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PROJECT MANAGEMENT OF ACADEMIC INFORMATION SYSTEM FOR JUNIOR HIGH SCHOOL IT REJIS STUDENTS

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Abstract. *The rapid development of information technology in the digital era encourages educational institutions to improve the quality of academic services through integrated information systems. However, many schools still manage academic administration manually, resulting in data inaccuracies, delayed information delivery, and low operational efficiency. SMP-IT Riyadh El Jannah Islamic School faces similar challenges in managing academic data, monitoring activities, and providing centralized information access for stakeholders. This study aims to analyze the implementation of information systems project management in developing an integrated academic information system for the school. The proposed system integrates academic and administrative processes, including student grading, scheduling, payment management, and information dissemination within a web-based platform. The implementation of project management principles is expected to ensure systematic planning, execution, monitoring, and control of system development activities. The results indicate that the integrated academic information system can improve administrative efficiency, transparency, accessibility of information, and overall effectiveness of educational services within the school environment.*

Keywords: Academic Information System, Information Systems Project Management, Educational Technology, Web-Based System, Academic Administration

INTRODUCTION

The rapid development of information technology in the digital era has encouraged educational institutions to improve academic services and data management through integrated information systems. Academic information systems are designed to combine educational and administrative processes into a structured platform that supports faster, more accurate, and organized information management. The implementation of such systems can enhance data processing efficiency and accelerate information delivery for stakeholders within the educational environment (Wibawa, 2018).

Despite these advantages, many educational institutions still rely on manual administrative processes and have not fully utilized information systems. Conventional data management often results in recording errors, delayed information delivery, difficulties in monitoring academic activities, and low operational efficiency. Therefore, system development requires effective project management to ensure that project objectives are achieved according to the defined scope, schedule, cost, and quality standards (Wayan K et

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al., 2025). The application of information systems project management is essential to ensure that user requirements are fulfilled systematically and efficiently.

SMP-IT Riyadh El Jannah Islamic School is one of the institutions facing challenges in managing academic administration in an integrated manner. The school has a large number of students and multiple grade levels, while its administrative processes remain insufficiently organized. Existing problems include inefficient data management, the absence of real-time monitoring, and limited centralized access to information for teachers, students, parents, and school administrators.

The implementation of project management in developing school information systems can improve data management structures and support more effective educational services (Handayani et al., 2025). Therefore, an integrated academic information system is required to manage school payments, student grades, lesson schedules, and other academic activities through a centralized platform accessible to all stakeholders. Supported by web-based project management systems, the development process can improve project effectiveness, simplify monitoring activities, and enhance transparency and efficiency in academic administration management (Putri, 2020).

LITERATURE REVIEW

Information systems project management is a series of steps to plan, organize, implement, and control the necessary resources to achieve the goals of system development in an effective and efficient way (Wayan K et al., 2025). In the process of developing information systems, project management has a crucial role to ensure that each project is completed according to the time, cost, scope, and quality standards that have been set. Project management in information systems not only prioritizes technical aspects, but also involves labor management, communication, risk identification, and project supervision. Effective management is essential for system development to run according to organizational needs and reduce the risk of project failure.

The implementation of a web-based project management information system can provide support for companies in organizing project activities more systematically (Darmawan & Ratnasari, 2020). This system can make it easier to monitor work, manage project information, and provide real-time data to all related parties. Research shows that project management information systems can improve coordination effectiveness and reduce problems that often arise due to conventional data management. A web-based project management system also supports acceleration in project data processing and increases operational efficiency (Putri, 2020).

Project management through information systems has also been applied in the world of education. Research on Project Management Design in Information Systems at SMA Negeri 1 Tarumajaya which is web-based shows that effective project management in the development of school information systems can help the planning process and implement systems with more focus (Handayani et al., 2025). In addition, research on the development of academic information systems (case study: SMPIT Nurul Islam Tengaran) explains that academic information systems that are designed in a planned manner can improve the quality of academic services and facilitate access to information for users (Wibawa, 2018). From these various studies, it can be concluded that project management in information systems plays a crucial role to support the success of system development, both in the business sector and educational institutions.

