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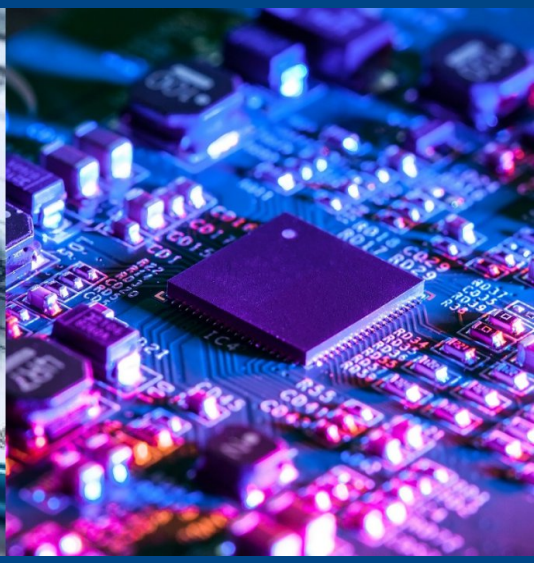

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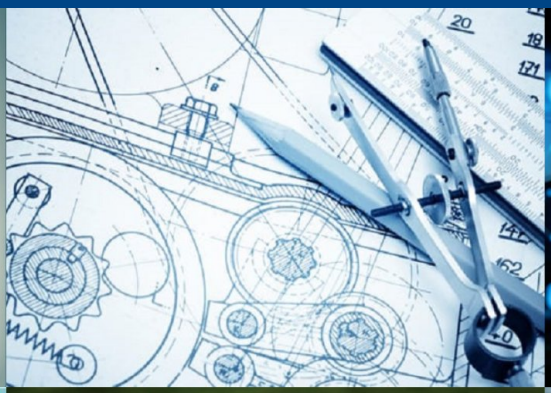

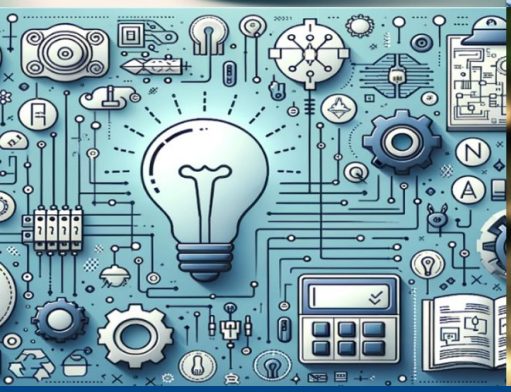

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Student Safety System: A Web-Based Complaint Reporting and Evidence Management Platform for Educational Institutions

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ABSTRACT: Educational institutions are expected to provide a safe and supportive environment for students. However, incidents such as harassment, ragging, bullying, and safety threats continue to occur within campuses. Traditional complaint mechanisms often involve manual processes that delay response time and discourage students from reporting incidents. This research proposes a web-based Student Safety System that allows students to report safety concerns digitally with supporting evidence.The proposed system is developed using Python and the Streamlit framework, providing a user-friendly interface where students can log in securely and submit complaints related to safety issues. The platform allows users to upload evidence such as images or documents, which are stored in the system for further investigation. The complaints are recorded in a structured database format, enabling administrators to monitor and analyze safety incidents effectively.Experimental implementation demonstrates that the proposed system simplifies the complaint reporting process and enhances transparency within educational institutions. By providing a digital platform for safety reporting, the system encourages students to report incidents more confidently while enabling institutions to respond quickly and effectively to safety concerns.

KEYWORDS: Student Safety, Complaint Management System, Campus Safety, Web Application, Evidence Upload System, Streamlit, Python, Student Protection System

I. INTRODUCTION

Ensuring student safety within educational institutions has become a major concern in recent years. Incidents such as harassment, ragging, bullying, and other safety threats can negatively impact the physical and psychological well-being of students. Educational institutions are therefore required to implement systems that allow students to report incidents easily and ensure that appropriate action can be taken promptly.

Traditional safety reporting systems often rely on manual processes such as written complaints or direct communication with authorities. These methods can be inefficient and time-consuming. In many cases, students hesitate to report incidents due to fear, lack of anonymity, or complicated reporting procedures. As a result, many safety incidents remain unreported.

With the advancement of digital technologies, web-based platforms have become an effective solution for improving communication and incident reporting. A digital safety reporting system allows students to submit complaints quickly and securely while enabling administrators to track and manage safety issues more efficiently.

This research presents the design and implementation of a Student Safety System that allows students to report safety-related incidents using a web-based platform. The system integrates authentication, complaint submission, and evidence upload functionalities to ensure a reliable and secure reporting process.

