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RESEARCH ARTICLE

Document Archiving Information System Design Using VB.NET, Banda Aceh Sharia Court

Khairul Rahmadi [1] | Dewi Mulyati [2*] | Taufik Hidayat [3]

[1,2*,3] Informatics Engineering Study Program, Faculty of Engineering, Universitas Serambi Mekkah, Banda Aceh City, Aceh Province, Indonesia.

Correspondence

[2*] Informatics Engineering Study Program, Faculty of Engineering, Universitas Serambi Mekkah, Banda Aceh City, Aceh Province, Indonesia.
Email: dewimulyati@usm.ac.id

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Abstract
The document archiving information system at the Banda Aceh Sharia Court currently faces efficiency challenges due to its reliance on conventional document storage methods, such as filing cabinets and manual record-keeping in books. This results in suboptimal accuracy levels. Additionally, significant space allocation is required for storage solutions like filing cabinets, folders, and shelves. Another issue is the time-consuming nature of document retrieval due to disorganized arrangements. From a cost perspective, there are additional expenses for the maintenance and upkeep of archive storage areas. This research aims to address the following questions: How can a more efficient Document Archiving Information System be designed for the Banda Aceh Sharia Court? Will the implementation of this system enhance the speed and accuracy of available information? What is the process for presenting this Document Archiving Information System at the Banda Aceh Sharia Court? The focus of this study is on developing an information system that provides alternative solutions to document archiving challenges using the Visual BASIC.NET approach. Furthermore, the study highlights the procedures for storing and retrieving archives within the document archiving information system at the Banda Aceh Sharia Court. The waterfall method, also known as the sequential method, was employed in the design of the Document Archiving Information System. Data collection was conducted through various research methods, including observation, interviews, and literature studies. The tools used in the application development include Microsoft Visual Basic.NET for interface design and Microsoft Office Access as the database management system. Testing results indicate that the developed system meets the identified needs, including efficient data input processes and accurate reporting.

Keywords
Information System; Archiving; Document; Visual Basic.NET.

1 | INTRODUCTION

Information technology has undergone rapid development, significantly impacting various aspects of life, including individuals, organizations, and government agencies. Despite these advancements, the Banda Aceh Sharia Court continues to rely on a conventional document archiving system, characterized by the use of filing cabinets and manual record-keeping in books. This approach has led to significant inefficiencies, exacerbated by factors such as suboptimal space utilization, unstructured document retrieval processes, and the costs associated with maintaining and preserving archive storage areas. The inefficiency in archive management at the Banda Aceh Sharia Court is attributed to several factors, including a lack of qualified human resources, limited knowledge of archive management and information technology, and a general lack of awareness about the importance of effective archive management. To address these challenges, this study aims to design an electronic archive system that offers solutions to the existing archive management issues. The objective of this research is to evaluate the current document archiving information system, design a structured and directed archiving information system, and develop a faster and more accurate archiving system. The benefits of this research include the ability to build an effective archiving information system, provide valuable material for students in their research endeavors, and assist the Banda Aceh Sharia Court in evaluating and improving its existing system. Furthermore, this research will benefit the Informatics Engineering Study Program by serving as an evaluation of students' ability to apply their acquired knowledge and enhancing the program's credibility.

Archives, known as "archief" in Dutch and "archive" in English, originate from the Greek word "arche," meaning beginning. Generally, archives are collections of documents with specific purposes, systematically stored and quickly retrievable. According to G.R. Terry, archiving is the process of placing papers in good storage according to predetermined rules, ensuring each paper can be easily and quickly found. Archives can be categorized based on their value or function: informational, administrative, and historical archives. They can also be classified as dynamic archives, used directly in archival creation activities, and static archives, no longer used directly in daily office activities. The purpose of archiving is to serve as a memory and information center, provide data to employees requiring information on past activities and work, and offer vital information in accordance with legal requirements. Electronic archiving systems share the same concept as conventional archiving techniques. However, in electronic archiving, documents are stored as digital files and organized in folder structures. The advantages of electronic archiving systems include ease of operation, document search facilities, data security accuracy, and ease of data recovery. Electronic archive management offers several benefits, such as accelerating access and utilization of archives, flexible indexing, minimizing the risk of physical document damage, facilitating supervision, and simplifying data recovery processes.