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METHODS

The research method used in the development of the Academic Information System for Junior High School IT Rejis students applies the System Development Life Cycle (SDLC) approach which is integrated with the principles of information system project management. Organized project management is essential in the system development process to ensure all stages run on time, efficient budgets, useful functionality, and proper risk management (Andika et al., 2024). The use of the SDLC method allows application creation to be carried out in stages and in an organized manner, starting from the identification of user needs to the final implementation at school (Fitrah & Yahfizham, 2024). In general, the information system development stage that follows the SDLC in this project is described as follows.

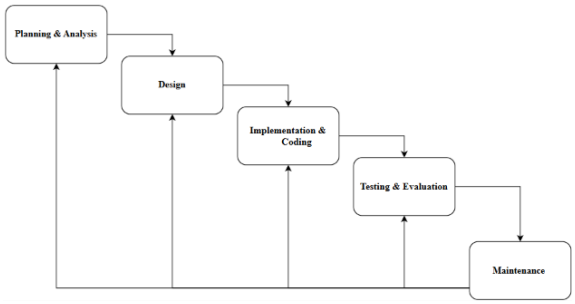

FIGURE 1. SDLC Method Development Stage

a. Planning & Analysis
   Collecting and analyzing system requirements through interviews, observations, and discussions to determine project objectives, scope, and user needs. The estimated duration is 22 days with a cost of approximately IDR 11,500,000.
b. Design
   Designing the system architecture, database structure, user interface, and prototype based on the identified requirements. The estimated duration is 10 days with a cost of approximately IDR 8,000,000.
c. Implementation & Coding
   Developing and integrating system modules according to the approved design to produce a functional application. The estimated duration is 24 days with a cost of approximately IDR 16,000,000.
d. Testing & Evaluation
   Performing testing, evaluation, deployment, and user training to ensure the system meets functional requirements and operates properly. The estimated duration is 9 days with a cost of approximately IDR 6,500,000.
e. Maintenance
   Monitoring system performance, fixing errors, and implementing minor improvements after deployment. The estimated duration is 7 days with a cost of approximately IDR 8,000,000.

If there is a change in the schedule during the project planning, then risk mitigation is made as below;

TABLE 1. Risk Management

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ID	Risk	Category	Impact	Probability	Risk Level	Mitigation	Contingency
R1	Scope Creep in Academic Information System Development	Scope	High	Medium	High	Define system requirements and scope clearly before development begins.	Prioritize core features and postpone additional requests to future versions.
R2	Project Schedule Delay	Time	High	Medium	High	Monitor project progress regularly and follow the CPM schedule.	Revise the project timeline and allocate additional resources if necessary.
R3	Project Cost Overrun	Cost	Medium	Low	Medium	Monitor project expenses and control scope changes throughout the project.	Use contingency funds and reduce non-essential activities.

RESULTS AND DISCUSSION

The results of the creation of the system show that the Academic Information System designed has several main features that are tailored to the needs of educational institutions. This feature includes monitoring tuition payments, grades, schedules and other academic activities. The system will also be accessible to Principals, Teachers, Admins, students, and Parents. Don't forget that it will be equipped with a username and password feature before entering the system to maintain the security of user data. With this system, it is hoped that all academic administration activities of students can run better, transparently, and organized.

The system features developed include login modules, student data modules, attendance modules, grade modules, and lesson schedule modules. All modules are then integrated so that they can be interconnected in one centralized system. This internal information system creation project was developed using the PHP programming language (with frameworks such as CodeIgniter or Laravel), JavaScript, HTML, and CSS combined with the MySQL/MariaDB database. The selection of web-based systems is considered more

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adaptive and makes it easier to disseminate information to all system users. Details of the process to be carried out in this study are illustrated in the flowchart in Figure 2.

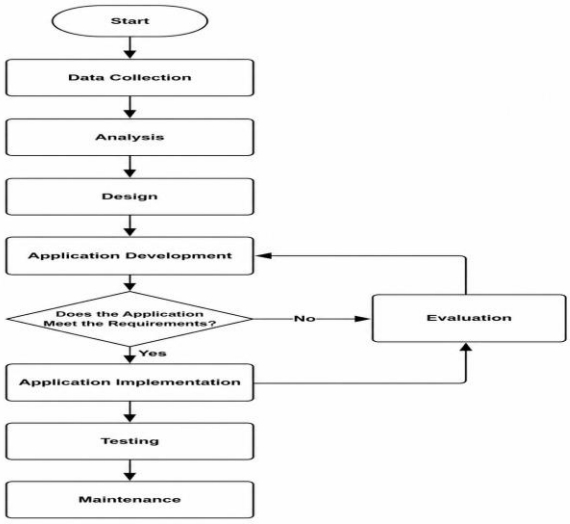

FIGURE 2. Research Flow Diagram

Project Flow

The project flow describes the stages that are carried out from the beginning until the system is ready to use. The method used is the SDLC approach because it is in accordance with a structured information system project.

