**Jurnal TAM (*Technology Acceptance Model*)**
Jurnal TAM, Volume 15, Number 1, July 2024
E ISSN: 2579-4221; P ISSN: 2339-1103, pp. 105-109
**Accredited SINTA 4 Number 225/E/KPT/2022**
https://jurnal.ftikomibn.ac.id/index.php/JurnalTam/index

# WEB-BASED SCHOOL INFORMATION SYSTEM (CASE STUDY OF PRIVATE HIGH SCHOOL PGRI 1 KOTABUMI LAMPUNG UTARA)

**Iqnatian Aidil Pratama[1*], Asep Afandi[2] Dwi Marisa Efendi[3], Pakarti Riswanto[4]**
[1,2,3]Prodi Sistem Informasi Insitut Teknologi Bisnis dan Bahasa Dian Cipta Cendikia Lampung
[2]Prodi Sistem Informasi STMIK Pringsewu Lampung
[1,2,3]Jl.Negara Nomor 03 Candimas Kotabumi Lampung Utara -Lampung
E-mail: iqna86080@gmail.com[1*], asepafandi189@gmail.com[2], dwi.marisa@dcc.ac.id[3], tutiriswanto@gmail.com[4]

**Article history:**
Received: June 16, 2024
Revised: July 12, 2024
Accepted: July 22, 2024

Corresponding authors
* iqna86080@gmail.com

**Keywords:**
School Information Systems;
Extreme Programming (XP);
Academic Data Management.

**Abstract**
A system is an interrelated set of components designed to achieve specific goals, exemplified by computer systems integrating hardware, software, and brainware. An information system integrates individuals, hardware, software, networks, data communications, and databases to manage information within an organization. Schools, as educational institutions, often face challenges in managing administrative data and effective communication. A web-based school information system, such as the one designed for SMA PGRI 1 Kotabumi, addresses these challenges by providing a platform for efficient academic data management and communication. The development process begins with data collection through observation, interviews, and literature reviews to understand current processes and user needs. The Extreme Programming (XP) methodology is applied, involving stages of requirements analysis, system design, coding with quality assurance practices like pair programming, and thorough testing. The system is then implemented with user training and continuous monitoring to ensure it meets user expectations. This iterative and responsive approach ensures the system enhances the efficiency and effectiveness of school administration and communication.



## 1. INTRODUCTION

A system is a component or part that is interrelated and functions to achieve a goal, for example a computer which consists of several systems, namely hardware, software and brain ware, each of which integrates with each other so that achieved a goal to be achieved[1], [2]. An information system is an organized combination of individuals, consisting of hardware (hardware), software (software), computer networks and data communications and databases in collecting, disseminating and modifying information in an organizational form [3].

School is an institution designed for teaching students or pupils under the supervision of a teacher. Most countries have a system of formal education, which is generally compulsory [3]. The school information system is an application designed for the needs of school administrative data processing with the aim that academic data is better managed [4].

A website or web is a document in the form of a set of pages containing various information in digital form. This information can be in the form of text, images, animations, videos or a combination of all that is provided via the internet and can be accessed by many people around the world as long as they have an internet connection [5], [6]. SMA PGRI 1 Kotabumi is a private senior secondary education institution located on Jl Soekarno-Hatta no. 97, Tanjung Harapan Village, Kotabumi Selatan District, North Lampung Regency. SMA PGRI 1 was established on May 23, 1994, in journey as an educational institution SMA PGRI 1 Kotabumi through its educational management always makes improvements to improve quality as a response to the dynamics of the globalization era which is

required to provide adequate knowledge and life skills for each student personally.

Based on the results of observations at SMA PGRI 1 Kotabumi, North Lampung Regency. The process of conveying information that is currently running, often encounters obstacles, administrative staff at SMA PGRI 1 Kotabumi often experience difficulties, such as difficulties in the process of delivering information to students and the community. because the data storage media still uses ledgers.

## II. RESEARCH METHODS

### 2.1. Data Collection Technique

Research always requires a data collection process according to the nature and characteristics of the research being conducted, so an appropriate collection method is necessary to obtain the necessary data. Therefore, in order to obtain the data mentioned by researchers, researchers use the following data collection methods[7].

