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College Management System using Blockchain

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A B S T R A C T

College management is when a group of people and resources work together to plan, organize, strategize, and put in place structures to run an educational system. The college management system oversees enrolment, students, faculty, attendance, scheduling, assignments, grades, notices, and the institution as a whole. The college management system is designed to automate all the processes included. It generates automatic reports on all elements for data-driven decision-making. The college information management system, in general, helps educational institutions by automating regular administrative tasks. It's called a "college administration system," and it has a lot of features, like apps, student achievement assessments, and more

Keywords: Blockchain, Encryption , Cloud , Management , cryptography , decentralized

1. Introduction

Automating every college function is the primary goal of the college administration system. You can handle all college administrative tasks with this system, including result declaration, scheduling, and fee submission. You may simply see or change statistics and information on students and staff using this college administration system. This system facilitates the management of student acceptance, registration, and fee submission. The administrator can also obtain student and personnel data. Student data, including attendance, fees, and grades, can be kept on file in the college administration system. Using this system, the admin can generate reports on any student at any time. You can register new students and their course information using this system. You can check the specifics of the fees at any moment and submit the student fees. Exam results can be created and submitted using this method. Students who log into the system can view their results online. Additionally, you may easily check an employee's details and add new employees to the system. Through this technology, students may also view course details online. You can manage every piece of information about a college, including its staff, departments, students, grades, and extracurricular activities, with this system. Using a college management system is the simplest approach to oversee every aspect of a college's operations. Colleges can manage the functionality pertaining to their staff and students with the help of this system. A college's administration, attendance, staff information, and other departmental data can all be stored and managed via a college management system. The user can obtain any information pertaining to students, teachers, and fees by using this system. Teachers can check students' attendance at any time by using this technology. This technique aids teachers in announcing the outcome as well. College work may be easily managed by college management as well. An administrator can view a teacher's leave, pay, and other information at any time. They can use this technology to design class schedules as well. Students and staff members' data processes related to library and book access are handled by the Library module.

2. Problem Statement

To digitalize and incorporate new modules into the college administration system using Cloud and Blockchain

Digitalizing and incorporating new modules into the college administration system using Cloud and Blockchain involves a multifaceted approach to revolutionize how educational institutions manage their administrative tasks. In the digitalization process, manual and paper-based procedures are replaced with advanced software solutions, making tasks such as enrollment, record-keeping, financial management, and communication more efficient and accessible through digital interfaces. Incorporating new modules signifies the addition of specialized software components tailored to the unique needs of the college administration. These modules can encompass various aspects of campus management, such as student registration systems, transcript verification, financial aid processing, and academic course management. By expanding the functionalities of the administration system, colleges can better adapt to changing needs and improve overall productivity. Cloud technology plays a pivotal role by providing a scalable and flexible infrastructure for hosting the administration system. This approach enables institutions to access data and services remotely, reducing the dependence on onpremises hardware and lowering maintenance costs. Furthermore, the integration of blockchain technology enhances security and transparency, making data tamper-proof and ensuring the authenticity and integrity of administrative records and transactions. The decentralized nature of blockchain contributes to trust and data immutability

3. Objective

• To address problems and implement digitalization in the college administration system Using a user-friendly user interface is the goal of this project, and the most pertinent problem is to acquire new technologies in the blockchain and cloud.

• Students can choose their subject and the choice list can be downloaded in PDF format.

• The results will be automatically shown in the "Result System" module, where they can be accessed by students.

• The student has to be able to monitor their daily schedule.

4. Methodology

4.1 Main Methodology

•Faculty and Student Attendance Management: This module should be part of the college administration system in order to track faculty and student attendance. This will keep track of every student's daily activities and attendance at the college.

•Student Information Management: This module gives the college administrator access to and oversight of student data. Additionally, this will secure each student's information so that their transactions can be tracked.

•Courses and Subjects Management: Each course that the college offers will have its subjects assigned by the courses and subject management module.

 •Additionally, the schedules for each subject and the teachers in charge of each subject will be bracketed by this module.

• Timetables Management: The work of this module will monitor and set the timetable or range of the subjects in each semester of the school year. Student Transaction Management: This module will help the admin monitor and check the content of each transaction made by their student.

