
Website Design for Archiving Notary Deeds and Land Deed Officials Using the Binary Search Algorithm at A Law Office in Bandung

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ABSTRACT

This study focuses on the development of a website for archiving notarial deeds and official land documents at a law office in Bandung. The principal challenge encountered is inefficiency in locating and managing these documents. A website has been developed utilising the Binary Search algorithm, recognised for its superior efficiency in data retrieval. This website seeks to facilitate the digital management of archives, enabling notaries and personnel to efficiently and precisely search for and retrieve essential records.

This website's primary features encompass comprehensive data entry, digital storage, and rapid searching with the Binary Search algorithm. The website incorporates security safeguards to safeguard data from unauthorised access. This research demonstrates that utilising the Binary Search algorithm in website design for archiving can improve the speed and efficiency of comprehensive data retrieval. The establishment of this website can mitigate the danger of losing physical documents and enhance work productivity at the law office in Bandung.

Keywords: Website Design, Digital Archiving, Notary Deed, Binary Search, Notary Office, Data Search Efficiency

INTRODUCTION

This study focuses on the development of a website for archiving notarial deeds and official land documents at a law office in Bandung. The principal challenge encountered is inefficiency in locating and managing these documents. A website has been developed utilising the Binary Search algorithm, recognised for its superior efficiency in data retrieval.

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Binary Search Algorithm

Ahmad Firdaus et al., (2025), demonstrates that the Binary Search approach is significantly more efficient than the Linear Search method, which sequentially examines each element in the array until the target element is located. Besides Binary Search, methods such as Interpolation Search and Jump Search also function on sorted data. In Binary Search, the data must be pre-sorted. The search procedure commences by partitioning the array into two segments. If the target data is less than the centre element, the Search proceeds to the left by halving the left segment of the array. If the target data exceeds the middle element, the Search proceeds to the right by dividing the array into two segments and identifying the midpoint once more. The division procedure continues until the target data is identified.

Binary Search operates accurately alone when the data is sorted. It is commonly utilised in daily life, for instance, when looking up a term in a dictionary. Binary Search is only relevant to sorted elements. Sequential searching is disadvantageous because it requires examining the entire array when the items are located at disparate final positions. Pre-sorted data will exhibit superior search performance. (Donald, 2022)

Avilla et al., (2024) , indicates that further scholars have examined the Binary Search method in the Indonesian-Acehnese dictionary. This study effectively used the binary algorithm in

the dictionary search process and conducted data testing to evaluate the search speed. The binary algorithm demonstrates a search time of 0 milliseconds for datasets containing 1,000, 2,000, 3,000, and 4,000 words. The maximum data utilised in this investigation was 4,000 words.

Furthermore, according Sjojfan et al., (2023) the Binary Search algorithm is a technique for locating data within a sorted array. This method is more efficient than the linear search technique, which examines each element in the array sequentially until the target element is located.

Archiving

Records are described as any documented material, including charts or photographs, that contains information regarding a subject or event. According to Aviantika et al., (2021) archives are documented activities in various formats, preserved through advancements in information technology, and are accessible to multiple stakeholders.

Archives function as documentation of performance responsibility that must be sustained, conserved, and safeguarded. Nonetheless, not all archives are regarded with the same significance, as they possess varying qualities. The utility value of archives includes administrative, financial, research, educational, documentary, and historical values. The diverse values substantially influence the advantages of archives, rendering their preservation imperative. The safeguarding of archives is governed by Law No. 43 of 2009 on Archiving, with its execution detailed in Government Regulation No. 28 of 2012 on the Execution of Law No. 43 of 2009 on Archiving. Archiving is essential to ensure legal clarity and protect the interests of parties involved in a legal relationship. Ahmad Yani, 2021.

"Archive" derives from the Greek word "arche," meaning "beginning," which evolved into "ta archia" and subsequently into "archeon," denoting a "government building." In Latin, it is referred to as "archivium." (Darmi et al., 2023; Suryani et al., 2023)

Website

A website is a compilation of web pages residing within a domain that includes information. (Mulyana & Rifqi, 2020)

A website is a compilation of information or pages accessible over the internet. It is accessible to anybody, wherever, and at any time, provided they have an internet connection. A website has pages organised under a specific domain or subdomain. (Yudi Herdiana, 2023)

A website is a compilation of interlinked pages that encompass diverse, dynamic, and static information, accessible and used by users. A website serves as an effective information medium, providing digital content to disseminate information to the public. (Yani & Syafiin, 2021)

In light of the aforementioned concerns, the author has cultivated a strong interest in creating a comprehensive website for archiving notarial deeds and documents produced by property deed officials. This website will utilise the binary search technique to improve the efficiency and speed of data retrieval.

