WEB-BASED DOCUMENT ARCHIVING INFORMATION SYSTEM IN COMMISSION C DPRD OF NORTH SUMATRA PROVINCE

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ABSTRACT

Commission C DPRD of North Sumatra Province is a commission that operates in the financial sector. In Commission C DPRD, the relationship between the budget and documents is closely related because documents are often used as a tool to record, track and present financial information. These documents assist Commission C in monitoring, evaluating and making decisions related to regional financial management. The document is an important reference to ensure transparency, accountability and efficiency of budget management in accordance with policies and community needs. The existence of documents is usually important because they record or record information that can be accessed and used as a reference in the future. Document management within Commission C DPRD of North Sumatra province still faces several obstacles, including manual processes that are vulnerable to human error, the time required to search for documents, and the risk of document loss or damage. Seeing this problem, a new system is needed that utilizes technology in the current era to deal with several obstacles related to document management. The aim is to design and implement a web-based document archiving information system at Commission C DPRD of North Sumatra province to increase efficiency, security and readability of information in document management. The research methods used in this study are Research and Development. Research and Development Research and development (R&D). This system was built by modeling several UML diagrams such as use case diagrams, activity diagrams, and class diagrams. It is hoped that Commission C DPRD of North Sumatra province can optimize document management performance and make a positive contribution to improving service quality and transparency within this institution.

1. INTRODUCTION

In the era of digitalization that continues to grow, the implementation of information technology is a must to support the efficiency and effectiveness of document management in government institutions (Hasrul; Amriadi; Nur, 2022). One institution that has significant duties and responsibilities in the legislative process is Commission C of the North Sumatra Provincial DPRD. Commission C of the North Sumatra Provincial DPRD is a commission engaged in finance including regional finance, regional revenue, taxation, retribution, banking, state-owned enterprises, joint ventures and investments and regional public service agencies (Wini Astuti & Selva Jumeilah, 2020).

A document is a written or printed record that contains certain information, data, or facts (Gilang Gemilang Ramadhan Putra & Wahyu, 2022). Documents can be in the form of text,

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images, tables, graphics, or a combination of these elements. Documents can have various types and purposes, such as official letters, reports, books, certificates, contracts, and so on. They are used to store, communicate, or record information. Documents also have value as evidence or reference in many contexts, including in the fields of law, business, education, and administration. The existence of documents is usually important because they record or record information that can be accessed and used as a reference in the future (Pasaribu & Fadhly, 2021). Often, documents must be carefully drafted, clear, and accurate to ensure the information stored in them can be well understood by readers or interested parties.

Document management within Commission C of the DPRD of North Sumatra province still faces several obstacles, including manual processes that are prone to *human error*, the time needed to search for documents, and the risk of losing or damaging documents. This is due to a conventional management system, namely storage only in the form of physical stored in a storage cabinet and recording the list of archived documents still using a handwritten book. Seeing this problem, a new system is needed by utilizing technology in the current era to face several obstacles related to document management.

To strengthen the basis in system makers, cited several previous studies related to document archiving problems. Previous research entitled "Analysis and Design of Web-Based Mail Archiving Information System at Dayah Tuha Village Subdistrict Office" by Liza Rozana argues that with this information system, archival documents can be stored and managed properly and more easily in the search process (Rozana & Musfikar, 2020). The next research entitled "Application of Web-Based Information Systems for Document Management and Archiving" by Reni Kurniah argues that the system that has been created will facilitate the storage, processing and search of archives where in the previous system the process of storing, processing and searching archives was still done manually so that it requires a long time in the process of searching for files (No et al., 2023). The research entitled "Web-Based Archive Management Information System to Improve Administrative Services" by Ahmad Bahrum Maula Rahman argues that the web-based archival information system implemented can improve the quality of service so that it can facilitate the storage of incoming and outgoing mail data or others is evidenced by the storage of incoming and outgoing mail data, such as adding data changing data, and delete data so that it is not lost or damaged (Rumengan et al., 2021).

