

Design of Archive Web Information System Electronic Documents in the Office Kotabaru District

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Abstracts

This study examines the challenges faced by the Kotabaru District Office in managing its document archives manually and proposes a web-based electronic archive information system (E-Arsip) as a solution. The research identifies inefficiencies in the current system, such as slow document retrieval, potential document degradation, and organizational issues. A web-based system offers a digital solution that improves access to and the preservation of archives while maintaining document authenticity. This study uses qualitative research methods, including observations, interviews, and document analysis, to design a comprehensive E-Archive system that ensures secure, efficient, and organized document management. The findings show that the system can significantly improve the office's document handling and support the digital transformation of government administrative processes.

Keywords: Electronic Archive, Information System, Archive Management

INTRODUCTION

The benefits of applying technology have been felt in various fields, including the field of document archiving. Based on the Great Dictionary of Indonesian (KBBI) Online, an archive is a document in the form of written, oral, or images that come from the past and can be stored in written or electronic media. Document archiving is an important process in office administration activities that must be carried out by a business (Alokluk, 2019; Purnomo et al., 2023; Simangunsong & Informatika, 2018). Some of the benefits that can be felt with the application of technology to document archiving are, the process of finding documents feels easier, faster, and more precise, documents are not scattered, able to avoid disasters that can damage documents, and simplify the process of distributing documents (Almahdi & Pahlevi, 2020).

The development of increasingly advanced computer technology makes it easier for people to carry out activities, especially in the field of administration. For example, in document management, which was previously only available in file holders, is now being developed in the system. Documents are important in the daily activities of an organization or company ("Application and Development of Computer Technology in Modern Military Logistics Construction," 2022; Djaelangara et al., 2015; Huang, 2020; Miranda et al., 2015; Shan, 2023; Zhu, 2024). Many daily activities are related to documents, including hardcopy and softcopy. If you need to view a document at any time, sometimes the document is saved for a long time for reference. Hardcopy documents are a complex problem because they are related to the durability of paper materials and how to avoid damage, which eliminates or reduces the value written on the document, so it becomes a problem. Softcopy documents also have the problem of how to prevent documents from being damaged (for example,

infected with viruses) or lost due to deletion (Moshinsky, 2020).

On the other hand, due to the large amount of data that needs to be reported in a document, there is a risk of data entry errors. Even though the certification process is very important, it has not been supported by existing conditions, namely it has not been integrated and does not have a systematic structure. Therefore, a systematic and integrated document management system is needed, namely by designing an electronic document system. The use of electronic document archive information systems will also help optimize the archive management system for incoming and outgoing documents, especially by bringing new ideas to the table to make the system better. If the archive is kept after its useful life, therefore, it is used for future studies (Sutanto & Nuryani, 2020).

Archives are useful not only as a repository of data but also as a reliable source of evidence. Every product that an organization creates for its day-to-day operations is called an archive. It serves as the basis for group behavior, output, and memory and is reliable evidence of administration and fairness. Archives must be managed electronically because information and communication technology and computer media are interrelated. Electronic media can be easily stored and managed without taking up much time, thanks to devices such as laptops, desktops, and web-based applications (Herwahyudi et al., 2020).

The Kotabaru District Office still uses manual techniques to manage the filing of incoming and outgoing letters and disposition letters from creation, search, receipt, and storage. Obstacles that often arise include the length of the document retrieval process, the occurrence of damage to documents, the arrangement of documents that are not organized, and the existence of incomplete documents due to scattering. The storage system is always in the form of a hard copy. Documents are still stored using the folder technique, which involves placing the folder in a filing cabinet. Archival document storage is not kept according to the procedure. To find archival documents that have been around for many years takes a lot of time. Deep archive storage is stored in a database, and archival records are secure and easy to use with more effective electronic storage solutions, which are harder to use and look greater.

These obstacles should be handled with the right solutions, so that the document archiving process can run better so that the Kotabaru sub-district office can be more effective and efficient when carrying out its duties and obligations. The solution that the author offers to the Blanakan sub-district office is to create a web-based electronic archive information system (E-Arsip). This E-Archive will serve as a digital storage of document archives, but does not eliminate the process of creating document archives manually so that the authenticity of documents can still be accounted for. In addition, with the existence of E-Archives, the process of rediscovering archives will be easier, faster, and more precise, and documents are avoided from causing damage.

