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Student Information Services

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ABSTRACT

Smart phones are used to manage all the day to day operations at anywhere anytime. Traditional student interface models are time consuming with limited reachability scope. Student information service (SIS) is build as a mobile App to act as an interface between the collect management and students. Attendance, activities, announcements and mark details are provided in the mobile application.

This paper is aimed to developing on Online Internet Based Information System that is of importance in educational institution or collages.

The proposed system is an Android application to manage all the activity of a student in his academic session. This application is introduced to keep a tract on various activity of the child through his or her parents. The various important key relations to student life is included in this application through which parents get aware of their child. Another thing parents are not aware of their child regularity and its seriousness towards his collage and study, so this application is made get know parents about their score and attendance and as well as other notices related to their academic session of which parents are not aware.

Index Terms: Smart Phones, Mobile Apps, Student Information Management, Android and Events Announcements

1. INTRODUCTION:

Changes in Information Technology (IT) allow colleges to utilize databases and applications thus, making the accessing of records centralized. One of the changes that came about is the online-based applications. These applications are an improvisation to the traditional- transaction processing systems. Thus, most universities switch to the online system because of its efficiency to acquire, process, store and retrieve information from the Internet.

The Student Information System (SIS) would be a new way of record management and transaction processing that would achieve efficiency on processing student information. It would be a great help to the administrative personnel, academic personnel or stakeholders and students in updating, retrieving and generating student data.

With the advance in time and technology there is a need for faster dissemination of information .The increasing advantages of automated system now are at highest position thus many manual processes are automated. Since the automated system is demanded now-a-days, educational infrastructures like colleges needed their manual system to function on mobile computing systems. Changes in Information Technology (IT) allow institutes to utilize databases and applications such as Student Information System thus, making the accessing of records centralized. One of the changes that came about is web based applications. These applications are an improvisation to the traditional- transaction processing systems.

The main objective of this project is to add mobility and automation to the process of managing student information in an institute .The system bridges this gap between the end-users and the contrivance planning managers by providing centralized control over the entire system. Different departments utilize the system for sequencing different processes that are isolated apart.

The system being designed is economically with respect to the students and teachers point of view .The goal is to extract useful information from an unstructured data using the concept of information retrieval, filtering and secure random algorithms .To develop an enhanced student information management system that can help solve drawbacks of existing ERP system. Our basic approach attempts to develop a smart phone based application using Android which can be used to make this process easier, secure and less error prone. More efficient information will be achieved through this system .To provide access to information related to college departments, uploaded assignments, notes, news and events, exams, discussion forum and daily time table on the go.

2. Literature Survey

There are no satisfactory solutions for achieving student information. Due its continuous evaluation process. This has led the researches for it. Challenges that need to be considered prominently are difficult in implementation of student information system.

All researchers have aimed to develop and provide a generalized solution to monitor the various works that are carried out by a College for automation of various tasks. They provide up to date information of the system which improved efficiency of college record management and decrease the space between student and college. The major contributions to this topic are summarized below:

It is discussed in [1], a mobile solution for those students who are registered with senior design project capstone course of bachelor engineering technology program. During the process of registration, the student likes to choose those projects supervisors who are flexible and committed to them for successful completion of their project at the end of the semester.

It is observed in [2], student information system manages all sorts of student details, academic related reports, college details, fee details, results, batch details, attendance details. It tracks all the details of

the student from very first moment to the end of the course which would be utilized for all reporting purpose and all these will be available through a secure, online interface embedded in the college's student record management system.

It is observed in [3], proposed student information supervision system, that give path for maintaining of student information and also provides the guidelines for students in different areas, and it also provides the different facilities to the student related to the placement exam section details etc. technologies they used are HTML, CSS, JAVASCRIPT, PHP and SQL.

In [4], the authors proposed a system using android operating system and removes all anomalies of existing system, it has various features, e-schools, colleges, attendance information is available 24*7,significantly reduces paper wastage. This mobile application will maintain the student attendance. An attendance system is presented which will greatly reduce the work load, save time for taking attendance at various places like school, colleges. In [5], proposed an application which provides the respective student details i.e., their internal marks, total number of days they attend the class ,technologies used are android, SQLite, Development tools are eclipse, android SDK. In [6], they proposed M learning environments M-learning has enhanced the e-learning by making the learning process and exam security in M learning environments and it provides appropriate security services.

3. Problem Definition

Presently to maintain information about different aspects, the collage is using manual process i.e. using books and ledgers. Now the collage requires a computerized environment where it is easy to storing information about student details, their attendance, marks, report faculty, course details, and schedule so on.

So after seeing this we know that this manual process is time consuming, and it's difficult to maintain the data also and its leads to wastage of stationary and increasing human efforts to maintain this all. So by using this computerized application through mobility service its get efficient and get replaced this entire problem.

4. Smart Phones and Android

A smartphone is a mobile phone with an operating system. Smartphones typically include the features of a phone with those of another popular consumer device, such as a personal digital assistant, a media player, a digital camera and/or a GPS navigation unit. Later smartphones include all of those plus the features of a touchscreen computer, including web browsing, Wi-Fi, 3rd-party apps, motion sensor, mobile payment and 3G. Devices that combined telephony and computing were first conceptualized by Theodore G. Paraskevakos in 1971 and patented in 1973 and were offered for sale beginning in 1993. He was the first to introduce the concepts of intelligence, data processing and visual display screens into telephones which gave rise to the "Smartphone." They were installed at

Peoples' Telephone Company in Leesburg, Alabama and were demonstrated to several telephone companies. The original and historic working models are still in the possession of Paraskevakos.