1. Observation
   Observation is a data collection technique that is required by a researcher, namely conducting a direct review of the object under study[8]. To get data that is real and convincing. As for this stage, the researcher made observations on the object to be studied, namely at SMAS PGRI 1 Kotabumi.
2. Interview
   Interview or Interview, is a collection of data that is done by way of question and answer or dialogue directly with the parties related to the research being conducted [9]. As for this stage, the researcher conducted interviews directly with the administrative staff of SMAS 1 PGRI Kotabumi.
3. Library Study
   Library study is a data collection technique that is carried out to obtain theoretical data, so the author collects data by reading and studying books, papers or other references related to the issues discussed.

### 2.2 Framework of Thinking

Framework of thought is a rationale that includes a combination of theory, facts, observations, and literature review, which later becomes the basis for writing scientific papers. Because it becomes the basis, this framework is created when presenting the concepts of methods, overall as in the picture below:

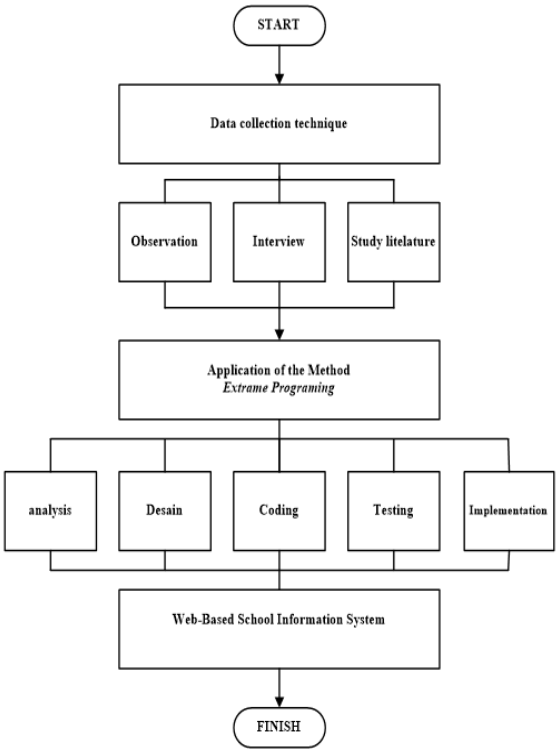


**Figure 1.** frame of mind

from the picture above the research methodology begins with data collection, which includes observation, interviews, and literature review. Observation involves direct examination of the environment or processes relevant to the school information system to understand how the current system operates and identify its shortcomings[10]. Interviews are conducted with relevant stakeholders such as teachers, students, and administrative staff to uncover their needs, issues, and expectations for the new system. The literature review encompasses examining documents, books, journals, and other sources to gain theoretical and practical insights that underpin system development.

Once data is collected, the Extreme Programming (XP) methodology is applied in developing the web-based school information system. The analysis phase identifies and documents user requirements, followed by a design phase that simplifies and visualizes how the system will function. The coding process involves writing code based on the design, with pair programming practices to enhance code quality[11], [12]. Testing is conducted to ensure each feature functions correctly and integrates well. The implementation phase involves deploying the system in the user's environment, training users, and monitoring to address any emerging issues. XP allows the system to be developed iteratively and responsively to user feedback, ensuring the web-based school information system effectively meets user needs and expectations[13].

## IV. RESULTS

The stages of developing a school information systemin this study are as follows:

1. **Usecase Daigram System Informasi Sekolah**
   The following is the design of the SMAS PGRI 1Kotabumi school information system.

