Research Paper

Student Result Management System

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Abstract— *a student performance management system is a computer application that helps educational institutions manage record and analyze student academic records, including grades, attendance and other relevant information. The system streamlines the management of student records by making it easy for administrators, teachers and parents to access and analyze student performance data. While students can view their grades, attendance, and other academic information, teachers can input and update student grades, data, and other pertinent information. Additionally, the system offers real-time analytics and reports to assist administrators in making fact-based choices. In handling student academic records, a Student Result Management System should be accurate, effective, and transparent. This abstract emphasizes these features and advantages. The system is intended to automate and simplify the process of managing student data, including keeping track of grades, attendance, and other data, producing reports, and giving students and parents academic input. The whole world and the administrators of educational institutions in our country care about the accuracy of student results. The overall academic performance of the student is affected by the presence of the student in his institute. Mainly there are two common methods of taking the results and presenting them on the result sheet or recording the student's mark on paper. Both were more time consuming and inefficient. Therefore, a computerized student performance management system is necessary to help the faculty maintain attendance records. The article examines various computer output management systems.*

I. INTRODUCTION

A student performance management system offers several benefits to educational institutions, such as administrative efficiency, student performance tracking and better decision making. This helps streamline the processing of results, which reduces staff workload and ensures accurate and timely delivery of results. Overall, a student performance management system is an important tool for educational institutions that want to optimize their academic processes and improve student outcomes. This article identifies a key issue in student attendance management that has traditionally been addressed by faculty. Computer View offers one way to automate the student scoring system. This article examines the various computer systems that have been developed using various techniques Based on this review, a new approach to recording and managing student participation is proposed for various colleges or academic institutes.

The Student Performance Management System is a computer platform that simplifies the process of recording, storing and retrieving academic information and student records. This system helps educational institutions manage student data efficiently and minimize errors and redundancy. The system facilitates the

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automation of tasks such as scoring, reporting and transcript generation, which improves the accuracy and speed of processing results.

The system is designed to store student records, including personal information, academic records and other relevant information. It allows students and teachers to access these records online, allowing easy retrieval of student records and results. In addition, the system provides a variety of features to track student performance and academic progress, including grade reporting, course scheduling, and attendance tracking.

A typical student performance management system has the following characteristics:

- Student Profile Management: This feature allows administrators to create, store, and update student information, including personal information, academic records, attendance information, and test scores.
- Grade Management: This feature allows teachers to enter test scores and generate grade reports for individual students or classes.
- Reporting: The system can generate various reports including exam result reports, attendance reports and student performance reports. Analysis: The system can analyze student performance data and generate useful insights for teachers, administrators and parents.
- Communication: The system can facilitate communication between teachers, administrators and parents, for example through automatic email notifications and alerts.

Overall, a student performance management system helps educational institutions manage student records more efficiently, resulting in better academic performance and better decision-making.The want for a scholar end result control gadget arises from the truth that academic establishments should manipulate massive quantities of scholar facts, inclusive of educational records, attendance, and different applicable information. Managing this facts manually may be time-ingesting and error-prone, and might result in inconsistencies and inaccuracies in scholar records. The student result management system offers insightful data analysis that enables educational institutions to evaluate the success of their educational initiatives, pinpoint areas for development, and create plans to improve student outcomes. Institutions may take well-informed decisions, carry out focused interventions, and constantly enhance their educational practises by utilising the power of data.

A scholar end result control gadget can assist cope with those demanding situations via way of means of offering a centralized platform for handling and reading scholar facts.
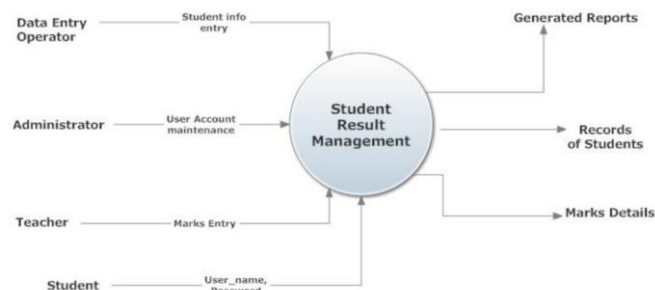
1.1   Context Diagram of Student Result Management System.