A website-based digital archive is a system that stores documents in digital format and is accessed through the website (Ibrahim et al., 2023). Website-based digital archives can improve the efficiency and effectiveness of the document archiving process. This is based on research conducted by the Ministry of Communication and Information Technology of the Republic of Indonesia in 2022, website-based digital archives have several benefits, namely increasing work efficiency, increasing the effectiveness of document searches, and increasing document security (Agustini & Aziz, 2022).

Based on several previous studies, the author offers a solution by creating a Web-Based Document Archiving Information System at Commission C of the North Sumatra provincial parliament. The aim is to design and implement a web-based document archiving information system at Commission C of the North Sumatra provincial parliament to improve efficiency, security, and readability of information in document management. With the web-based document archiving information system, it is hoped that Commission C of the North Sumatra provincial parliament can optimize the performance of document management and make a positive contribution to improving service quality and transparency within this institution.

2. METHOD

The research methods used in this study are *Research and Development*. *Research and Development* Research and development (R&D) is a process used to produce a particular product and test the effectiveness of that product (Khairunnissa & Afriyadi, 2023). The products produced

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can be in the form of physical products, non-physical products, or service products (Okpatrioka, 2023). The data collection techniques in this study are observation, interviews and literature studies (Kibtiyah & Somantri, 2023).

1. Observation, namely making observations at related agencies. Things observed include agency profiles, organizational structures, and problems in the system.
2. Interview, which is the process of interaction between researchers and respondents, where researchers ask questions and respondents provide answers.
3. Literature study, which is collecting data by citing several references from journal articles or books related to the research conducted.

a. System Development Methods

This research uses system development with methods *Waterfall*. Method *Waterfall* is a software development method that is systematic sequentially in building software starting from the problem analysis stage and system functional needs analysis, the design stage using *Unified Modeling Language* (UML) such as *use case diagram*, *activity diagram*, *sequence diagram*, *hypertext preprocessor* (PHP) as a programming language, testing systems using *blackbox testing* and *maintenance* system (Nurseptaji, 2021).

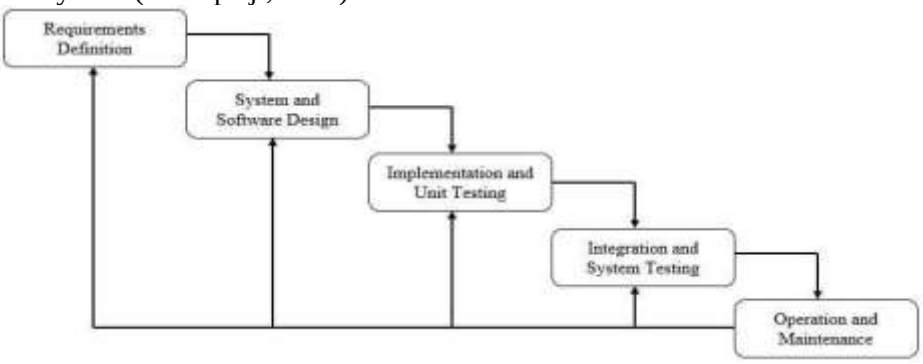

Figure 1. Method *Waterfall*

b. Unified Modelling Language

UML (*Unified Modelling Language*) is a visually presented modeling method that aims to demonstrate the design of object-oriented systems (Kurniawan, 2018). UML can also be said to be a standard tool in visualization, design, and documentation of application systems. In this system, the author models the system design into several UML diagrams, such as: *use case diagram*, *activity diagram*and *class diagram*.

1) *Use case diagram*, a diagram used to model interactions between users (*user*) with the information system to be created (Tabrani et al., 2021). Diagram *use case* Helps the software development team to understand the interaction between the user and the system, clarify the features needed, as well as provide a better understanding of the needs from the user's perspective.
2) *Activity diagram*, a diagram used to model the workflow or activity of a system or business process or a menu in software (Yolanda et al., 2023). This diagram illustrates the sequence of activities, actions, and decisions that occur in a process from start to finish.
3) *Class diagram* is a diagram used to illustrate the structure of the system in terms of defining the classes that will be created to build the system (Yahya et al., 2023). These diagrams are commonly used in software engineering to visualize the design of a system, particularly in object-oriented programming.