1. Planning & Analysis

1.1. Data Collection

The project flow describes the stages that are carried out from the beginning until the system is ready to use. The method used is the SDLC approach because it is in accordance with a structured information system project. Planning & Analysis Data Collection Based on the results of observations with SMP-IT REJIS, literature studies and documentation studies from the internet produced an Academic Information System to solve problems that occurred in SMP-IT REJIS.

1.2. Analyzes PIECES

PIECES is an evaluation method consisting of aspects (variables) of Performance, Information, Economy, Control, Efficiency and Service. PIECES will usually be carried out on several aspects, including performance, information, economy, application security, efficiency and customer service (Darmawan & Ratnasari, 2020).

TABLE 2. Analyzes PIECES

Parameter	Constraint	Solution
Performance	The process of searching and processing data takes a long time, slowing down administrative work.	The integrated system can speed up data processing and search automatically.
Information	Information is often received late by	The system provides information in real-

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	students, teachers, and parents and has the potential for misinformation.	time and centrally so that information is faster and more accurate.
Economy	Operational expenses have become greater due to the use of stationery and physical documents.	Web-based systems reduce paper usage and reduce administrative operational costs.
Control	Data can be accessed by uninterested parties, increasing the risk of data misuse.	The system implements login using username and password according to the user's access rights.
Efficiency	There is duplication of work and the data input process is repeated.	The system integrates the entire academic process into a single platform so that work becomes more efficient.
Service	Users must wait for information from the school.	The system provides online access to information for admins, teachers, students, principals, and parents.

2. Design

2.1. System architecture design

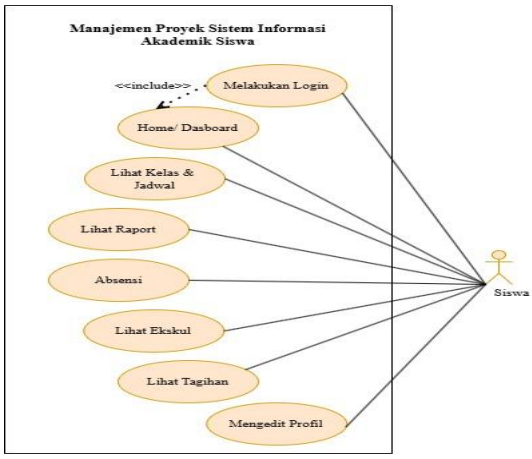

FIGURE 3. Proposed Use Case Diagram

3. Implementation & Coding

3.1. Application Discussion

a. User Login

The login page is the first page used by students to reach the academic information system. On this page, students must enter the username and password that correspond to their account. If successful, it will be included on the next page, if it fails to log in, a notification will appear "Login Failed".

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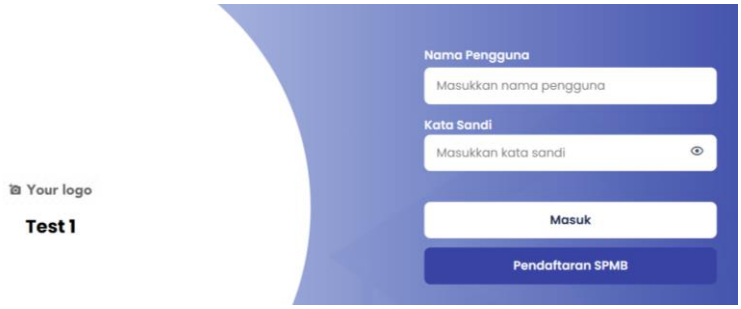

FIGURE 4. Login Page

b. Home Page

The Home Page is the first page that appears after the user successfully logs into the system. This page serves as a data center that shows an overview of academic information such as attendance, assignments, grades, class rankings and school bills.

