

Design of Letter Management System at Kanna Utara Village Office Based on Website

Syahratul Annas^{1*}, Isdayani.B², Rahmat Siswanto³

^{1,2,3} Muhammadiyah Palopo University, Indonesia

¹syahratulannas@gmail.com, ²isdayani@umpalopo.ac.id, ³rahmat@umpalopo.ac.id



*Corresponding Author

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ABSTRACT

This study aims to design a correspondence management system in the Kanna Utara village office based on a website that previously used manual methods through bookkeeping and Microsoft Word/Excel applications; these methods have various weaknesses, such as easy archive damage, limitations in searching for letters, and potential data loss. The system, which was designed using the Laravel framework with an agile development approach, aims to improve efficiency, security, and ease of access for both village officials and the community. This qualitative research approach uses observation and interviews to identify user needs, such as digital management of incoming and outgoing letters, online submission by the community, and tracking of letter status in real time. This system has separate features between Kanna Utara village office employees and the community to ensure access authority according to their respective roles. Kanna Utara village office employees can monitor and manage letters through the admin dashboard, and the community can submit letter requests and view letter status on the public dashboard. The simple interface makes it easy for village officials with technical limitations to operate the system. Although the system is running well, development, such as digital signatures and automatic notifications via short messages, is still needed. This study concludes that digitalizing the correspondence system at the village level is possible and can be used as a model for other villages with similar conditions.

INTRODUCTION

The development of technology today is increasing rapidly along with the development of the times. It encourages every human being, especially websites as information providers, to continuously follow developments and make decisions to improve, develop, and influence every information presented for good service. (To Suli 2023). Design is a process of identifying something that will be worked on using various techniques, and it involves a description of the architecture and component details as well as the limitations that will be experienced in the work process. (Rizal et al., 2022). In today's era, technological transformation has become a crucial necessity for government institutions, including those at the village level. Manual management of administrative correspondence is still widely used in village offices, but it is considered inefficient and prone to data loss. Therefore, a web-based correspondence management system is needed to enhance security and ease in handling documents. The implementation of a digital system in village offices is also expected to improve the quality of public services in a faster and more structured manner.

A website is a portal that can be accessed via the Internet from anywhere and at any time. A company profile website is a medium for conveying information about a company or government agency. It displays information about a company's background, products, or services, contact information, and brief news about the company. (Nopita Lestari 2021)

The village office is a regional government unit under the sub-district office, one of which is the Kanna Utara village office located in Basse Sangtempe sub-district, Luwu district. Currently, the Kanna Utara village office does not use a website for correspondence management; in the village office, it is still stored in bookkeeping and uses Microsoft Word and Microsoft Excel with many correspondence archives. The weakness of this manual system is that the data cannot be stored properly because it is easily torn, and the books used are easily damaged because they are used almost daily to write down the data (Zulia nur permatasari et al. 2022).

LITERATURE REVIEW

The development of information technology has greatly influenced various aspects of administrative management, including correspondence systems. According to (Mochamad Rifky Dwi Fani 2022), a website-based letter management information system can increase efficiency and accuracy in managing incoming and outgoing letters in government institutions. According to (Darmansah et al. 2024), correspondence cannot be separated from daily activities, especially in a government system. The study (Royani and Rohman, 2023) explains that website-based



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technology makes it easier for employees to create, receive, and store documents easily, accurately, and without losing them.

Several things can cause problems in a system run manually, including the large amount of data that must be processed, the complexity of processing data, the limited time used to process data, and diverse data. (Mahardika, Sumantri, and Ripai 2024).

According to (Widiastuti 2022), a Website is a system related to documents and media to display text, images, and multimedia on the internet network. Archiving and managing letters can be done electronically with this system, replacing the traditional method, which is prone to human error and wastes time. (Indramayu 2023). However, according to (Rifki Rivaldi 2024), the administration section experiences obstacles in correspondence and archiving activities because the correspondence system is still conventional.

Laravel is a PHP framework released under the MIT license, built with the concept of MCV (Model View Controller). Laravel is a website development based on MVP written in PHP that is designed to improve software quality by reducing initial development costs and maintenance costs and improving the experience of working with applications by providing expressive, clear, and time-saving syntax. (Hermanto et al., 2019). The framework is a collection of instructions collected in classes. It functions with their respective functions to make it easier for developers to call them without having to repeatedly write the same program syntax and can save time. (Sallaby and Kanedi, 2020).

