

Development Of Student Violation Tracking System

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Abstract - The Student Violation Tracking System was developed to improve the slow and disorganized way student violations were recorded manually. Paper based records were often misplaced, disciplinary actions were delayed, and managing student and parent information was difficult. This digital platform helps Prefects and Advisers keep track of student behavior in a clear and organized way. All student and parent information is stored in one central location. Violations can be recorded with detailed notes, and Anecdotal Records show actions taken and recommendations for improvement. For major offenses or repeated violations, Advisers can use the “Refer to Prefect” feature to forward the case to the Prefect for further action, ensuring serious cases receive proper attention. The system also automatically sends SMS notifications to parents or guardians whenever a “Parent/Guardian Notification” sanction is applied, keeping them informed immediately. Appointment scheduling and proper documentation for each case help maintain a structured and transparent process. Testing showed that the system performs as expected, reducing delays and keeping records organized. It is mobile friendly, easy to navigate, and works well even with unstable internet connections. Overall, the system provides a faster, more organized, and reliable way to manage student violations while keeping parents informed.

Keywords - Violation Tracking System, Anecdotal Records, SMS Notifications, Student Discipline, Parent Notification, Refer to Prefect

I. INTRODUCTION

Schools commonly rely on manual logbooks and paper-based anecdotal records to monitor student discipline. At Tagoloan Senior High School, this approach resulted in missing records, delayed sanctions, and difficulty tracking repeat offenses. Daily violations such as tardiness and incomplete uniforms were particularly hard to monitor due to the volume of cases. More serious violations were also affected by inconsistent documentation.

This study presents the development of a web-based Student Violation Tracking System designed to centralize disciplinary records, improve accuracy, and enhance communication with parents through SMS notifications. The system supports both the Prefect of Discipline and Class Advisers and is accessible through web and mobile browsers.

II. REVIEW OF RELATED LITERATURE

A. Student Discipline Management Systems - Previous studies highlight the importance of automated systems in managing student behavior records. Digital tracking systems reduce administrative workload and improve consistency in disciplinary actions.

B. Web-Based Information Systems in Education - Web-based systems provide accessibility, centralized storage, and real-time updates. These systems allow multiple users to access data securely and efficiently, making them ideal for school management applications.

C. Existing Violation Tracking Approaches

Most existing approaches focus on manual documentation, which limits reporting capabilities and historical analysis. This project improves upon these methods by implementing automated sanction stages and comprehensive reporting features.

III. METHODOLOGY

A. System Development Approach

The researchers used the System Development Life Cycle (SDLC) methodology, consisting of planning, analysis, design, development, testing, and implementation phases.

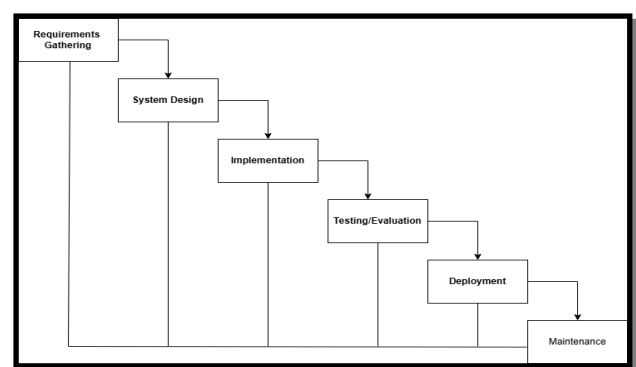


Figure 1.0: Modified Waterfall Software Development Life Cycle (SDLC)

B. System Design

The system design includes:
Data Flow Diagrams (DFD) to illustrate information movement

