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ANDROID BASED CAMPUS SOLUTION FOR COLLEGE MANAGEMENT SYSTEM

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ABSTRACT: Nowadays Smart phones have become an irresistible part of everyone's life. With these smart phones the human life is changed for better. "Android Based Campus Solution" is a college management application which basically aimed at managing most of the activities of college. The main objective of this app is to make advancement in education system and institutional activities. This application helps in adding mobility and automation in managing the institutional information. The existing system uses website for publishing notices, or peon helps in circulating notices. This is very time consuming process. The android application simplifies this process by giving instant notifications to the students or concerned staff. This application makes this process easier, faster, secure and less error prone.

KEYWORDS: Android Based Campus Solution, Education System, College Management, Advancement.

I. INTRODUCTION

In today's time the smart phone evolution has changed the lives of every individual drastically. On touch of a button the world is coming to our fingertips. This Mobile era has simplified our life by putting the world in our hands. The heart of these smart phones is their Applications. There are lots of free applications available at our service. We can order food, we can pay the bills, we can monitor our health, we can have our own personal assistant. So this list is endless. There are different college management applications available in market with the basic functionality of sharing notes, marking attendance, etc.

"Android Based Campus Solutions" is the proposed system which mainly connects the students, staff, parents, alumni with the college using mobile phone. The staff can enter attendance of students, internal test marks, can share notes, etc. The students can get notifications time to time about the tests, events, etc. The parent can anytime check their child's attendance, performance. The parents get notified with the achievements of college

students. The striking feature of this app is that the students or alumni can get their certificates, concession forms using the app. They get notified when their document is ready.

The college magazines, journals can be shared on the app hence saving cost of paper and printing. The institutional holiday list can be broadcasted on the app. The different circulars notices can be quickly forwarded. The different events schedule can be notified to the students and reminder can be sent. One more important part of the app is appointment scheduling, anyone can make use of this feature and schedule an appointment with principal and vice principal by checking their availability. Overall this application eases the communication process, institutional activities.

II. PROBLEM DEFINITION

In today's time most of the colleges have their own websites which displays college information, students can get timetables, test schedules, event schedules on these websites. But for retrieving this information the students have to log in to the website. The students can visit the website if they are having internet connection and these websites can be viewed on mobile phones as well. There is one problem with the websites that if there is no internet connection then these websites cannot be reached. Hence offline connectivity is the biggest issue with the websites. The college management involves execution of different activities, using different software for different purposes is very tedious job. So the best solution for this is to make one software for carrying out different activities involves in college management. The software can be made for mobile phones, this is called app. There are different operating systems for different mobile phones but the 83% of mobile users uses android based mobile phones. So this paper focuses on development of Android Based College management system development.

III. LITERATURE SURVEY

There are different applications available for managing college campus activities. Each app has its own features, advantages and disadvantages. These apps are made by considering requirements of that particular institute. Basically these apps serve a single purpose only and we need different apps for different institutional activities. So the thought is why not a single app serving various purposes of institution. Android Based Campus Solutions helps in doing almost all institutional activities using mobile phones.

In [1], for development of android applications, there are certain guidelines and rules to be followed which are listed in the "Mobile application development –a practical approach". The app developers least significantly adapt the existing software development processes to suit their purpose. This leads to variations in existing processes and introduces new trends hence establishing new guidelines for the developers. So there is need of official documentation of guidelines for app development, which we have also followed in the app development process. These listings are very helpful as an instructional manual for developing the app.

The app developers need to consider the security vulnerabilities of the app. The app should be protected from various security threats. There are different security practices to be followed for making a secure app. These security practices changes as per the operating systems. These security practices are the checklists to be checked while development of app.

Next important thing to consider while developing the app is to check its energy consumption. It means the app should be designed in a way that it uses less battery power. The app usage should not drain out mobiles battery. Then only the app is considered energy efficient. There are certain guidelines for energy aware automatic restoring techniques in app development; these should be strictly followed for making energy efficient apps.

In college campus there are hundreds of students studying, so communicating with these many students is a difficult task. In case of emergency the message needs to be circulated immediately, taking this into consideration there is a need of instant messaging feature. The students can be notified about schedules of tests, events, emergencies at any point of time. In college campus there are different audio, video, text or pdf files being circulated amongst the students. There is a need of an efficient file sharing system which serves this purpose. The teachers can share their notes amongst the students, not only this they can also inform the students about submission schedule, test schedule.