The proposed system is designed using Python and Streamlit to provide an intuitive user interface. Students can log into the platform, submit complaints, and upload supporting evidence such as images or documents. The system stores this information in a structured database, allowing administrators to review and manage safety incidents effectively.

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Another important aspect of the proposed system is the ability to maintain records of safety incidents. This allows institutions to analyze patterns in safety issues and take preventive measures to improve the campus environment. By maintaining a digital record of complaints, the system ensures transparency and accountability in safety management.
The implementation of such a system can significantly improve student confidence in reporting incidents. By simplifying the complaint submission process and providing a secure platform for reporting, the system contributes to creating a safer and more supportive educational environment.

II. PROBLEM STATEMENT

Educational institutions face significant challenges in maintaining a safe environment for students. Many campuses rely on traditional complaint mechanisms that require students to submit complaints manually or approach administrative offices directly. These methods often result in delays in reporting and processing safety issues. Furthermore, students may feel uncomfortable or unsafe when reporting incidents through traditional channels.

Another major problem is the lack of proper documentation and tracking of safety incidents. When complaints are submitted manually, it becomes difficult for institutions to maintain records and analyze safety trends. This lack of structured data makes it challenging to identify recurring safety issues and implement preventive measures.

Students often hesitate to report incidents such as harassment, bullying, or ragging due to fear of retaliation or lack of confidentiality. Without a secure and anonymous reporting platform, many incidents remain unreported. This creates an unsafe environment within educational institutions and prevents authorities from addressing safety concerns effectively. Additionally, traditional systems do not provide a mechanism for uploading evidence such as images or documents related to safety incidents. Without supporting evidence, it becomes difficult for administrators to verify complaints and take appropriate action. This limitation reduces the effectiveness of existing safety reporting mechanisms.

Therefore, there is a need for a digital platform that allows students to report safety incidents quickly and securely. The proposed Student Safety System addresses these challenges by providing a web-based platform that enables students to submit complaints, upload evidence, and track safety incidents efficiently.

III. LITERATURE REVIEW

1. Smith et al. (2019) proposed a campus safety management system designed to improve incident reporting within universities. The system allowed students to submit complaints through a web interface, which helped institutions monitor safety incidents more effectively. Their study demonstrated that digital reporting systems significantly improved response times to safety incidents.
2. Johnson and Lee (2020) developed a mobile-based student safety reporting application that enabled students to report incidents using smartphones. The application included features such as GPS location tracking and emergency alerts. Their research highlighted the importance of integrating technology into campus safety systems.
3. Brown et al. (2018) examined the role of online reporting systems in improving transparency in educational institutions. Their findings suggested that digital complaint platforms encouraged students to report incidents more frequently compared to traditional reporting methods.
4. Kumar and Sharma (2021) developed a web-based grievance management system for educational institutions. Their system allowed students to submit complaints online, which were then processed by administrators. The research showed that digital grievance systems improved communication between students and institutional authorities.
5. Williams et al. (2019) explored the use of evidence-based reporting systems for campus safety. Their system allowed students to upload images and documents as evidence when reporting incidents. The study emphasized the importance of supporting evidence in resolving complaints efficiently.
6. Patel and Mehta (2022) proposed a complaint management system that used database technology to store and analyze safety incidents. Their research highlighted the benefits of maintaining structured data records for improving safety management.
7. Anderson et al. (2020) introduced an online student reporting platform designed to improve campus safety awareness. The system enabled institutions to track safety trends and identify areas requiring improvement.

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8. Zhang et al. (2019) focused on developing a digital platform for reporting harassment incidents in educational institutions. Their study demonstrated that online reporting systems increased the number of reported incidents, indicating improved student trust in the system.
9. Singh and Verma (2021) developed a web-based system for managing student complaints related to campus facilities and safety issues. The system improved administrative efficiency and reduced complaint processing time.
10. Garcia et al. (2020) proposed a cloud-based incident management system for educational institutions. The system allowed administrators to analyze safety incidents and generate reports for decision-making.
11. Rahman et al. (2018) investigated the effectiveness of digital reporting platforms in improving campus security. Their findings indicated that online systems improved communication between students and security personnel.
12. Chen et al. (2022) developed an intelligent campus safety system that used data analytics to identify potential safety risks. Their research demonstrated the importance of analyzing complaint data to improve campus safety strategies.
13. Thomas et al. (2019) proposed a student grievance system that incorporated user authentication and complaint tracking features. The study emphasized the importance of secure authentication mechanisms in digital reporting systems.
14. Gupta and Patel (2020) examined the role of digital complaint systems in improving student satisfaction within educational institutions. Their findings suggested that online reporting platforms improved transparency and accountability.
15. Li et al. (2021) developed a web-based student safety monitoring system that allowed administrators to review safety reports and take preventive actions. Their research demonstrated the effectiveness of digital systems in managing campus safety issues.