Several previous studies indicate that a website-based management system is an effective solution to overcome various obstacles in manual letter management. However, this study presents a different approach, adjusting the system to the specific needs of the Kanna Utara village office. In addition, this study prioritizes user convenience through a simple interface design but still optimally supports the main function.

METHOD

This study applies the Agile Development approach to the software development process. Agile was chosen because of its flexibility in handling changes in user needs iteratively and gradually. Agile emphasizes incremental collaboration between developers, end users, and system developers, resulting in functional software at each cycle stage. Agile software development is designed to help developers work quickly and adapt to system needs. (Pertiwi et al. 2023).

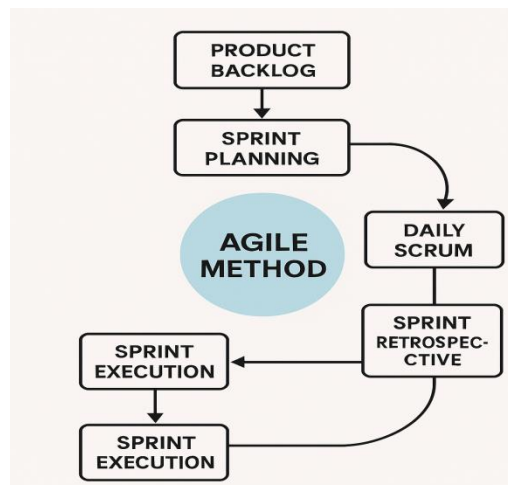


Figure 1. Agile Methods

This study uses a qualitative approach to understand the problems in managing letters manually and identify user needs for a website-based letter information system. According to Ardiansyah (2023), Qualitative approaches aim to understand phenomena through interpretation and descriptive analysis.

The research stages are:

1. Problem identification: Problems found in the North Kanna village office include a letter system still being done manually, storing letter archives susceptible to damage, and slow letter searches.
2. Literature study: researchers studied various literature on website-based correspondence information systems, the Laravel framework, and agile development methods.
3. Data is collected through interviews or direct observation with village officials and the community.
4. Data analysis: The main needs were obtained from the interviews and observations with village officials, namely digital management of incoming and outgoing mail, features for submitting letters by the public online, and tracking letter status.

5. System design: the researcher designed a correspondence management system based on a North Kanna village office website and developed the system structure and user interface.
6. Implementation of Agile Development: Agile development is built using the Laravel framework and MySQL database.
7. Trial and evaluation: Village officials were the main users of the trial, and the community also tried the system through registration and letter requests, assessing the speed and ease of managing letters.
8. System tester: carried out with black box testing to ensure the main functions are as described.

RESULT

The results of this study indicate that the mail management system in the Kanna Utara village office based on the website that has been designed can help village officials manage incoming and outgoing mail in a more efficient and organized way. This system is built using the Laravel framework with an agile development approach that allows the development process to be carried out in stages and adjusted to user needs.

This website is equipped with several features, namely:

Admin login page

This page is intended for employees or devices to log in to the system via the address <https://kannautara.site/pegawai.php>. After successfully logging in, the admin will be directed to the dashboard to manage incoming mail, the signing process, and the status of the letter.

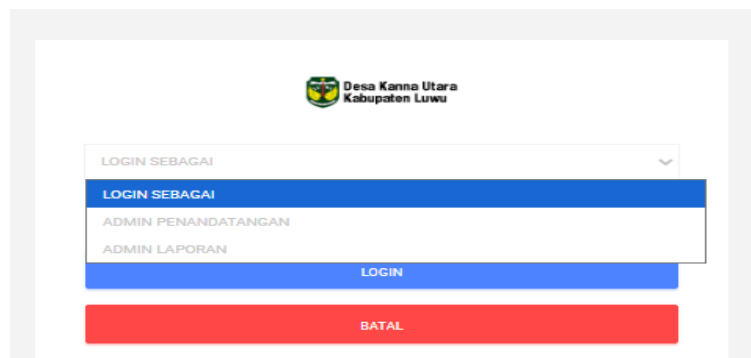


Figure 2. Admin Login Page

Signer Admin Dashboard Page

Employees and village officials use this page to manage and sign letters digitally. The admin can verify and monitor letters through the system, but this access is only given to employees and village officials to maintain data security.