•Grading System Management: This department is responsible for computing the students' grades. All instructors or administrators need to do is input the students' output into the system.
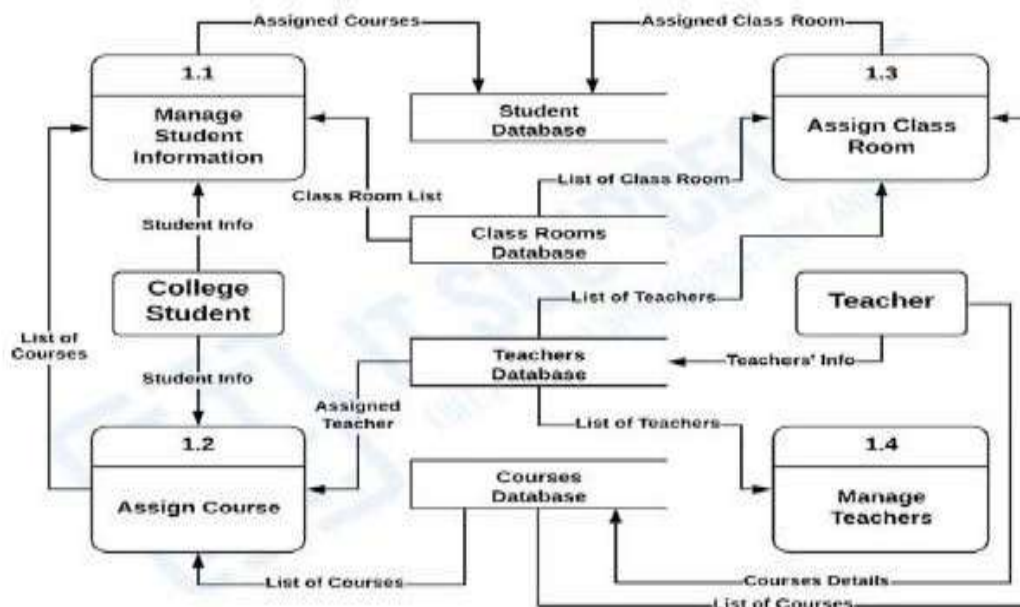
4.2 Data Flow Diagram

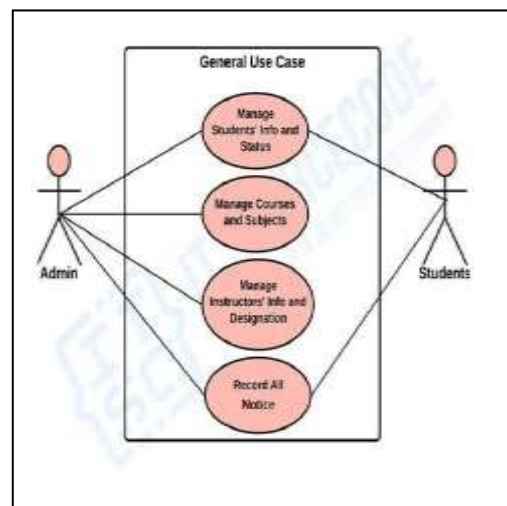Fig.1.DataFlowDiagram

4.3 Use Case Diagram

Fig.2.Use case Diagram
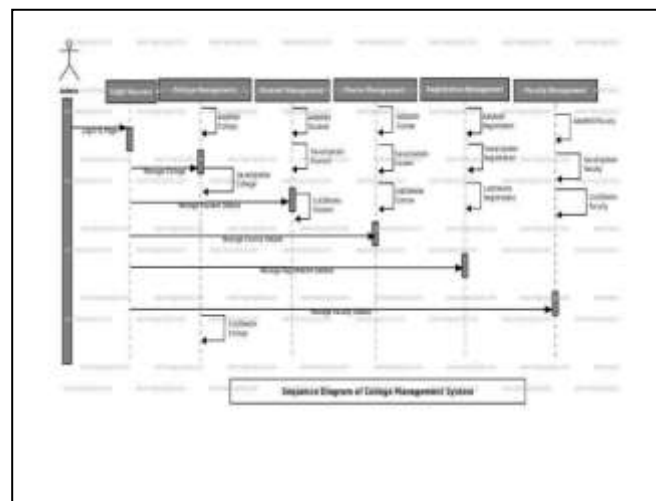
4.4 Sequential Diagram

Fig.3.Sequential Diagram
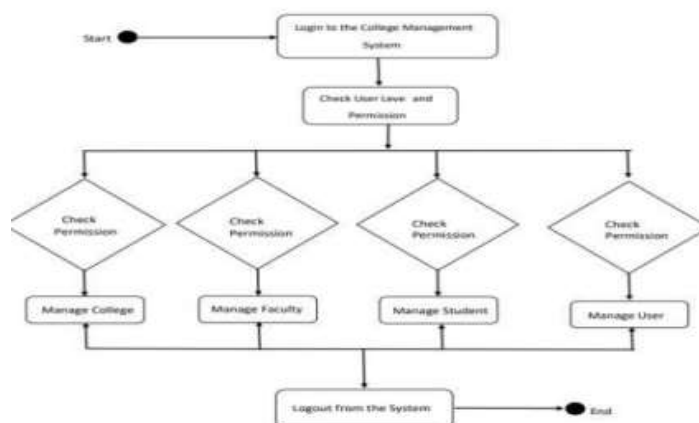
4.5 Activity Diagram

