



Student Management System – A Survey

Krithi P¹, Dr M Ramakrishna²

PG Student¹, Professor²

^{1,2} Computer Science and Engineering,

Vemana Institute of Technology, Bangalore-34

Abstract: Student Management System is essential for an institution or to a college or to a university, which utilizes computer, also which reduces manpower. Student Management System manages several student details like USN, student attendance, internal assessment marks, parent name, phone number, email-id, date-of-birth, class, sex etc. The goal of evolving this application is to induce the report regarding attendance at the completion of the conclave or at the middle of the conclave. Also it is possible to get the average of internal assessments and it is easy to get the report at the end. Student's and faculty's details uploaded by the admin. He will give username and passwords to the respective. Faculty will update the student status by putting present or absent. Suppose if particular student is absent, the message will be sent to the respective parent and email will be sent to parent. Finally student can only view his details, he can take the report. Student Management System has four modules. Initially admin will login, login module. Later he is going to upload the details of student, called student data module which has the functionalities like searching, inserting, updating and deleting the student data. At the end of the session report will be generated, called report module which is generated in the pdf format. If particular student is absent his status will be sent to the parent by a SMS, called SMS module, and email will be sent to the respective parent and it is known as email module.

Keywords: Student Management System, Login module, Student data module, SMS module, email module, report module.

I. INTRODUCTION

As colleges got expanded the number of students also gets increased and also the student related contents increases. Student Management System (SMS) is application software which is deliberated to begin with exchange of information in a secure manner to affiliate with students, faculties, parents and the college/school administration. The suggested system contains whole data regarding information of the student such as informing parents regarding students' progress through mail system, and also modifying the student particulars through the application can be achieved successfully, student progress reports on consistent basis will be sent to respective parent in letter format in regular intervals. The faculty will be going to enter the student data contains the information (like USN number, mobile number, class, date-of-birth, sex, email-id, parent name, class, internal assessment marks etc.). These statistics will be stored in the database. This application can be effortlessly used in any educational institutions. In private and government educational institutions also it can be implemented. SMS application is a web application that means it is easy to access and easy to control from anyplace and at any time. So SMS is uncomplicated application to the end user. Student attendance information is stored in respective educational institutions with distinct details. The responsibility of the faculty to maintain the record regarding attendance and internal assessment marks. Maintaining the attendance report by manually is not systematic, not secure and in addition to that more time is needed to organize the record and to determine the average attendance of individual student. Also manual internal assessment record system also not secure, more time is needed to organize it and getting an average is difficult. So it is significant to have a system and which will overcome the downsides of traditional system like information arrangement of a student, average attendance estimation, to enter student internal assessment marks, to generate the average and also to get the report of student attendance as well as internal assessment progress. The proposed system is going to accumulate the details of student those who are absent and present attendance details as well as internal assessment marks in electronic format so that management of attendance and internal assessment becomes comfortable. The traditional model has rectified with issues which can be resolved in the suggested model. The limitations in traditional model is if a student who missed his/her name, meanwhile other student can make some proxy attendance record. Manual attendance tracking system will require lots of human effort. Faculty has to carry attendance register every time and there is a chance of data manipulation. Since it is in hardcopy form there is a chance of data lose missing the register.

II. LITERATURE SURVEY

The [1] system has come up with many functionalities for educational institutions to track the student progress and managing attendance. It helps both student and guardian to keep track of student progress without visiting to the college. It also notifies student and guardian during the time of important events which are happening in institution. One more feature is guardian get alerted whenever student get failed in the exam or student not able to meet the expected attendance average. Student Information Report System (SIRS) is application software and which has intention to begin a conductive and direct interchanging the statistics in a secure platform to coalesce with students, faculties, parents and the college/school administration. The student information has the particulars (like register number sem, date-of-birth, sex, parent phone number, address, parent name, etc.) invade to the system by the faculties. All these particulars is stored in the database. SIRS application is trouble free to use in schools, colleges, universities, and any other educational institutions. It can be customized as per the need. It can be used in private and government educational institutions also. SIRS application is an internet based application we can login to the system from anywhere irrespective of geographical area it will give seamless navigation. The paper [2] provides the particulars to carry out the performance, management and decision-making functions of enterprises or organizations. Enormous grow of students is caused to expand the functionality in the respective educational institutions. As student added to the educational system it is difficult to manage and track student details. To overcome difficulties we come up with this new approach student information management system with additional features. This new approach will provide fast processing, efficient student tracking, and produces desired result. This approach will allow students to save their personal details. It is more secure, reliable and easy to use.