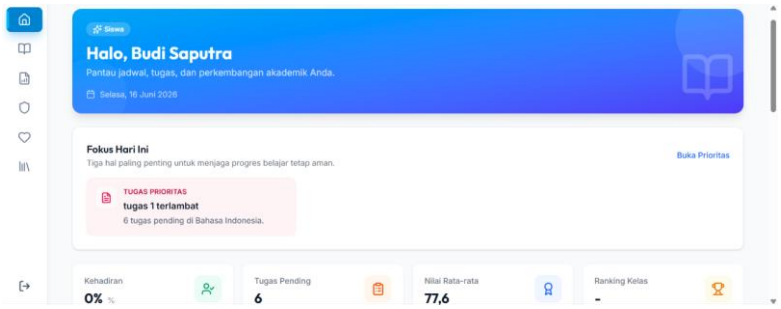

FIGURE 5. Home Page

c. View Class & Schedule Page

Students can see the feature after the "Home" page, users can see the Subjects and classes. On this page, users can find details regarding the lesson list and progress.

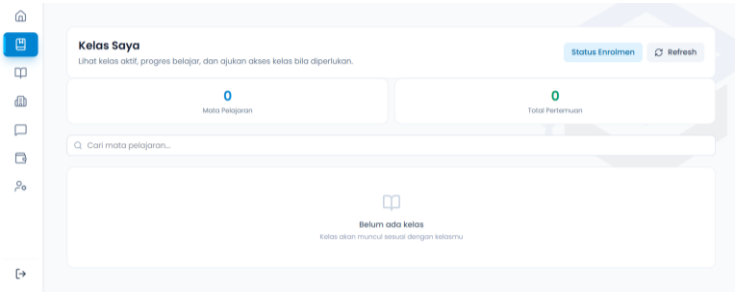

FIGURE 6. Kelas & Jadwal Page

d. View Raport Page

Students can see the page after the Classes & Schedules menu. The report card page serves to show the student's academic achievement within a certain period of time. The data displayed includes grades from assignments, test scores, final grades, and summaries of student learning outcomes.

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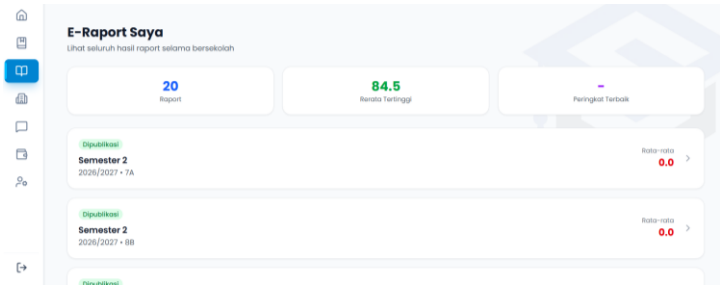

FIGURE 7. Raport Page

e. Absensi Page

Students can view the attendance page that works for that student's attendance. The attendance data shown includes attendance, permit, illness, or absenteeism status.

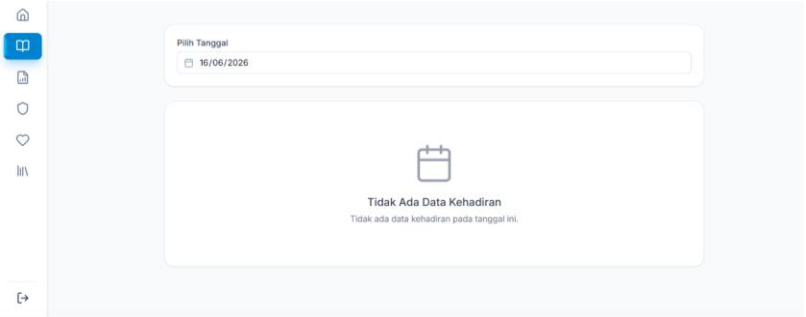

FIGURE 8. Absensi Page

f. Ekskul Page

After the attendance page, students can view and register for Extra-Curricular at school. The details presented can include the category of extracurriculars, active extracurriculars, extracurricular registrations and the list of extracurriculars that students participate in.