The objective is to develop an intuitive platform that enables notaries and their personnel to efficiently access, manage, and search for essential legal documents. The author aims to address the issues inherent in conventional archiving techniques by implementing this technology, thereby facilitating rapid access to necessary information while preserving the integrity and security of archived records. This programme aims to optimise the archiving process and enhance overall productivity inside the law office.

METHOD

This project used a descriptive research approach to create a website for archiving notarial deeds and official land records at a law office in Bandung. The principal difficulty noted is the ineffectiveness of locating and managing these essential papers. This research commences with a comprehensive literature review of current archiving methods and the Binary Search algorithm. The process involves interacting with notaries and personnel through interviews and surveys to collect qualitative and quantitative data on their existing challenges. This research outlines the essential needs for the website, emphasizing characteristics such as thorough data entry, adequate digital storage, and stringent security protocols to safeguard critical information.

The development phase entails creating a prototype that integrates the Binary Search algorithm for swift and precise document retrieval. Usability testing with real users ensures that the website meets their requirements and enhances efficiency. Performance testing evaluates the speed of searches compared to conventional approaches, revealing substantial improvements. This system implementation highlights the potential to mitigate hazards associated with physical document loss while improving workflow efficiency in the law office. This research underscores the need to utilize technology to optimize document management in legal contexts, facilitating further improvements and broader applications.

DISCUSSION

Analysis of the Current System

A systematic strategy is necessary to assess the efficiency, security, and regulatory compliance of the current system at a legal office in Bandung. Examining problems within a system is an essential phase in creating and establishing the criteria for the new system. This aims to clarify the operational framework of the system and address current issues.

Observations at a legal office in Bandung reveal that the archiving system employed by the Archiving Staff remains manual. This results in possible human errors, including the failure to archive specific data, yet reports to the Head Notary are deemed secure and authorised. This condition unequivocally complicates the tasks for other staff members who may subsequently need to get such data. To resolve this issue, an archive information system must be directly integrated with the website. Consequently, the risk of data loss and inaccuracies can be mitigated, enabling the system to offer enhanced advantages to users in the successful management of their finances.

Proposed System

1. Use Case Diagram

A use case diagram is a diagram within the Unified Modelling Language (UML) that depicts the interactions between users (or "actors") and the system under construction.

This graphic illustrates the primary functions the system must execute and delineates

the individuals who engage with the system. Use cases delineate standard interactions between system users and the system via a story illustrating the system's use. The following is the Use Case Diagram for the proposed system.

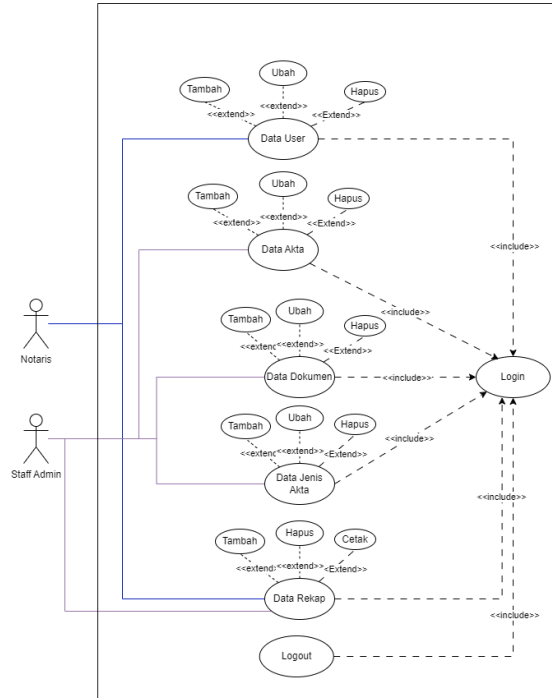


Figure 1. Use Case Diagram

2. Class Diagram

A class diagram is a static diagram utilized in object-oriented system modelling. This diagram is a component of Unified Modelling Language (UML) and depicts the static structure of the system, particularly the relationships among the classes inside the system. The class diagram facilitates the design and comprehension of the system's structure.

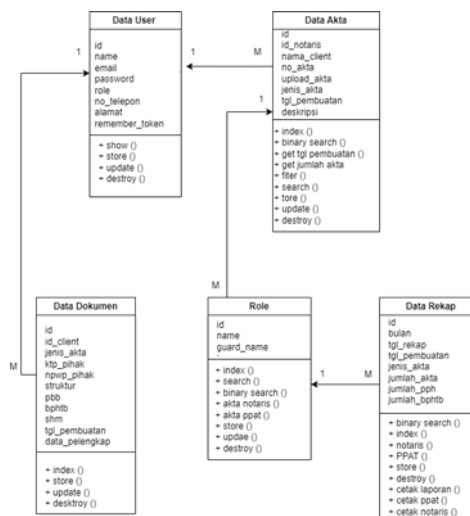


Figure 2. Class Diagram

3. Table Structure Design

Structuring the table design is a critical aspect of database development. The fundamental objective is to provide adequate data storage and facilitate easy access. This entails identifying the entities to be kept in the database, specifying attributes for each entity, and establishing the primary keys for each table. The following delineates the structural design of the archive database table.

