

Development of a Web-Based School Academic Information System Using the Rapid Application Development (RAD) Method

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Abstract. *In the current digital era, meeting the efficiency demands of academic data management with a large student body of 775 students poses a distinct challenge for schools. The management and dissemination of information often face constraints such as slow data processing, difficult information access, and limited administrative personnel. These obstacles result in prolonged and less transparent processes for reporting student performance and attendance, thereby hindering parents from optimally monitoring their children's progress due to the lack of direct and real-time access. This research aims to develop a web-based academic information system capable of efficiently integrating data management. The system is developed using the Rapid Application Development (RAD) method to ensure a fast, iterative, and participatory development process. Key features include grade recording, attendance tracking, data verification, and online information portals for teachers, students, class guardians, and parents. The black-box testing results indicate that all core modules functioned according to the expected requirements.*

Keywords: *Academic Information System, Web, Rapid Application Development (RAD), PHP, MySQL.*

INTRODUCTION

The development of Information and Communication Technology (ICT) has had a significant impact on various sectors, including education, where the use of information systems has become a key pillar supporting school managerial and academic activities. Globally, this phenomenon is recognized as a key driver of changes in educational organizational governance models ((UNESCO, 2023). Minister of Education, Culture, Research, and Technology Regulation Number 63 of 2022 mandates the use of digital platforms for educational data management as part of the national digital transformation agenda. This policy makes the development of information systems in schools no longer merely an option but an urgent policy requirement.

SMA Negeri 1 Laguboti currently manages academic data for 775 students and still faces efficiency challenges because the system is not yet fully digitized. The hierarchical process of recording grades from subject teachers to homeroom teachers, daily attendance recapitulation, and separate distribution of teaching schedules results in longer processing times for information flows. This situation limits data accessibility for teachers and hinders the transparency of real-time reporting of student learning outcomes and discipline to parents.

To meet the demands of the digital era and the need for closer collaboration between schools and families, developing an integrated software system is a strategic move. Utilizing a web platform is considered more functional than a mobile application due to its ability to handle and display large-scale data in a structured manner and its accessibility across multiple devices without the need for additional installation (Sommerville, 2016). Through this system, teachers can securely input, update, and verify data

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before the data lock deadline, thereby minimizing the risk of administrative errors before report cards are officially issued. Implementing a web-based academic information system is an integral part of a school's digital transformation strategy, which encourages a shift in work culture from a physical document-based approach to an integrated and responsive information management ecosystem that goes beyond mere process automation (Fitzgerald et al., 2013)..

Although numerous studies have been conducted on academic information systems in secondary schools, most previous research has focused primarily on the functional aspects of the system without adequately addressing the suitability of development methods for the limited resources and technological infrastructure commonly found in regional public schools (Pohan et al., 2024; Widjaja & Hermanto, 2023).. This gap highlights the need for research that addresses not only the technical design of the system but also the selection of development methods that explicitly accommodate end-user involvement and rapid iteration cycles in response to the dynamic needs of educational institutions.

In the development process, this study adopted the Rapid Application Development (RAD) method. The RAD method is highly effective for developing systems requiring rapid turnaround times, prioritizing flexibility and prototype iterations that actively involve user feedback (Pressman & Maxim, 2020). This method is considered far more appropriate than rigid approaches like Waterfall, ensuring that each module developed is truly responsive to specific needs in the field. With RAD phases encompassing requirements planning, user design, construction, and cutover, the development process can proceed in parallel, iteratively, and oriented towards the actual needs of users in the field.

Based on the description above, this research aims to design and build an integrated web-based academic information system to support administrative processes at SMA Negeri 1 Laguboti. The implementation of this innovation is expected to improve the efficiency, accuracy, and professionalism of school document management while providing real-time access to academic monitoring for students and parents. Thus, this system serves not only as an administrative tool but also as a foundation for digital transformation that supports a transparent and adaptive educational environment. The contribution of this study lies in the application of the RAD method to develop a role-based, multi-user, web-based academic information system for a regional public senior high school. Unlike previous studies that primarily focused on functional system development, this study emphasizes iterative user involvement, real-time academic monitoring, and the integration of academic roles involving administrators, teachers, homeroom teachers, students, and parents.

LITERATURE REVIEW

The development of a school Academic Information System (SIKAD) is one form of digital transformation implementation in education governance. Academic information systems play a crucial role in supporting the more structured management of academic data, such as student, teacher, class, subject, schedule, attendance, grades, and academic reports. SIKAD serves not only as an administrative tool but also as an information integration medium that can improve work efficiency, accelerate data presentation, and support managerial decision-making. Educational technology needs to be used appropriately to support access, quality, system management, and education governance (UNESCO, 2023). Consequently, the digital education ecosystem requires the support of information systems, data governance, interoperability, and effective institutional management (OECD, 2023).