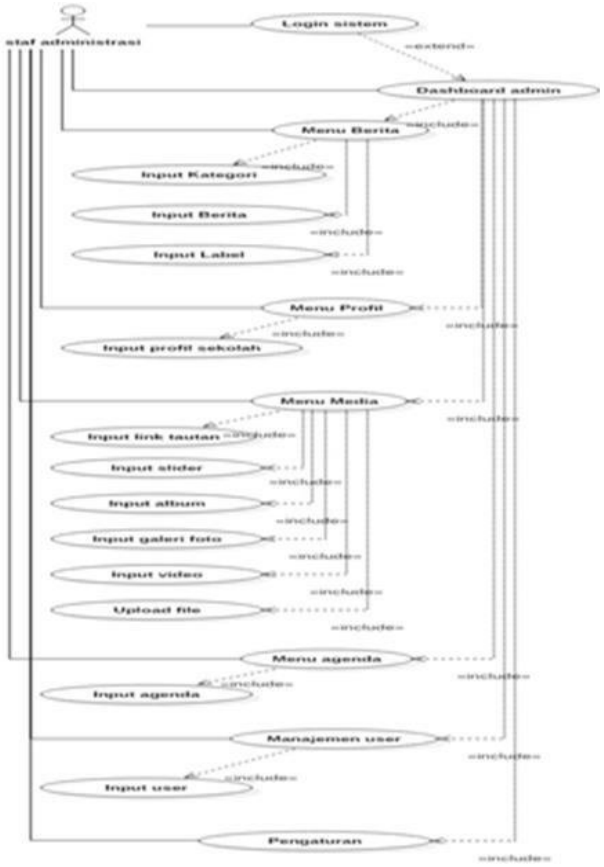


**Figure 2.** Use Case Diagram

The following is the design of the SMAS PGRI 1 Kotabumi school information system use case diagram. It comprises various actors including the administrative staff, who have access to several functionalities through different menus. These functionalities include the login menu for secure access, the news menu to manage school announcements, the profile menu for managing personal and institutional profiles, the media menu for handling multimedia content, the agenda menu for scheduling events and activities, user management for overseeing user roles and permissions, and the settings menu for configuring system preferences. This comprehensive system ensures efficient administration and seamless communication within the school environment.

2. **Activity Diagram**

The following is an activity diagram for the SMAS 1 PGRI Kotabumi school information system login:

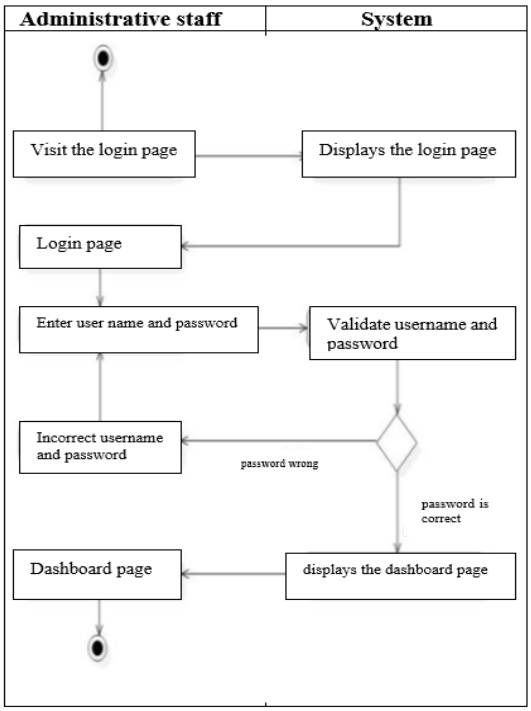


**Figure 3.** Activity Diagram

The following is an activity diagram for the SMAS 1 PGRI Kotabumi school information system login process, involving both the administrative staff and the system. The process begins with the administrative staff entering their login credentials, which include a username and password. The system then verifies these credentials against the stored data. If the credentials are correct, the system grants access and redirects the staff to the main dashboard, where they can access various functionalities such as news management, profile updates, media handling, agenda scheduling, user management, and system settings. If the credentials are incorrect, the system displays an error message, prompting the staff to re-enter their login information. This activity diagram ensures a secure and streamlined login process for administrative staff, facilitating efficient management of school operations.