A system is a set of objects, ideas, and interrelations aimed at achieving specific goals. Information is data placed in a meaningful context for the recipient. An information system is an arrangement of people, data, processes, and information technology that interact to collect, process, store, and produce the necessary information output to support an organization. Visual Basic.NET is a programming language used to create Windows applications with a graphical user interface (GUI). Microsoft .NET Framework is a Microsoft technology that simplifies the creation of various applications, including Windows applications. Visual Basic consists of several components, such as forms, controls, properties, methods, event procedures, general procedures, and modules. Microsoft Access is a database management software operating on Windows, used to manage databases within an organization. Access supports object-oriented programming techniques and can be used to develop complex applications. A database is an organized collection of data stored to meet an organization's information needs. A Database Management System (DBMS) is software that allows users to define, create, maintain, and control access to databases. The database development lifecycle includes several stages, such as planning, definition, analysis, design, implementation, testing, and maintenance.

In designing the Document Archiving Information System at the Banda Aceh Sharia Court, the waterfall method was employed. The waterfall model is a classic, systematic, and sequential approach to software development. The stages of the waterfall model include communication, planning, modeling, construction, implementation, and deployment. The advantage of this model is its straightforward application, while its drawback is the difficulty in accommodating changes once the process has begun. Research by Langoday *et al*. (2023) highlights the impact of web-based archiving systems on report efficiency, emphasizing the importance of structured information systems in educational settings. Pradini and Sudradjat (2021) demonstrate the effectiveness of web-based archiving systems in village offices, showcasing improved document management and retrieval efficiency. Ina and Hariadi (2022) focus on the design of archiving systems in urban offices, highlighting the benefits of electronic systems in managing incoming and outgoing correspondence. Hasrul *et al*. (2022) explore the design of archiving systems in legal offices, emphasizing the role of technology in enhancing document management processes.

Further studies, such as those by Riefnaldi *et al*. (2021) and Pinaria *et al*. (2022), underscore the advantages of web-based archiving systems in various organizational contexts, from village offices to student dormitories. Nugraha

(2021) discusses the implementation of archiving systems in community service offices, highlighting the role of technology in improving public service efficiency. Ishak *et al*. (2022) and Kurniawan *et al*. (2022) focus on the development of web-based archiving systems in village and urban settings, respectively, showcasing the transformative impact of digital solutions on document management. Setiawan and Hesinto (2022) explore the application of information systems in transportation departments, emphasizing the importance of data management in public sector operations. Djamil (2021) examines the processing of correspondence in postal services, highlighting the role of information systems in streamlining communication processes. The integration of electronic archiving systems in organizational settings offers numerous benefits, including improved efficiency, accuracy, and accessibility of information. By leveraging technologies such as Visual Basic.NET and Microsoft Access, organizations can overcome the limitations of conventional archiving methods, ultimately enhancing their operational effectiveness and service delivery. Through this research, the Banda Aceh Sharia Court can develop a robust electronic archiving system that addresses its current challenges and supports its long-term strategic objectives.

2 | BACKGROUND THEORY

The evolution of information systems has significantly transformed the landscape of document management and archiving. The integration of web-based systems into archiving processes has become increasingly prevalent, offering numerous advantages over traditional methods. Ishak *et al*. (2022) highlight the development of a web-based document archiving system for managing incoming and outgoing correspondence in Desa Gudang Tanjungsari. The study emphasizes the importance of digital solutions in enhancing the efficiency and accessibility of document retrieval, thereby reducing the time and effort required for manual searches. This transition to digital systems aligns with the broader trend of utilizing technology to streamline administrative functions, as explored by Kurniawan *et al*. (2022). Their research on the design of web-based archiving systems underscores the role of technology in improving data organization and retrieval processes, ultimately supporting more effective decision-making within organizations. The application of information systems in public sector operations is further exemplified by Setiawan and Hesinto (2022), who investigate the implementation of data archiving systems within the Transportation Department of Prabumulih. Their findings reveal that these systems not only enhance data management capabilities but also facilitate better service delivery to the public. The integration of information systems into government operations reflects a growing recognition of the need for efficient data management to support transparency and accountability.