The research is of great importance given the increasing volume of documentation in organizations and the frequent challenges faced in managing these documents. The manual archival processes currently in place, as demonstrated in the Kotabaru District Office, are inefficient, leading to problems such as document loss, degradation, and prolonged retrieval times. The urgency lies in the need to transition to a more efficient and modern method of document management that ensures better accessibility, preservation, and organization, especially with increasing demands for transparency, accountability, and speed in

government and private sector operations.

This study introduces the concept of a web-based electronic archive information system (E-Arsip) for the Kotabaru District Office. While electronic archiving systems have been explored globally, this research focuses on the implementation of an E-Archive that maintains the authenticity of manual document creation while transitioning to digital formats. By integrating a web-based system with a database, the research offers an innovative solution to improve the archiving process and reduce the risks of document corruption and mismanagement.

This research contributes both academically and practically. Academically, it offers a framework for understanding how electronic archiving systems can optimize document management processes. Practically, it provides a real-world solution for improving the efficiency of document handling, reducing the risk of document loss, and enhancing organizational transparency. Additionally, this research supports the ongoing digital transformation in governmental offices, helping institutions like the Kotabaru District Office become more efficient, organized, and accessible in their operations.

RESEARCH METHODS

In an organization, an information system is a system that combines the administrative needs of day-to-day transaction processing with the tasks to produce reports required by a particular third party. Acceptance that "A system is defined as an integrated whole that generates information and achieves goals" (Hartati et al., 2021).

Design is the process of organizing everything in advance. The design brings out the intended creative form. Through the process of cultivation and processing, design creates orderly things from an idea or idea that is not ordered. According to (Emalia Lilis et al., 2023) Planning, drafting, and drawing several discrete components into a cohesive and useful whole is known as system design.

The research method used in this study is a qualitative descriptive method, which aims to describe systematically and factually about the document archiving process at the Kotabaru District Office (Ninia Lina, 2020). Data collection was carried out through direct observation to understand data management activities, interviews with staff of the Kotabaru District Office to obtain more detailed information, as well as documentation studies on relevant documents, such as asip reports, incoming and outgoing mail documents, and archive databases. In addition, literature studies are also used to support the analysis with references from related literature. This method allows researchers to obtain a clear and comprehensive picture of data administration in the environment. Dalam penelitian ini, Teknik pengembangan perangkat lunak menggunakan metode *prototype*, dimana dalam metode *prototype* menunjukkan sebelum proses pengembangan dimulai, bagaimana program atau komponen perangkat lunak akan berfungsi di lingkungan target (Aditya et al., 2021).

1. Software Needs Analysis

Here, the author compares and searches for website-based document archiving information at the Kotabaru District Office to conduct a complete analysis of software needs to ensure what users need.

2. System and Software Design

At this point, the author created a software application using UML (Unified Modelling

Language), LRS (Logical Record Structure), and ERD (Entity Relationship Diagram), which includes class diagrams, use case diagrams, sequence diagrams and activity diagrams (Hartati et al., 2021).

3. Unit Implementation and Testing

At this point, the author offers recommendations to support the programs that will be implemented at the Kotabaru District Office through the use of the Blaxbox Testing method, which allows for analysis of whether each function is successful or not.

RESULTS AND DISCUSSION

Documents, manuscripts, and other media from various sources of information within an organization make up its archives. Records of activities or events authorized and produced by state institutions, local governments, companies, political parties, educational institutions, and other entities in various media formats, environmental associations, and citizens in order to carry out society, the state, and the life of the state are kept in archives. This is in accordance with Law Number 43, Article 2, 2009, which relates to archives.

