

741_SIMILARITY_BISTEK_REVISI

By Dimas Nurdiansyah

Extracurricular Management Information System

**Dimas Nurdiansyah¹, Fadhlán Hadyan Nadhir², Hasyifa Nur Fadhilah³, Marjito⁴, Asep Ririh
Riswaya⁵**

STMIK Mardira Indonesia, Bandung^{1,2,3,4,5}

Email: dimasndiansyah303@gmail.com¹, fadhlanhnn@gmail.com², hasyifanurf@gmail.com³,
marjito@stmik-mi.ac.id⁴, asep.ririh@stmik-mi.ac.id⁵

ABSTRACT

The extracurricular management information system aids educational institutions in efficiently managing extracurricular activities. These activities are vital for student development outside of the classroom. However, manual administration of extracurricular activities is time-consuming and challenging. In the digital age, extracurricular management information systems are necessary to enhance efficiency and effectiveness in managing these activities.

1
This study aims to create and involve an extracurricular management information system that will enhance the efficiency and effectiveness of managing extracurricular activities in schools and educational institutions. This extracurricular management information system's construction employed a research technique encompassing needs analysis, system design, software development, implementation, and evaluation. During the needs analysis step, we conducted interviews with schools and educational institutions that have experience managing extracurricular activities. The interview results were used to design the system according to the user's needs. The findings of this analysis serve as a basis for developing suitable information systems. This research has developed software that utilizes cutting-edge technology to enable system access through various devices, such as PCs, cell phones, and tablets. In addition, we prioritize data security and user privacy during the development of this system. Implementing an extracurricular management information system has undergone testing in multiple schools and educational institutions. Evidence from the test results demonstrates that this method can enhance the effectiveness of overseeing extracurricular activities. The incorporation of cutting-edge technology enables users to access the system through various devices, including PCs, cellphones, and tablets, thereby enhancing user flexibility and accessibility. This system's implementation and testing have been limited to a small number of schools and educational institutions. An enormous scope is required to ensure the generalizability of the research outcomes.

Keywords: Information Systems, Extracurricular Management, Information Technology.

INTRODUCTION

The rapid development of science and technology is causing significant changes in the engineering, communication, and information sectors. These improvements are motivated by the inherent capabilities and possibilities of information technology. (Dekawati & Kurnaeti, 2023) The constraints inherent in communication can be surmounted through the progress of science and technology, facilitating rapid, precise, and unrestricted communication and information gathering. Due to the progress in computer technology and data communication networks, the Internet is now accessible and utilized by most individuals worldwide, including those in Indonesia. The Internet is extensively utilized in several domains of life, encompassing entertainment, education, and business. Specific influences within the realm of education will precipitate alterations in educational institutions. (Fakhretdinova et al., 2021)

The function of information systems in organizational development is immensely significant. An efficient information system enables a business to achieve a competitive edge and enhance its operational effectiveness. The information system should also enable the gathering of precise and dependable data. (Enăchescu, 2019; Jasmis et al., 2021) SMK Kedokteran Fajar Kencana is expanding its presence in multiple areas, including information systems such as the school's official website,

social media accounts, and even individual school organizations. Everyone possesses their authorized account. The school primarily owns information systems and a limited number of school-affiliated companies.

Consequently, numerous tasks are still performed manually and require considerable time. Four individuals engage in petition submission, information dissemination, attendance recording, and attendance record compilation. In this scenario, the manual method could be more efficient for students and teachers who serve as supervisors. The constrained timeframe frequently hinders the implementation of Teaching and Learning Activities. (Shkitsa et al., 2020)

Given the pressing need for integrated information systems in all secondary education institutions, we propose the immediate implementation of a web-based system at the professional economics department of Fajar Kencana Medical School. This system will effectively manage proposal submissions, distribute information, record attendance, and provide activity reports, all of which will be readily available via a website and securely stored in a database. The urgency of this proposal is underscored by the need to streamline the department's workflow.

The information system plays a key role. Its role becomes increasingly crucial as a company or organization grows faster. The process of

creating information systems is commonly referred to as system development. (Ding et al., 2021; Xue et al., 2021)

Information systems development refers to establishing computer-based systems designed to address organizational challenges or take advantage of new opportunities. (Ivanova & Logvinova, 2017; Ng et al., 2017) System development encompasses creating a new system to replace an outdated one or enhancing an existing system in response to faults with its predecessor, such as inefficiency or other problems. (Carvalho et al., 2024)

The problem statement of this research is **to develop and implement an extracurricular management information system**. Your valuable insights and contributions will be crucial in improving the efficiency and effectiveness of managing extracurricular activities in schools and educational institutions, taking into account the background difficulties mentioned above.