II. BACKGROUND STUDY/LITERATURE SURVEY

Student performance management systems have been widely studied in the scientific literature, and many researchers have focused on the benefits, challenges, and implementation of these systems. In this literature review, I summarize some of the main findings of the relevant studies.

1.   A study by Nithya and Uman (2018) investigated the effectiveness of a student performance management system in a higher education institution in India. The study revealed that the system made data management more efficient and helped eliminate errors and delays in processing results. In addition, the system enabled better communication between teachers, students and parents, which led to better academic results.

2.   Another study by Fajar et al. (2020) investigated the implementation of a student performance management system in a private high school in Indonesia. The study found that the system helped streamline administrative processes such as grading and attendance tracking and improved the accuracy and timeliness of student performance reporting. The system also allowed for better communication between teachers, students and parents, resulting in more effective academic feedback.

3.   In a study by Ayinde and Popoola (2016), the authors investigated the challenges of implementing a student performance management system in a Nigerian university. The study found that challenges such as lack

of technical expertise, inadequate infrastructure and staff and student resistance to change hindered successful implementation. However, the authors suggested that these challenges can be overcome with proper planning, training and stakeholder engagement.

4. Finally, Kadir et al. (2020) investigated the potential of a student performance management system to improve student learning outcomes in Malaysian universities. The study found that the system helped identify areas where students needed additional support and enabled more effective tracking of student progress over time. The authors suggested that the system could be used to teach pedagogical practices and improve student engagement and motivation.

5. Grade Point Average (GPA) is a main measure for finding students' performance academically [6]. It includes all the learning results anticipated of a student in his/her semesters' subjects.

6. According to [7], an important interpreter of any students' graduate performance is GPA. Thus, it can be considered as the main measure of student's current and future studies.

7. As per [8], putting higher demands on student learner is more important as compared to external forces.

8. According to [9], the institutional guidelines and rules must be implemented properly to enhance the studying environment. It is needed that institution's plans and procedures must be directed towards students' accountability and they must be active enough to participate in their own college and university for promotion.

9. [10] did not consider other variables like students' internal nature which would be obtained from students' assessments or results

10. [11] Studied both the students' characteristics and self-reported theories to identify the aspects that add to the academic presentation of students at the university. Self-efficacy, assigned goals, self-goals and abilities are four major causes the students' academic performances.

11. According to [12], students' age is important for qualification which is essential for academic performance.

12. [13] through path analysis observed and explained gender to have a direct effect on the academic performance of third year students.

There are many academic institutions in India. But only a few institutions are modernized and use software to manage their daily work. A city like Bengaluru has around 1000 schools, more than 300 pre-university colleges and colleges. Most of these academic institutions still use the traditional way of administration, which mainly involves paper work and a lot of human effort.

Students admitted to educational institutions dependent on the traditional way of management have to work hard to obtain a certificate or other documents. Administrations also struggle to keep all the records, records, and retrieve records of interest to them in a timely manner. The managements of these institutions also have to hire several employees just to keep the accounting documents necessary to manage and support their daily work The Student Performance Management System is a computer platform that simplifies the process of recording, storing and retrieving academic information and student records. This system helps educational institutions manage student data efficiently and minimize errors and redundancy. The system facilitates the automation of tasks such as scoring, reporting and transcript generation, which improves the accuracy and speed of processing results.

III. METHODOLOGY

We used software life cycle to create this automation based application system developmental model. Since the design requirement was not well defined in the initial phase, we did this used a prototype model approach for this system. In the prototyping model, software is created early requirements and improvements are made while specifying the requirements.

Efficient record-keeping: A scholar end result control gadget affords a centralized platform for storing and handling scholar records, making it less complicated to get right of entry to and replace scholar facts.

Improved accuracy: By automating the technique of facts access and record-keeping, a scholar end result control gadget can assist enhance the accuracy and consistency of scholar records.

Streamlined reporting: A scholar end result control gadget can generate reviews automatically, making it less complicated for educators to investigate scholar facts and become aware of tendencies in scholar performance.

