

Student Management System

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Abstract- The Student Management System (SMS) is a computerized platform designed to automate and simplify student academic and administrative tasks. Traditional student record systems rely heavily on manual processes, which lead to errors, time delays, and difficulties in maintaining large datasets. The proposed system provides fast data processing, secure storage, and efficient management of student information such as attendance, marks, personal details, and course enrollment. This system increases accuracy, reduces paperwork, and enhances institutional productivity.

Index Terms— Student Management System, Academic Records, Attendance Automation, Database, Education Technology.

I. INTRODUCTION

In educational institutions, maintaining accurate and up-to-date student data is a crucial task. Manual systems often cause problems such as record misplacement, difficulty in updating information, data redundancy, and slow retrieval. With the advancement of digital technologies, it is essential to replace outdated manual systems with an automated solution. The Student Management System provides a centralized platform for managing student profiles, academic performance, attendance tracking, and administrative information. It ensures data integrity, improves efficiency, and supports better decision-making for teachers and administrators.

II. LITERATURE SURVEY & RELATED WORK

- Study of existing manual student record systems
- Examination of challenges such as slow data retrieval and inaccuracy
- Review of modern digital student information systems used globally

- Study of database design, user authentication, and access-level control

III. STUDY & FINDINGS

The proposed system is designed with the following main modules:

The Student Management System consists of the following main modules:

A. Student Profile Management

Stores and manages personal data such as name, roll number, contact details, department, and academic year. Allows easy update and retrieval.

B. Attendance Management

Automates attendance recording and generates reports. Teachers can mark attendance digitally, and the system calculates attendance percentages.

C. Marks & Examination Management

Stores internal and external exam marks. Generates performance reports and tracks academic progress.

D. Course & Department Management

Allows institutions to manage semester-wise courses, subjects, and department structures.

E. Database Management

Ensures secure and structured storage of all data. Supports fast search, backup, and retrieval.

IV. PEER REVIEW FEEDBACK

The system design was reviewed by faculty and software professionals. They suggested improvements for better usability and performance. Key recommendations:

- Add role-based login (Admin, Teacher, Student)
 - Improve attendance reporting module
 - Include graphical performance reports
 - Enhance database security
- [5] B. Smith, “Digital record automation,” Unpublished.

V. IMPROVEMENTS BASED ON REVIEW

Based on the peer review:

Based on reviewer comments, the following upgrades were implemented:

- Role-based authentication added
- Attendance dashboard redesigned for quick view
- Student performance graphs integrated
- Data encryption and secure login added
- User interface improved for better navigation

VI. RESULTS (DETAILED ANALYSIS)

Based on the peer review:

After implementing the improvements, the system showed:

- Faster access to student records
- Accurate attendance and performance reports
- Reduced paperwork and manual effort
- High data security and reliability
- Easy usability for teachers and students

VII. CONCLUSION

The Student Management System provides a reliable and efficient platform for managing student information in educational institutions. It significantly reduces administrative workload, increases data accuracy, and improves academic monitoring. The system can be enhanced further by integrating mobile applications, cloud-based storage, biometric attendance, and AI-driven performance analytics.

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