METHOD

The employed data collection methods are as follows:

a. Observation

Students and teachers were directly observed during their engagement in the process.

b. Interviews

Interviews were conducted to directly gather information from students who hold leadership or secretary positions in extracurricular activities or organizations and other relevant individuals.

c. Document Study

Researchers can analyze various papers related to the current extracurricular management information system at SMK Kesehatan Fajar Kencana. These documents may include policies, instructions, or guidelines.

d. Survey

Online surveys were administered using custom-designed questionnaires.

System Development Methods

The author employs the waterfall method, a systematic and sequential approach to system development. The process's steps encompass requirements analysis, design, implementation, testing, and maintenance. The stages are executed sequentially and commence when the preceding stage is finished.

The sequential steps in the waterfall methodology are as follows:

1. Requirements Gathering

This phase entails gathering and scrutinizing system requirements from both users and stakeholders. The development team employs interviews, observations, and document studies to comprehend the system's requirements.

2. Design

Once the system requirements have been identified, the design step is initiated. This entails formulating the abstract and comprehensive blueprint of the system to be constructed. The design encompasses **2** system architecture, database design, user interface design, and other system components.

3. Implementation

The implementation stage entails converting the system design into code that can be executed. The development team executes the business logic, interface interactions, and system features by the designated design.

4. Testing

Once the system has been implemented, the testing phase verifies that it operates appropriately and fulfills the set criteria. Testing encompasses several types, such as functionality testing, integration testing, performance testing, and any additional tests necessary for the project.

5. Maintenance

Once the system has undergone testing and implementation, the maintenance phase commences. Maintenance encompasses monitoring the system, resolving any difficulties that may develop, updating and enhancing the

system, and incorporating user feedback to improve its features.

RESULTS and DISCUSSION

System analysis and development

a. Current Analysis

Extracurricular activities encompass the hobbies, interests, and organized activities that students engage in to express themselves within academic and non-academic settings. The duties of extracurricular members and supervising teachers encompass overseeing all internal organizational procedures, including the activities themselves and their administration. When managing extracurricular activities, it is essential to focus on various things, including giving comments, exchanging information, keeping records, and summarizing participation and absences.

Conventional methods are still used to present proposals, spread information, document, participate, and synthesize information. Nevertheless, this approach is impeded by temporal limitations in submitting proposals, disseminating information, and compiling attendance records for particular semesters. This can impede the efficacy of organizational management.

b. Proposed New System

1. Usecase Diagram

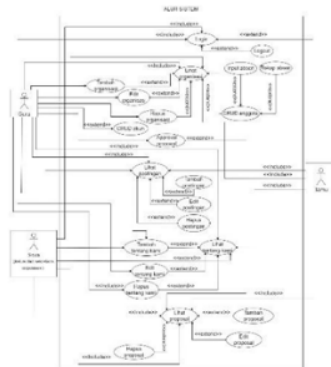


Figure 1. Usecase Diagram



Figure 3. Database Design

2. Skenario Table

Table 1. Skenario Table

Type/Usecase	Normal
actor	Teachers, Students, Guests
Initial Conditions	Displays the page dashboard
Final Condition	Displays the dashboard page with access akun
Main Scenario	
Action/Actor	Action/response sistem
1 Enter the web	2 Displays the dashboard
3 Access login	4 Displays the login form
5 Enter username dan password	6 Performing queries
	7 a. If true, displays a dashboard with account type access b. If incorrect, display validation and login again

Table 2. Database Design

No	Field	Type	Size	Information
1	Id	Int	11	Primary Key
2	Name	Varchr	150	
3	Username	Varchr	150	
4	Email	Varchr	150	
5	Password	Varchr	150	
6	Account_type	Enum	'admin', 'user', 'guest'	
7	Created_at	Date		

2. Interface Design



Figure 4. Interface Design

3. Activity Diagram

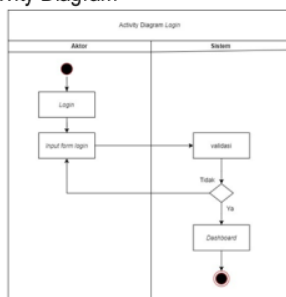


Figure 2. Activity Diagram

c. System Design

1. Database Design

System Implementation

The implementation stage involves describing and operating a previously defined application system.