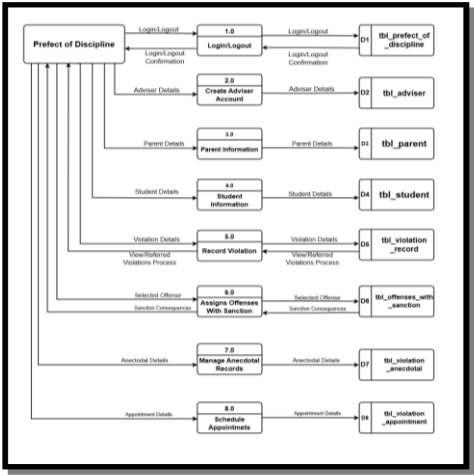


Figure 2.0: Data Flow Diagram for Prefect of Discipline

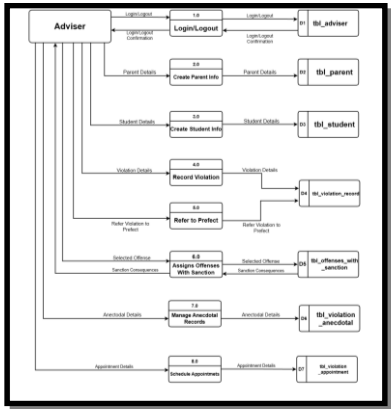


Figure 2.1: Data Flow Diagram for Adviser

Entity Relationship Diagrams (ERD) to define data relationships

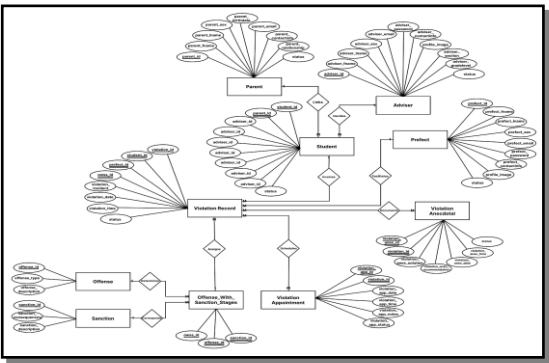


Figure 3.0: Entity Relationship Diagram

Use Case Diagrams to represent user interactions

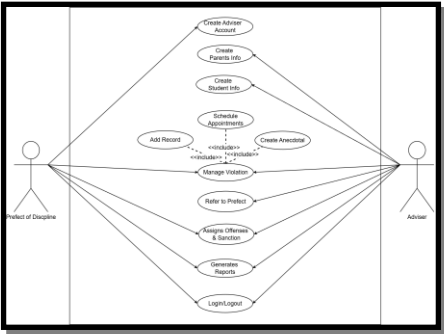


Figure 4.0: Use Case Diagram

These diagrams ensure clear system structure and data consistency.

C. System Features

- Key features of the system include:
- Student violation recording
- Automated sanction assignment
- Role-based access for advisers and prefects
- Violation history tracking
- Report generation in PDF format

IV. RESULT AND DISCUSSION

After implementation and testing, the system demonstrated improved efficiency in managing student violations. Authorized users were able to record offenses quickly, retrieve student histories accurately, and generate reports without manual computation. The centralized database reduced data redundancy and ensured consistent sanction implementation based on offense severity. The system also improved coordination between advisers and the Prefect of Discipline by clearly defining roles and access levels. Overall, the results confirm that the system meets its objectives and supports effective discipline management.

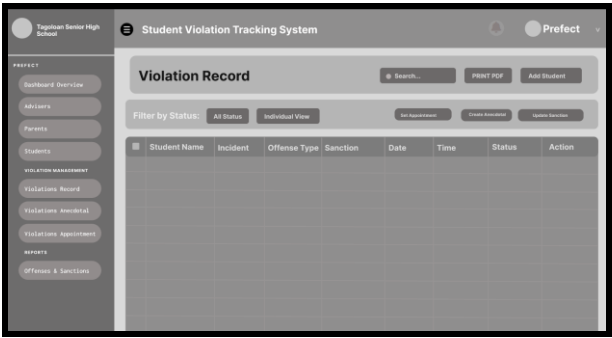


Figure 5.0: Prefect Violation Record Low-Fidelity

This interface showed the violation records for the Prefect of Discipline. It helped the Prefect view, manage, and update student violations in one place. The top buttons included Search to find records, Print PDF to save or print the list, and Add Student to enter new violations. Filters such as All Status and Individual View helped sort records. Other actions, such as Set Appointment, Create Anecdotal, and Update Sanction, allowed the Prefect to manage each case quickly. The table displayed details such as ID, Student Name, Incident, Offense Type, Sanction, Date, Time, Status, and Action, making it easy to track and handle student violations.

