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Student Educational Navigation System

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ABSTRACT: The Student Educational Navigation System (SENS) presents a groundbreaking solution aimed at streamlining student record management within educational institutions. SENS encompasses a plethora of features including semester results and personal information management for students. For semester details, the system provides a user-friendly interface allowing students to effortlessly access their academic results and grades across all semesters. Additionally, students can securely update personal information such as contact details, address, and parental information through the website. Furthermore, SENS incorporates a profile section where students can view and modify their details, including the option to add or edit a profile photo. Operational control is vested in two login authorities, namely Admin and Faculty, who possess the privilege to make alterations. Meanwhile, students retain the autonomy to modify only their personal information and profile photo. Ultimately, SENS stands as a comprehensive platform empowering students to efficiently manage their academic journey while maintaining oversight of their personal data.

KEYWORDS: Student profile management, Academic semester-wise grades, active backlogs.

I. INTRODUCTION

The proposed website serves as an innovative student educational management system, meticulously designed to efficiently handle and organize student profiles and academic records. It is tailored to cater to the diverse needs of educational institutions, offering a centralized platform that accommodates three primary user roles: administrators, faculty members, and students themselves. Administrators and faculty members wield comprehensive privileges, allowing them to seamlessly manipulate, add, or delete student data as necessary. Meanwhile, students are granted access solely to retrieve their individual academic information, ensuring data privacy and confidentiality [1]. At its core, this project addresses the exigency for a holistic academic management solution, encapsulated within an intuitive and user-friendly website interface. Beyond merely storing student profiles, the platform intricately catalogues their academic journey, meticulously delineating semester-wise results alongside active backlog management. By consolidating this wealth of academic data into a centralized repository, the website streamlines data handling and retrieval processes, guaranteeing that pertinent information remains readily accessible to authorized users [2]. Within this system, each student is allocated a detailed profile, encompassing not only personal particulars but also comprehensive academic records. This comprehensive approach to student data management fosters a nuanced understanding of individual academic trajectories, facilitating the implementation of personalized support and intervention strategies where necessary. Furthermore, the system maintains meticulous oversight of active backlogs, providing faculty and administrators with a comprehensive overview of students' academic progress and areas warranting attention or intervention [3]. Integral to the system's functionality is its robust user authentication mechanism, meticulously engineered to safeguard data privacy and confidentiality. Through stringent authentication protocols, only authorized users are granted access to student data, thereby mitigating risks associated with unauthorized data manipulation or breaches. This ensures the integrity and security of the academic records stored within the system, instilling trust and confidence among stakeholders [4]. In essence, the proposed website represents a significant leap forward in academic record management, offering a centralized platform that not only consolidates student profiles but also provides invaluable insights into their academic journey. By empowering stakeholders with tailored access and comprehensive insights, the system endeavors to enhance the academic experience while facilitating informed decision-making and support strategies, ultimately contributing to the overarching goal of academic excellence.

II. LITEARATURE REVIEW

Today's education increasingly relies on technological innovation to improve teaching methods and student learning outcomes. In this context, the proposed project aims to contribute to the field of educational management by leveraging

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technology to streamline student record management and facilitate the tracking of academic progress.

1. Literature Review
   This article reviews related literature, particularly studies focused on profiling student performance and measuring progress in educational technology and pedagogy.

2. A framework for profiling student progress
   Research by Andreas Papadakis et al. Provides insight into the development of a system for profiling student progress in engineering, particularly multimedia communications. The authors present a framework for systematically assessing and measuring student status and progress in communication systems using technical simulation tools.

3. Data Analysis for Academic Performance
   Another study considers the use of data analysis techniques to profile students' academic performance and predict future outcomes. By analyzing various data points such as attendance records, assignment grades, and engagement levels, researchers developed a predictive model to identify at-risk students and provide timely interventions.

4. Personalized Learning Environment
   Investigating the impact of personalized learning environments on student engagement and academic performance. Adaptive learning platforms dynamically adjust content and pacing based on learner preferences and abilities, resulting in a more interactive and engaging learning experience and better learning outcomes.

5. Educational Data Mining
   The role of educational data mining in identifying patterns and trends in student learning behavior is discussed. By analyzing large-scale datasets from online learning platforms, researchers can gain insights into student engagement, collaboration patterns, and learning trajectories to inform instructional strategies and interventions to support student learning needs. will be able to be adjusted.

