



Development of a Web-Based Mobile System for the Electronic Archiving of Official Letters in Sumber Rejo Village

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Article	Abstract
<p>Keywords: Electronic Archiving System; Web and Mobile; Village Administration; Public Information Disclosure; Digitization.</p> <p>Article History Received: July 7, 2023; Reviewed: July 23, 2023; Accepted: August 11, 2023; Published: September 30, 2023.</p>	<p>This study aims to develop a web-based mobile system for electronic letter archiving in Sumber Rejo Village, in order to improve the efficiency and transparency of administrative letter management. The main issue faced by the village was manual archiving, which is prone to data loss and time-consuming retrieval. Using the Software Development Life Cycle (SDLC) method, the system was designed with features such as incoming and outgoing letter recording, data search, and cloud-based storage. The results show that the system improves administrative speed, data accuracy, and ease of access to information for both village staff and the public. The implementation of this system also supports the enforcement of Law No. 14 of 2008 on Public Information Disclosure, which guarantees citizens' rights to access information from government institutions. Therefore, the system is expected to be an innovative solution for modernizing village governance towards greater efficiency and transparency.</p>

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INTRODUCTION

In a fast-paced era like today's technology and information, it has become very influential in the daily life of modern society, with the development of technology covering everything related to the process of using it as a tool, manipulating and managing information. All forms of activity can be helped by the existence of information technology (IT). The prevalence and use of digital technology is increasingly affecting the wearer. With the right design, product variety, and increasingly competitive prices, technology has now been widely accepted and used by all people, making it a necessity for communication and information that can be used to support, cool, and expedite activities. On the other hand, technological phenomena are also closely related to several aspects of society, such as business plans and governance, as well as the industrial and government sectors, such as the transformation of the offline paradigm into an online paradigm (driving). (on line). Due to the increasing emphasis on transparency, accountability and time management, these systems have become a source of anxiety for the general public. With the existence of technology can lighten and accelerate the activities of today's society. Many activities that previously could only be done manually but now can be done using technology so that it doesn't take much time to do something.

On implementation in E-archives as in the case of the Government, many businesses use information technology-based systems, be they companies, governments, or other types of institutions (IT). E-archives with this method have helped many people in time and money efficiency, both consumers and businesses, institutions or organizations. In several cases, what happened in the field of correspondence management supported by the system was felt to be not very effective due to many factors, causing many new problems for its users. With the number of archives and documents increasing every year, letter archives are increasingly difficult to find. In this case, many letter archives are lost, damaged, piled up making it difficult to find them again when needed, it is difficult to predict whether the archives still exist or not, thereby slowing down performance and service in an agency, especially village government agencies.

Research conducted by Febriansyah Dwi Kurnia. W, Lintang Ragadanu. A, et al (2022) with the title design of a website-based e-archive information system in the village of Wateswinangun concluded that the application features on the village website can help in getting better and more effective e-archive information because the system already has a search function so that the search process is faster. Research conducted by Maharani Hamidah, Kasman Rukun, (2019) with the title Implementation of the YII2 framework in electronic archive systems (e-archives) raises the notion that electronic archive systems are one that will assist in organizing correspondence in village or villages so that they can make more use of the need for technology for administration. Since technology has developed significantly, records management has also experienced a number of manual extensions which are now computerized extensions. Research conducted by Ari Gunanto, Endah Sudarmilah (2019), with the title Development of an E-Archive Website at the Pabelan Village Office, with the conclusion that the Pabelan village e-Archive creates efficiency in storing various letters at the Pabelan village office that the Pabelan village e-archive creates efficiency in stored various letters at the Pabelan sub-district office, and black box testing has been carried out so that it is feasible to use because the results are valid but there is a possibility of trouble returning and the system needs repair and maintenance.

From previous research on research by Febriansyah Dwi Kurnia. W, Lintang Ragadanu. A, et al. the system has been equipped with features that can help village officials to access archives, incoming mail, outgoing mail, general cash books and is also equipped with a search feature but there is no service for disposition of letters because making an outgoing letter must be accompanied by the numbering of the letter from institutions so that they can be neatly arranged and do not overlap between one number and another, causing the numbering of letters to be not optimal at the time of implementation. the researcher concluded that a correspondence management system was needed can be accessed online by users so that archives are not lost and damaged, namely by creating an electronic archive information system to improve mail management in Pekon Sumber Rejo, Pagelaran District, based *on mobile web* using the *waterfall method*. The use *of the mobile web* can make it easier for users to access the site so that it is more effective and efficient, that is, it can be accessed from a desktop or a *smartphone*.

waterfall method as a reference in making application systems because it has many conveniences. The ease of using the *waterfall method* is because in building software this method has a sequential, regular nature from one phase to the next. The convenience promised by the existence of this e-archive system is that users only have to look in the letter archive system

they need, making it easier to find old archives, archives can be neatly organized and no longer need to worry about mail archives being damaged, lost or piled up. In using the E-archives that will be used, users can save archived letters in the form of *files* or *scanned* and then uploaded in the E-archive system. Users can also access archived letters that have been uploaded in the E-archive system so that the archived letters can be easily reused in the future by viewing it from the E-archive system or can be downloaded so that it can be printed. The ease of using E-archives also adds to efficiency in terms of compiling letter archives according to time and type.