1) Deed Table

2) Document Table

3) Roles Table

4) Summary Table

5) Users Table

4. Menu Structure Design

The menu structure is a fundamental aspect of application design that helps users navigate the application. This ensures that customers have no difficulty selecting their preferred menus when using the application.

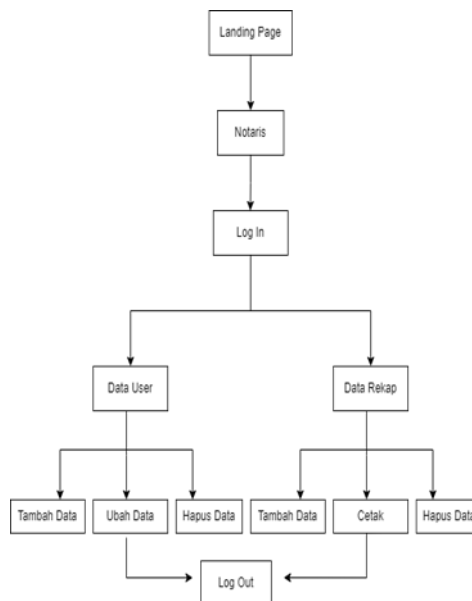




Figure 3. Menu Structure Design

System Implementation

System implementation is the process of deploying the intended and developed system into the operational environment. Prior to complete implementation, the system must undergo comprehensive testing to verify that all components operate by specifications. This process encompasses multiple operations, including hardware and software installation, data migration, user training, system testing, and necessary adjustments to ensure the system functions in alignment with the defined objectives. The following is a display of the program created:

Figure 4. Log In View

No	Name	Email	Password	Alamat	No Telpun	Role	Aksi
1	notaris@gmail.com	notaris@gmail.com	123456789	Jl. Bendo No. 100	08123456789	admin	edit delete

Figure 5. User Data Display

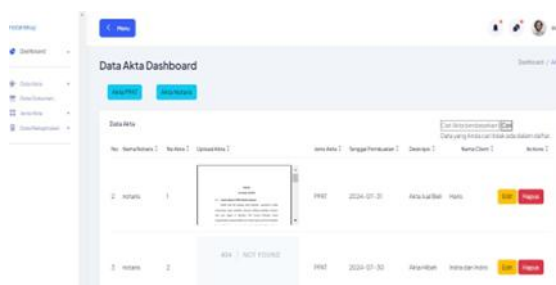


Figure 6. Display of Deed Data



Figure 7. Document Data Display

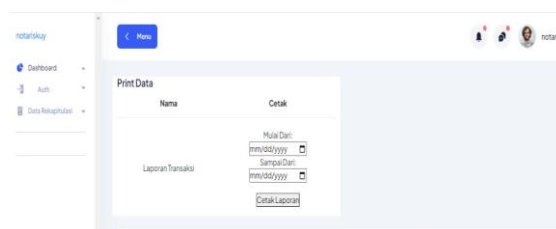


Figure 8. Print Page Summary Data Display

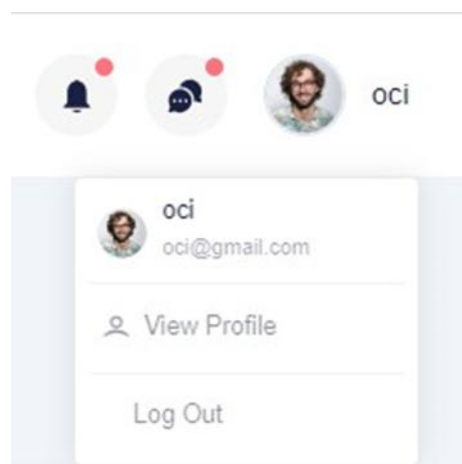


Figure 9. Log Out View

CONCLUSION

The establishment of this archiving website signifies a substantial improvement in the efficiency, security, and transparency of legal document management, hence expanding client services and meeting legal requirements. The developed website effectively offers functionalities that facilitate the administration of deed archives at the Notary Office of Rinawati Oetji, S.H. This advancement enables personnel at the Notary Office to organise and manage historical data more effectively and efficiently. Functions like rapid search, categorisation, and indexing optimise document management, markedly decreasing the time needed to find or retrieve stored records.

Furthermore, the establishment of this website reduces the need for physical space to accommodate documents or deed archives, thereby decreasing costs and storage requirements. Digitally stored deeds are enhanced by multiple security measures, such as encryption, role-based access control, and data backup, which reduce the likelihood of document loss or destruction. This project enhances operational efficiency and ensures the secure management of essential legal records.

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