Utilizing web-based technology is one approach widely used in developing academic information systems. Web platforms allow systems to be accessed flexibly by various users via the internet or intranet without relying on a specific device. Furthermore, web technology supports multi-user data management, real-time information presentation, and the integration of various academic modules. The PHP programming language and MySQL database are still widely used in academic information system development because they are relatively easy to implement, have extensive community support, and can manage academic data in a structured manner. Developing a website-based academic information system using the Rapid Application Development (RAD) approach can facilitate faster and more organized academic data management (Santoso & Amanullah, 2022).

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Various software development methods have been used in academic information system design. One commonly used method is the Waterfall method, a linear and sequential system development method. This method offers advantages in terms of process order, documentation, and systematic development stages. However, in the dynamic context of school administration, user needs can change along with changes in policies, curriculum, schedules, and academic reporting requirements. Therefore, more flexible, and adaptive methods are needed to allow the system to adapt to user needs throughout the development process (Aryanti et al., 2021; Harahap et al., 2024).

Rapid Application Development (RAD) is a system development method that emphasizes speed, user involvement, prototyping, and iteration. RAD is an information systems development approach developed to address the need for rapid application development (Beynon-Davies & Holmes, 2002). User involvement is crucial in the RAD process, particularly through prototyping and user feedback (Mackay et al., 2000). In the context of academic information systems development, RAD can be applied to building web-based academic information systems because this method is oriented towards time efficiency and user involvement (Aryanti et al., 2021). RAD in the development of web-based academic information systems has demonstrated its relevance in producing systems that meet user needs (Fitriani et al., 2024; Harahap et al., 2024).

In addition to methodological aspects, ease of access to information for stakeholders is also a crucial issue in the development of school academic information systems. Academic systems are needed not only by school administrators but also by teachers, homeroom teachers, students, parents, and principals. Each actor has different information needs and authority. Admins require master data management features, teachers require grade and attendance input features, homeroom teachers require student progress summaries, students and parents need access to academic information, and principals require reports to support decision-making. Therefore, the development of a web based SIAKAD (School Academic Information System) requires attention to the design of multi-user access rights so that the system can be used according to the roles and responsibilities of each user.

Developments in mobile and biometric technologies, such as facial recognition, have also driven innovation in student attendance and monitoring systems. These technologies offer the advantage of supporting fast and instant attendance recording. However, for more complex academic data management, such as grade recapitulation, schedule management, class allocation, attendance, and academic report preparation, web-based systems remain superior because they provide a broader visual workspace, support multi-user data management, and are easier to integrate with other school administration modules. Therefore, a web-based approach remains relevant for SIAKAD development, which requires comprehensive academic data management.

TABLE 1. Comparison Table of Previous Research

No	Author	Method / Platform	Main Finding	Research Gap / Relevance to This Study
1	Dzul Fikri (2024)	MADLC / Android Mobile	Developed an Android-based mobile application with API integration for attendance to solve limitations of a separate web system. Usability testing using SUS scored 83.	Relevance: Focuses on digitizing academic and attendance data Gap: Uses MADLC and focuses on an Android mobile platform, whereas the current system is purely web-based.
2	Ardiansyah (2017)	Object Oriented, RAD / Web	Created a web-based prototype using an object-oriented approach and RAD to manage student, teacher, attendance, grading, and scheduling	Relevance: Manages similar core academic data (grades, attendance, schedules) using a web platform Gap: The previous study stopped at the prototype stage,

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			data, which increased data efficiency and security.	while the current research implements a fully functional production system.
3	Putri Nurhaliza (2021)	Waterfall / Web (PHP & MySQL)	Built an academic information system using PHP and MySQL that increased data management efficiency and security while facilitating easier information access.	Relevance: Utilizes the exact same technological stack (PHP and MySQL) for a web-based academic system. Gap: Uses the Waterfall method and lacks specific focus on specialized dashboards like homeroom teachers
4	Gilang Dwi Fahri Harahap, et al. (2023)	RAD / Web	Proved that the RAD method provides fast and iterative solutions, resulting in more structured data management and improved communication between schools and parents	Relevance: Demonstrates the effectiveness of structured web systems in bridging information to parents. Gap: The study setting and specific use cases are different, as the current system is tailored specifically for the business processes of SMA Negeri 1 Laguboti
5	Renita Selviana, Abdul Aziz	RAD / Android	Successfully implemented an Android application with a 100% success rate to deliver academic information quickly and accurately to parents without them needing to visit the school	Relevance: Highlights the importance of delivering academic information directly to parents. Gap: Developed exclusively for Android environments, whereas the current system ensures cross-device accessibility through a responsive web interface.
6	Mufid Aden et al. (2023)	Waterfall, ISO 25010 / Web	Developed a web-based alumni system tested with ISO 25010 standards, resolving data management issues and providing up-to-date alumni information.	Relevance: Utilizes a web-based platform to solve institutional data management problems. Gap: The scope is strictly limited to alumni data, whereas the current research handles active academic operations (grades and attendance)
7	Siti Fatimah, Susuwen, Yesi Kurniasi (2019)	Prototype / Web	Replaced inefficient Microsoft Excel processes with a web system that manages students, teachers, classes, grades, attendance,	Relevance: Addresses the exact same problem of migrating from manual Excel tracking to an automated web system. Gap: Uses the Prototype methodology, whereas the

