VIVA-Tech SAM: Student Attendance Management System

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ABSTRACT

Attendance is a daily activity performed by every institute and college to maintain the records of student's attendance. This record is then used by the faculty of the college whenever needed.

The current system involves a lot of manual work. This paper focuses on designing an automated attendance management system which reduces much of the manual procedure. The proposed system is able to store records of student attendance provided by the subject teacher, generate cumulative and defaulter lists and undertaking form automatically. This system can also calculate out of 5 marks for individual student which are required at the end of each semester and provide the attendance details to the subject teachers and to the parents of the student.

General Terms

Attendance, faculty, system, automated, defaulter, marks, student.

Keywords

VIVA-Tech SAM - VIVA-Tech Student Attendance Management, Biometric Technology, RFID- Radio Frequency Identification, OCR.

1. INTRODUCTION

Attendance is undertaken in every institute and college. The stored attendance is then used for the analysis by the faculty. The exisiting system involves a procedure which is conducted manually by the teachers. In exisiting system, the recorded attendance is stored in the register or on attendance sheets which are handled by the respective teacher, thus the students does not have any access to the records. Defaulter list is formed using these stored records, the calculations required are manually done by the staff. These calculations may lead to human errors and are also time consuming. To inform the parents about the defaulter student, an undertaking form is generated by the faculty and is physically distributed to the student. The form is then signed by the parents of the respective student and is handed over to their class teacher. Since all the records are stored either in register or on attendance sheets and are needed to be maintained throughout the semester, the burden of record keeping is encountered.

2. RELATED WORK

Many systems have been developed to store and maintain the attendance records. These various systems include different methods and technologies. Some attendance management systems are based on Biometric Technology [1] which marks the attendance using fingerprints of employees. In some systems attendance is stored and maintained using RFID technology [3] and some uses combination of RFID technology and Face Recognition [5]. The attendance can also be stored using Location Based Time and Attendance System [7]. This system by using the location can determine whether the employee is inside the organization or not. System based on OCR technology [9] is also developed. This technology enables the marking of attendance without user intervention. Also a system is developed which stores the attendance in a computerized way provided by the teacher of a particular class and can also generate report automatically [11].

3. PROPOSED SYSTEM

The proposed system is a web application to automate the attendance maintainence which is done manually in the existing system. The proposed system is platform independent and is accessible from web browser.

Using this web application, student are able to see their cumulative attendance records through an open interface at any time from a web browser. The cumulative record is displayed based on the choice of student (i.e. date wise, overall). Also defaulter list is automatically generated by the system, the calculations required are done automatically by the proposed system. To notify the student's parents about the low attendance an SMS will be sent to them automatically by the system.

According to Mumbai University Engineering syllabus, students have 5 marks for their attendance in term work. These marks are calculated by the proposed system against each student.
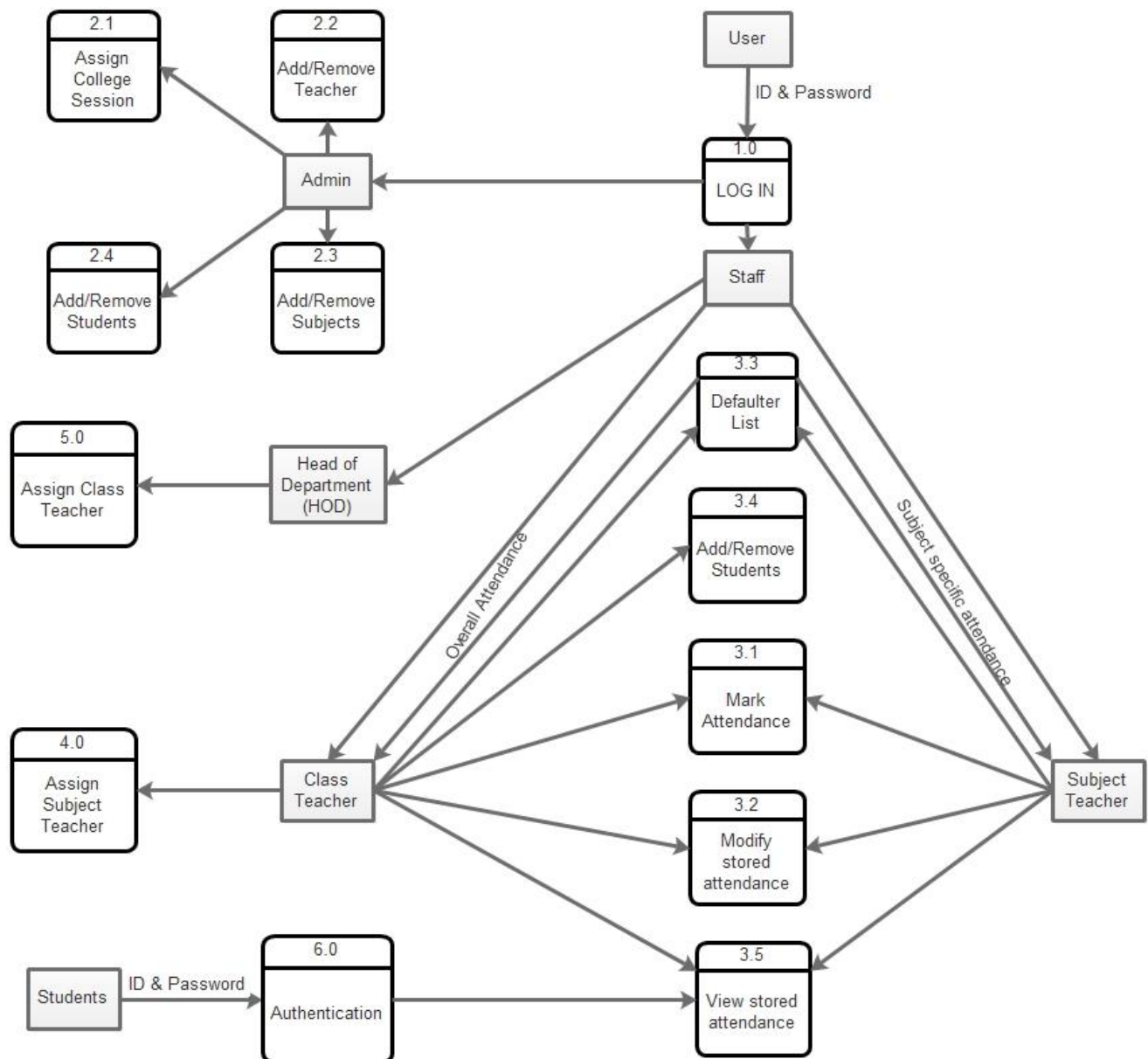
3.1 Flow of the System