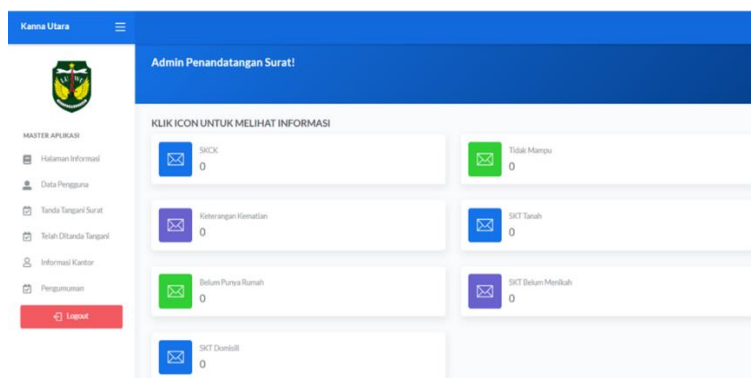


Figure 3. Signing Admin Dashboard Page

Admin Report Dashboard Page

This page displays a summary of incoming and outgoing letters in full. The admin can see the report on the number of letters per month. This feature facilitates administration and the creation of accountability reports.

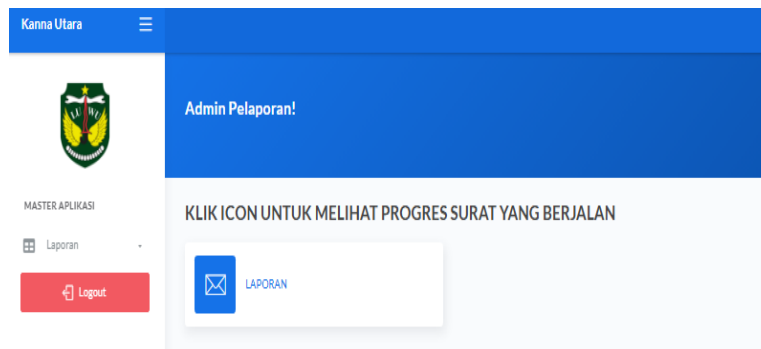


Figure 4. Admin Report Dashboard Page

Home Page

The main page of the official website of the Kanna Utara village office is designed to provide convenience for the community in managing letters digitally. The community can register and log in using the buttons provided. This display aims to make it easier for the community. To log in, access via the address <https://kannautara.site/.php>



Figure 5. Home Page

Community Login Page

People who have successfully registered can log in using their NIK and password. After that, they will be taken to the main page, which displays the application letter, completed data, and the application status.

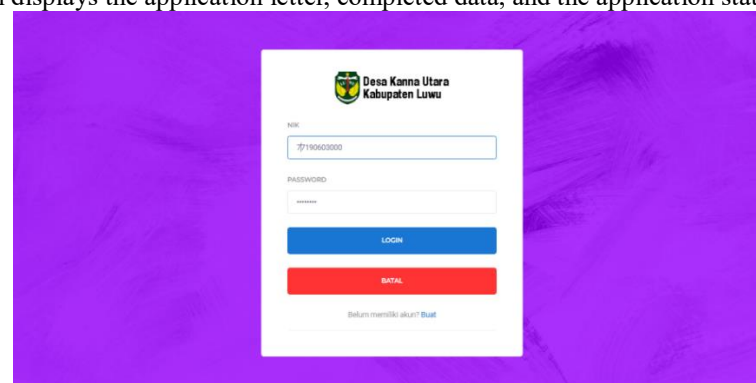


Figure 6. Community Login Page

Community Dashboard

The community dashboard is designed to provide convenience in submitting letters independently and monitoring the process transparently. The community can choose the type of letter they want to submit; after selecting the letter, the system will ask the user to complete the data.

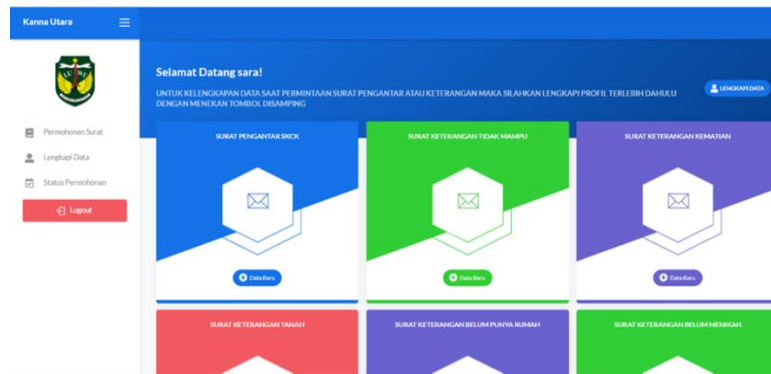


Figure 7. Community Dashboard Page

Letter Submission Page

This page will ask the public to fill in the required data in the letter format.

