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# College Parent Interaction using Android Application

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**Abstract -** In recent years the Android Technology with web services has brought many drastic changes in mobile application development field. The creation and management of accurate, up-to-date information regarding a student's academic career is crucial for the colleges. Now-a-days the information to parents regarding their ward is provided through post cards, SMS or E-mail, but these techniques are very time consuming and lengthy. Hence 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 contain query message option for parents so that parents can interact with the college faculty through this application. It also facilitate 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.

**Keyword -** *Android technology, PHP, MySQL, student information.*

## 1. Introduction

We have seen over the years that the process of notice boards, important notification about academics has been carried out manually almost across all educational institutions. The process is not only time consuming but also inefficient. This traditional system requires a manual work of writing notifications, taking printouts, displaying it on notice boards and also requires students to watch periodically. It uses a lot of paper work. Today, we need not to maintain paper based Notice boards. Following this thought, we have developed a system based on the concept of web services which is implemented on Android mobile application as well as on PC that communicates with the database residing on a remote server. This paper focuses on how the students are able to get notifications right on to their mobile application.

In this paper the author's show that how the concept of web services will be useful for communication between remote server and Android mobile application. With the help of this Application parents are able to access all the details regarding their ward. All data is stored securely on SQL servers managed by the college administrator and ensures highest possible level of security. The system features a complex logging system to track all parent's access and ensure conformity to data access in order to reduce the manual work by visiting the college personally which will help the parents to save time from their busy schedule.

Fig. 1 Android Technology

## 2. Related Work

In any educational system, notices, important notifications, information about any event etc. are displayed on the notice board. In this manual system student didn't get vital information about their academics or any updates about notifications regarding events on timely manner. The sizes of notice boards are small due to this only important notifications are placed there. The notice boards are distributed among different departments of college therefore it is not possible for student to visit each department for getting updated information about their notifications, events.

### 2.1 Existing System

SMS based student information system for schools and colleges provide timely and critical student information to the parent. This application allows the parents/caregivers to send an SMS to a predefined number from an already registered mobile number for the required information. Upon receiving the SMS request, the application automatically queries the database for the required student information based on the mobile from which the request has come from and sends back the reply SMS with the requested information..

### 2.2 System Architecture of SMS-Based Student Information

Following shows the System Architecture for SMS-based System:

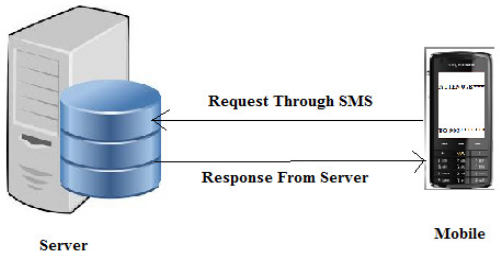



Fig. 2 System Architecture For SMS-based Student Information

SMS-based Student Architecture have following steps :

1. Parent request for some information about his or her ward through predefined number.
2. Server maps that predefined number with Student Name.
3. Server search the Student's information which is requested by the parent.
4. Server sends the Student Information to the requesting parent by SMS.

### 2.3 Advantages

- It is used minimize the manual work load.
- Intended to provide efficient services like (student attendance , marks…….)

### 2.4 Disadvantages

- It is hectic and tedious job.
- Data cannot be accessed concurrently.
- Increase paper work in case of first system.

## 3. Implementation Details

### 3.1 Proposed System

There is a need to gap the bridge between teachers and parents by designing an android app to provide timely and critical student information to the parents. It is a standalone Application and can be used in various institutions like schools, colleges, etc. There are three kind of user who will be using our application HOD, admin and parents. Each one they got to login into the application to access the internal system. Parents will be using the application through smart phone. College staff will get screen to add details of students attendance and fees structure. HOD and Staff members can post any notification on the system which then gets visible to parents. An option to parents to directly interact with the HOD is provided basically an internal chat.