6. Gamification in Education
   The effectiveness of gamification in increasing student motivation and participation is examined. Integrating gaming elements into learning activities creates immersive and interactive experiences that engage students, foster intrinsic motivation, and improve learning outcomes.

III. PROPOSED WORK

The proposed system is an integrated academic management website aimed at efficiently handling student profiles, academic semester-wise results, and active backlogs. It operates through three distinct user roles: admin, faculty, and student. Admin and faculty users enjoy exclusive privileges to manipulate, add, and delete existing student data, while students are restricted to accessing only their personal academic information.

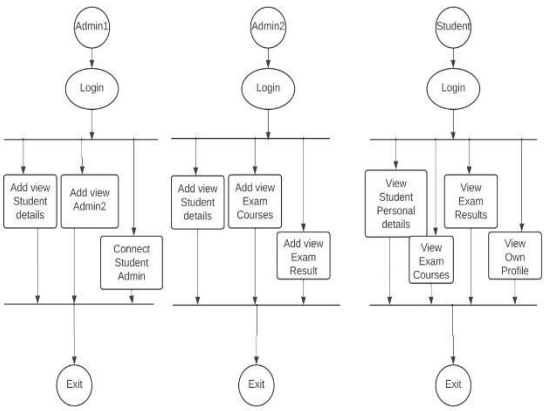

Fig. 1. Representation of System Architecture

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The Fig. 1. represents the interactions between students, administrators, and a database within an information system, specifically tailored for a school or educational institution. It delineates the processes involved when students access and update their information, as well as how administrators manage these requests.

1. Student Interactions
Login: At the starting point, students have the option to log into the system using their credentials.
Register: Alternatively, new students can register their information to gain access to the system.

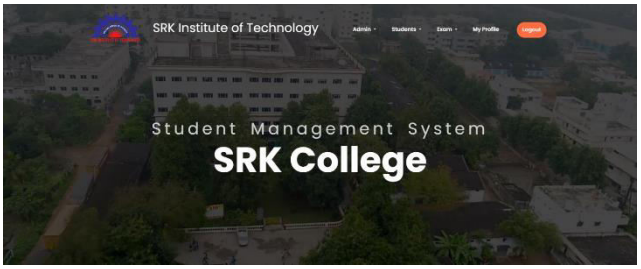
2. Student Information Processes
Edit the Profile: Upon logging in, students can modify their profile information as needed.
Get the Information: Students can retrieve and view their existing information stored in the system.
Information about Update: This process likely involves notifying students of any updates or changes made to their information.
Login the System: This indicates a repeated action, suggesting that students may log in from various points in the process.
Request Access: Students have the capability to request access to specific information or features within the system.
Make Changes in Record: Students can initiate requests to modify or update their records stored in the database.

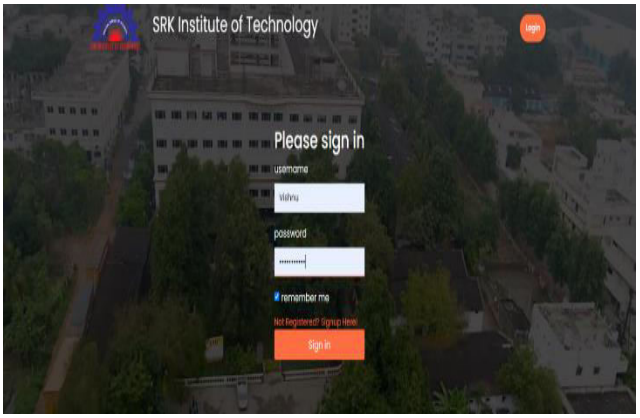
3. Database Operations
Creation Record: This step signifies the initial creation of a student's record within the database upon registration.
Process the Request: When students request changes to their information, the database processes these requests accordingly.

4. Admin Functions
Admin Login: Administrators, represented as "Admin," can log into the system using their own set of credentials.
Process Requests: Administrators have the authority to manage and process requests initiated by students, including approving or rejecting updates to student records.
Make Changes to Student Information: Admins can directly modify student information stored in the database as necessary.