Figure 8. Public Letter Submission Page

Mail Status Page

This page displays the progress letters submitted by the community, such as processed, signed, and completed. This display makes it easier for the community to monitor the letter process in real-time without visiting the village office.

SURAT PENGANTAR SKCK							
Tanggal	NIK	Nama	Kebutuhan	Status	Keterangan Staff	Action	
No data available in table							

SURAT KETERANGAN TIDAK MAMPU							
Tanggal	NIK	Nama	Kebutuhan	Status	Keterangan Staff	Action	
29 June 2025	731704	xx1x	xx1x	xx1x	xx1x	xx1x	xx1x

SURAT KETERANGAN KEMATIAN							
Tanggal	NIK	Nama	Kebutuhan	Status	Keterangan Staff	Action	
No data available in table							

Figure 9. Mail Status Page

Letter Submission Page

The letter submission page will ask the public to fill in the required data according to the letter format.

Figure 10. Letter Submission Page

Letter Results Page

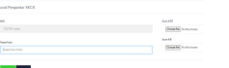
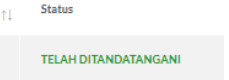
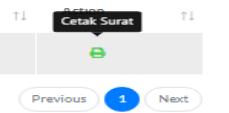
This page displays letters that have been processed and signed. The public can immediately print the letter directly, making it easier for them to ensure that the letter has been completed digitally without coming to the village office.

Figure 11. Letter Result Page

Blackbox Testing

Table 1. Blackbox Testing

Admin				
No	Features tested	Input given	Expected output	Test results
1	Admin login	Username and password valid/invalid	Login successful if valid or error message if invalid	Succeed
2	Dashboard mail management	Access the dashboard after login.	Displays incoming and outgoing mail data	Succeed
3	Verify letter	Click the verify mail button.	The letter status changes to "in process."	Succeed
4	Signature of the letter	Click the signature button.	The letter status changes to "signed."	Succeed
5	Incoming/outgoing mail report	Access the report page.	Displays a summary of the number of incoming and outgoing letters per month.	Succeed

6	Admin logout		Click the logout button.	The system returns to the login page	Succeed
1	Account Registration		Public Complete data (NIK and Password)	Account successfully created, and can log in	Succeed
2	Community Login		NIK and password valid/invalid	Login successful if valid/error message if invalid	Succeed
3	Community Dashboard		Access the dashboard after login.	Displays the letter submission menu and letter status	Succeed
4	Submission of newsletter		Filling and sending the letter form	Letter saved, initial status "processing"	Succeed
5	Check letter status		Access the main status page.	Shows current status: "processed, signed, completed."	Succeed
6	Print letters		Click the print button on the completed letter	The letter is displayed in a print-ready format.	Succeed
7	Community logout		Click the logout button.	The system returns to the login page	Succeed

DISCUSSION

Based on the website, this study shows that the mail management system in the Kanna Utara village office shows a significant increase in the efficiency of mail management. This system allows the recording, storage, and tracking of letters to be done digitally, which was previously managed manually using books and Microsoft Word/Excel files.

The system is developed flexibly and according to user needs using the agile development approach and the Laravel framework. The separate login feature between the North Kanna Village Office employees and the community helps maintain data security and authority simultaneously. Provide relevant access according to their respective roles.

The simple interface is designed to meet the technical capabilities of village devices, making this system easy to operate and complex technical training. The community can now also monitor the status of letter requests directly through the community dashboard. This success shows that other villages with similar conditions can adapt digitizing letter services at the village level.

CONCLUSION

Implement a mail management system in the Kann Utara village office that can increase efficiency and security in mail management. This system uses an agile development approach and the Laravel framework and is equipped with separate login features for Kanna Utara village office employees and the community.

The implementation results show that this system speeds up the administrative process and makes it easier for the public to access mail services without coming directly to the village office.

However, this system still has room for further development, such as integration with a digital signature system or automatic notification services via short messages to improve user convenience. It is hoped that there will be continuous testing and building of additional features according to the needs of the community and village officials.

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