Enhanced conversation: A scholar end result control gadget can facilitate conversation among teachers, administrators, and parents, offering a extra obvious and collaborative studying environment.

Better decision-making: By offering educators with get right of entry to to real-time facts on scholar performance, a scholar end result control gadget can assist them make higher choices approximately the way to guide

IV. RESULT

The process of organising the student documentation for the educational institution is called the online student management system. This is accomplished using an online process that was previously made using paper and manual ledgers. Administrators' and students' resources are preserved. For maintenance purposes using student data, this system offers a straightforward user interface. This comprises actions like recording the researcher's data, assigning a department based on the chosen course, and accounting. Because of the availability of the network Since access and information exchange are also worldwide, information is global. This data is securely preserved in an archive that makes it simple to retrieve and change the data as needed. This is a software designed for the daily management of student documents in educational institutions.

It helps to get information about students of a particular class with just a few clicks. This system also helps creating a student status report such as total amount, requested transaction, payment information, access to information and so on. Click the mouse and the system will generate a student report that reduces the need for manual work which is prone to error and time consuming. This application is designed for automatic processing of student data management.

It even heals speed of solving tasks. Student information is stored by batch, department and section. Students and staff have a unique username and password available for email through the OTP concept Microservices architecture is used for application development and deployment. The microservices architecture is implemented using Spring-boot, which is a spring application opinion instance and also a rapid application development platform. The proposed methodology has 5 stages, which are requirements gathering, planning, development and implementation, testing and maintenance.
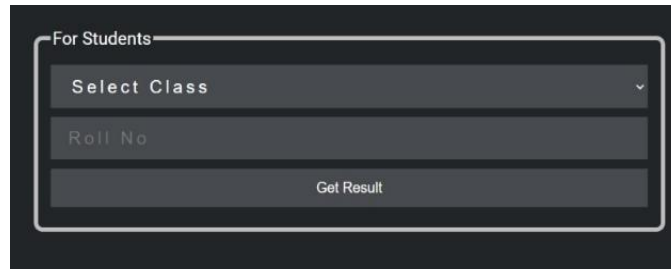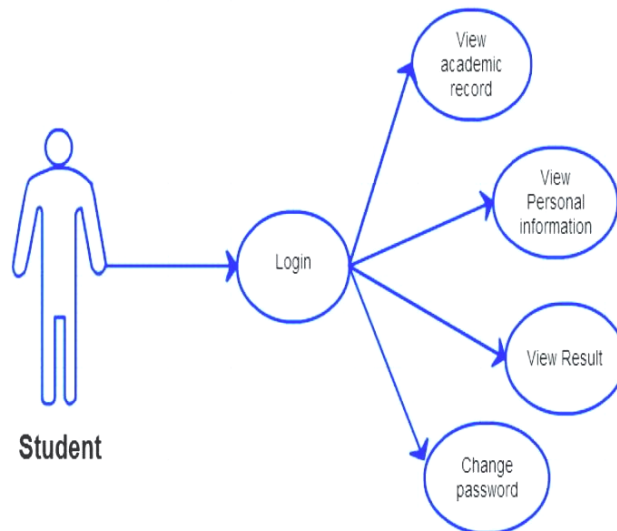