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			and schedules to generate fast and accurate reports	current system utilizes a more comprehensive system development lifecycle.
8	Mochamad Alif Kurniawan, Iskandar Fitri, Deny Hidayatullah (2021)	RAD, UCD / Web (PHP CodeIgniter, MySQL)	Created a web-based thesis guidance system using RAD and UCD, featuring online submissions and live chat, tested using the Black Box method	Relevance: Develops a web-based educational system using PHP and MySQL. Gap: The domain is specific to university thesis guidance workflows, which requires different data structures compared to high school academic monitoring.
9	Nadia Fatin Harahap (2023)	Waterfall, WebQual 4.0 / Web (PHP, MySQL)	Developed a web academic system tested using WebQual 4.0 (focusing on usability, info, and interaction), achieving 66% user satisfaction.	Relevance: Involves building a web-based academic system using PHP and MySQL. Gap: Applies the Waterfall method and WebQual 4.0 testing; the current study focuses on role-based data validations (e.g., locking grades by homeroom teachers)

Based on the literature review, there is still room for development in web-based school academic information systems that focus not only on data digitization but also on the integration of user roles within a single academic system. Several previous studies have applied RAD to the development of academic information systems, but the development of systems that emphasize the integration of multi-user access rights for administrators, teachers, homeroom teachers, students, and parents still needs to be strengthened. This study attempts to fill this gap by designing a web-based School Academic Information System using the RAD method. Through the RAD approach, user needs are identified, designed, tested, and refined iteratively so that the resulting system meets the school's operational needs.

METHODS

This research was conducted in stages using the Rapid Application Development (RAD) method to develop a Student Academic Information System at SMA Negeri 1 Laguboti, as shown in Figure 1. The selection of the RAD method was based on its ability to accelerate the development process through prototype iterations that actively involve users.

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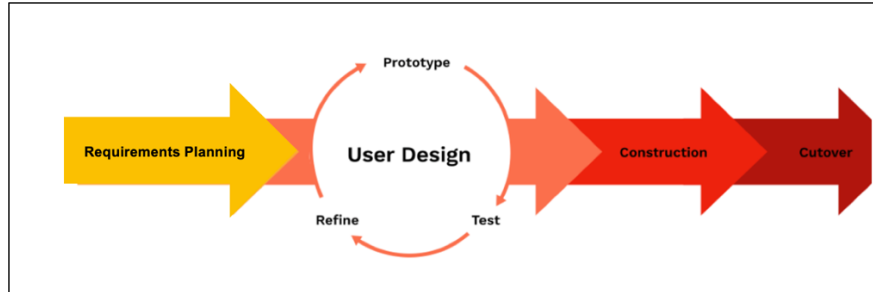


FIGURE 1. Stages of the RAD Method

The development process follows four main phases in the RAD cycle (Kendall & Kendall, 2011):

1. Requirements Planning

Needs identification is conducted through online interviews and questionnaires with school officials (teachers and administrative staff) to determine the scope and challenges of the current manual system.

2. System Design (User Design)

Researchers and users collaborate to design the interface (UI/UX) and workflow. At this stage, initial prototypes, and technical diagrams such as Use Case Diagrams, Activity Diagrams, and Class Diagrams are created.

3. Construction

The coding phase uses the PHP programming language with the Bootstrap framework and a MySQL database. This process is carried out iteratively to ensure each module (grade input, attendance, etc.) functions as expected.

4. Implementation (Cutover)

The final stage includes comprehensive system testing (final testing), student data migration, and training for end users at the school.

Data Collection Methods

Data were collected through three main techniques:

1. Literature Review: Reviewing journals, books, and scientific papers related to web technology and RAD methodology.
2. Online Interviews: Conducted through communication platforms (WhatsApp/Zoom/Google Meet). The questionnaire focused on challenges faced in manual grade management and desired features.
3. Documentation Review: Analysis of digital documents and academic data provided by the school.