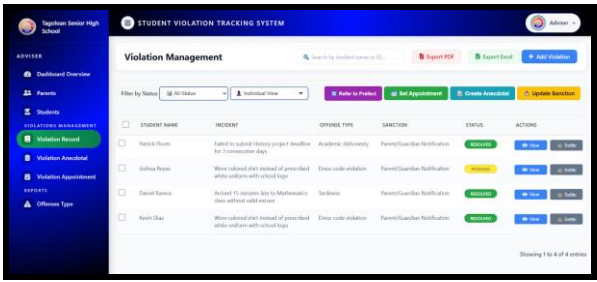


Figure 5.0: Adviser Violation Record High-Fidelity

The Violation Management feature helps advisers easily record and monitor student violations in one place. They can search for students by name or ID, add new violation records, view incident details, and check the offense, sanction, and current status of each case. The system also allows advisers to refer cases to the Prefect, set appointments, create anecdotal notes, update sanctions, and export records to PDF or Excel. This makes it easier for the school to organize, track, and properly handle student behavior cases.

```
1 public function store(Request $request)
2 {
3     $validated = $request->validate([
4         'student_id' => 'required|string|max:100',
5         'student_name' => 'required|string|max:255',
6         'student_email' => 'required|string|max:255',
7         'student_phone' => 'required|string|max:255',
8         'student_address' => 'required|string|max:255',
9         'student_contactinfo' => 'required|string|max:255',
10        'student_parent_id' => 'required|nullable|string|max:100',
11        'student_advisor_id' => 'required|nullable|string|max:100',
12        'student_status' => 'required|in:active,transferred,graduated',
13    ]);
14
15    // Create student record
16    $student = new Student($validated);
17    $student->save();
18
19    // Create parent record
20    $parent = new Parent($validated);
21    $parent->save();
22
23    // Create advisor record
24    $advisor = new Advisor($validated);
25    $advisor->save();
26
27    // Link student to parent and advisor
28    $student->parent_id = $parent->id;
29    $student->advisor_id = $advisor->id;
30    $student->save();
31
32    return redirect()->route('student.management')->with('success',
33        'Student record successfully saved!');
34 }
```

Figure 6.0: Code Snippet For Store Student

This code was responsible for saving multiple student records into the system at once. Its main function was to validate each student's information such as personal details, contact information, parent ID, and adviser ID ensuring that the data was complete and linked to existing parent and adviser records. After validation, the method looped through all provided student entries and created a new student record in the database for each one, assigning a default status of "active" if none was specified. Once all student records were successfully stored, the system redirected the user to the student management page, and a success message was displayed to confirm that the students had been saved.

System Usability System (SUS)		P1	P2	P3	P4	P5	Total
1.	I think that i would like to use this System Frequently	4	4	0	3	4	
2.	I found the system unnecessarily complex	2	4	4	4	3	
3.	I thought the system was easy to use.	4	3	2	2	3	
4.	I think that I would need assistance to be able to use this system.	4	1	4	2	2	
5.	I found the various functions in this system were well integrated.	2	3	2	4	4	
6.	I thought there was too much inconsistency in this system	3	4	3	1	3	
7.	I would imagine that most people would learn to use this system very quickly.	4	1	1	3	3	
8.	I found the system very cumbersome or awkward to use.	2	0	2	4	4	
9.	I felt very confident using the System.	3	4	3	3	3	
10.	I need to learn a lot of things before I could get going with the system.	2	2	4	4	3	
Total:		75	65	65	75	80	360.5
Average SUS Score:		72					

Table 1.0: Final SUS Score Computation

The final SUS results show that the Student Violation Tracking System achieved an average usability score of 72, indicating an acceptable level of usability while leaving room for improvement. Overall, users were able to complete their tasks, showing that the system meets its basic purpose. A score of 72 suggests the system is generally usable, but some features may need refinement to improve the overall experience.