3. **Website Main Page**

**Figure 4.** Website Main Page

The main page of the website for SMAS PGRI 1 Kotabumi serves as a centralized hub for essential information, featuring sections for news, agenda, and announcements. The news section provides the latest updates and important information regarding school activities, achievements, and events, ensuring that students, parents, and staff are well-informed. The agenda section outlines the schedule of upcoming events, including academic schedules, extracurricular activities, and school functions, helping the school community stay organized and prepared. The announcements section highlights critical notifications and reminders from the school administration, ensuring timely communication of important messages. This comprehensive main page design fosters effective communication and keeps the entire school community engaged and informed.

**4. Downloads Page**

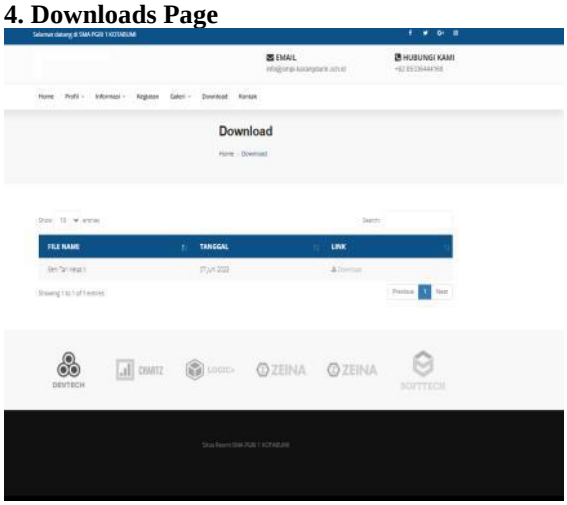


**Figure 5.** Downloads Page

The Downloads Page of the SMAS PGRI 1 Kotabumi website serves as a dedicated resource center where students, teachers, and parents can access various downloadable materials. This page is organized to provide easy access to essential documents such as academic calendars, syllabus outlines, study materials, homework assignments, and school forms. By offering a centralized location for these resources, the Downloads Page enhances convenience and ensures that all members of the school community can quickly find and obtain the information they need. This feature supports efficient communication and helps maintain an organized and well-informed school environment.

**6. Admin Dashboard**

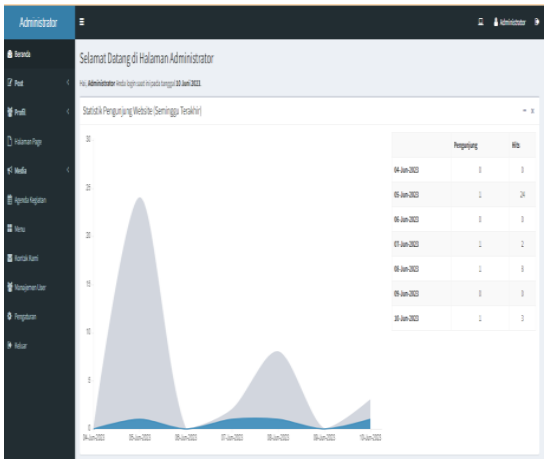


**Figure 6.** Admin Dashboard

The Admin Dashboard of the SMAS PGRI 1 Kotabumi website is a comprehensive control panel designed to facilitate the efficient management of the school's online information system. This dashboard provides administrative staff with easy access to various functionalities, including user management, content updates, and system settings. Key features include the ability to manage news articles, update the school profile, upload and organize media, schedule and track school events through the agenda, and oversee user roles and permissions. The dashboard is designed for intuitive navigation and real-time monitoring, enabling administrators to maintain the website's content, ensure smooth operation, and respond swiftly to any issues or updates. This centralized platform empowers administrators to keep the school's online presence dynamic, accurate, and up-to-date.

## V. CONCLUSION

In conclusion, a system is a collection of interrelated components working together to achieve a specific goal. For example, a computer system consists of hardware, software, and brainware, all integrating to accomplish its intended functions. An information system combines individuals, hardware, software, computer networks, data communications, and databases to collect, disseminate, and modify information within an organization. Schools, as institutions for teaching under the supervision of teachers, often face challenges in managing administrative data and communicating information effectively. A web-based school information system, such as the one designed for SMA PGRI 1 Kotabumi, addresses these issues by providing a comprehensive platform for managing academic data and facilitating communication. The development of this system begins with data collection through observation, interviews, and literature reviews to understand the current processes and identify user needs. The Extreme Programming (XP) methodology is then applied, starting with analyzing and documenting requirements, designing the system, coding with quality assurance

practices like pair programming, and conducting thorough testing. Finally, the system is implemented, with user training and ongoing monitoring to ensure it meets expectations. This iterative and responsive approach ensures the web-based school information system is well-aligned with user needs, thereby enhancing the efficiency and effectiveness of school administration and communication.