Fig.4.Activity Diagram
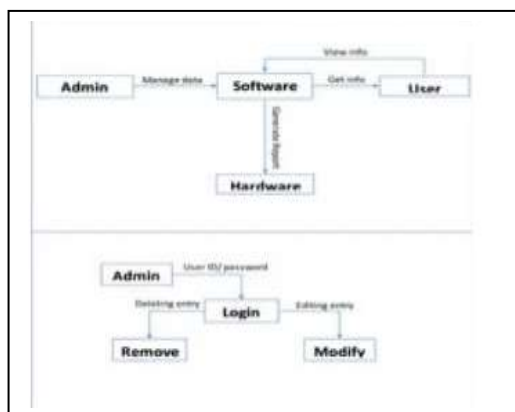
4.6 System Architecture Diagram

Fig.5.System Architecture Diagram

5. Results and Discussion

The "College Management System Using Blockchain" project has produced noteworthy improvements in a number of areas related to student management and college administration. Accuracy and security have been guaranteed by automating the result generation process through the use of digital result management. The timetable management module has made it easier to schedule and plan classes and events, and both faculty and students have commented on how convenient and timely it is to receive their results. Personalized timetables are available to teachers and students, which promotes better time management and organization. In order to reduce scheduling conflicts and disruptions, the system automatically manages updates and conflicts.

The college community's ability to communicate has been transformed by the installation of a digital notification distribution system. The intended recipients can easily create, publish, and access important notices. This digital strategy ensures effective and timely information dissemination by replacing conventional physical notice boards. To address any potential shortcomings or areas for improvement found during the implementation phase, it is crucial to recognize that ongoing evaluation and improvement efforts are required. In order to identify and address these issues, user feedback and satisfaction surveys will be essential. This will ensure that the system keeps up with the changing needs of the college and its stakeholders

Fig 2.1 Log in page

This is log in page of our system by using the PRN and your Password you can log in to our System

Fig 2.2 Forgot password page

With the help of forgot password page you can change your password if you have forget your password

Fig. 2.3 Student Dashboard

Fig 2.4 Educator Dashboard

There are two dashboards in our system one is for student and one is for educator who can make notices and result as well he/ she can publish notices

Fig 2.5 Result Checking System

With the help of result checking system the student can check its result

6. Future Scope

- The digital result module should provide real-time updates of student results as they are processed and recorded, allowing students, faculty, and staff to access up-to-date and accurate results in a timely manner.

- The timetable module should provide a clear and accessible view of the schedule to students, faculty, and staff, enabling them to easily view and understand the assigned timings, locations, and instructors for each class or activity, facilitating smooth coordination and planning.

- Integration with cloud and blockchain technologies

- The Open Elective selection module which will help the faculties to fastly collect data from students.

- Integration with emerging technologies

- Enhanced collaboration and communication features

7. Conclusion

A college administration system using blockchain technology offers advantages such as enhanced security, transparency, and efficiency. It can revolutionize traditional administrative practices by leveraging blockchain's unique features such as immutability, consensus, and smart contracts. However, challenges and limitations need to be carefully considered, including technical complexities, scalability issues, and potential resistance to change. Overall, a blockchain-based college administration system has the potential to modernize and improve administrative processes in higher education institutions.

8. Acknowledgements

9. References

[1] S.R.Bharamagoudar et al , "Web-Based Student Information Management System ,International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 6, June 2013.

[2] R. M. Leod, Management Information Systems, Third Ed., Science Research Associates, 1986, pp. 17-19.

[3] ShrikantPatnaik, "Collage Management System", International Reserch joural of Engineering and Technology Volume 3 2016.

[4] AbhisheakTyagi "Digitalizing the collage management ecosystem by using Android",International journal of advance research , ideals and innovation in technology, volume 4 issue 2.

[5] College Management System by Sourabh Salokhe, Supriya Patil, Savita Patil, Tushar Salavi, Snehal Mali , Rahaul Nejkar

[6] Kartiki Datarkar, Neha Hajare, Nidhi Fulzele, Sonali Kawle, Vaibhav Suryavanshi and Dipeeka Radke, "Online College Management System, International Journal of Computer Science and Mobile Computing Vol.5 Issue.4, April- 2016, pg. 118-122

[7] Software Design Concepts by Apress

[8] S.R.Bharamagoudar et al , "Web-Based Student Information Management System ,International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 6, June 2013.

[9] Zhibing Liu, Huixia Wang,Hui Zan "Design and implementation of the student information management system." 2010 International symposium on intelligence information processing and trusted computing. 978-0-7695- 4196-9/10 IEEE.