol.%202.3%20 (2)/I0232056059.pdf.

[23]https://www.google.co.in/search?newwindow=1&es_sm=122&q=lollipop+android+features&oq=disadvantage+of+lollipop+android&gs_l=serp.3.1.0i7118.0.0.0.564625.0.0.0.0.0.0.0.0..0.0....0...1c..64.serp..0.0.0.gvSkUctXj8g

[24] http://www.startgadget.net/12-advantages-android-lollipop-5-0/

[25] http://www.android.com/versions/lollipop-5-0/

[26]https://www.google.co.in/search?newwindow=1&es_sm=122&q=disadvantage+of+lollipop+android&oq=disadvantage+of+Lollipop+&gs_l=serp.3.1.0l2j0i22i30.17403.56441.0.58564.41.28.4.9.9.1.673.5162.210j4j1j1.16.0....0...1c.1.64.serp..16.25.3947.N5YvZNDD-O0

[27]https://www.google.co.in/search?newwindow=1&q=comparison+of+all+versions+in+android&oq=comparison+of+all+versions+in+android&gs_l=serp.3..0i22i30.297651.369255.0.369473.37.33.0.1.1.0.430.4278.2-4j7j2.13.0....0...1c.1.64.serp.24.13.3980.D0bR-cVgtyU 348