Figure 5. Dashboard View



Figure 6. Login View

CONCLUSION

The research effectively deployed a CodeIgniter framework to establish an extracurricular management information system for SMK Kesehatan Fajar Kendana. From the analysis of the development and testing outcomes, it is possible to derive numerous conclusions:

1. The implemented management information system facilitates the management of students' extracurricular activities through an online platform. Additionally, teacher documentation components are organized in a structured manner.
2. This system helps ensure that students have up-to-date information about the status of their proposals, promoting transparency between students and the school.
3. The development of this system utilized the CodeIgniter framework to build a web-based platform.

Based on the research and development results, several suggestions for further

development of this management information system are as follows:

1. **Additional Function Development**
Consider developing additional features such as automatic student notifications about proposal statuses, shared information, and integration with the academic calendar.
2. **Security Optimization**
It is of utmost importance to ensure the system has robust security layers. This includes protection against cyber attacks and unauthorized access. By doing so, we can safeguard the system from potential threats and ensure the integrity of our data.
3. **User Training**
Besides technical implementation, students and supervising teachers should be trained to use the system. This helps reduce potential errors and difficulties in use and makes the web-based management system a habit for students in the future.
4. **Monitoring and Evaluation**
Monitor the system's performance and user feedback regularly. This helps identify potential issues and enhance the user experience.

REFERENCES

- Carvalho, A. R., Ferreira, L., Gonçalves, L., Santos, C., Almeida, J., Ribeiro, N., Filipe, M., Brandão, J., Santos, S., Dionísio, C., & Pedro, L. (2024). Developing a gamified digital platform to promote extracurricular activities in basic and secondary schools – preliminary findings. *Educational Media International*, 1–14. <https://doi.org/10.1080/09523987.2024.2358651>
- Dekawati, I., & Kurniati, K. (2023). Life Skill Education Policy Implementation and Vocational Education Extracurricular Management and Its Impact on Student Independence. *Mimbar Ilmu*, 28(3), 394–402. <https://doi.org/10.23887/mi.v28i3.67351>
- Ding, Y., Zhang, N., & Li, Y. (2021). College Physical Education Course Management System Based on Internet of Things. *Mobile Information Systems*, 2021, 1–10. <https://doi.org/10.1155/2021/5874390>
- Enăchescu, V. A. (2019). Management of educational potential through extracurricular activities. *Revista de Management Comparat Internațional*, 20(3), 317–322.
- Fakhretdinova, G. N., Osipov, P., & Dulalaeva, L. P. (2021). Extracurricular Activities as an Important Tool in Developing Soft Skills (pp. 480–487). https://doi.org/10.1007/978-3-030-68201-9_47
- Ivanova, G. P., & Logvinova, O. K. (2017). Extracurricular Activities at Modern Russian University: Student and Faculty Views. *EURASIA Journal of Mathematics, Science and Technology Education*, 13(11). <https://doi.org/10.12973/ejmste/79797>
- Jasmis, J., Aziz, A. A., Hasrol Jono, M. N. H., Zamzuri, Z. F., & Elias, S. J. (2021). An Analysis Model for An Integrated Student Activities Management System for Higher Education during RMO/CMCO/PASCA COVID-19 Period in Malaysia. *Procedia Computer Science*, 179, 798–803. <https://doi.org/10.1016/j.procs.2021.01.067>
- Ng, S. W., Chan, T. M. K., & Yuen, W. K. G. (2017). Outsourcing extra-curricular activities: a management strategy in a time of neoliberal influence. *International Journal of Educational Management*, 31(4), 470–484. <https://doi.org/10.1108/IJEM-07-2016-0150>
- Shkitsa, L., Kornuta, V., Kornuta, O., Bekish, I., & Bui, V. (2020). Information Support of Design Innovation Activity of the Technical University. *Management Systems in Production Engineering*, 28(2), 127–132. <https://doi.org/10.2478/mspe-2020-0019>
- Xue, L., Cho, Y., He, W., Yao, L., & Zou, W. (2021). Construction and application of the student satisfaction evaluation system for the extracurricular education services in colleges. *Computer Applications in Engineering Education*, 29(2), 370–384.

<https://doi.org/10.1002/cae.22206>



© 2024 by the authors.
Submitted for possible open access publication
under the
terms and conditions of the Creative Commons
Attribution (CC Attribution-NonCommercial-
ShareAlike 4.0) license
(<https://creativecommons.org/licenses/by-nc-sa/4.0/>).

741_SIMILARITY_BISTEK_REVISI

ORIGINALITY REPORT

9%

SIMILARITY INDEX

PRIMARY SOURCES

1	jurnal.stiepas.ac.id Internet	143 words — 8%
2	publisher.uthm.edu.my Internet	8 words — < 1%

EXCLUDE QUOTES ON
EXCLUDE BIBLIOGRAPHY ON

EXCLUDE SOURCES OFF
EXCLUDE MATCHES OFF