Research Tools

The system *implementation* is supported by hardware and software with specifications as shown in Table 2:

TABLE 2. Research Tools

No	Type	Software/Hardware	Function/Description
1	Hardware	MacBook Air M1 (RAM 8GB)	Main development hardware.
2	OS	macOS Sequoia 15.5	Development operating system.
3	Editor	Visual Studio Code	Program code writing.
4	Server	XAMPP (Apache, MySQL)	Local server and database management.
5	Design	Uizard & Star UML	System mockup and diagram design.

RESULTS AND DISCUSSION

1. System Analysis and Proposed Problem Solving

Based on the analysis of the academic system at SMA Negeri 1 Laguboti, it was discovered that the academic data management process is still manual, particularly for recording attendance and processing grades. The attendance process is managed by the class secretary using physical media, which is then summarized by the homeroom teacher at the end of the semester. For academic evaluation, subject teachers manually submit grades to the homeroom teacher for re-crediting into the ledger and report cards. This situation creates several operational problems, including:

- Time-consuming and inefficient administrative processes.
- High vulnerability to human error due to repeated data copying.
- Lack of integration between academic data.
- Lack of real-time access to information for students and parents.

Therefore, digital transformation through automation systems is needed to address the need for more effective and transparent data management.

2. Proposed System Design and Architecture

As a foundation for system construction before implementation, functional modeling is represented by a Use Case Diagram (figure 2) to map system boundaries and access rights for the various users involved (Admin, Subject Teachers, Homeroom Teachers, Students, and Parents).

The modeling is designed vertically (top-to-bottom) with a simplified layout and the use of uniform diagram component icons. This structure simplifies tracking specific access rights, with teachers acting as grade data producers, homeroom teachers as verifiers, and parents and students as real-time information consumers.

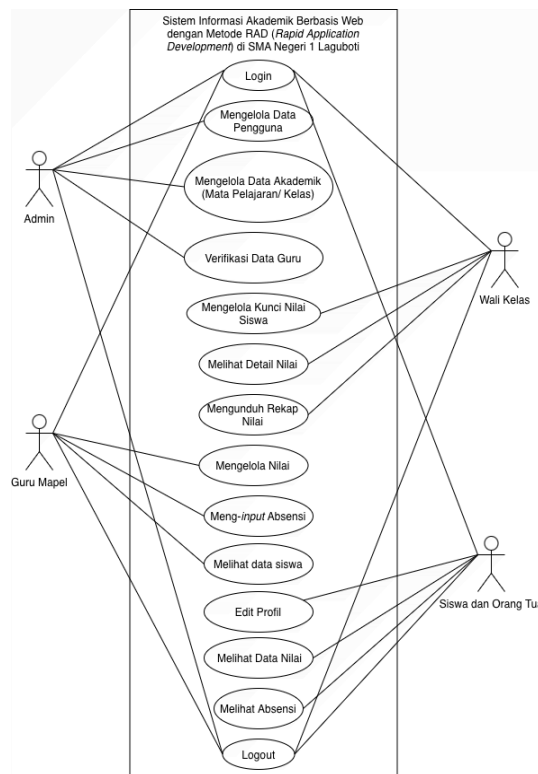


FIGURE 2. SIAKAD Use Case Diagram

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3. Implementation of the Proposed Academic Information System

As a solution to the identified problems, an integrated, web-based Academic Information System (SIKAD) was developed. This system was built using the Rapid Application Development (RAD) method to ensure a fast, adaptive development cycle and continuous user feedback. The system architecture is built with multi-user characteristics that separate role-based access rights, including admin, subject teachers, homeroom teachers, students, and parents.

The functional implementation results include the following key interfaces:

- **Authentication Page:** The login page (Figure 3) serves as a security gateway for all users to access the system using validated email and password credentials.