Attendance [3] is part of any system to keep track of the particular person. It is mandatory process in educational system which directly reflects the student progress. In educational institutes attendance management is normally a manual process. There is enormous grow in the software industry which has privileged colleges to maintain the attendance system by using gadgets which is the best way. As we are using the smart phones we not require maintaining attendance register. It can be easily done in mobile application. Faculty will be going to take the attendance when class gets started. They will initially login to the system through mobile application. Once attendance has been taken successfully for the class it will sent to sever through GPRS. The faculties can also do the necessary functions like registering new students, deleting the information about a particular student, modifying the information regarding the student etc. The main intention of this process is to reduce the risk of manual efforts. It also reduces the time consumption. Also we want to give importance to reduce the paper wastage that daily happens. The model [4] utilizes computer aided system. The model plays main role in an institution or in the college management. Initially, the system has developed with four layers based on the hierarchy such as Web display layer where application is deployed and displayed for end users. Business logic layer responsible for handling the functionality of the product. Data access layer is responsible for viewing the data. Database layer responsible for storing the student data. In Database layer ER diagram has been designed to provide data normalization. The process provides complete information about student, faculties and educational institution. Third thing in this project is to allowing user based on their categories.

The paper [5] provides end user to seamless navigation to the application and ease of access. The model provides information management storing of student academic reports. This model consists of various functionalities like information about the courses available in the college starting from first grade to graduation. It also enables students to enrol to particular course through online, online fees payment, examination results, and also get notified when important events occur. All data stored and retrieved through the application is secure. So to achieve this we have developed a powerful web based secured interface application which supports all type of request which are coming from the students also which gathers and corrects all student information. To achieve this we have used similarity (Euclidean distance) algorithm. The results showed that the new information gathered by the SDS has the ability to fill the requirement and done the error correction in the traditional model. The papers [6] will explains how it is playing an important role in the education domain. This system is provides seamless access through the web based application to access and manage different department or all over the organization. This system is used to mainly monitor the attendance for the university. Students are provided access to login to application and view the progress report and attendance report. This system is developed for an engineering college it will provide end users to maintain their data with minimum effort. Initially faculties/students get registered with the system once they finish registration process they can access the system as well as they are able to do the changes in the data. As per the requirement users has been granted with certain level permission to manage and track the student information. Either student or faculty can upload and copy the statistics from the database. Since it is a web based application which is accessible from any part of the world it has certain features like accessibility, easy to use. IOT, easy to manage etc. It is developed to suite the current environment which is rapidly growing in the student domain.

III. SYSTEM DESIGN

This application is designed by using Oracle Forms and Reports 10g and Oracle Express Edition database 11g. It also includes Oracle programming languages like SQL and PL/SQL. In this project application server is Oracle 11g. The Front end is designed by using Oracle Forms and Reports 10g supported by back end as Oracle XE. We have used Oracle Application Server to deploy the application. Forms and Reports is a third generational language programming tool which was developed by Oracle which supports GUI. To develop an application using Oracle Forms and Reports much easier because it is a GUI tool which was designed by using C-programming linked list. Oracle Forms is used for generating screens that communicate together with oracle database. It has an IDE, object navigator, property sheet, code editor, canvas, menus, libraries, PLL.

Oracle Report is used for retrieve the data which is stored in the database. In Oracle report we can generate the reports like graphs, pie charts, web layout, paper layout etc. We can generate different type of reports like tabular, matrix, form, form letter and mailing label. Oracle database we use to store the data. Since Oracle is user-friendly, secure and stable product. In Oracle database we are using schemas to store the data. We have implemented backup strategy to restore the data which is lost accidentally. User management like password expire, password protection, password encryption will be taken care in the project. Data protection is a major concern, Oracle provides 100% data protection. It prevents unauthorised data access and it restrict data hacking or manipulation. Oracle application server is used to deploy the Oracle application on an internet based environment. The end user will connect to the Oracle application server then it will route to the Oracle database and he will get the result as per his request. In application server end user sessions will be handled. We have used load balancer to distribute the connections coming to the application server.

IV. CURRENT SYSTEM

Large amount of paper work is needed to accomplish the task in the current system and more time is needed to perpetuate necessary record. This system is used far and wide and it requires lot of human efforts and interaction is needed to maintain the records. It is very difficult to get the information about the old students who left the college more than ten years. There is a chance of data loss in case of any physical damage is encountered or in case of any natural disaster. It is decentralised and asymmetric way of storing the data. User has to wait in the queue to get his details and he has to visit the centre during the business hours. So it will take more time. In this case data manipulation, data hacking can be done easily. There is low level of data security and high level of data threatening. Parents' will not able to get the status of the student until and unless they visit the college. There is no transparency regarding the student information.