The Prefect (P1) and some Advisers (P4 and P5) gave higher scores because the system helped them perform tasks such as viewing student records, managing violations, and handling complaints more efficiently. Other Advisers (P2 and P3) gave lower scores, suggesting that some parts of the system were confusing or difficult to use, especially for first-time users. These results indicate that while the main functions are effective, clearer navigation and guidance are needed for new users.

During the evaluation, several strengths and weaknesses were observed. Positively, users could complete their tasks correctly, and the system worked well with a stable internet connection. Negatively, some users experienced difficulties at the start, slow page loading with weak internet, and occasional delays in updates. These issues can be addressed with better system optimization, clearer instructions, and brief user training. Overall, the system reduces manual recording, paperwork, and scattered reports. With further improvements, it can become easier to use for all users, especially new Advisers, while continuing to support effective monitoring and management of student violations.

V. CONCLUSION

The Student Violation Tracking System successfully addressed the challenges associated with manual and paper-based disciplinary record-keeping at Tagoloan Senior High School. By providing a centralized and web-based platform, the system improved the efficiency, accuracy, and organization of recording student violations, managing sanctions, and maintaining anecdotal records. The integration of role-based access for advisers and the Prefect of Discipline enhanced coordination and ensured that disciplinary actions were handled appropriately.

Testing and evaluation results, including the System Usability Scale score, indicate that the system is generally usable, mobile-friendly, and effective in reducing delays and paperwork. Despite minor issues related to initial navigation and performance under unstable internet conditions, the system met its intended objectives. Overall, the Student Violation Tracking System offers a more organized, reliable, and transparent approach to managing student discipline and keeping parents informed through timely SMS notifications.