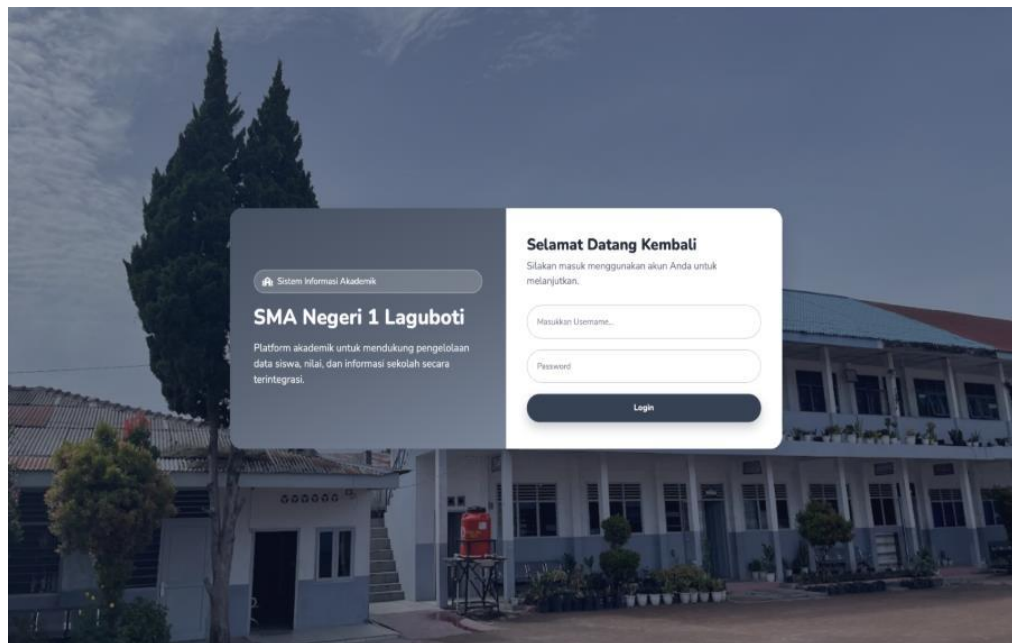


FIGURE 3. Authentication Page

- **System Dashboard:** The dashboard interface (figure 4) is dynamically designed according to user roles. The Admin Dashboard focuses on master data management and system configuration menus.

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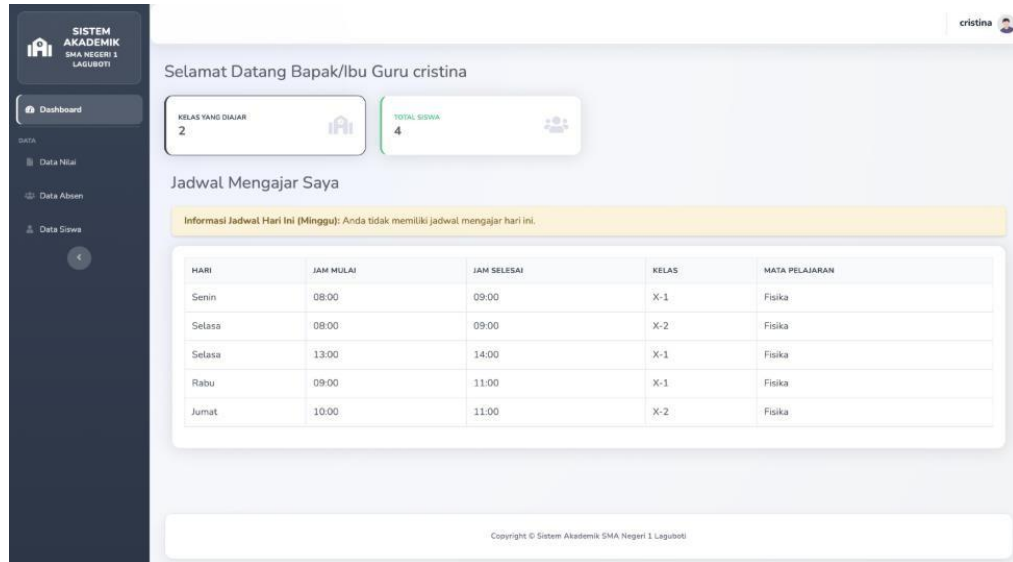


FIGURE 4. Dashboard Sistem Page

- **Grade Input and Attendance Module:** This feature cuts manual bureaucracy by allowing teachers to directly input grades (Figure 5) and record students' daily attendance (Figure 6) into a central database.