The teachers can make use of the presence system to input student's attendance; their marks can be uploaded along with this. The students can check their attendance record at any point of time and they are also able to check their marks. This system also helps the parents to check their child's performance and attendance record. This Android Based Campus Solution app integrates all these and some other aspects to make it unique and powerful. This app adapts the basics from the existing literature and implements it in a better way.

In [8], this Project deals with the students to assist them in the college environment with the help of android operating system. This project requires for the student to check the availability of staff members when they are in need of getting help from them and get circular information instantly.

In [9], this application provides a solution through a simple interface for maintenance of student information and also helps parents to get detailed information regarding their ward such as attendance, fees due, marks, important notice, event details, etc. It also contains query message option for parents so that parents can interact with the college faculty through this application. It also facilitates parents to gain all the notifications about the activities held in the college. Each individual parent will be provided with the details of his/her ward only.

In [11], college management system focuses on helping the staff's, lecturers who are working in the institution. The android application is focused to help the staff's for the progression and the academic development of the institution. i.e. by reducing the manual labor, checking the performance of the students.

In [12], the Android platform provides a number of algorithms for encrypting sensitive information. Some of these algorithms provide stronger cryptographic guarantees in protecting data than others. Cryptographic algorithms are harder to break when there is more unpredictability in the random numbers generated for use in encryption. A way of introducing unpredictability in Android is to use the Secure Random class. The need for encryption is twofold. Firstly, encryption makes it difficult to read and use any sensitive information that an app stores on a device. Secondly, encryption adds an additional layer of security to sensitive information that is exchanged between apps and remote server.

In [13], it is aimed at developing an Android Application on College Management on mobile phones that is of importance to either an educational institution or a college. This Application can be used as a knowledge / information management system for the college.

In [14], Android College Management system is an android application which is helpful for students as well as the colleges. In the existing system all the activities are done manually. It is very costly and time consuming. In their proposed system, students can view results using Android phones. The data will be stored in the college server. The faculty can login into their college account through the app itself and update the academic result. In this system, students have easy access for viewing the marks, provided their authentications are correct and they are not permitted to change/update the marks.

IV. PROPOSED METHODOLOGY

The proposed work has a better, energy efficient, user friendly system which is named as "Android Based Campus Solution". This app is helpful for teachers, students, parents and alumni. This app ensures the smooth communication between the college and students. The parents are also included as special member in the app so that they can get aware about the happenings in college as well as they can have a track of their child's performance. This app helps the administrative staff in issuing the different certificates to the student. This feature is digital certificate feature which eases the task of getting certificate. This is very helpful for student as they don't need to run for the certificates and apply for the same by using this app. There is e-appointment feature which makes it unique from other applications. This feature facilitates the users to take appointment of concerned authorities on touch of a button. There is a provision of event scheduler which helps to broadcast event schedules to the users. Once the event gets over it is removed automatically from the event list.

Module wise flow of proposed system:

Login Page/Landing Page Module:

This page allows a new user to sign in and a new user to sign up. Instant notification of registration of new user along with an email is sent back to the authorized email and mobile number of the user to provide security. It gives various categories options to sign as Parent/Student/Alumni/Guest/Staff etc.

About US Page Module:

Here general information of the institute along with digital uploading of any pictures is provided. So that any user can find out details about the institute and proceed.

Souvenir Page module:

It includes digital magazine or souvenir of the institute where all the information can be displayed on the app where by reduction in printing cost and instant updates from the back end application can be found.

Circulars Module:

It contributes in routine circulars and instant information sending to the various categories of the Students/Teaching and non-teaching staff along with other categories of the persons (user definable). Also images can be uploaded on the circulars and time and date can be set accordingly. Instant notification is given to the users.

Holiday List Module:

Here holiday list can be set for instant information to all the categories of the institutes.

E- Application Module:

User can apply through this page for their various certificates, concession forms etc in the prescribed format of the institute. Easy drop downs available for user to maintain the e-application through this app. Digital signature facility is available for the user to sign even with the finger tip. Once the e-application is submitted a notification is triggered to the concerned person and to the user confirming the submission. Once the approving authority approves the application a return notification is triggered to the user indicating the approval. The approving authority can use the back end panel from his mobile or his desktop.

Voice Messaging Module:

It also has unique feature to send voice messages instantly in case of urgent situation. Messages can also be prerecorded and scheduled as well. Notification will be sent to the users as soon as the voice message is delivered.