In the context of postal services, Djamil (2021) explores the processing of correspondence within the Peureulak Post Office in Aceh Timur. The study highlights the challenges faced by traditional mail processing methods and the potential for information systems to address these issues. By automating routine tasks and improving data accuracy, these systems can significantly enhance operational efficiency and customer satisfaction. The role of secretaries in implementing administrative processes is also crucial, as demonstrated by Laina and Djamil (2021). Their assessment of secretarial performance in the Banda Aceh State Wealth and Auction Service Office underscores the importance of effective administration in supporting organizational objectives. Similarly, HS (2021) examines the role of secretaries in the Agricultural and Forestry Extension Center in Peureulak, Aceh Timur, highlighting the critical support they provide in facilitating smooth administrative operations. Moreover, Jumari *et al*. (2022) introduce innovative approaches to data management through the use of Reed Solomon Codes and QR Codes in information systems. This research showcases the potential for advanced algorithms to enhance data retrieval and verification processes, offering new opportunities for improving the efficiency of information systems.

Lastly, Murni (2021) discusses the role of secretaries in assisting administrative functions at the Aceh Provincial Development Planning Agency (BAPPEDA). The study emphasizes the importance of secretarial support in ensuring the smooth execution of administrative tasks and the overall effectiveness of organizational operations. In summary, the integration of information systems into document management and archiving processes offers significant benefits across various organizational contexts. By leveraging digital technologies, organizations can improve data organization, accessibility, and accuracy, ultimately enhancing operational efficiency and service delivery. As demonstrated by the referenced studies, the adoption of these systems is crucial for modernizing administrative functions and supporting effective decision-making in both public and private sectors.

3 | METHOD

This research was conducted at the Sharia Court of Banda Aceh City for a period of four months, starting from the first week of October to the third week of January 2017, according to the planned schedule. System analysis is an important stage in this research. Analysis is conducted to outline the techniques needed to achieve

certain goals after basic needs have been identified and the feasibility of the study has been ascertained. The analysis stage consists of several parts, the first of which is problem analysis. At this stage, information about the ongoing process in the field of socialization and information is collected to identify existing strengths and weaknesses. Furthermore, at the data analysis stage, attention is paid to the regularity of data that is currently unsystematic. A data coding system is needed so that similar data can be better identified. Then, a needs analysis is conducted to compare the advantages of implementing a new information system design with the current system. Weaknesses of the current system are identified, and proposed solutions for each weakness are noted. After system analysis, the next step is to design a new system. The system design includes various elements such as Running FlowMap, Proposed FlowMap, ER-Diagram, Data Flow Diagram, Database Structure, and Menu Design. The Running FlowMap describes the procedures currently taking place in the document archiving information system of the Banda Aceh City Sharia Court. While the Proposed FlowMap describes the procedures proposed for the new system. ER-Diagram is used to model the database structure, while the Data Flow Diagram helps understand the flow of data in the system.