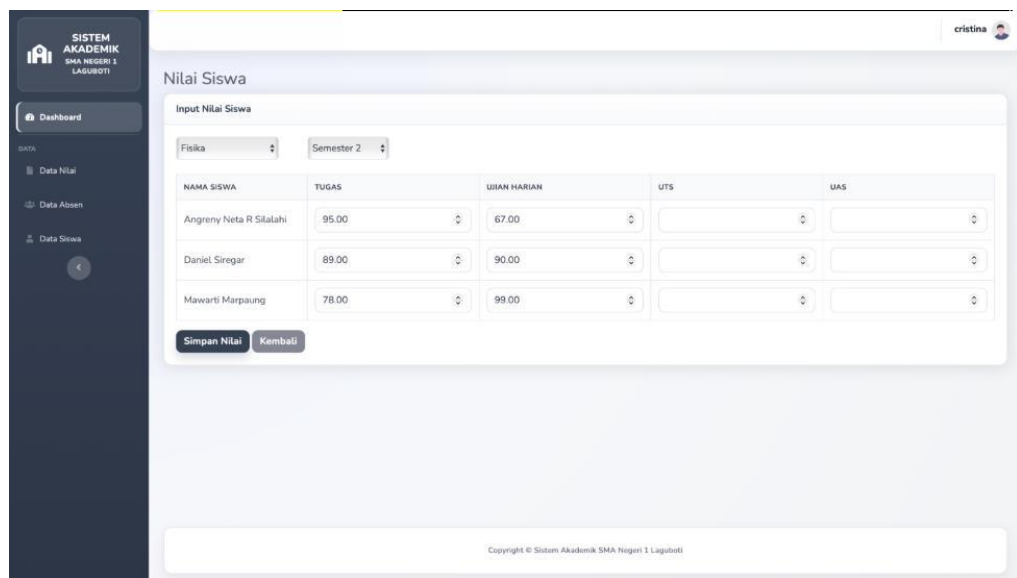


FIGURE 5. Grading Page

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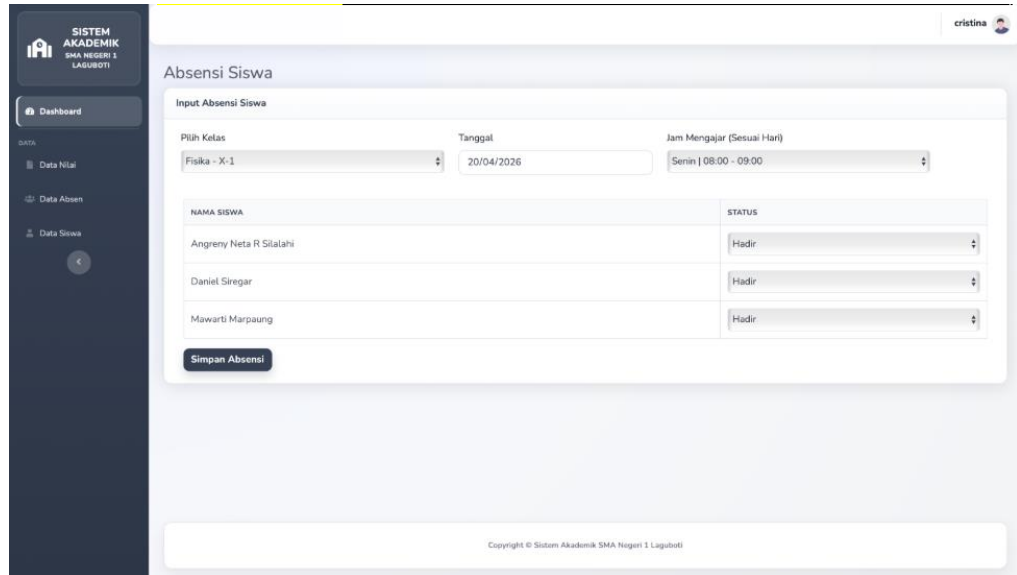


FIGURE 6. Attendance Page

- **Data Monitoring and Visualization:** The system provides homeroom teachers with a comprehensive summary of academic data (figure 7). It also provides graphic visualizations of grade development, making it easier to analyze specific student academic trends (figure 8).

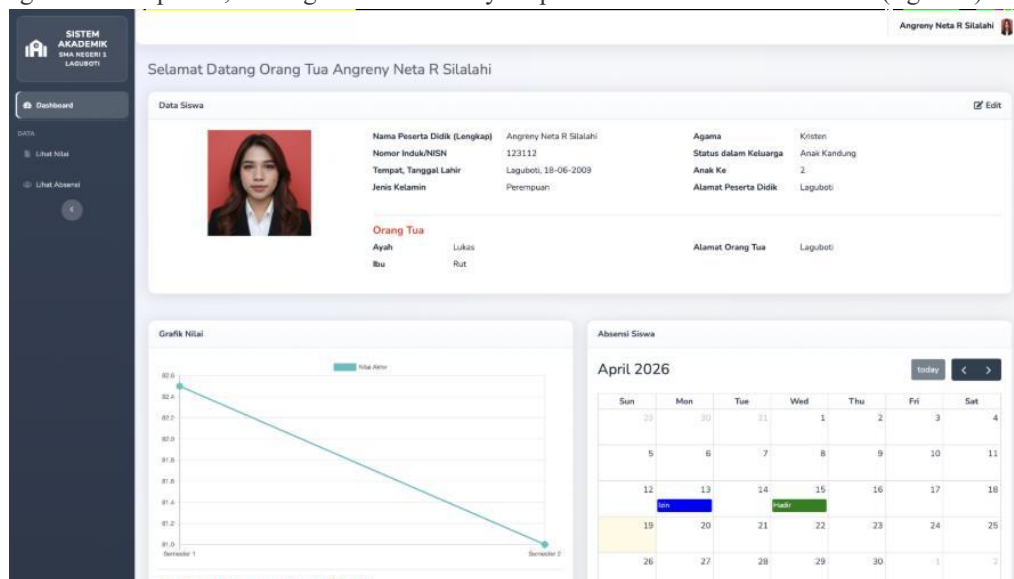


FIGURE 7. Data Monitoring and Visualization Page

4. System Testing

Software feasibility testing was conducted using the Black-Box Testing method to verify the suitability between user input and system output functionality. Test parameters focused on authentication features,

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user data management, grade entry and attendance processes, recapitulation algorithms, and smooth navigation.