V. PROPOSED SYSTEM

Current system has encountered with many limitations. The suggested system hits the restrictions found in the current system. There exists lot of advantages in a proposed system that is the system is complete package so there is no slipups concerning the statistics of student's attendance and internal assessment marks etc. Also it eliminates redundancy. It is easy to get information from single source. No latency when bringing back statistics and status of the student. Complete statistics of a student can be recovered in the method of SMS to the mobile phone through one touch.

Notifications will be conveyed to the respective guardians through SMS when particular student not able to attend the class as per the university guidelines and also email can be sent to respective parent and also pie and bar charts can be generated as per student's performance. Also it allows admin to store student and faculty details also admin can track the faculty and student details. The application allows bringing about courses surrounded by a class domain. It has got profile based super vision like administrator, faculty and student. It allows faculties to manage student attendance and their internal assessment marks. And also it allows students to view their own details and also can generate report. Students get alerted during examination via circular. And also it allows storing internal assessment marks and also generates the average.

VI. DATA FLOW DIAGRAM

Figure 1 shows the dataflow diagram. Based on end user necessities as well as the thorough investigation on current system we have suggested a system that satisfies user requirements. Initially admin will going to login to the system. Once he successfully logged in, he will be able to upload student details and faculty details. Admin may be head of the department. And he will give access to faculties and students. Admin have the privileges to view/edit the details of both students and faculties. Also he can send the circular or the notice to all faculties and students. Also he can see the reports of the students' and faculties. Faculty will be going to log in to the system. He can store the student attendance and internal assessment marks also he can view the same. And average of internal assessments calculated automatically. The faculty can generate report based on the student records like attendance and internal assessments.

Next mode of login is student or guardian log in. Students have to visit to the portal and need to provide the respective details, after that student will be registered. Admin will distribute the passwords to the faculties and student. Once they receive the password from the admin they are able to login to the application and monitor the statistics.

Once they receive the credentials they are able to access the application. And also to monitor the statistics like they can generate their own report of internal assessments and attendance and they can view their performance. Figure 1 explains about how data get distributed and processed in the application. It has got four modules. They are Login Module, Student Data Module, SMS module, Email module, Report module. End user will be going to login to the system. There are three types of users are created based on the access criteria. They are Admin, Faculty and Student/Guardian. Admin users are responsible for storing student data and faculty details, scheduling time table for faculties. Admin users can create, replace, update, delete (CRUD) the student and faculty details.

Admin users can also generate all types of reports which are available in the application. Admin user can send circular or notice to faculties and students. Admin users will have all the privileges and access to the application. Admin user is a root user; he is having complete control over the application. Faculty users are responsible for maintaining the attendance of the students, internal assessments marks, generating time tables. Faculty users can generate report based on the student progress like internal assessment, attendance. Student/Guardian users are responsible for viewing their own page; they can check their academic progress, and attendance. They are able to generate report and charts like bar/pie based on their performance. Once particular user is positively registered in, if logged in user is student then he is not authorised to make changes or manipulate the details. If logged in user is a faculty user then he can manipulate student attendance and internal assessment marks. If logged in user is an admin user then he is the only person to manipulate all the necessary details regarding students and faculties. When an admin finishes all manipulations, faculty will generate the report and he will be sending an email or SMS to the respective student's parent.