RESEARCH METHODS

3.1 Data Collection Methods

Mestika Zed (in Evita Roesnilam Syafitri, Wiryo Nuryono, S.Pd., M.Pd, 2020) defines library research as a process of collecting library information, reading, recording, and processing research materials as part of library research, also known as literature study. Literature or literature study is a study carried out to collect data or theory for the purpose of writing research, in this case the author reads, searches from sources such as books about *mobile web*, journals, theses and references related to research. This observation method is carried out by making direct observations at the Pekon Sumber Rejo office to obtain the accuracy of the data needed for research purposes. The results of observations made at Pekon Sumber Rejo, are that the filing system is indeed still manual and requires a computerized system, many archives are damaged, lost, wet and many have been piled up or buried with new archives.

According to Suwartono (in Suyono, Elisabet Yunaeti A., Tri Susilowati, 2020) Interviews are a way of gathering data or information through direct or verbal interaction. Interviews allow us to get information directly and directed to the source. This interview method was carried out by asking direct questions with related parties in Pekon Sumber Rejo, Pagelaran District to collect the necessary data as data for research purposes. In this case the author conducted an interview with the Pekon Secretary, namely Mr. Paino, from the information provided by Mr. Paino it can be concluded that during the preparation of archives they were underestimated and the apparatus did not realize the importance of archives. There are many things that cause the filing system at the Pekon Sumber Rejo Office to be done electronically due to the fact that the building is old and the leaking settings cause the archives to get wet. Large populations of termites or insects can cause damage to archives. The outgoing mail numbering system is still manual and focuses on 1 person causing delays in the service process to the community.

3.2 Development Method

In system design using the *waterfall method*, the definition of the Waterfall method is according to Sholikhah, et al (in Hamid Kurniawan, et al: 2021), explaining that, The Waterfall method is a classic model which has sequential properties in designing software (software). This method has the following phases and descriptions:

1. Planning

According to Ida Ayu Putu Anggie Sinthiya, Keni Puspita Sari, et al (2021), Planning is the initial stage where at this stage the writer identifies used and developed, and they determine the targets to be achieved.

2. Needs Analysis

According to Bambang Suyono, Wirta Agustin, Yoyon Efendi (2018), the stages that can form the basis of the overall *software development process and the completeness of the software features* to be produced are very dependent on the results of this needs analysis.

3. System Design

According to Hamzah Alfariz, Suyono, (2018), the system model was developed during the system design phase as a response to existing needs and problems. For example, creating databases, programs, user interfaces, software and hardware specifications, network connections, and other components involved in system modeling that need to be modified or created.

4. Implementatio

The purpose of the implementation phase is to carry out logical design specification activities into the actual activities of the information system being developed or built. After that, the new system is implemented using one of the most suitable programming languages. The ability of the new system to function properly and optimally must also be ensured at this stage. According to Muhaimin, Suyono (2017), the implementation stage has a goal, namely to carry out logical design specification activities into ongoing activities of the information system to be developed or built, and only then implement the new system into one of the programming languages used. very precise.

5. System

The system referred to here is a system that has been completed and can operate optimally in order to achieve the desired goals. However, the system that is built must have hosting and have a large enough storage capacity.

DISCUSSION

Mobile web -based application for E-Archive Management of Letters at the Pekon Sumber Rejo Office, Pagelaran District, is used to assist Pekon apartments in managing records properly and correctly and improving their management system, which is still problematic and manual. the plan that will be used in this test is a Use Case Diagram. Use case diagrams describe the relationship between the user and the various user cases involved.

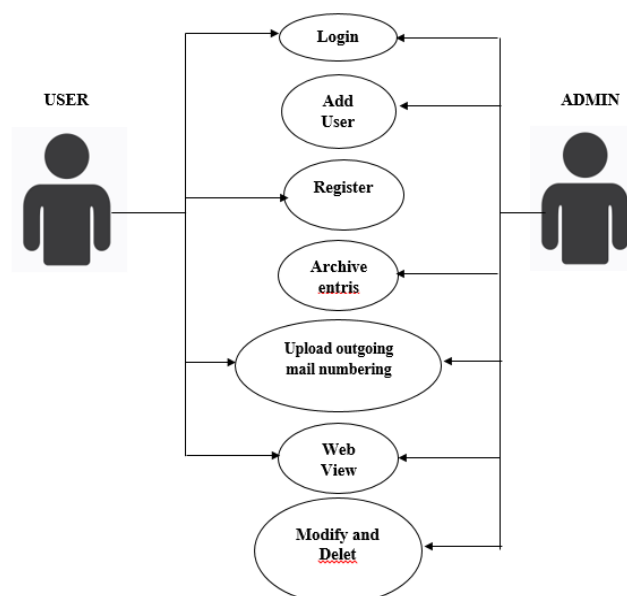


Figure 1. Use Case Diagrams

This Use Case diagram is to describe the clarification of the running of the android application framework that has been made.