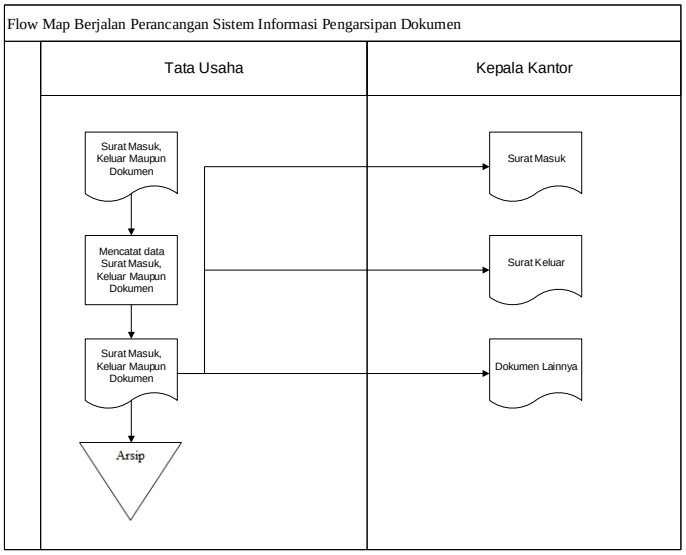

Figure 1. Document Walking FlowMap

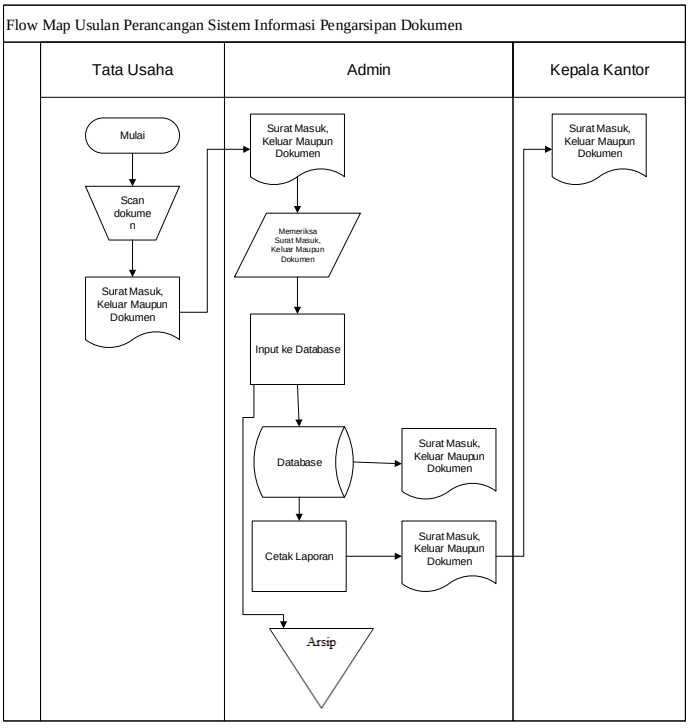

Figure 2. Proposed Document Flowmap

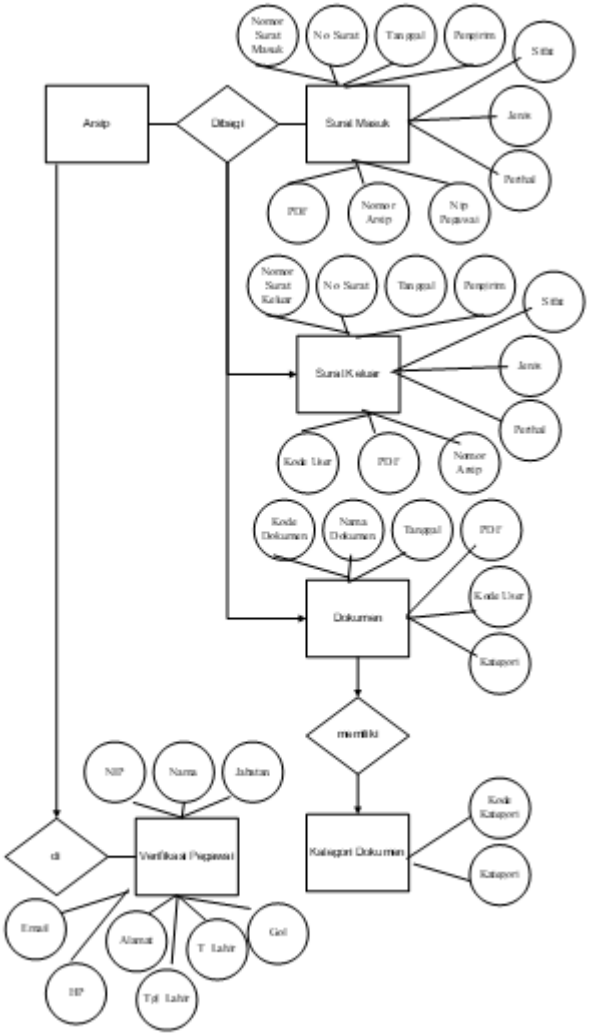

Figure 3. ERD Procedural Design

The database structure is planned by considering the tables needed to store document archiving data, categories, employees, users, incoming mail, and outgoing mail. Each table has a primary key and various fields that correspond to the type of data stored. In addition, the relationship between tables is also described to clarify the relationship between entities in the database. The system menu design includes several forms designed to manage document archiving data, category data, incoming mail data, outgoing mail data, and document data. These forms are designed to make it easier for users to add, edit, and delete data, as well as upload related files. In addition, a login form is also prepared as a security measure to access the system. In addition, a monthly report is also planned to provide a summary of document archiving activities each month. This report will contain information about the date, document name, and its status. Thus, management can track document archiving activities periodically.

