An Android Application for Student, Parent College Interaction System

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ABSTRACT

College Parent Interaction is a new concept which is very useful to both staff members and as well as parents and students. In this project staff has to update the timetable details, students details, syllabus, attendance percentage, and the events going to held will be updated in the database. Head of the department can view all the details uploaded by the staffs. Parents have to logon to their account using their student's register number and selecting the particular year. After successful login parents can view their student’s internal marks, semester marks, attendance details of that student, and the fees details of that student. Same as in students also, student have to logon to their account using register number after successful login students can see their own internal marks, semester marks, and the attendance details, time table, and syllabus also. Students have to send leave form using this application to their corresponding staff and staff have to send that to Head of the Department.

Keywords: Android, Application, Attendance.

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 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 the 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 a 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.
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, students didn’t get vital information about their academics or any updates about notifications regarding events on a 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 a 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:

![System Architecture For SMS-based Student Information](image)

**SMS-based Student Architecture has following steps:**

- Parent request for some information about his or her ward through the predefined number.
- Server maps that predefined number with Student Name.
- Server searches the Student’s information which is requested by the parent.
- The 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 a hectic and tedious job.
- Data cannot be accessed concurrently.
- Increase paper work in case of the 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 is three kinds 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 the screen to add details of student’s attendance and fees structure. HOD and Staff members can post any notification on the system which then gets visible to parents. An option for parents to directly interact with the HOD is provided basically an internal chat.

**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 parent’s login. A staff member of college can log in with the credentials which have been given to them.

Head of the department can view all the details uploaded by the staffs. Parents have to logon to their account using their student's register number and selecting the particular year. After successful login parents can view their student’s internal marks, semester marks, attendance details of that student, and the fees details of that student.

B. Staff Login and Create Student Database

A staff member will log in and will create the user under each class and feed in their data. Data will be saved in the database as per their entry from web panel.
C. Student Notification, Attendance and Fees Entry

A 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. A staff member can push on notification to their students.

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.
E. Parents login (Android)

Parents will use the login credentials to login into the application from the android device. After they login they can view the current notification from college side, they gotan option to view the attendance data of their own child to know about their attendance.

![Fig. 8 Parent Login](image)

F. Parents Query Post

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

![Fig 9: Parents query post](image)

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, \(A: \text{Admin}\), he deploys the app on college website.
He also updates student information on college server.
\(W: \text{College website, where app is present.}\)
\(C: \text{College, is the institute where student takes admission for education.}\)
\(ST: \text{Student, whose information is to be updated on college server like marks, attendance, exam schedule, etc} \{ST1, ST2, ST3, \ldots \ldots STn\}\).
\(SR: \text{Server, where admin stores all student information.}\)
\(P: \text{Parents, fills registration form and submit it to admin}\{P1, P2, P3, \ldots \ldots Pn\}\)
\(AP: \text{Android application, that is to be installed by parent from college website L: Login, Parents login into their account}\)
\(Au: \text{Authentication Process.}\)
\(I: \text{Information where ‘I’ is set of}\)
\(I= \{M, AT, E, F, No \} \text{ Where}\)
\(M = \text{Marks, } \ AT = \text{Attendance, } \ E = \text{Exam schedule, } \ F = \text{Fee dues, } \ No = \text{important notification of college.}\)

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

Activity 2: Student takes admission in college

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

Activity 4: Admin update student information on college server

Activity 5: Admin mails login credentials to parent on his given mail address
Activity 6: Parent installs app from the college website

Activity 7: Parent enters login id and password

Activity 8: Authentication Process starts

Activity 9: Admin gives authentication to parents
Activity 10: Parent access student information

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 provide accurate information always. All years together gathered information can be saved and can be accessed using the 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 generalized 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. This goal.

6. REFERENCES

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BIBLIOGRAPHY

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