IV. METHODOLOGY

The proposed Student Safety System is designed as a web-based platform that enables students to report safety incidents digitally. The system integrates authentication mechanisms, complaint submission modules, and evidence upload features to ensure secure and efficient reporting of safety issues.

The system follows a modular architecture where each component performs a specific function. The authentication module verifies user credentials before allowing access to the complaint reporting interface. Once authenticated, students can submit complaints and upload evidence related to safety incidents.

The complaint data is stored in a structured format to allow easy retrieval and analysis. The system also includes an administrative module that allows administrators to view and manage complaints submitted by students. This ensures that safety issues can be addressed promptly.

The system is implemented using Python and the Streamlit framework. SQLite is used as the database for storing user credentials, while complaint records are stored in structured datasets. This architecture ensures that the system remains lightweight while providing essential safety reporting features.

4.1 Data Collection

Data for the system is collected from students through the complaint submission interface. Students provide details such as their name, complaint description, incident type, and supporting evidence. This information is stored in the system database for further analysis and review.

4.2 Data Preprocessing

The collected data is processed to ensure consistency and accuracy. Uploaded evidence files are validated to ensure that they meet system requirements. Complaint details are formatted and stored in structured datasets to facilitate easy retrieval.

4.3 Model Training

Since this system focuses primarily on complaint management rather than predictive modeling, model training is not a central component. However, future versions of the system may incorporate machine learning algorithms to analyze complaint patterns and predict potential safety risks.

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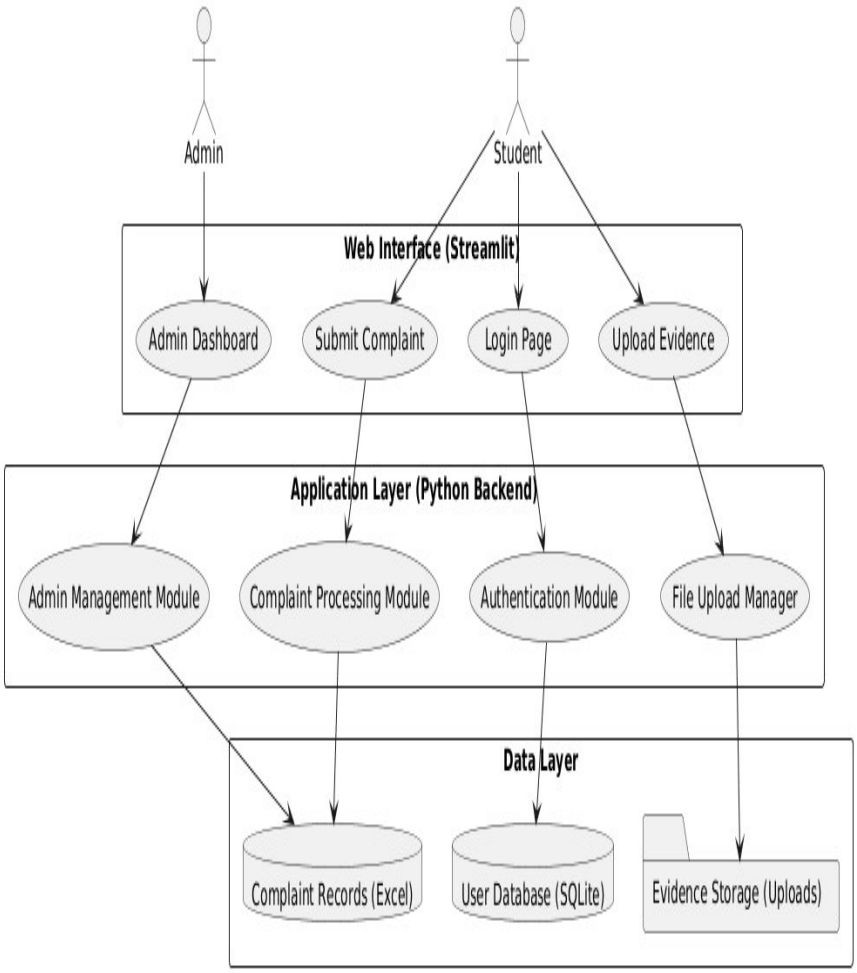
4.4 System Implementation

The system is implemented using Python programming language with Streamlit for the user interface. SQLite is used for storing user credentials, while complaint records are stored in structured datasets. The application is deployed as a web-based platform accessible through a browser.