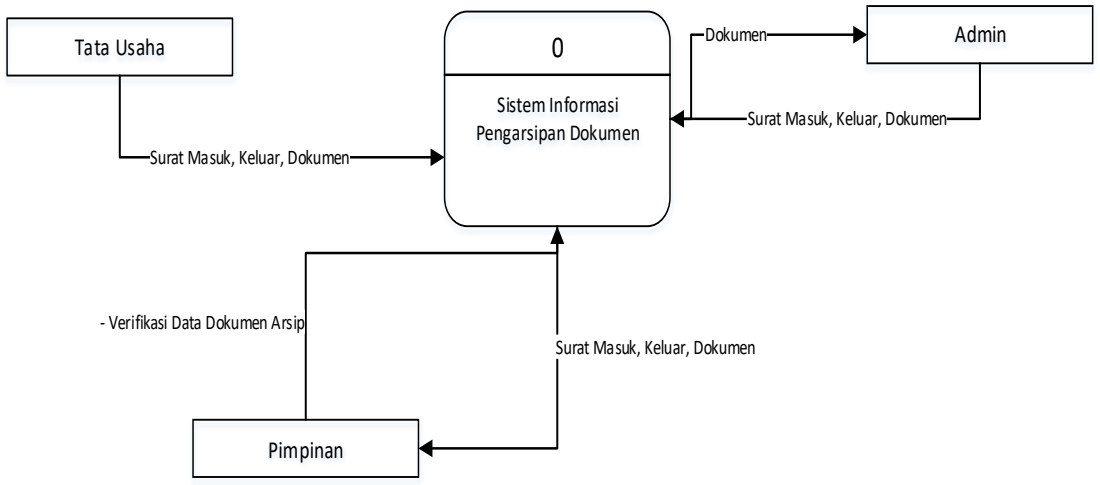

Figure 4. Context Diagram Design

With the overall design of this system, it is hoped that the Banda Aceh City Sharia Court can increase efficiency and effectiveness in managing and archiving documents, as well as strengthen the database to support better decision-making in the future..

4 | RESULT

The resulting application is a document archiving data processing application and is made into the main menu. The main menu consists of submenus, namely the Master data submenu, Search Report and Setting, where each menu and submenu has a function as input and output. In the main menu, ten forms are used for the data input process and output as report material so as to produce information according to needs. The data processing system is an activity of processing data that aims to produce useful information to carry out follow-up activities from a document archiving data. The purpose of data processing is to produce and present complete information to interested parties regarding the report of a document archiving data, data information can be obtained from daily, monthly reports which later this information can provide a document archiving report for the Banda Aceh City Sharia Court Employees. And the purpose of the data processing system is to obtain information regarding document archiving based on daily, monthly, incoming mail, outgoing mail and archive documents. To process document archiving data at the Banda Aceh City Sharia Court. The processed data comes from employees in the archiving of documents at the Sharia Court of Banda Aceh City. In this discussion, the submenus in the main menu will be explained. The main submenus are: master menu; category input, incoming mail input, outgoing mail input, document archive input, employee input and user/system user input and the report menu is to display reports or information from data that has been inputted into the database which will also be used as a report.

Implementasi program dilakukan melalui beberapa halaman antarmuka. Halaman pertama adalah halaman login, which is the first step to access the main program. Users must enter a username and password to enter the system. The main page displays a collection of interrelated submenus. The submenus include user data input, category data input, incoming mail data input, outgoing mail data input, document archive data input, employee data input, and data search. Each submenu page has a different function and data input process. For example, the user data input page is used to create a user account in this program. The category data input page is used to fill in the categories in the Banda Aceh City Sharia Court. The incoming mail, outgoing mail, and document archive data input pages are used to record data related to document archiving. Meanwhile, the employee data input page is used to record employee data involved in the document archiving process. In addition, there is also a search page that allows users to search for information by entering certain keywords. This page is an implementation of the search process in the document archiving system. The program output form has also been prepared to print reports according to needs. There are various types of reports that can be printed, such as daily and monthly incoming mail reports, daily and monthly outgoing mail reports, daily and monthly archive reports.