TABLE 3. Black-Box Testing Results

No.	Tested Module	Main Functions Tested	Expected Result	Testing Result	Status
1	Login and Authentication	Login using valid and invalid credentials; role-based access for admin, teacher, homeroom teacher, student, and parent	The system validates user credentials and displays the dashboard according to user role	The system successfully authenticated valid users, rejected invalid login attempts, and displayed role-based dashboards	Valid
2	User Management	Add, edit, view, and delete user data by admin	The system stores, updates, displays, and deletes user data according to admin commands	User data management functions worked properly according to the test scenarios	Valid
3	Academic Data Management	Manage subjects, classes, teacher-subject relations, teaching schedules, and homeroom teacher assignments	The system manages academic master data and prevents deletion of data that is still related to other records	Academic data were successfully managed, and the system displayed warnings for restricted deletion actions	Valid
4	Grade Management	Input, edit, delete, view, and filter student grades by teacher, class, subject, and semester	The system saves and displays grade data according to selected criteria and access rights	Grade input, editing, deletion, filtering, and display functions worked as expected	Valid
5	Grade Locking and Verification	Lock and unlock student grades by homeroom teacher	The system controls grade editing access based on lock status	The system successfully locked and unlocked grade data and restricted editing when grades were locked	Valid
6	Student and Parent Grade Access	View student grades and grade details by semester	The system displays student grade information according to the selected semester and user role	Students and parents could access grade information properly based on their access rights	Valid
7	Attendance Management	Input, edit, delete, and save student attendance by subject teacher	The system records student attendance according to class, subject, date, and teaching schedule	Attendance data were successfully saved, updated, deleted, and displayed according to the test scenarios	Valid
8	Attendance Validation and Monitoring	Validate attendance input based on teaching schedule; view attendance history and recapitulation	The system prevents invalid attendance input and displays attendance records according to user role	The system displayed warning messages for invalid schedules and showed attendance data correctly	Valid
9	Recapitulation and Report Generation	View grade recapitulation and generate printable reports or PDF documents	The system displays filtered recapitulation data and generates downloadable reports	The system successfully displayed grade recapitulation and generated reports according to selected filters	Valid

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No.	Tested Module	Main Functions Tested	Expected Result	Testing Result	Status
10	General Navigation	Access sidebar menus, buttons, forms, and logout function according to user role	The system directs users to the correct pages and executes navigation commands properly	All tested navigation menus and buttons functioned correctly	Valid

The black-box testing was conducted to evaluate whether each system module produced outputs consistent with the expected functional requirements. The testing covered authentication, user management, academic master data, grade management, grade locking, student and parent access, attendance management, attendance validation, report generation, and general navigation. Based on the testing results, all tested modules functioned properly and produced outputs in accordance with the expected results. Therefore, the web-based Academic Information System is considered functionally valid and feasible for implementation in the school environment.

5. Discussion and Impact Analysis

The implementation of the Academic Information System potentially improves the efficiency of academic data management compared to the previous manual system at SMA Negeri 1 Laguboti, with the following impact comparisons:

- **Time and Manpower Efficiency:** The administrative workload of homeroom teachers and teachers has drastically decreased. The new system eliminates redundant processes such as copying grades to ledger books and physical report cards, as the data is automatically locked and processed by the system.
- **Data Integrity and Accuracy:** Digitizing the grade entry process minimizes the risk of human error that often occurs when piles of manual documents are processed at the end of the semester. Data corrections can also be systematically tracked.
- **Transparency and Educational Synergy:** The Academic Information System (SIKAD) breaks down the barriers of information delay. Granting real-time access rights allows families to directly monitor their children's attendance and grades from home. This transparency encourages more proactive collaboration between schools and parents in monitoring student discipline and academic progress.