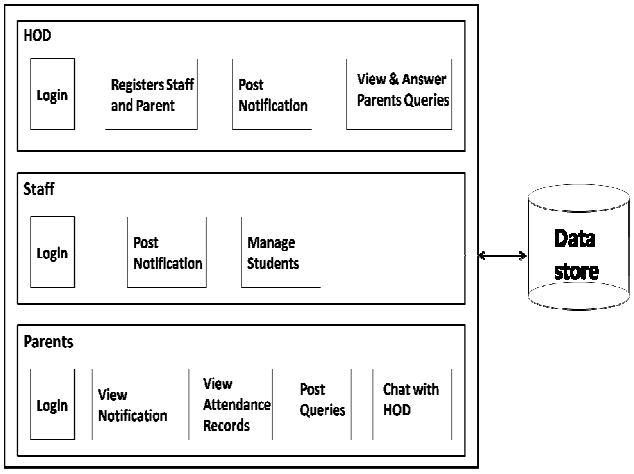



Fig. 3 System Architecture

The Proposed System tries to

- Providing the online interface for faculty and Parents.
- Increasing the efficiency of college record management.
- Reduces time required to deliver notices.
- To make the system more secure.

The Proposed system can be categorized by the following modules:

### A. College Staff Registration and Login

This module will consist of registration of college user. Registration of college staff and student parents will be done by HOD from web panel. Only HOD has the right to

create staff login and parents login. Staff member of college can login with the credentials which has been given to them.

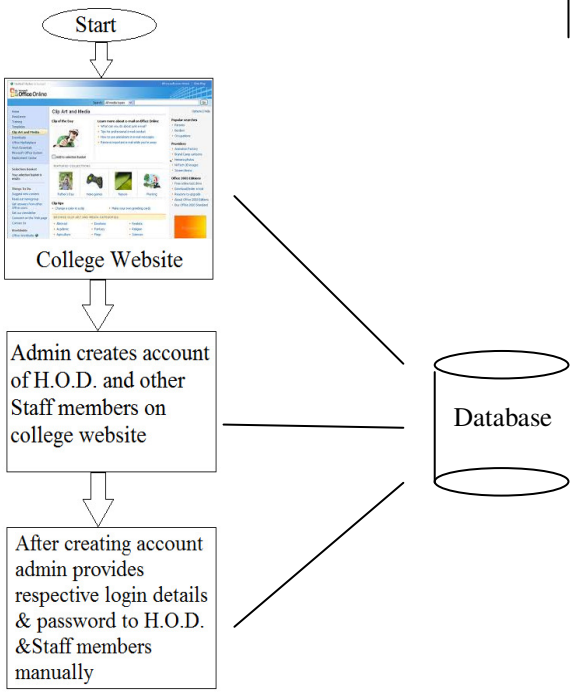



Fig. 4 College Staff Registration and login

## B. Staff Login and Create Student Database

Staff member will login and will create the user under each class and feed in their data. Data will be saved in database as per their entry from web panel.

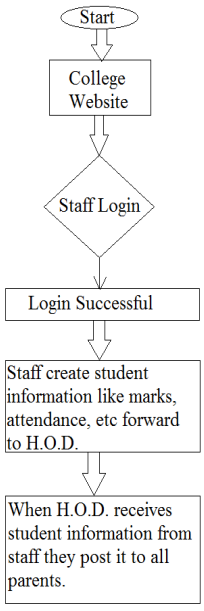



Fig. 5 Staff Login

## C. Student Notification, Attendance and Fees Entry

Staff member has an option under their panel to enter the fees details about each and every student and also enter the attendance records so that parents can view their individual data. Staff member can push on notification to their students.