IV. RESULTS

ADMIN LOGIN:





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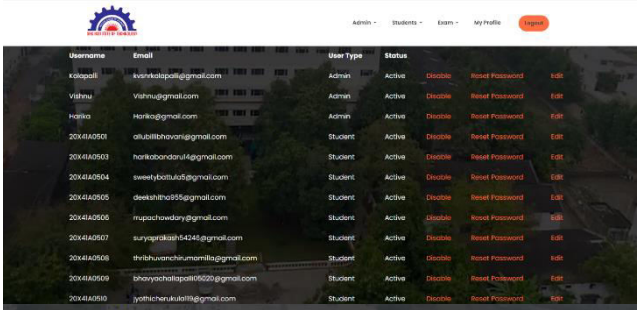

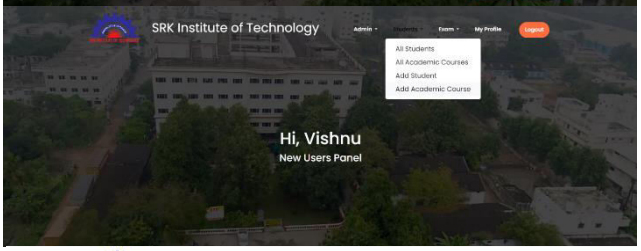

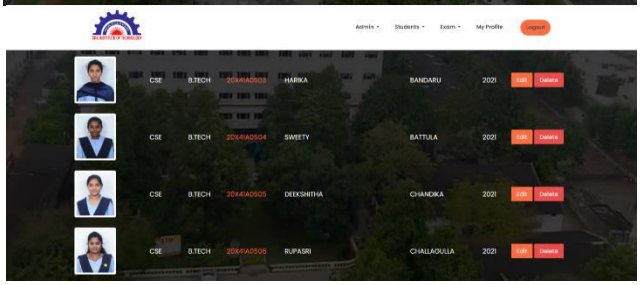

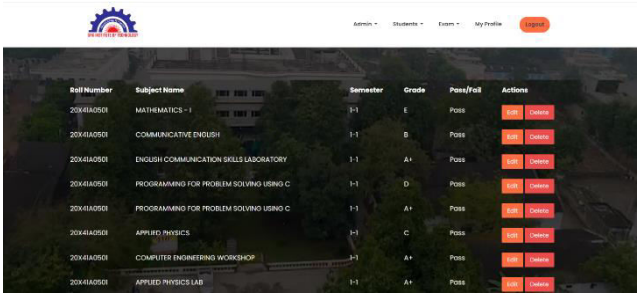

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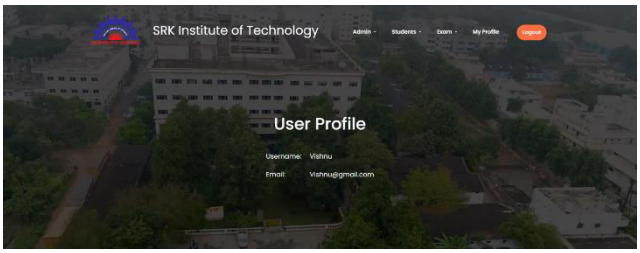
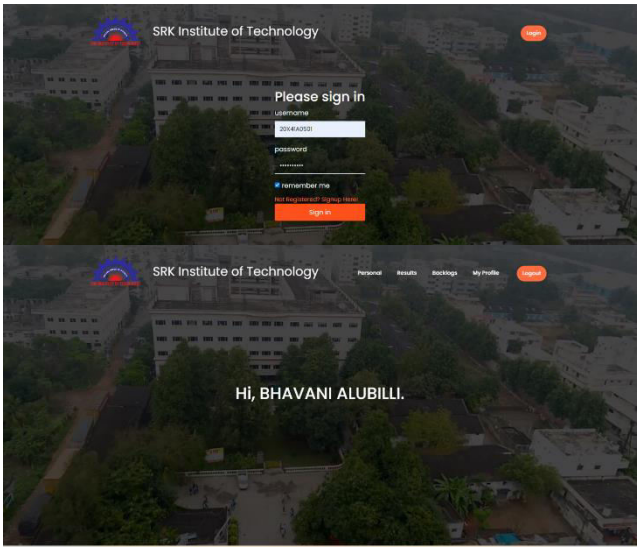
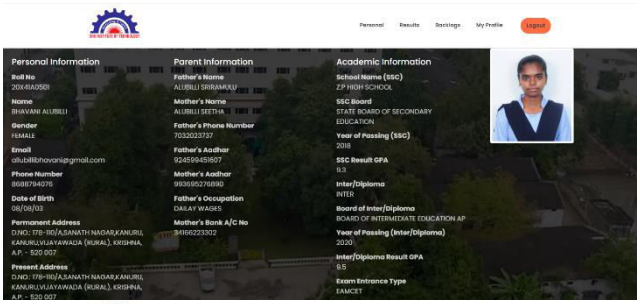
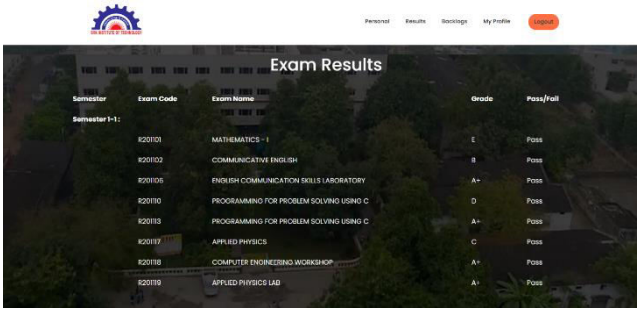