CONCLUSIONS

Based on the overall design, implementation, and testing of the web-based Academic Information System at SMA Negeri 1 Laguboti, the following conclusions are made regarding its functionality and usability:

1. The web-based Academic Information System (SIKAD) was successfully developed using the Rapid Application Development (RAD) method and is operational. The use of the RAD method has proven effective in facilitating a rapid and adaptive development cycle to the school's operational needs, with black box testing results demonstrating a valid level of functionality without any critical bugs.
2. The system has proven capable of automating previously manual academic bureaucratic processes. The digital integration of grade and attendance input forms frees teachers and homeroom teachers from repetitive data copying processes, significantly saving time, reducing the risk of human error, and maintaining the integrity and neatness of academic documents.
3. The implementation of a role-based multi-user architecture enables information transparency. Providing real-time access for students and parents to monitor grades and attendance summaries is crucial in strengthening the synergy between schools and families in monitoring students' academic progress.

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For further system development, future research is recommended to integrate an automatic notification feature (broadcast messages via email or WhatsApp gateway) to parents regarding student absences or grade correction deadlines. Furthermore, developing a mobile app-based interface (Android/iOS) can be considered to increase flexibility and user convenience in accessing information.

References

- Aryanti, R., Fitriani, E., Ardiansyah, D., & Saepudin, A. (2021). Penerapan Metode Rapid Application Development Dalam Pengembangan Sistem Informasi Akademik Berbasis Web. *Paradigma - Jurnal Komputer Dan Informatika*, 23(2). <https://doi.org/10.31294/p.v23i2.11170>
- Beynon-Davies, P., & Holmes, S. (2002). Design breakdowns, scenarios and rapid application development. *Information and Software Technology*, 44(10), 579–592. [https://doi.org/10.1016/S0950-5849\(02\)00078-2](https://doi.org/10.1016/S0950-5849(02)00078-2)
- Fitriani, E., Royadi, R., Ardiansyah, D., Saepudin, A., & Aryanti, R. (2024). Penerapan Sistem Informasi Akademik Berbasis Web Menggunakan Metode Rapid Application Development. *Journal of Information System, Applied, Management, Accounting and Research*, 8(4), 770–782. <https://doi.org/10.52362/jisamar.v8i4.1551>
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). Embracing Digital Technology. *MIT Sloan Management Review*. <https://sloanreview.mit.edu/projects/scholars/embracing-digital-technology/>
- Harahap, G. D. F., Adithia, M. K. P., Amir, S., & Mardiah. (2024). Perancangan Sistem Informasi Akademik Dengan Menggunakan Metode Rapid Application Development (RAD) Berbasis Website. *Jurnal Ilmu Komputer Dan Sistem Informasi*, 3(3), 215–223. <https://doi.org/10.70340/jirsi.v3i3.145>
- Kendall, K. E., & Kendall, J. E. (2011). *Systems analysis and design* (8th ed). Pearson Prentice Hall.
- Mackay, H., Carne, C., Beynon-Davies, P., & Tudhope, D. (2000). Reconfiguring the User: Using Rapid Application Development. *Social Studies of Science*, 30(5), 737–757. <https://doi.org/10.1177/030631200030005004>
- OECD. (2023). *OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem*. OECD Publishing. <https://doi.org/10.1787/c74f03de-en>
- Pohan, S. D., Widian, S. A., Ketaren, E., & Firdaus, I. (2024). PENGEMBANGAN SISTEM INFORMASI AKADEMIK BERBASIS WEB MENGGUNAKAN METODE PROTOTYPE PADA SEKOLAH MENENGAH PERTAMA (SMP) ADVENT KOTAMOBAGU. *Jurnal TIMES*, 13(1), 65–72. <https://doi.org/10.51351/jtm.13.1.2024745>
- Pressman, R. S., & Maxim, B. R. (2020). *Software engineering: A practitioner's approach* (Ninth edition). McGraw-Hill Education.
- Santoso, L., & Amanullah, J. (2022). PENGEMBANGAN SISTEM INFORMASI AKADEMIK BERBASIS WEBSITE MENGGUNAKAN METODE RAPID APPLICATION DEVELOPMENT (RAD). *Elkom : Jurnal Elektronika Dan Komputer*, 15(2), 250–259. <https://doi.org/10.51903/elkom.v15i2.943>
- Sommerville, I. (2016). *Software engineering* (10. ed). Pearson.
- UNESCO, G. R. (2023). *Global Education Monitoring Report 2023: Technology in education: A tool on whose terms?* (1st ed.). GEM Report UNESCO. <https://doi.org/10.54676/UZQV8501>
- Widjaja, S., & Hermanto, R. E. (2023). PENGEMBANGAN SISTEM INFORMASI AKADEMIK MENGGUNAKAN METODE UNIFIED MODELING LANGUAGE BERBASIS WEBSITE. *Dinamik*, 28(1), 25–34. <https://doi.org/10.35315/dinamik.v28i1.8980>