An archive is a repository of historical materials and public records. Everything that is archived can be easily accessed, especially with the advent of electronic archives that are quickly accessible and well-organized. An organization creates, maintains, and receives archives, which are then kept as evidence of activities. According to (Amalia & Panduwinata, 2022), An archive is a repository of historical materials and public records. Everything that is archived can be easily accessed, especially with the advent of electronic archives that are quickly accessible and well-organized. An organization creates, maintains, and receives archives, which are then kept as evidence of activities. According to (Dewi & Dewi, 2021), Seorang pejabat administrasi tidak dapat mengingat sesuatu secara manual jika tidak ada arsip, sehingga untuk mencapai tujuan perusahaan atau lembaga, diperlukan pengetahuan untuk mengelola struktur tata kelola arsip yang memadai.

An electronic archive is a record that is created, used, and constantly updated to serve as evidence of the types of transactions, actions, and roles that have been performed, transferred, and then processed by organizations and people. Because the security of the system is guaranteed, electronic archives allow users to quickly obtain the necessary data without having to leave the location to search for it. In addition, there is no need to keep an original copy of the data when using electronic archives (Amalia & Panduwinata, 2022).

Images, e-mails, digital paper with data files, and databases are some of the file formats that can be found in electronic archives. Meanwhile, hard drives, CDs, DVDs, and other storage devices are used to handle electronic archives. (Dewi & Dewi, 2021). A database processing system is commonly referred to as DBMS (Database Management System) in the field of information technology. A file system connected with at least one Primary Key for an iteration consisting of a number of tables that store data and information is also known as a database. (Puspita, 2020).

Currently, the document archiving system of the Kotabaru District Office operates as follows: In the Procedure of the Incoming Letter Archive Running System, the Head of the General Sub-district receives incoming mail first, which starts the process of managing incoming mail at the Kotabaru District Office. The receipt, recording, control, and distribution are then handled by the Head of the General Sub-Division. After that, the Head

of the District received the letter of entry and the letter of disposition, which was then read and given instructions to the relevant section. The letter is returned to the Head of the Sub-Division, the letter is then distributed by the Head of the General Sub-Division, in accordance with the purpose of its use. After that, the incoming letter along with the disposition letter are stored and archived by the Head of the General Subdivision on a Map and stored in the archive.

In the Procedure of the Outgoing Letter Archive Running System at the Kotabaru District Office, starting from the Processing Section making outgoing letters, outgoing letters are made in a number of 2 copies. Then the outgoing letter is processed, recording is given, giving the letter number, date of the letter, the purpose of the letter, and giving a stamp on the outgoing letter. After that, the Head of the General Subdivision handed over the exit letter to the Head of the District to be read and approved. If the exit letter is not approved, the Head of the District will return the exit letter to the Processing Section. Meanwhile, if the exit letter is approved by the Head of the District, the Head of the District will give the exit letter to the Head of the General Subdivision to be sent a sheet and archived. Then the Head of the General Subdivision handed over the letter to the introducer to be sent and one sheet was handed over to the Head of the General Subdivision to be archived and stored in a folder placed in the filing cabinet. To provide a report to the Head of the District on all letters received and sent, The Head of the General Subdivision must first make a ledger of incoming and outgoing letters.

In order for the document archiving process to be improved and the Kotabaru District Office to carry out its duties more successfully, the problems with the archiving process that is now there must be resolved. The solution that the author proposes to the Kotabaru District Office is to create a website-based electronic archive information system and integrated with databse. Although this electronic archive functions as a place to store document archives digitally, it does not eliminate the process of creating archives manually, so that it can still prove the authenticity of documents. Web-based electronic archives also prevent document corruption and make the process of rediscovering archives more straightforward, fast, and precise. accurate.

From the results of the analysis of user needs carried out by the author by making direct observations at the Kotabaru District Office, it is divided into 2 user access rights as follows:

1. Scenario of the Needs of the General Head of Sub-division
 - a. The Head of the General Subdivision can manage incoming mail data
 - b. The Head of the General Subdivision can manage the data of outgoing mail
 - c. The Head of the General Subdivision can manage the data of the disposition letter
 - d. The Head of the General Subdivision may print a letter report
2. Admin Needs Scenario
 - a. Admins can manage incoming mail data
 - b. Admins can manage outgoing mail data
 - c. Admin can manage disposition letter data
 - d. Admin can manage user data
 - e. Admin can print mail reports

Stages of Unified Modeling Language (UML)

1. Use Case Diagram

The relevant interactions between actors and operating systems are described in the Use Case Diagram. The preparation of functional requirements is currently necessary to assist in the development of application systems in information system software technology. Use Case Diagram provides an easy-to-use summary of the capabilities available in the system.