Figure 1: Flow Diagram of the System

Above figure 1. shows the flow of VIVA-Tech SAM system. This system consists of two types of user account- Administrative Account and Staff Account.

i. Administrative Account

Administrative account consists of following functions:
*   Add/Remove Teacher

*   Add/Remove Subject

*   Assign College session

ii. Staff Account

Staff Account consists of three accounts- HOD, Subject Teacher and Class Teacher.

HOD consists of following function

*   Assign Class Teachers

Subject Teacher consists of following functions

*   Mark Attendance

*   View/Modify Attendance

*   Retrive Cummulative and Defaulter List for their respective subject

Class Teacher consists of functions included in Subject Teacher account and also contains some additional functions like

*   Add/remove Students

*   Sort Student List

*   View Defaulters

*   Assign Subject Teacher

This system also includes an additional student section function using which students are able to view to their attendance records.

4. IMPLEMENTATION

The proposed system is a web application, hence it is accessible from any platform and whenever required. This system is developed using PHP5 for server scripting, JAVASCRIPT is used for validation purpose, CSS3 is used for designing frontend using BOOTSTRAP Framework, AJAX is used to implement dynamic response and MySQL database to store the data.

5. PARTIAL OUTPUT

Figure 2: Assign Head of Department

Figure 2 represents the GUI of Admin for assigning Head Of Department (HOD) for a particular branch. It also shows the various teachers that are assigned as HOD for their respective branches. Also various functions of Admin are visible in the menu of the figure.

Figure 3: Assign College Session

Figure 3 represents GUI for assigning college session for the VIVA-Tech SAM system. This functionality is accessible for the admin only. Many functionalities of the system are depended on this college session assigned by the admin.

Figure 4: Mark Attendance

Figure 4 represents a GUI for marking attendance of a class. This functionality is accessible to all the subject teachers of all the branches in the institute. Also various functionalities of subject teacher are mentioned in the figure.

Figure 5: Defaulter List

Figure 5 represents the GUI showing defaulters of a particular class. This functionality is used by each of the subject teacher assigned in various branches of the institute to view the defaulter students in their subject respectively. Also the subject teacher can take a print of the list whenever required.

6. CONCLUSION AND FUTURE SCOPE

This paper results to a system that provides easier record keeping, generate defaulter list automatically, provide an interface and dynamic analysis of attendance to students, printing undertaking form for students etc. Also it provides additional facilities like SMS and Email services for contact purpose. Also the system automates the procedures and reduces much of the work which is presently manually done.

The future scope of this web application is that this system can be implemented using OCR/OMR technology wherein the procedure of manual input of attendance records entered by the subject teacher can be removed hence minimizing human effort.

7. REFERENCES

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