Events Module:

Events can be maintained and informed to the users for all future activities in this module. Events can be set for with time bounds, which will expire after the event is completed. Any events like guest lectures, practical's, cultural events etc. can be maintained along with images, pictures and various formats of documents. Event notification is triggered at every point.

Accolades Module:

Accolades and achievements of the students, institutes can be broadcasted using this module. Images, write ups etc. can be attached for such achievements and a common broadcast can be sent to all the users.

E-Appointment Module:

Appointment can be maintained by the users through this page where a prescribed form is available along with the calendar option for checking the slots available of the person with whom the appointment is placed. At the backend a complete kiosk is available for the user to come on the day of the appointment, key in his/her token number and inform the concerned person of his presence. Once the appointment is completed next token number notification would flash at the meeting room counter. KISOK screen is also available to be displayed at the waiting room.

Other modules like Manage profile/Change password etc. are available for users to maintain their credentials. The entire app has a complete back end application where all the pages can be maintained by the admin or a designated user.

V. ARCHITECTURE OF PROPOSED METHODOLOGY

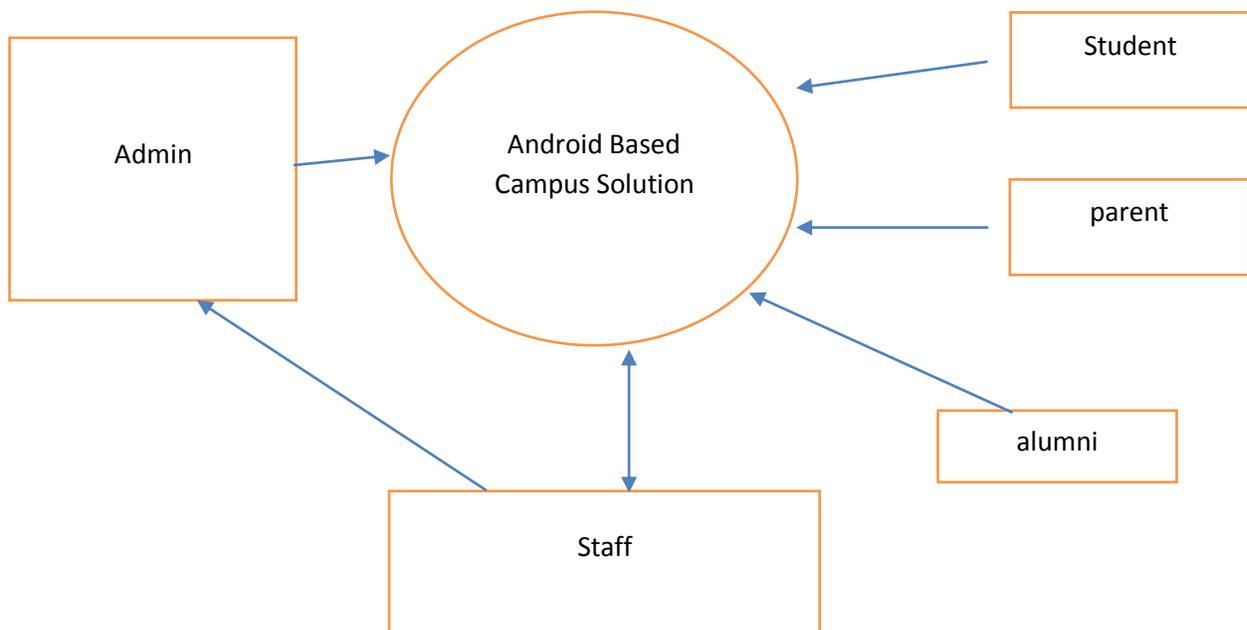


Fig.1 Architecture of Proposed Methodology

VI. ADVANTAGES

- This app is available in play store and users can download it use it.
- As this is an app, it facilitates the offline data access.
- The different notifications are sent easily and quickly.
- The design is very user friendly
- The app is designed by following the security guidelines hence protects the app from vulnerabilities.
- This app is very energy efficient and doesn't drain the mobile phones battery.
- This app integrates almost all major tasks in college management system hence provides one stop solution for the users
- The data is stored on backend server and can be retrieved at any point of time.

VII. CONCLUSION

This app gives the mobility and automation to the institutional activities. This app gives an easier, safer and quicker way of connectivity with college. This app is completely secure and battery safe. The information can be quickly retrieved from backend server but in a user friendly way. This app helps in saving cost of printing and papers, as most of the paper work is done electronically. So this app helps in keeping pace in this mobile era.

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