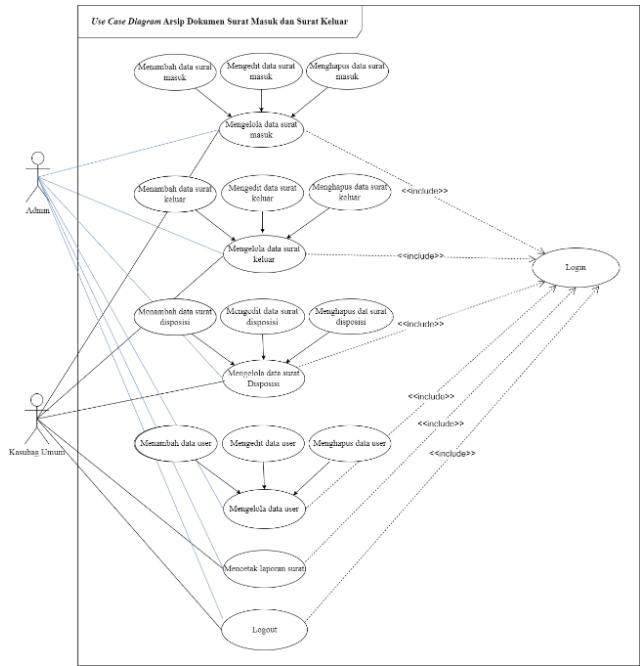


Figure 1. Use Case Diagram
Source : Research Results (2024)

2. Activity Diagram

Activity Diagrams are created to illustrate the workflow of work processes to reduce errors and prevent errors. Activity Status The activity in a workflow or statement presentation in a process is represented by an Activity Diagram.

a. Activity Diagram Login

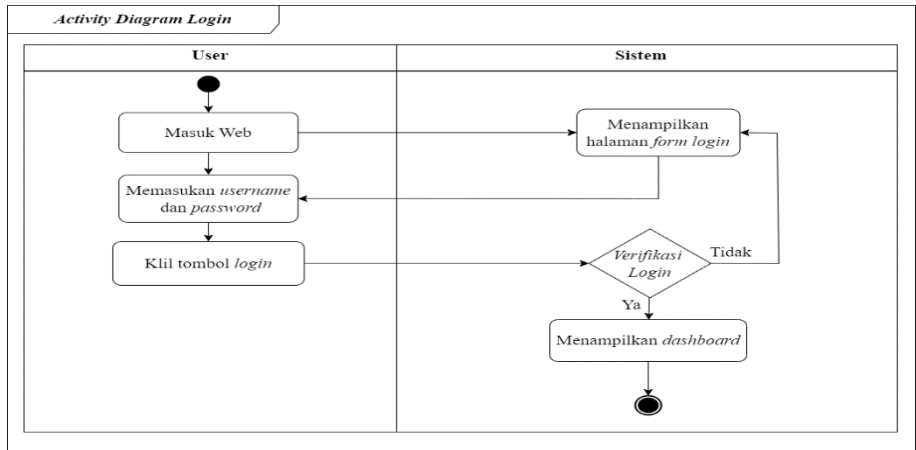


Figure 2. Activity Diagram Login
Source : Research Results (2024)

b. *Activity Diagram of Incoming Letter*

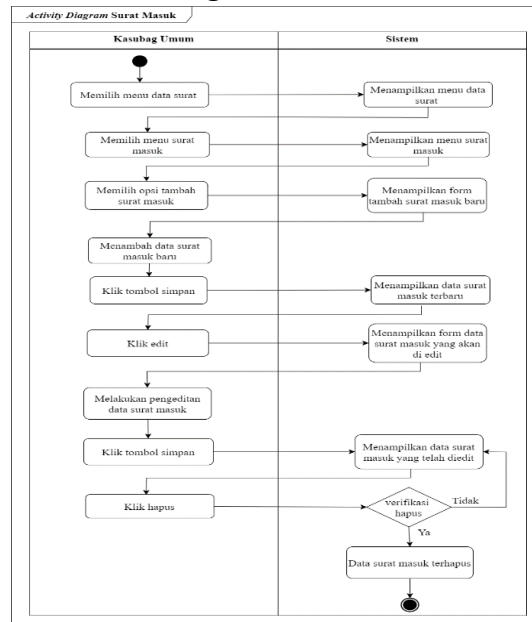


Figure 3. Activity Diagram of Incoming Letter
Source : Research Results (2024)