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3. RESULTS AND ANALYSIS

3.1 Design UML

a. Use Case Diagram

In the use case diagram of the web-based document archiving information system in the finance section of Commission C of the North Sumatra provincial parliament has 2 users, namely admin and *user*. Admin here as experts in the IT field at Commission C of the DPRD North Sumatra province. While the user here is an employee or employee of Commission C of the DPRD Provsu. Admins have *login* access, manage user data, create incoming documents, create outgoing documents, print incoming documents, print outgoing documents, manage access rights, and *log out* on the system to be designed. While the *user* only has login access, create incoming documents, create outgoing documents, print incoming documents, print outgoing documents, and *log out* on the system to be designed.

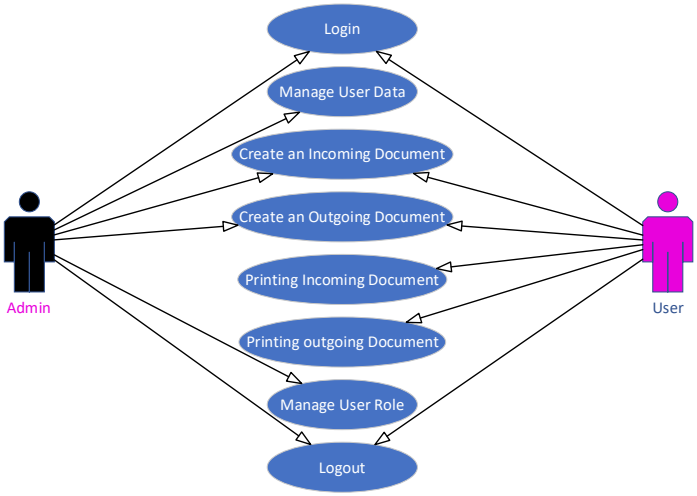

Figure 2. *Use Case Diagram*

b. Activity Diagram

The activity diagram in the web-based document archiving information system in the finance section of Commission C of the North Sumatra provincial parliament is used to illustrate the processes in the system. *The activity diagram* depicted in this case is the process of incoming documents and outgoing documents. The *incoming document activity diagram* describes the sequence of processes for adding a new document. The process starts from selecting the "Login Documents" menu, then the system will display an incoming document page containing incoming document data. Then select the "Add Incoming Document" button, then the system will display the "Add Incoming Document" page which will contain the *form* to fill out. Next, fill out the form according to the data from the incoming document you want to add. If the system saves successfully, it will display a notification of adding incoming documents successfully. Meanwhile, if it fails, the system will redirect to the page to fill out the *entry document* form.

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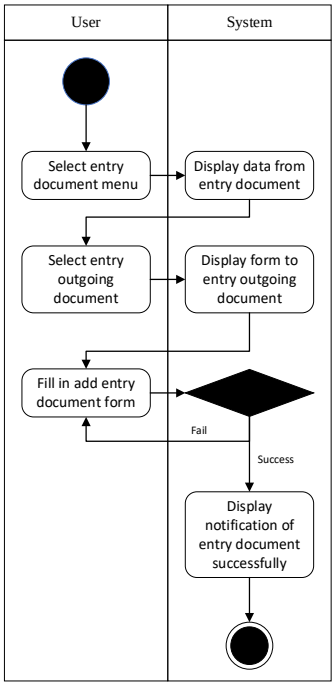

Figure 3. *Activity Diagram* Entry Documents

In the *activity diagram*, the exit document describes the sequence of processes in adding a new document. The process starts from selecting the "Outgoing Document" menu, then the system will display an outgoing document page containing outgoing document data. Then select the "Add Outgoing Document" button, then the system will display an add outgoing document page that will contain *a form* to fill out. Next, fill out the *form* according to the data from the incoming document you want to add. If the system saves successfully, it will display a notification adding documents out successfully. Meanwhile, if it fails, the system will redirect to the page to fill out *the exit document* form.