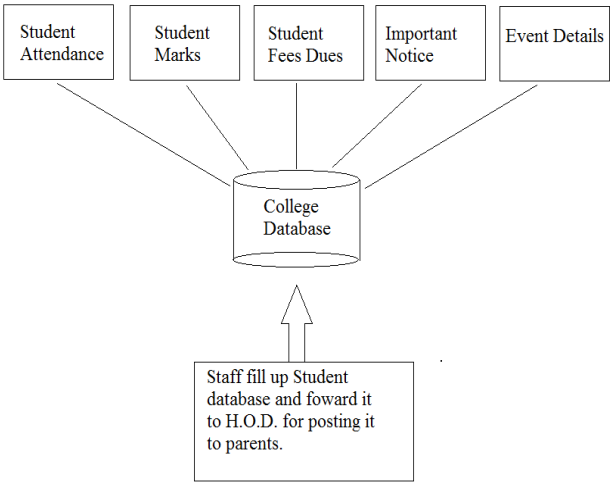



Fig. 6 Student Information Database

## D. HOD login

HOD will create staff member once he logs into the application from web panel. Even HOD has the right to forward any notification or notice to student or their parents.

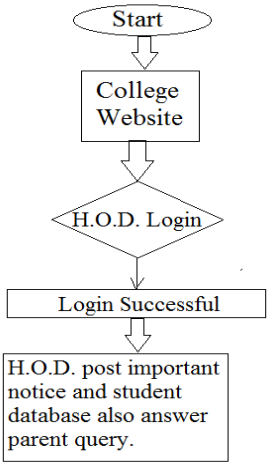



Fig. 7 H.O.D. Login

## E. Parents login (Android)

Parents will use the login credentials to login into the application from android device. After they login they can view the current notification from college side, they got

an option to view the attendance data of their own child to know about their attendance.

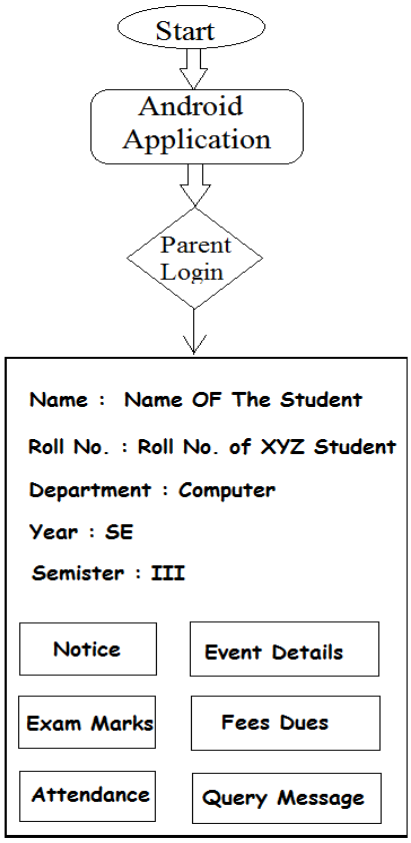



Fig. 8 Parent Login

### F. Parents Query Post

Parents also has an option to push forward any queries and can interact directly with HOD. Queries forwarded in the system will be under HOD panel and only HOD has the right to answer up parents query timely.

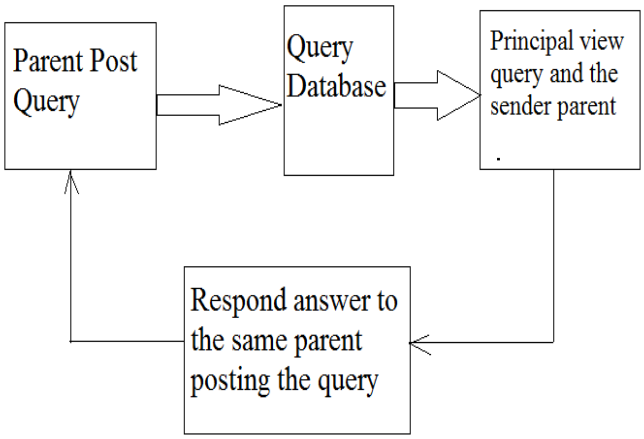



Fig 8: Parents query post

## 4. Mathematical Model

### 4.1 Problem Description

Let, S is the System such as

S = {A, W, C, ST, P, SR, AP , I, L, Au}

where,

**A:**Admin, he deploys app on college website. He also updates student information on college server.

**W:** College website, where app is present.

**C:**College, is the institute where student takes admission for education.

**ST:** Student, whose information is to be updated on college server like marks, attendance, exam schedule, etc {ST1, ST2, ST3, …….STn}.