c. *Activity Diagram of Outgoing Letter*

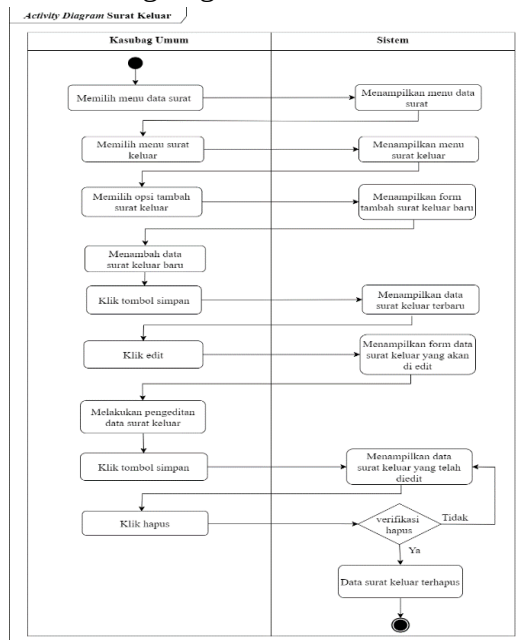


Figure 4. Activity Diagram Outgoing Letter
Source : Research Results (2024)

Interface Design

1. Login Page

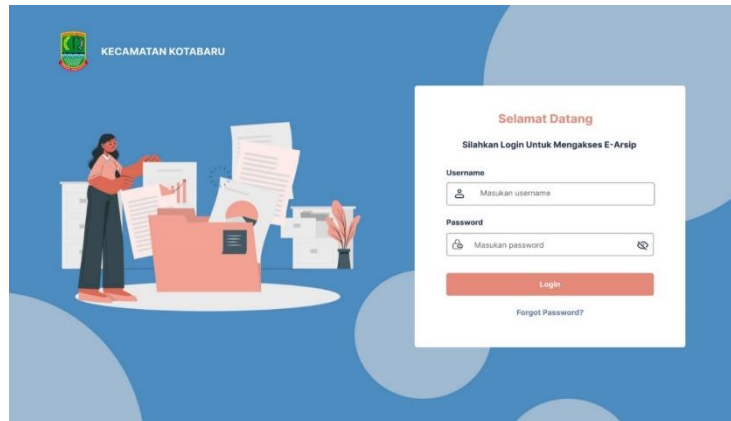


Figure 5. Login Page

Source : Research Results (2024)

2. Dashboard Page

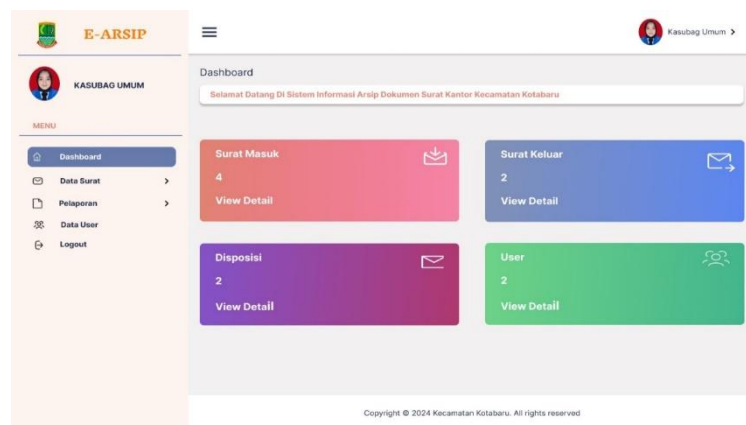


Figure 6. Dashboard Page

Source : Research Results (2024)