## REFERENCES


[1] T. H. Wang, K. H. Wang, W. L. Wang, S. C. Huang, and S. Y. Chen, "Web-based Assessment and Test Analyses (WATA) system: Development and evaluation," *J. Comput. Assist. Learn.*, vol. 20, no. 1, pp. 59–71, 2004, doi: 10.1111/j.1365-2729.2004.00066.x.

[2] G. Mecca, P. Atzeni, A. Masci, P. Merialdo, and G. Sindoni, "ARANEUS Web-Base Management System," *SIGMOD Rec. (ACM Spec. Interes. Gr. Manag. Data)*, vol. 27, no. 2, pp. 544–546, 1998, doi: 10.1145/276305.276375.

[3] D. Prokopowicz, "the Question of the Security of Facilitating, Collecting and Processing Information in Data Bases of Social Networking," *Int. J. New Econ. Soc. Sci.*, vol. 6, no. 2, pp. 0–0, 2017, doi: 10.5604/01.3001.0010.7645.

[4] R. Erway and OCLC Research., "READ Starting the conversation : university-wide research data management policy," 2013.

[5] D. I. Zahran, H. A. Al-nuaim, M. J. Rutter, and D. Benyon, "A Comparative Approach To Web Evaluation and Website Evaluation," *Int. J. Public Inf. Syst.*, vol. 2014:1, no. 1, pp. 20–39, 2014.

[6] D. E. Rosen and E. Purinton, "Website design: Viewing the web as a cognitive landscape," *J. Bus. Res.*, vol. 57, no. 7, pp. 787–794, 2004, doi: 10.1016/S0148-2963(02)00353-3.

[7] M. Sandelowski, "Focus on research methods: Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies," *Res. Nurs. Heal.*, vol. 23, no. 3, pp. 246–255, 2000, doi: 10.1002/1098-240x(200006)23:3<246::aid-nur9>3.0.co;2-h.

[8] N. L. Cohen, "Observation and characterization of near-interface oxide traps with C-V techniques - AUTHOR : Cohen , Neil Laurence TITLE : Observation and , Characterization of Near- . Interface Oxide Traps With C-V Techniques," pp. 1–87, 2017.

[9] "The interview," *Welding and Cutting*, vol. 4, no. 3. pp. 106–107, 2005.

[10] C. Hofisi, M. Hofisi, and S. Mago, "Critiquing interviewing as a data collection method," *Mediterr. J. Soc. Sci.*, vol. 5, no. 16, pp. 60–64, 2014, doi: 10.5901/mjss.2014.v5n16p60.

[11] M. Kircher, P. Jain, A. Corsaro, and D. Levine, "Distributed extreme programming," *Extrem. Program. Flex. Process. Softw. Eng.*, no. September 2013, pp. 66–71, 2001, [Online]. Available: http://cf.agilealliance.org/articles/system/article/file/1057/file.pdf

[12] I. Ahmad, R. I. Borman, J. Fakhrurozi, and G. G. Caksana, "Software Development Dengan Extreme Programming (XP) Pada Aplikasi Deteksi Kemiripan Judul Skripsi Berbasis Android," *INOVTEK Polbeng - Seri Inform.*, vol. 5, no. 2, p. 297, 2020, doi: 10.35314/isi.v5i2.1654.

[13] L. Oktaviani, Y. Fernando, R. Romadhoni, and N. Noviana, "Developing a web-based application for school councelling and guidance during COVID-19 Pandemic," *J. Community Serv. Empower.*, vol. 2, no. 3, pp. 110–117, 2021, doi: 10.22219/jcse.v2i3.17630.