1.2 Use Case Diagram of Student
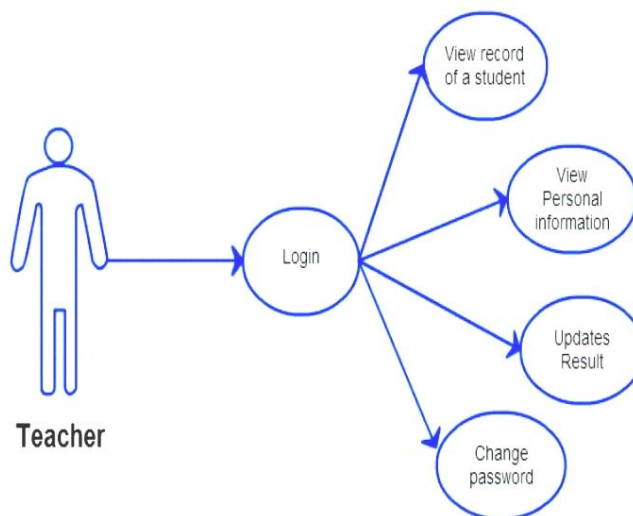
1.3 Use Case Diagram of Teacher

Educators can improve their teaching and learning practises by using data analysis and insights to better evaluate student performance, spot trends, and make data-driven decisions. By giving parents, instructors, and students quick access to test results, progress updates, and attendance data, the system also improves parent-student communication. This data is securely preserved in an archive that makes it simple to retrieve and change the data as needed. This is a software designed for the daily management of student documents in educational institutions. It also encourages academic planning and curriculum improvement by making it easier to assess instructional strategies and pinpoint areas for improvement. The system guarantees the security and confidentiality of student data by using data validation and privacy procedures.

1.4   Login page for students

1.5   Login page for admin

1.   Requirements for assembly

Before starting projects, requirements must be gathered and their feasibility checked. The project can continue if the requirements are feasible. In this phase, the stakeholders collect all the requirements necessary for the development and implementation of the project and communicate them to the designer and designer. In this project, the final product of which will be a web application, the requirements are divided into six categories such as Student Management Service, Course Management Service, Attendance Service, Administrative Management Management, Document management service, employee management service.

2.   Student Administrative Service

In this service, a student can check his attendance,   progress report, result, send request for required documents, view notifications, view schedule, view and submit assignments. Students can give feedback on the teachers' performance in the class.

3.   Course management service

In this service, the administrator can add, edit and delete courses. The administrator can also add, update and delete certain course topics. The teacher, guardian and students can only see the courses added by the administrator.

4.   Participant management service

In this service, a system administrator can report student attendance information, update and delete student attendance according to the course and class they belong to. The teacher, guard and students can only see the attendance.

5.   Administrative management service

In this service, the administrator has access to all resources. The system administrator can send notifications via email, SMS and push messages. The system administrator can also add, update and delete the data of students, guardians and staff.

6.   Document management service

The system administrator can add documents to this service, such as student report cards, ID cards, curriculum, payment receipts, certificates and many other documents that are useful for the smooth operation of educational and financial activities of the educational institution.

7.   Employee management service

In this service, the employee (teacher) can see the data of the students he supervises. The teacher can report on the students' activities and evaluate the students' performances. The teacher can download the assignments and check the assignments.

V.   CONCLUSION

In conclusion, a system for tracking and analysing student results is a useful tool for educational institutions to automate and streamline the procedure. The system offers the school, instructors, administrators, and students a number of advantages by centralising student data, automating result calculations, and producing thorough reports.

By removing manual processes, minimising paperwork, and giving instructors and staff more time, the deployment of a student outcome management system promotes efficiency. By reducing errors and discrepancies, it provides precise and reliable result calculation. The system also makes it simple for teachers to obtain data on student performance, enabling them to monitor the development of specific students, spot areas where they need to improve, and offer tailored guidance.

The student result management system offers insightful data analysis that enables educational institutions to evaluate the success of their educational initiatives, pinpoint areas for development, and create plans to improve student outcomes. Institutions may take well-informed decisions, carry out focused interventions, and constantly enhance their educational practises by utilising the power of data.

However, rigorous planning, efficient project management, a solid system design, and thorough testing are all necessary for the successful deployment and use of a student result management system. For the system to be adopted and used at its best, user education and continuing assistance are also essential.

In summary, a properly designed student result management system has the potential to revolutionise result management procedures, enhance educational results, and support data-driven decision-making in educational institutions. It is a useful tool for providing timely and accurate information, building a positive learning environment, and boosting student success for teachers, administrators, students, and parents.

Educators can improve their teaching and learning practises by using data analysis and insights to better evaluate student performance, spot trends, and make data-driven decisions. By giving parents, instructors, and students quick access to test results, progress updates, and attendance data, the system also improves parent-student communication. It also encourages academic planning and curriculum improvement by making it easier to assess instructional strategies and pinpoint areas for improvement. The system maintains the security and confidentiality of student data through data validation and privacy procedures.

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