STUDENT LOGIN: (Existed Student Login Profile)







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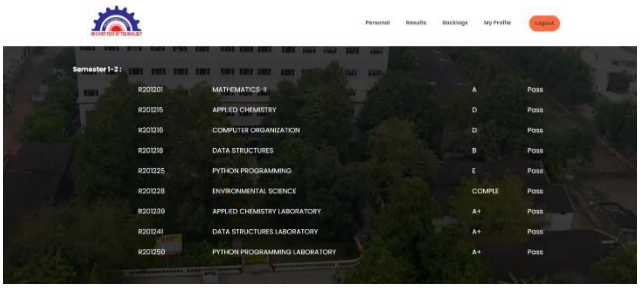
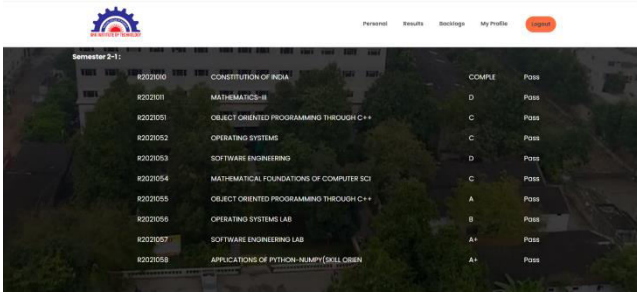


Personal Results Backlogs My Profile Logout

Semester 1-2:

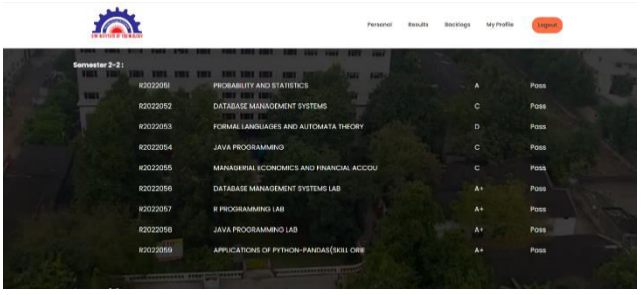
R201201	MATHEMATICS-II	A	Pass
R201215	APPLIED CHEMISTRY	D	Pass
R201216	COMPUTER ORGANIZATION	D	Pass
R201218	DATA STRUCTURES	B	Pass
R201225	PYTHON PROGRAMMING	E	Pass
R201228	ENVIRONMENTAL SCIENCE	COMPLE	Pass
R201239	APPLIED CHEMISTRY LABORATORY	A+	Pass
R201241	DATA STRUCTURES LABORATORY	A+	Pass
R201250	PYTHON PROGRAMMING LABORATORY	A+	Pass



Personal Results Backlogs My Profile Logout

Semester 2-1:

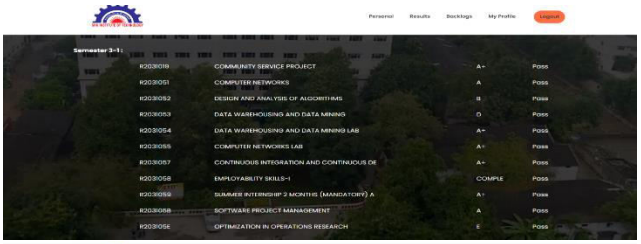
R2021010	CONSTITUTION OF INDIA	COMPLE	Pass
R2021011	MATHEMATICS-III	D	Pass
R2021051	OBJECT ORIENTED PROGRAMMING THROUGH C++	C	Pass
R2021052	OPERATING SYSTEMS	C	Pass
R2021053	SOFTWARE ENGINEERING	D	Pass
R2021054	MATHEMATICAL FOUNDATIONS OF COMPUTER SCI	C	Pass
R2021055	OBJECT ORIENTED PROGRAMMING THROUGH C++	A	Pass
R2021056	OPERATING SYSTEMS LAB	B	Pass
R2021057	SOFTWARE ENGINEERING LAB	A+	Pass
R2021058	APPLICATIONS OF PYTHON-NUMPY(SKILL ORIEN	A+	Pass



Personal Results Backlogs My Profile Logout

Semester 2-2:

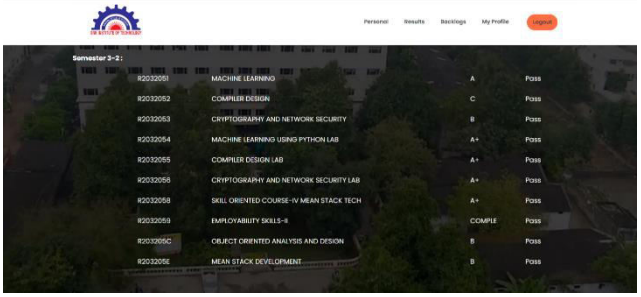
R2022051	PROBABILITY AND STATISTICS	A	Pass
R2022052	DATABASE MANAGEMENT SYSTEMS	C	Pass
R2022053	FORMAL LANGUAGES AND AUTOMATA THEORY	D	Pass
R2022054	JAVA PROGRAMMING	C	Pass
R2022055	MANAGERIAL ECONOMICS AND FINANCIAL ACCOU	C	Pass
R2022056	DATABASE MANAGEMENT SYSTEMS LAB	A+	Pass
R2022057	R PROGRAMMING LAB	A+	Pass
R2022058	JAVA PROGRAMMING LAB	A+	Pass
R2022059	APPLICATIONS OF PYTHON-PANDAS(SKILL ORIE	A+	Pass



Personal Results Backlogs My Profile Logout

Semester 3-1:

R2031019	COMMUNITY SERVICE PROJECT	A+	Pass
R2031051	COMPUTER NETWORKS	A	Pass
R2031052	DESIGN AND ANALYSIS OF ALGORITHMS	B	Pass
R2031053	DATA WAREHOUSING AND DATA MINING	D	Pass
R2031054	DATA WAREHOUSING AND DATA MINING LAB	A+	Pass
R2031055	COMPUTER NETWORKS LAB	A+	Pass
R2031057	CONTINUOUS INTEGRATION AND CONTINUOUS DE	A+	Pass
R2031058	EMPLOYABILITY SKILLS-I	COMPLE	Pass
R2031059	SUMMER INTERNSHIP 2 MONTHS (MANDATORY) A	A+	Pass
R2031060	SOFTWARE PROJECT MANAGEMENT	A	Pass
R2031061	OPTIMIZATION IN OPERATIONS RESEARCH	E	Pass



Personal Results Backlogs My Profile Logout

Semester 3-2:

R2032051	MACHINE LEARNING	A	Pass
R2032052	COMPILER DESIGN	C	Pass
R2032053	CRYPTOGRAPHY AND NETWORK SECURITY	B	Pass
R2032054	MACHINE LEARNING USING PYTHON LAB	A+	Pass
R2032055	COMPILER DESIGN LAB	A+	Pass
R2032056	CRYPTOGRAPHY AND NETWORK SECURITY LAB	A+	Pass
R2032058	SKILL ORIENTED COURSE-IV MEAN STACK TECH	A+	Pass
R2032059	EMPLOYABILITY SKILLS-II	COMPLE	Pass
R2032060	OBJECT ORIENTED ANALYSIS AND DESIGN	B	Pass
R2032061	MEAN STACK DEVELOPMENT	B	Pass