3. Incoming Letter Data Display Page

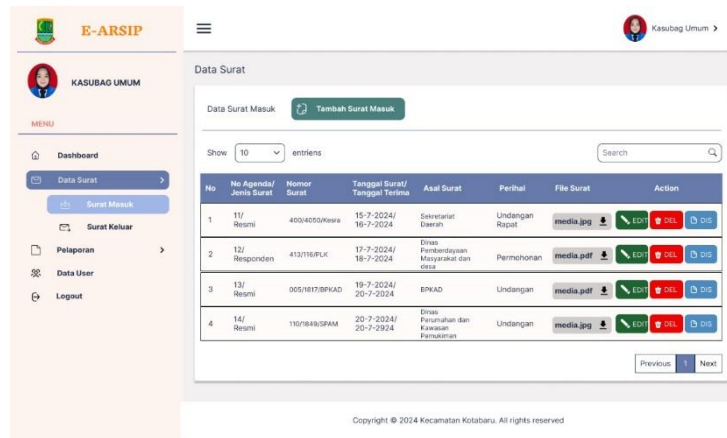


Figure 7. Incoming Letter Data Display Page
Source : Research Results (2024)

4. Outgoing Letter Data Display Page

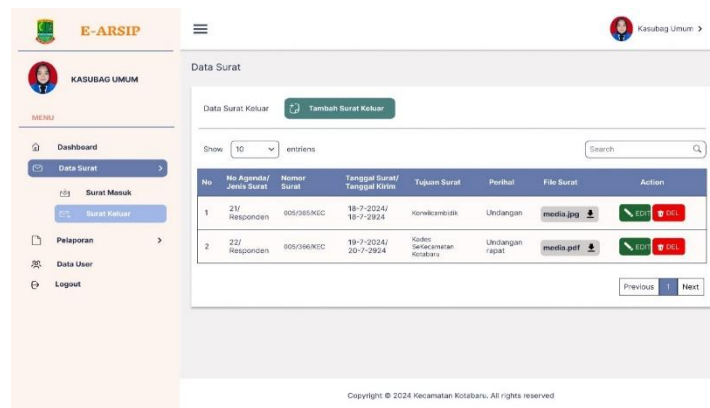


Figure 8. Incoming Letter Data Display Page
Source : Research Results (2024)

5. Incoming Mail Report Print Page

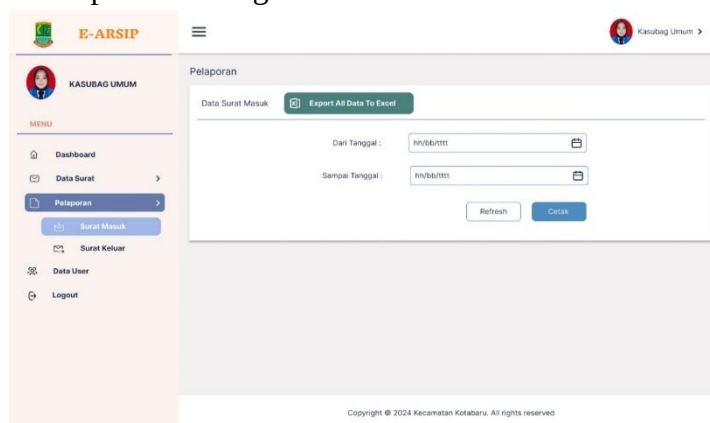


Figure 9. Incoming Mail Report Print Page
Source : Research Results (2024)

CONCLUSION

The implementation of a web-based electronic document archive information system at the Kotabaru District Office has significantly improved archive management efficiency.

It has made the process of searching and storing documents faster and easier, compared to the previous manual methods. The system enhances data security, protecting documents from physical damage or loss, thereby maintaining their integrity. Authorized users can easily search, add, edit, or delete archive data, increasing work productivity by reducing time spent on document management. This system not only streamlines the archiving process but also ensures documents remain secure, authentic, and easily accessible, contributing to improved administrative efficiency and reliability at the Kotabaru District Office.

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