System Implementation

According to Tri Darma Rosmalasari, Mega Ayu Lestari et al (2020), the implementation phase aims to carry out logical design specification activities into the actual activities of the information system to be created or built, and then a new system. To determine whether the system to be developed can actually achieve the desired goals, the system must first be ready to be implemented. The interface design produces an application as follows which can appear on PCs and on *Smartphones*. Implementation of the system on the PC as follows:

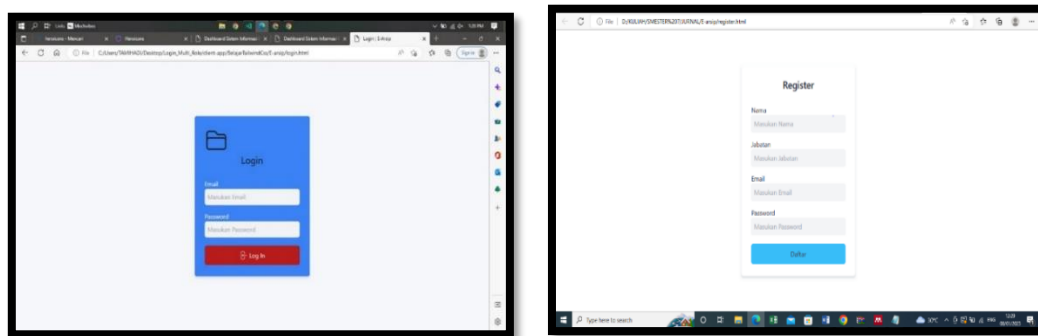


Figure 2. Login display and Register on *Smartphone*

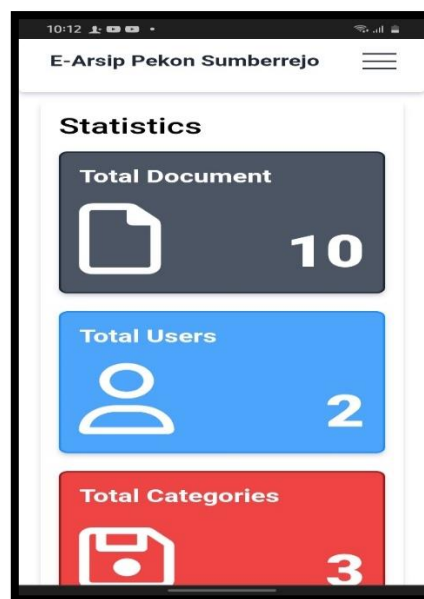


Figure 3. Dashboard view on *Smartphone*

Analysis of Research Results

This research focuses on the development of a web-based mobile system for the electronic archiving of official letters in Sumber Rejo Village. The main impact of implementing this system is the improvement of administrative efficiency. Through digital archiving, the process of recording and retrieving letters becomes faster, more accurate, and more organized. The system also increases accessibility, as it can be operated via mobile devices, allowing staff to

manage data anytime and anywhere. Furthermore, the system supports the realization of transparent and accountable public service, aligning with **Indonesia's Law No. 14 of 2008 on Public Information Disclosure** (*Undang-Undang No. 14 Tahun 2008 tentang Keterbukaan Informasi Publik*). By digitizing and organizing official documents, the village government ensures that information can be accessed more easily and efficiently by the public, thus promoting good governance and public trust.

However, there are several challenges to implementing this system. The reliance on digital infrastructure such as internet connectivity and mobile devices may hinder performance in areas with limited access. Additionally, not all village officials may be familiar with the use of digital systems, necessitating training and capacity building to ensure the system is used effectively. From a data security perspective, digital systems must be protected against risks such as data breaches, hacking, and unauthorized access. Strong cybersecurity measures must be in place to maintain the confidentiality and integrity of government documents. Despite these challenges, the system brings significant benefits and directly supports national regulations aimed at transparency, public participation, and the modernization of village administrative services.

CONCLUSIONS

Based on the results and analysis conducted, it can be concluded that the development of a web-based mobile system for electronic letter archiving significantly contributes to improving the efficiency and effectiveness of administrative processes in the village government. This system accelerates the recording, retrieval, and management of letters in a digital format, thereby enhancing the productivity of village officials in carrying out their daily administrative tasks. Moreover, the implementation of this system supports the principles of transparency and accountability as mandated by Law No. 14 of 2008 on Public Information Disclosure, which ensures the public's right to access information managed by the government. By digitizing official documents, the system allows for more organized documentation and easier public access to information. However, several challenges must be addressed, including the need for adequate technological infrastructure, human resource training, and robust data security measures. Therefore, technical support and policy backing from relevant stakeholders are essential to ensure that the system functions optimally and sustainably. In conclusion, the web-based mobile archiving system is highly relevant for implementation at the village level to modernize public services, enhance governance, and fulfill the public's right to information. This research is expected to serve as a foundation for other villages to adopt similar innovations in an effort to realize faster, more transparent, and accurate public service delivery.

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