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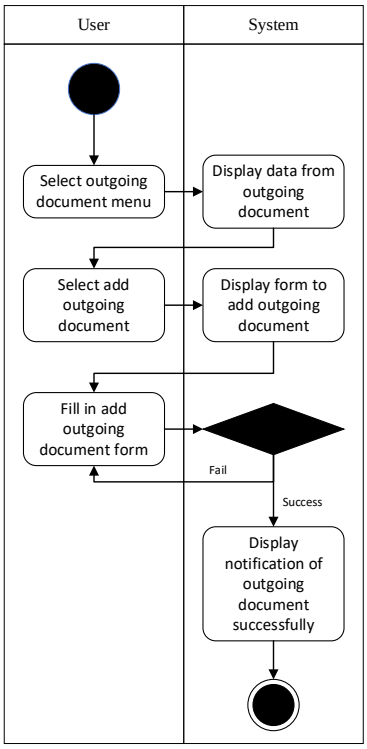

Figure 4. *Activity Diagram* Outgoing Documents

c. Class Diagram

Class diagrams in the web-based document archiving information system in *the* finance section of Commission C of the North Sumatra provincial parliament have 5 classes where each class has its own attributes and methods of operation. Starting from the login class which has 2 attributes and 2 operation methods, namely *login* and *logout* validation. The data_adm class has 10 attributes and 3 operation methods namely add, edit, and delete. Likewise, data_pegawai has 10 attributes and 3 operation methods, namely add, edit, delete. The dokumen_masuk class has 8 attributes and 3 operation methods, namely add, edit, delete. Likewise, the incoming document has 8 attributes and 3 operation methods, namely add, edit and delete.

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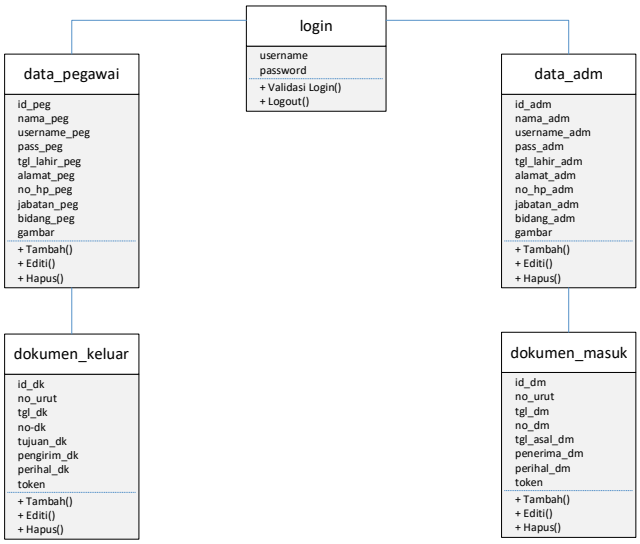

Figure 5. *Class Diagram*

3.2 Implementation

a. Login *Page*

On this page there is security access for users to enter the system. This security is in the form of *emails* and *passwords* that have been verified or stored in the *database.* This page can distinguish the permissions of the logged-in user, whether it is admin or user.

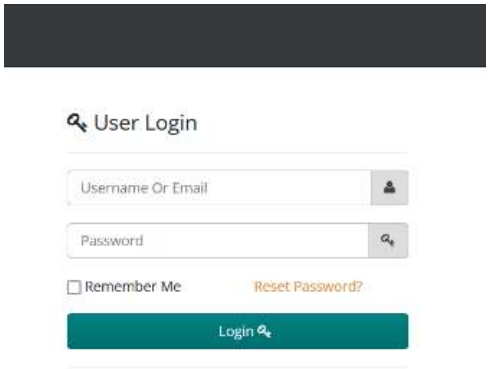

Figure 6. Yard *Login*

b. Halaman *Dashboard*

This page contains the main page or start page when you first log in to the app. On the page called the home page or *home* contains data on the number of users registered in the system. The appearance of this page on the admin and *user* is the same, the difference is *the nickname* of the username and also on the admin page has a User menu. If *the user will appear* next to the username on the right and vice versa if admin then the administrator nickname will appear to the right of the user name.