The first mobile phone to incorporate PDA features was an IBM prototype developed in 1992 and demonstrated that year at the COMDEXcomputer industry trade show. A refined version of the product was marketed to consumers in 1994 by BellSouth under the name Simon Personal Communicator. The Simon was the first cellular device that can be properly referred to as a "smartphone", although it wasn't called a smartphone in 1994. In addition to its ability to make and receive cellular phone calls, Simon was also able to send and receive faxes and e-mails and included several other apps like address book, calendar, appointment scheduler, calculator, world time clock and note pad through its touch screen display. Simon is the first smartphone to be incorporated with the features of a PDA.

Android is an open-source platform founded in October 2003 by Andy Rubin and backed by Google, along with major hardware and software developers that form the Open Handset Alliance. In October 2008, HTC released the HTC Dream, the first phone to use Android. The software suite included on the phone consists of integration with Google's proprietary applications, such as Maps, Calendar and Gmail and a full HTML web browser. Android supports the execution of native applications and third-party apps which are available via Google Play, which launched in October 2008 as Android Market. By Q4 2010, Android became the best-selling smartphone platform.

Android Operating system should ensure the security of users, user's data, applications, the device and the network. To achieve the security of these components Android provides these key security features:1) Security at the Operating System level through the Linux kernel. 2) Application sandbox for all applications 3) Secure interprocess communication. 4) Application signing. 5) Application-defined and user-granted permissions.

A sandbox is a security mechanism for separating running programs and limiting the resources of the device to application. It is often used to execute untested code or programs from untrusted users and untrusted websites. By using sandboxing technique limited access to device's resources is given. Therefore security of the system is increased. Sandboxing technology is frequently used to test unverified programs which may contain a virus or other malware code, without allowing the software or code to harm the host device. With the help of sandbox untrusted program access only those resources of the device for which permission is granted. Permission is denied if it tries to access other resources of the device.

Some of the applications still use traditional Linux techniques such as network sockets, file system and shared files for inter-process communication. But android operating system also provides new mechanism for IPC such as Binder, Services, Intents and Content Providers. All these mechanism allows developers to verify the identity of application and also used to set the security policies.

In order to install and run applications on Android OS they must be digitally signed. This feature also used to establishing trust relationship between applications. If an application is no signed properly then it cannot be installed on the emulator also. Some standard tools such as Keytool and Jarsigner are used to generate keys and sign application .apk files.

Permissions are an Android security mechanism to allow or restrict application access. By default, Android applications have no permissions granted, making them safe by not allowing them to gain access to protected APIs. Some of the protected APIs include: Camera functions, Location data (GPS), Bluetooth functions, Telephony functions, SMS/MMS functions and Network or data connections. These resources are accessed only through the operating system.

5. ANDROID BASED STUDENT INFORMATION SERVICES

The Android Based Student is developed to provide student information regarding collage activities such as events organized at collage level and department level as well, circular activities, conferences, attendance, marks, general notices etc. This information should be provided to student in a effective way.

If we look towards a real scenario normally done in collages that the notices and marks were displayed in notices board through which only students get know about it but parents not, to get it know to parents also this application is made. This application mainly woks in two model first the Android mobility application and secondly the Web side application in which JSONS web application service is used as well oracle database is provided.

The working is done in two models, like firstly the admin which is going to enter all the data of students in database it will be its attendance, marks, and its remarks towards his or her performance, any notice and lastly information about his or her fees. The admin enter this data in database and according to a specific students parents will login from an Android application by providing correct user id and password for login, after login whatever the data is entered in a system of that sacrifice student is reflected to its user from database to Android mobile application. Our system has seven modules, they are administrator, student, course, department, exam, attendance through mobility services its get efficient and get replaced this entire problem.

The student information service application is designed to provide the students information through mobiles. The data upload activities are handled by the administrator environment. The mobile app is build to support the student data access. The system is divided into five major modules. They are Attendance Management, Activities, Announcements, Internal / Semester Marks and Calendar.

Students' attendance information is provided under the attendance management module. Conference, seminars and workshops details are provided under the activities module. The announcements module

is build to issue the circular details. Student academic performance details are provided under the internal/semester marks module. College working schedules are provided in the calendar module.

5.1. Attendance Management

Students attendance information are uploaded by the Admin everyday in the morning. Absentees list is uploaded to the database in the web server environment. Student absent details are send to the parent through the SMS. Students can view their attendance history through the App.

5.2. Activities

The Admin uploads the activities information with schedules and descriptions. Seminar, Conference, Symposium and Workshop details are uploaded to the server. Completed activity details are automatically removed from the activities list. The students can view the activities details through the mobile App.

5.3. Announcements

Official information that are announced by the management are provided in the Announcements module. Examination schedules, Fee details and leave details are uploaded by the Admin. The announcements are listed with priority levels. The students can view the announcement through the mobile App.

5.4. Internal / Semester Marks

The internal and semester mark details are uploaded by the Admin. Three internal marks are uploaded to the server. Semester marks are uploaded for each students. Students can view their mark details for selected semester.

5.5. Calendar

The college calendar provides the working day schedule with day order information. Calendar schedule changes are updated by the Admin. Leave schedules are also provided in the calendar. The schedule details are listed for the selected month.

6. CONCLUSION

In this paper an efficient method proposed “Android Based Student Information System” for challenging information technology allows colleges to utilize database and applicant such as SIS Student Information System, thus making the accessing records centralized. This proposed system is mainly concentrated and efficiently on student information system for achieving better information to all staff and members involved institutions.

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