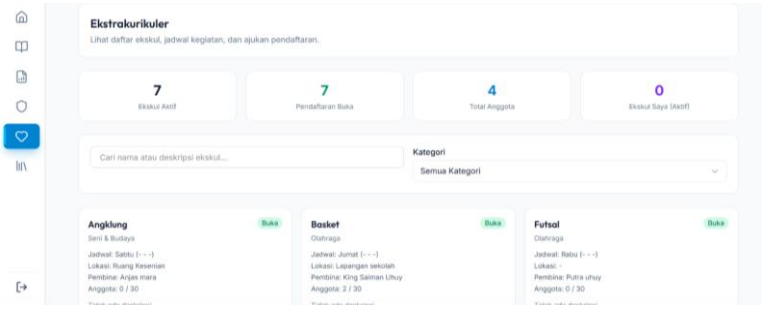

FIGURE 9. Ekskul Page

g. Bills Page

Students can view the bill on the billing page. On this page there is information about payments such as total bills, unpaid totals, unpaid totals and due.

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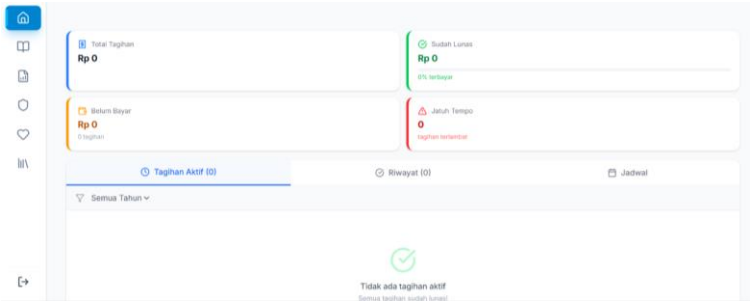

FIGURE 10. Tagihan Page

h. Profile Page

Students can access the profile page to show the details of the data of the students who are interacting with the system. The details shown include name, user identity, email address, phone number, and other information according to the system's needs. On this page, students can also change their personal data and change their account passwords to keep the system secure.

FIGURE 12. Profile Page

4. Testing & Evaluation

a. Application Testing

The results of the test showed that all the key features in the Academic Information System functioned as expected. Users can access the system through login, view academic information, manage data, and receive information in real-time without experiencing any significant obstacles. With thorough testing, the system developed is expected to improve the efficiency of academic administration management and support faster, more accurate, and organized information delivery.

TABLE 3. Analyzes PIECES

No.	Tested menu	Testing Sub Menu	Test Steps	Expected Result	Current
1.	Login		Log in to the website – Enter your username & password / Register now	Successfully logged in and switched to the home page.	Successful
2.	Home Page	Classes & Schedules	Home – Classes & Schedules	Display the Class & Schedule page	Successful

	Report	Home – Report	Showing the Report card page	Successful
	Attendance	Home – Attendance	Showing the Attendance page	Successful
	Extracurricular	Home – Extracurricular	Showing the Extracurricular page	Successful
	Bills	Home – Bill	Display the Billing page	Successful
	Profile	Home – Profile	Display your Profile page	Successful

5. Maintenance

a. System Monitoring: After the system is implemented, a monitoring process is carried out periodically to ensure that all features such as Login, Home, Class & Schedule, Report Card, Attendance, Extracurriculars, Bills, and Profiles can run properly. Monitoring is carried out to identify obstacles that may occur during the use of the system by the user.

b. System Bug Fix: The maintenance stage is carried out when there is a fault or problem with the system during the lifetime of use. Maintenance is carried out so that the system functions according to the expectations of the user and improves the quality of system services.

c. Sitem Update and Development: System maintenance is also carried out by conducting regular system updates, including performance improvements, appearance improvements, and the addition of new features according to the school's future needs.

CONCLUSIONS

Based on the analysis and discussions that have been conducted, it can be concluded that the application of Information System Project Management in the development of Academic Information Systems at SMP-IT Riyadh El Jannah Islamic School can support the system development process in a more organized, systematic, and focused way. The system development process is carried out through the System Development Lifecycle (SDLC) approach, which includes planning, analysis, design, implementation, testing, and maintenance steps, so that each stage can take place sequentially and be well recorded. The results of the analysis show that the current academic administration system still faces a number of problems, such as data management that is not fully integrated, limitations in access to information, and the absence of real-time data monitoring. To overcome these problems, a web-based academic information system was designed that was equipped with various features such as Login, Home, Classes & Schedules, Report Cards, Attendance, Extracurriculars, Bills, and Profiles. Based on the results of application testing, the system that has been developed is able to fulfill the function according to user needs, so it is expected to increase the effectiveness, efficiency, transparency, and quality of academic services in the school environment.

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