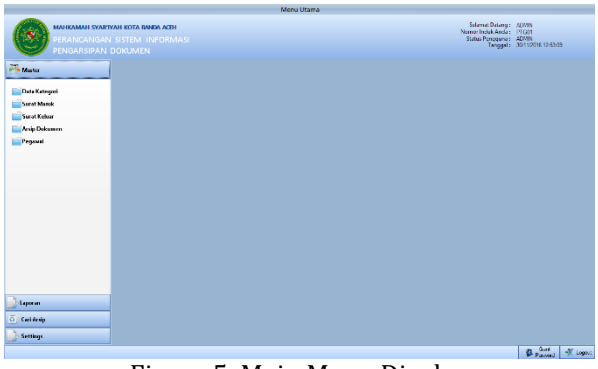

Figure 5. Main Menu Display

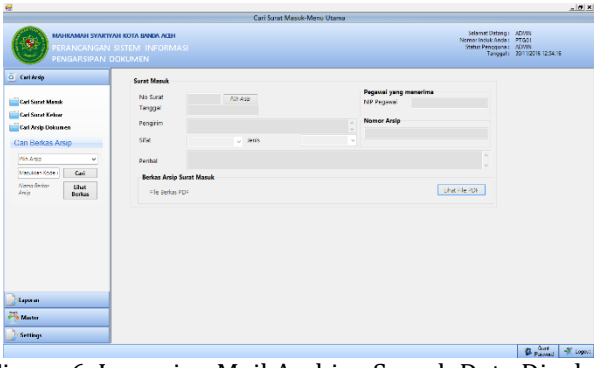

Figure 6. Incoming Mail Archive Search Data Display

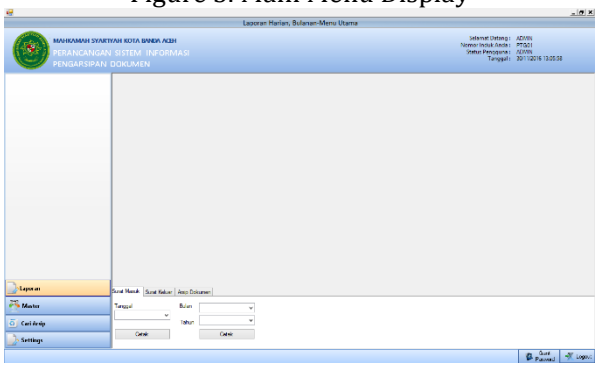

Figure 7. Report Menu Form Display

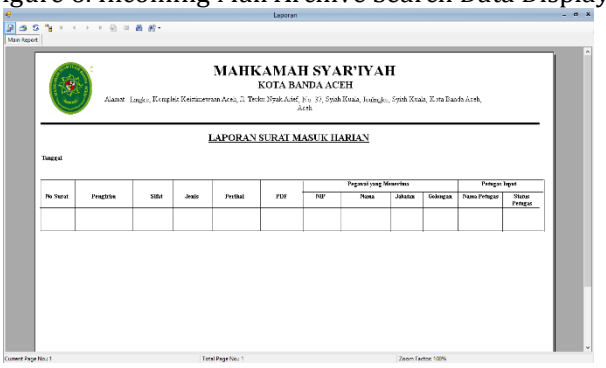

Figure 8. Daily Incoming Mail Report View

The implementation of the document archiving data processing application for the Banda Aceh City Sharia Court provides a comprehensive solution for managing and reporting document archives efficiently. The application is structured around a main menu that includes various submenus such as Master Data, Search Report, and Settings, each serving specific functions for data input and output. With ten distinct forms dedicated to data entry and report generation, the system effectively transforms raw data into valuable information tailored to meet the needs of court employees. The application facilitates daily and monthly reporting of incoming and outgoing mail, as well as archived documents, ensuring that stakeholders have access to complete and accurate information. By integrating a user-friendly interface with secure login features, the system not only enhances data management but also supports informed decision-making processes within the court. The ability to generate customizable reports further underscores the application's utility in streamlining administrative tasks and improving overall operational efficiency.

5 | CONCLUSIONS AND FUTURE WORK

The conclusion of this study indicates that there are still weaknesses in the management of document archive data at the Banda Aceh City Sharia Court. The archiving process that still uses manual recording in the Microsoft Office Excel application causes inaccuracy and delays in data retrieval, and increases the risk of data loss or damage. Therefore, a computerized system solution is needed to improve efficiency and effectiveness in managing document archive data. The implementation of a computerized archiving system offers a number of advantages, including the ability to process and record data better, speed up the data search process, facilitate report creation, improve data security with user verification, and reduce the risk of data damage or loss by performing regular backups. To improve the performance of this document archiving system in the future, the author provides a number of suggestions to information system developers. First, this application can be expanded in scope to be able to manage document archive data from various agencies and not only on a small scale such as the Banda Aceh City Sharia Court. Second, there needs to be innovation and new ideas in developing application features to facilitate the operating process. Finally, the author admits that the creation of this application still has shortcomings, therefore criticism and evaluation are highly expected for further improvement and development. Thus, the conclusions and suggestions presented are expected to be the basis for further development in document archive data management. Hopefully, this document archive data processing application can provide maximum benefits for users and help improve efficiency in document archiving at the Banda Aceh City Sharia Court and other agencies.