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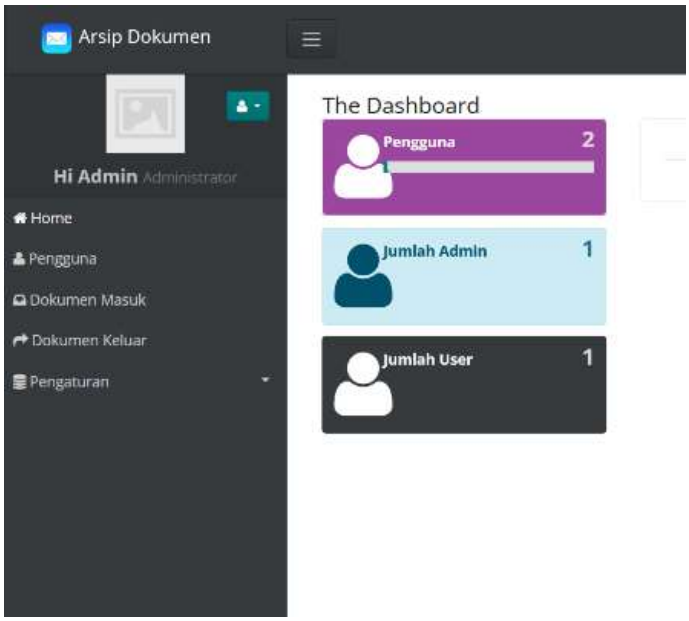

Figure 7. Yard *Dashboard* Admin

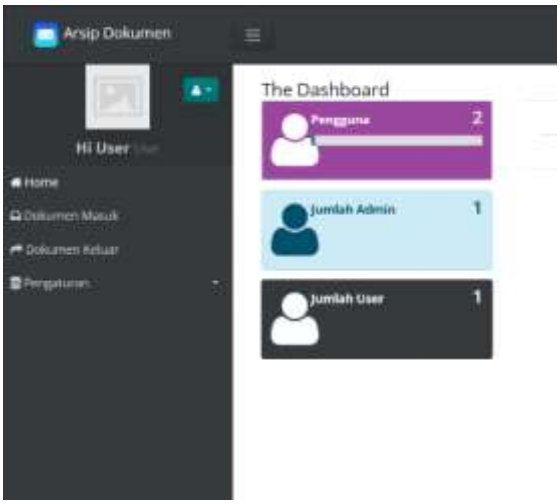

Figure 8. Yard Dashboard User

c. User Menu Page

This page contains the management of user data, both users and administrators. This page can only be accessed by admins who can add, edit, view and delete user data. This page is also supported by features to export user data in the form of excel, csv, word, pdf to print print. This page can only be accessed by administrators.

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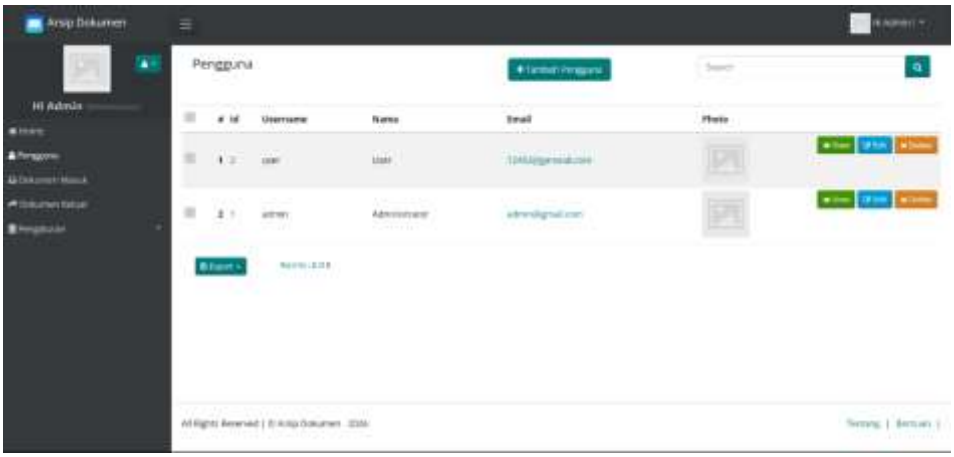