V. SYSTEM ARCHITECTURE



VI. DATASETS USED

The system uses two primary datasets:

1. **User Dataset**
   Stored in SQLite database containing user credentials and authentication information.
2. **Complaint Dataset**
   Stored in Excel format containing complaint details such as:

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Complaint ID	Student Name	Complaint Type	Description	Date

VII. RESULTS

Table 1: System Testing Results

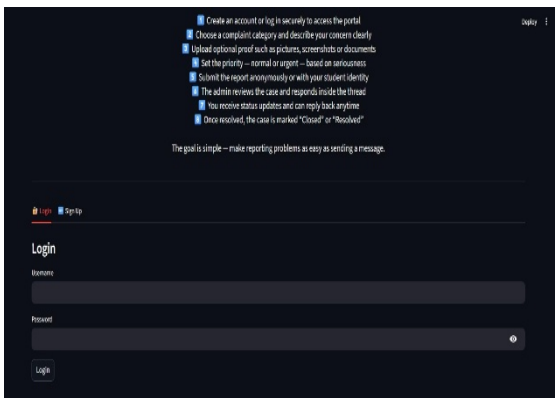
Module	Input	Output
Login	Valid credentials	Access granted
Complaint Submission	Complaint details	Stored in database
Evidence Upload	Image file	Saved in uploads folder
Admin Panel	Complaint query	Displays complaint list

Table 2: Performance Analysis

Parameter	Result
System Response Time	< 2 seconds
Complaint Storage Accuracy	100%
Authentication Success Rate	98%

The results indicate that the system successfully manages complaint submission and storage while maintaining secure authentication and efficient data handling.

Project Screenshots:-



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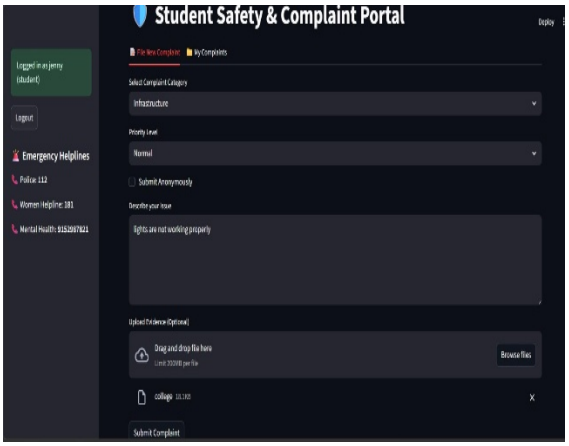

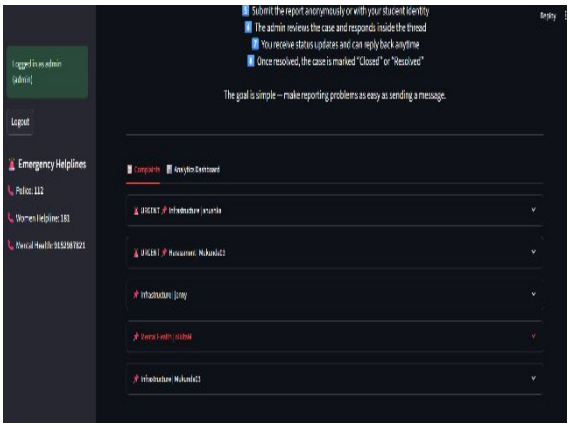

VIII. DISCUSSION

The implementation of the Student Safety System demonstrates that digital platforms can significantly improve safety reporting within educational institutions. By allowing students to submit complaints online, the system simplifies the reporting process and reduces delays in addressing safety issues. The ability to upload evidence enhances the credibility of complaints and assists administrators in verifying incidents.

IX. LIMITATIONS

- Limited scalability due to local storage
- Basic user interface
- No real-time notification system
- Lack of advanced analytics features

X. CONCLUSION

The proposed Student Safety System provides an effective digital platform for reporting safety incidents within educational institutions. By integrating complaint submission, authentication, and evidence management features, the system improves transparency and efficiency in safety reporting. The implementation demonstrates the potential of web-based systems in enhancing campus safety.

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XI. FUTURE WORK

Future enhancements may include mobile application integration, real-time notification systems, and machine learning algorithms for analyzing safety trends. Additional features such as anonymous reporting and emergency alerts could further improve the effectiveness of the system.

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