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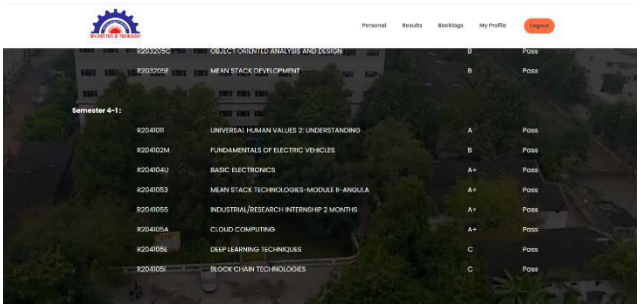
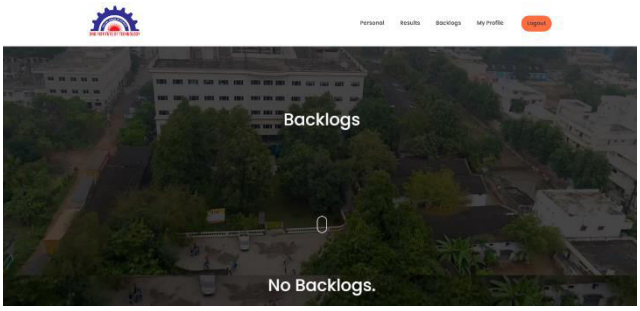
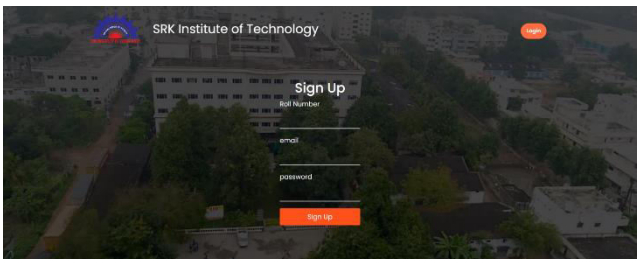
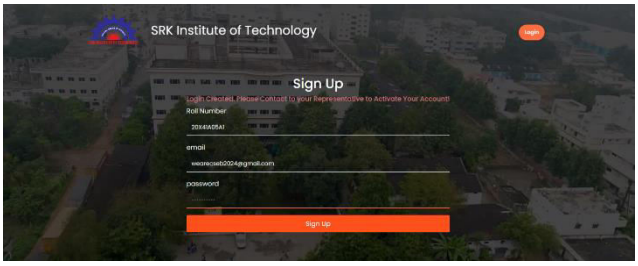




STUDENT LOGIN: (Student Signup Page)





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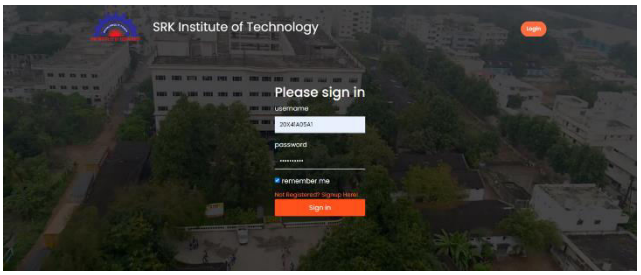

V. CONCLUSION

Current management of student data is done by maintaining digital records in various locations such as Excel spreadsheets and Google Drive. Therefore, universities are facing the problems of data linkage and repetition, data utilization delay, data redundancy, and data non-manipulation. Additionally, as the number of students continues to grow, the amount of data increases enormously, creating many challenges in maintaining, updating, and retrieving selected information.

Therefore, implementing a student navigation website that allows students to securely access their personal information and academic records (including their active backlog) increases transparency and convenience. By providing a user-friendly platform for students to monitor their progress, this site encourages accountability and empowers students to take active steps toward academic success. Additionally, ensuring secure login and logout procedures protects student privacy and data integrity. Overall, such websites encourage student engagement and effectively support their educational journey.

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