REFERENCES

Djamil, M. (2021). Sistem Pemrosesan Surat Menyurat pada Kantor POS Peureulak Kabupaten Aceh Timur. *Jurnal Ekonomi Manajemen dan Sekretari*, *6*(2), 22-26.

Hasrul, H., Amriadi, A., & Suprayitno, N. F. (2022). Perancangan Sistem Informasi Pengarsipan Surat Pada Kantor Kejaksaan Kabupaten Mamuju Utara. *Jurnal Manajemen Informatika, Sistem Informasi Dan Teknologi Komputer (JUMISTIK)*, *1*(1), 21-31.

HS, M. D. (2021). Peranan Tugas Sekretaris pada Balai Penyuluhan Pertanian dan Kehutanan Peereulak Aceh Timur. *Jurnal Ekonomi Manajemen dan Sekretari*, *6*(2), 33-36.

Ina, A., & Hariadi, F. (2022). Perancangan sistem informasi pengarsipan surat masuk dan keluar di kantor kelurahan Lewa Paku. *Jurnal Informatika dan Teknik Elektro Terapan*, *10*(2).

Ishak, K. M., Yusman, N. I., & Nurmeilana, A. (2022). Rancang Bangun Sistem Informasi Pengarsipan Surat Masuk Keluar Berbasis Website di Desa Gudang Tanjungsari. *Jurnal Dimamu*, *1*(2), 120-125.

Jumari, J., Fauziah, F., & Hayati, N. (2022). Algoritma Reed Solomon Codes pada Sistem Informasi Pemanggilan Data Peserta Wisudawan-Wisudawati menggunakan QR Codes. *Jurnal JTIK (Jurnal Teknologi Informasi dan Komunikasi)*, *6*(1), 152-160.

Kurniawan, D. L., Immasari, I. R., & Sianipar, A. Z. (2022). Perancangan sistem informasi pengarsipan berbasis website. *Jurnal Manajamen Informatika Jayakarta*, *2*(1), 77-89.

Laina, Y., & Djamil, M. (2021). Penilaian kinerja sekretaris dalam menerapkan administrasi pada kantor pelayanan kekayaan negara dan lelang Banda Aceh. *Jurnal Ekonomi Manajemen Dan Sekretari*, *6*(2), 27-32.

Langoday, M. I. K., Racma, D. F., & Wibowo, A. (2023). Kualitas Sistem Informasi Pengarsipan Surat dan Dampaknya Terhadap Efisiensi Laporan Pengarsipan pada SDN 1 Karangklesem Berbasis Website. *Dike*, *1*(2), 53-61.

Murni, T. (2021). Peranan Sekretaris dalam Membantu Kelancaran Administrasi BAPPEDA Provinsi Aceh. *Jurnal Ekonomi Manajemen dan Sekretari*, *6*(1), 6-9.

Nugraha, W. (2021). *Sistem Informasi Pengarsipan Berkas Pelayanan Masyarakat Pada Kelurahan Demanglebardaun* (Doctoral dissertation, STMIK Palcomtech).

Pinaria, A., Huwaida, H., & Fauziah, D. (2022). Sistem Informasi Pengarsipan Surat Berbasis Web: Studi Kasus Asrama Mahasiswa Islam Sunan Giri. *JUST IT: Jurnal Sistem Informasi, Teknologi Informasi Dan Komputer*, *12*(2).

Pradini, A. G., & Sudradjat, A. (2021). Sistem Informasi Pengarsipan Surat Kantor Desa Berbasis Web. *Information Management For Educators And Professionals: Journal of Information Management*, *5*(2), 1-10.

Riefnaldi, A. R., Aranta, A., & Muaidi, M. (2021). Pembuatan Sistem Informasi Pengarsipan Surat Pada Kantor Desa Sandik Berbasis Website. *Jurnal Begawe Teknologi Informasi (JBegaTI)*, *2*(2).

Riefnaldi, A. R., Aranta, A., & Muaidi, M. (2021). Pembuatan Sistem Informasi Pengarsipan Surat Pada Kantor Desa Sandik Berbasis Website. *Jurnal Begawe Teknologi Informasi (JBegaTI)*, *2*(2).

Setiawan, I., & Hesinto, S. (2022). Sistem Informasi Pengarsipan Data Dinas Perhubungan Kota Prabumulih. *Jurnal Teknik Informatika dan Sistem Informasi ISSN*, *2407*, 4322.

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