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REFERENCES

- [1] G. Eason, B. Noble, and I.N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," *Phil. Trans. Roy. Soc. London*, vol. A247, pp. 529-551, April 1955. (references)
- [2] Agustyn, Z. B., & Wardhana, A. C., Rancang bangun sistem informasi pemantauan pelanggaran siswa di SMP Negeri 1 Sumbang, *Jurnal Ilmiah Teknik Elektro Terapan*, 12(2), 2023.
- [3] Arisandi, D., Syahputra, M. F., Purnamawati, S., Hizriadi, A., & Azra, M. H., Face recognition for a student violation point system in schools using the Fisherface algorithm, *Journal of Web Technologies Education*, 2022.
- [4] Calibay, S. M., Castro, S. M., Rayon, K. D. J., Ranises, J., & Pagaling, M. R., Development of Student Internship Monitoring System, 2022.
- [5] De La Cruz, & Diaz, Development of a web based student monitoring system with Short Message Service (SMS) notifications, *International Journal of Educational Technology*, 2019.
- [6] Desierto, Dualan, & Virata, Web based student violation management system for St. Dominic College of Asia using the Waterfall development methodology, *Journal of Educational Technology & Systems*, 2022.
- [7] Dewi, A. K., Design and development of a web based student violation monitoring system application for SMP Negeri 2 Wonosalam, Undergraduate thesis, Universitas Semarang, 2022.
- [8] Dinasti, N. K., & Nuryati, Implementation of the waterfall model in designing a prescription abuse prevention system with patient identification in Sleman Regency pharmacies, *Procedia of Engineering and Life Science*, 2(2), 2022.
- [9] Espinosa, K. P. M., Implementing school disciplinary program through participatory action research approach, 2020.
- [10] Fadli, S., Ashari, M., Asyari, H., & Pardiansyah, A. S., Implementation of the AHP SMARTER method in the decision support system for giving sanctions for violation, 2022.
- [11] Goyal, A., Optimising software lifecycle management through predictive maintenance: Insights and best practices, *International Journal of Science and Research Archive*, 7(2), 693-702, 2022.
- [12] Grepon, B. G. S., et al., Designing and implementing eschool systems: An information systems approach to school management of a community college in Northern Mindanao, Philippines, 2021.
- [13] Heradura, J. L., & Damasco, L. B. Jr., Improving monitoring and checking of students with violations in university using a mobile violation application, University of St. La Salle, Bacolod City, Philippines.
- [14] Huang, T., FEAD: Figma enhanced app design framework for improving UI/UX in educational app development, 2024.
- [15] Jamilu, B. A., Iliyasu, U., & Tanko, M. A., Web based teaching practice management system (WBTPMS) A case study of Federal University DutsinMa, Katsina State Nigeria, *Journal of Software Engineering and Simulation*, 9(7), 1-10, 2023.
- [16] Joey, et al., Web based student monitoring system with Short Message Service (SMS), *International Journal of Advance Research in Computer Science and Management Studies*, 7(6), 813, 2019.
- [17] Martadina, P. J., & Aslamiah, S., Website design information system of recording offenses and punishment students SMK Muhammadiyah 8 Siliragung use Waterfall development method, *Jurnal Teknologi Informasi Universitas Lambung Mangkurat*, 9(1), 2024.
- [18] Matthies, C., Huegle, J., Dürschmid, T., & Teusner, R., Attitudes, beliefs, and development data concerning Agile software development practices, *Proceedings of the 41st International Conference on Software Engineering: Software Engineering Education and Training (ICSESEET)*, 2019.
- [19] Navarra, J. M., & Antonio, E. O., Efficient student monitoring and data tracking system, *Psychology and Education: A Multidisciplinary Journal*, 2025.
- [20] Nazar, S., Analysis and design of assessment and monitoring system web based, Faculty of Computer Science, Mercu Buana University, Indonesia, 2024.
- [21] Neelambaran, T., Shuvan, S., Aathavan, V. S., & Ramana, K., Student discipline monitoring and management portal for faculty members, *International Research Journal of Education and Technology*, 7(3), 3536, 2025.
- [22] Olipas, C. N. P., The design and development of student information and violation management system (SIVMS) for a higher educational institution, *International Journal of Innovative Research in Multidisciplinary Field*, 2020.
- [23] Owuor, E. A., Kalai, J. M., & Okoth, U., Students' involvement in decision making and discipline management in public secondary schools, *IOSR Journal of Humanities and Social Science (IOSRJHSS)*, 27(7), 38-48, 2022.
- [24] Pugada, R. D., Yellow Form 2.0: A digital monitoring system for student decorum violations, *European Journal of Contemporary Education and ELearning*, 3(3), 17-26, 2025.
- [25] Purnama, R., ViMoIS: The student violation point monitoring information system, *Edumatic: Jurnal Pendidikan Informatika*, 2022.
- [26] Rozy, A. F., & Purnama, R., ViMoIS: The student violation point monitoring information system, *Edumatic: Jurnal Pendidikan Informatika*, 6(2), 2022.
- [27] Sanchez, E., Towers, E., Lobato, A., & Bardales, S., Student discipline plan 2024-2025, *Mater Academy Davenport*, 2024.
- [28] Saravanas, A., & Curinga, M. X., Simulating the software development lifecycle: The waterfall model, *Applied System Innovation*, 6(6), 108, 2023.
- [29] Setiawan, W., Pratama, S. A., Wirdayanti, & Joeffie, Y. Y., Implementation of a student violation counseling guidance information system using a points system, *International Journal of Computer Science*, 2024.
- [30] Talamoron, C. J., Student Record of Offense Monitoring System, Capstone project, 2022.
- [31] Trabelsi, Z., Alnajjar, F., Parambil, M. M. A., Gochoo, M., & Ali, L., Real time attention monitoring system for classroom: A deep learning approach for student's behavior recognition, *Big Data and Cognitive Computing*, 2023.
- [32] Yanto, H. D., Design build a REST API student abuse monitoring system on SMP Budi Bakti Samarinda, S1 Thesis, STMIK Widya Kintang Dharma, 2019.
- [33] Zamri, D. F. M., Ahmadon, F., Mohamed Aris, R., & Mohd Shahrin, N. B. M., Dental treatment orientation for children using role playing game, Faculty of Computer and Mathematical Sciences, UiTM Jasin, Melaka, Malaysia.
- [34] Zhou, H., Jiang, F., Si, J., Xiong, L., & Lu, H., StuArt: Individualized classroom observation of students with automatic behavior recognition and tracking, 2022.