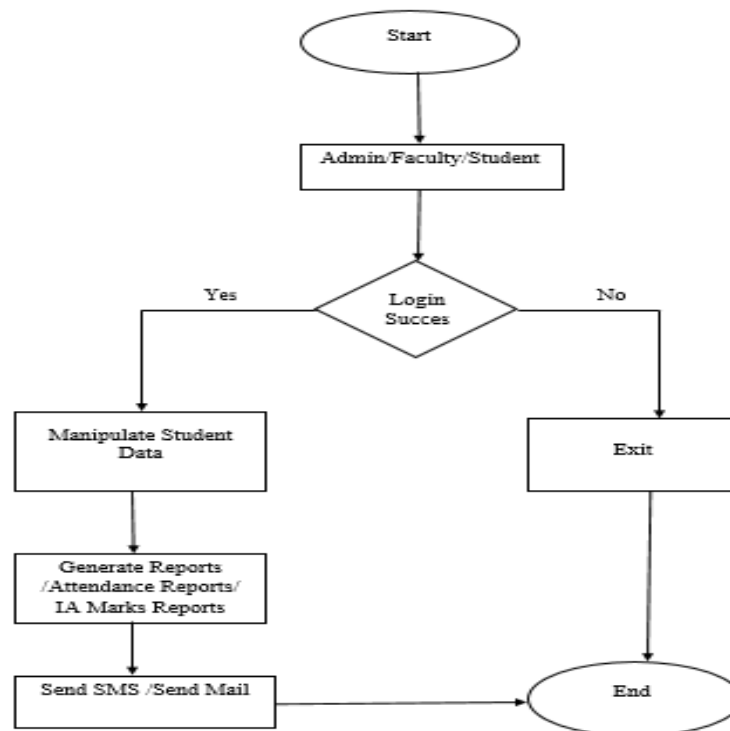


Figure 1 Data flow Diagram

VII. STRUCTURAL DESIGN OF STUDENT MANAGEMENT SYSTEM

Figure 2 shows the structural design of the student management system. Users will login to the student management system. If the logged in user is an admin user he will be able to register the students and faculties in the system, admin can only have the complete privileges on the system. He will be sending circular to the students as well as faculties regarding the upcoming events that will appear in the college. Admin can set the time table and also he will generate the report of faculty as well as student. When faculty user login to the system, his work is to manipulate the attendance and internal assessment marks as well as he is going to send circular to his students regarding his subject notifications like class test etc. Also faculty will be able to generate the report of his students based on their progress in his class. When student user login to the system he can visit only to his pages and he will be able to check his academic progress as well as attendance. Also he will generate report of his performance in internal assessments and in attendance. All these information is stored in the database.

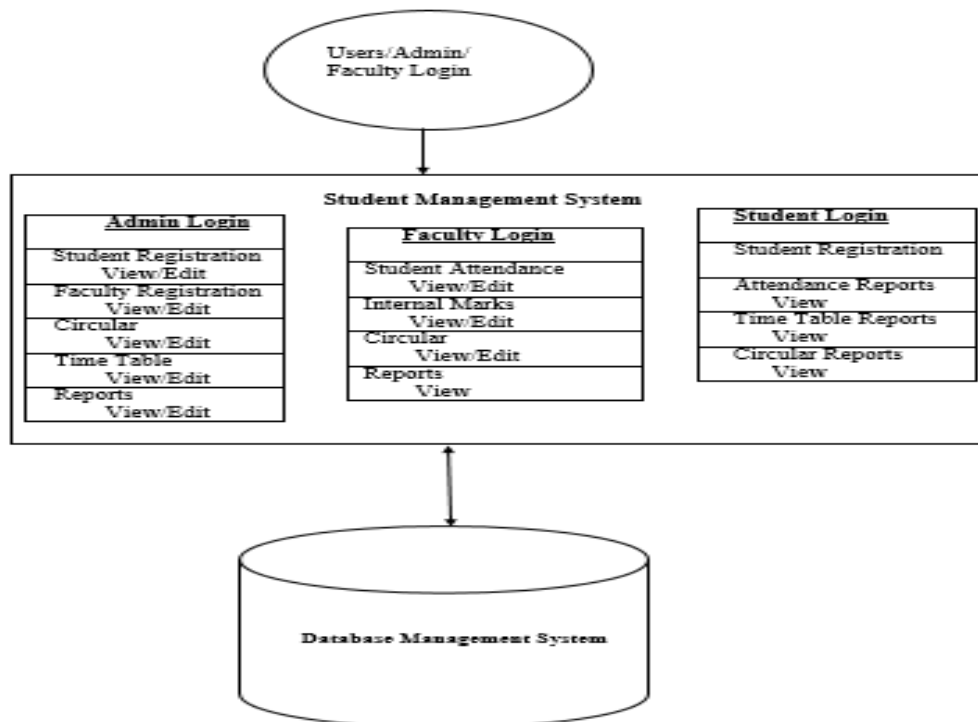


Figure 2 Structural design of student management system

VIII. CONCLUSION

Student Management System is very useful in an institution or in college or in universities. There is no paper work in this proposed system. Supervision can be done from anywhere. This project especially minimizes human effort necessary. This application is handled by the college so there is no information leak and data will be secured. Since it is a web based application anyone can use the system anywhere at any time and it is very easy to get the necessary information without the latency. It is very useful to the students to get their report on attendance and internal assessments. Parents also get benefited more since college is going to send the notification of the student via the SMS or email will be sent to get the recent activities happen in the college. Since this application will be handled by the college whenever they need any changes in an application they can make it without the upfront investment, and the system will be more secure when it is handled by the own college.

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