**SR:** Server, where admin stores all student information.

**P:** Parents, fills registration form and submit it to admin{P1, P2, P3, ……Pn}

**AP:** Android application, that is to be installed by parent from college website

**L:** Login, Parents login into their account

**Au:** Authentication Process.

**I:** Information where 'I' is set of

I={M, AT, E, F, No }

Where

**M** = Marks,
**AT** = Attendance,
**E**= Exam schedule,
**F**=Fee dues,
**No**=important notification of college.

### 4.2 Activities

**Activity 1:** Admin deploys app on the college website.
f(A)={W}

**Activity 2:** Student takes admission in college**.**
f(S)={C}

**Activity 3:** Parents fill registration form and submit it to admin.
f(P)={A}

**Activity 4:** Admin update student information on college server.
f(A)={SR}

**Activity 5:** Admin mails login credentials to parent on his given mail address.
f(A)={P}

**Activity 6:**Parent install app from college website.
f(P)={W, AP}

**Activity 7:**Parent enter login id and password.
f(P)={L}

**Activity 8:**Authentication Process starts.
f(A, SR)= {Au}

**Activity 9:** Admin gives authentication to parents
f(A)={P}

**Activity 10:** Parent access student information
f(P)={I}

## 4.3 Venn Diagram

**Activity 1**: Admin deploys app on college website.

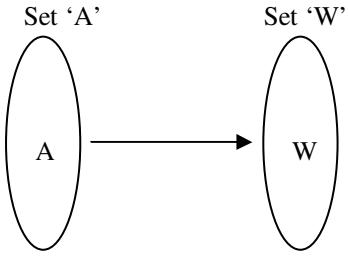



Fig 9: Activity 1

**Activity 2:** Student takes admission in college.

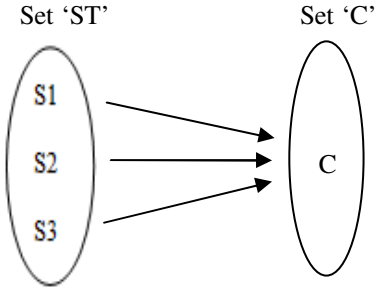



Fig 10: Activity 2

**Activity 3:** Parents fill registration form and submit it to admin.

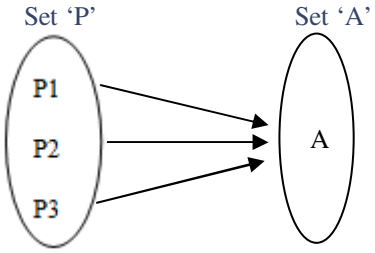



Fig 11: Activity 3

**Activity 4:** Admin update student information on college server.

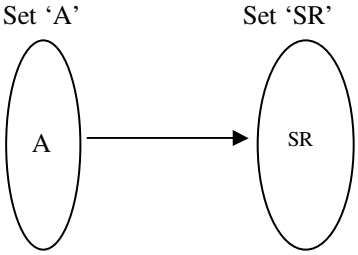



Fig 12: Activity 4

**Activity 5:** Admin mails login credentials to parent on his given mail address.

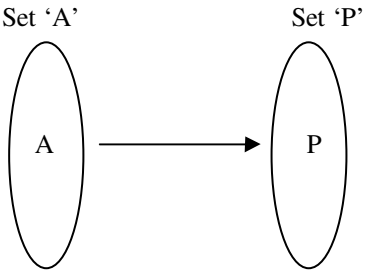



Fig 13: Activity 5

**Activity 6:** Parent install app from college website.

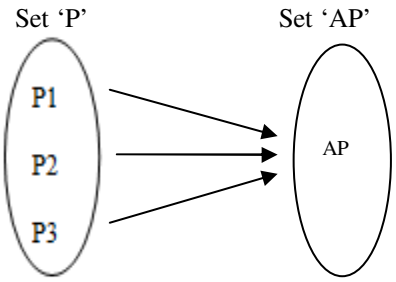



Fig 14: Activity 6

**Activity 7:** Parent enters login id and password.

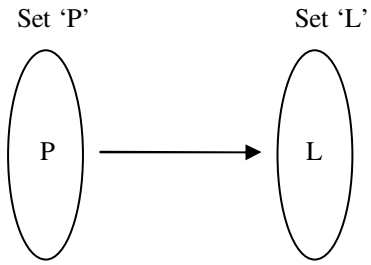



Fig 15: Activity 7

**Activity 8:** Authentication Process starts.

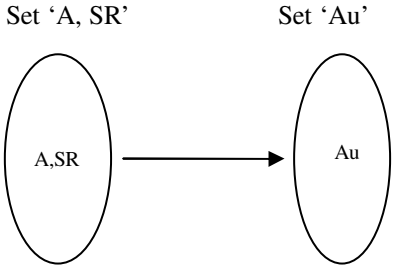



Fig 16: Activity 8

**Activity 9:** Admin gives authentication to parents.

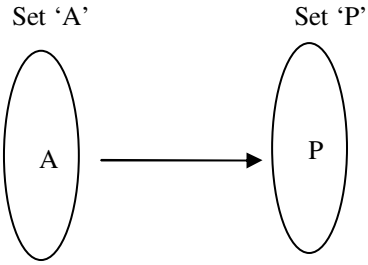



Fig. 17 Activity 9

**Activity 10:** Parent access student information.

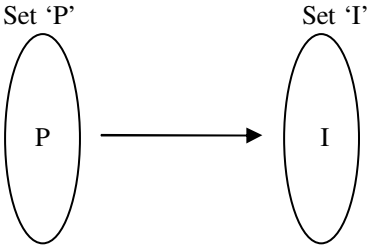
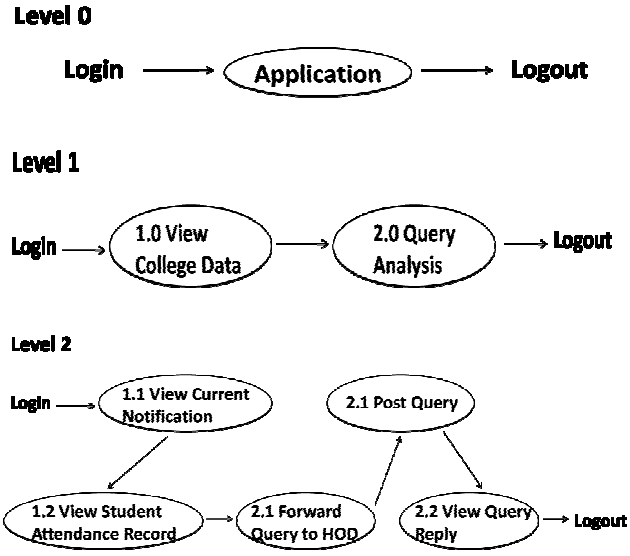



Fig. 18 Activity 10

4.4 Data Flow Diagram




## 5. Conclusions and Future Work

This application in automating the existing manual system. This is a paperless work. It reduces man power required. It will provides accurate information always. All years together gathered information can be saved and can be accessed using application at any time. This System is essential in college. All the administrator, HOD, parents, faculty can get the required information without delay. As this application is only made for the general purpose it can be generalize to big scale use such as in colleges, university and even distance education can be benefited from this application as this app can provide all related information according to the ward without direct contacting the staff. Features like video calls between the staff and parents can also be added to this application. In future we can also add the feature like paying the fees of the ward.

**Acknowledgments**

It is our great pleasure to express our deep sense of gratitude to Mrs. Rachna Sable, Computer Science, for her valuable guidance, inspiration and whole-hearted involvement during every stage of project preparation. Her experience, perception and through professional knowledge, being available beyond the stipulated period of time for all kind of guidance and supervision and ever-willing attitude to help, have greatly influenced the timely and successful completion of project preparation.

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