Figure 9. User Page

d. Login Document Menu Page

This page contains the management of incoming document data in the document archive application. Activities that can be done on this page are displaying incoming document data, adding, editing, viewing and deleting incoming mail data and can explore incoming mail data earlier in the form of excel, csv, word, pdf to print out. This page can be accessed by admins and *users*.

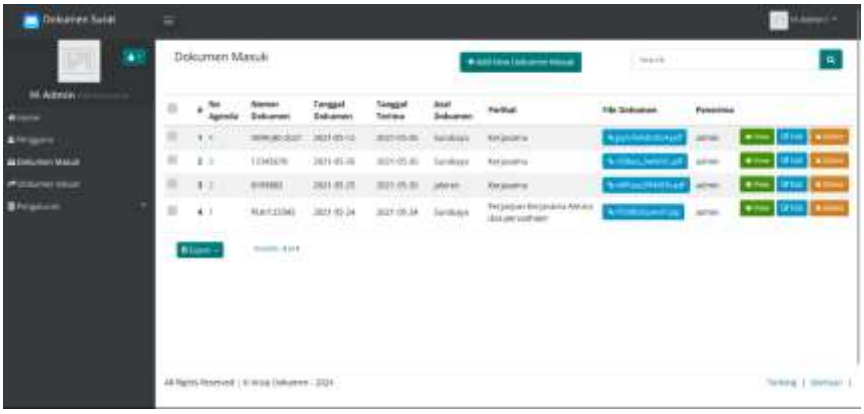

Figure 10. Login Documents page

e. Add Incoming Document page

This page contains the activities in addition to incoming mail. Activities carried out include filling in the document number, document date, receipt date, document origin, subject and also the incoming document file. This page can be accessed by admins and *users*.

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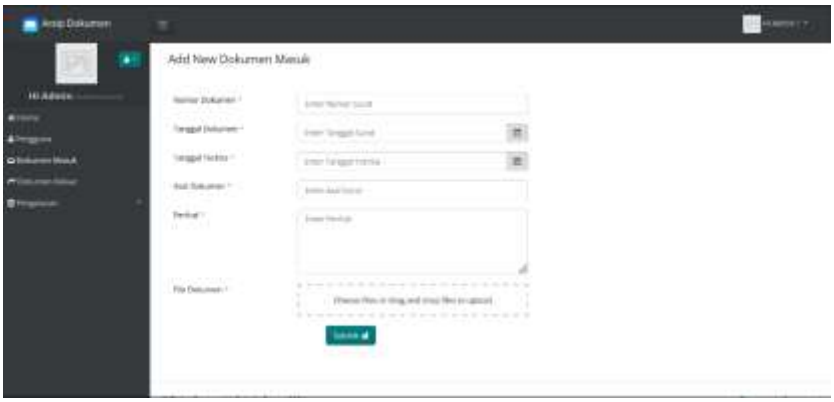

Figure 11. Add Incoming Document page

f. Outgoing Document Menu Page

This page contains outgoing document data management in the document archive application. Activities that can be done on this page are displaying outgoing document data, adding, editing, viewing and deleting outgoing document data and can export outgoing mail data earlier into excel, csv, word, pdf to print out. This page can be accessed by admins and *users*.

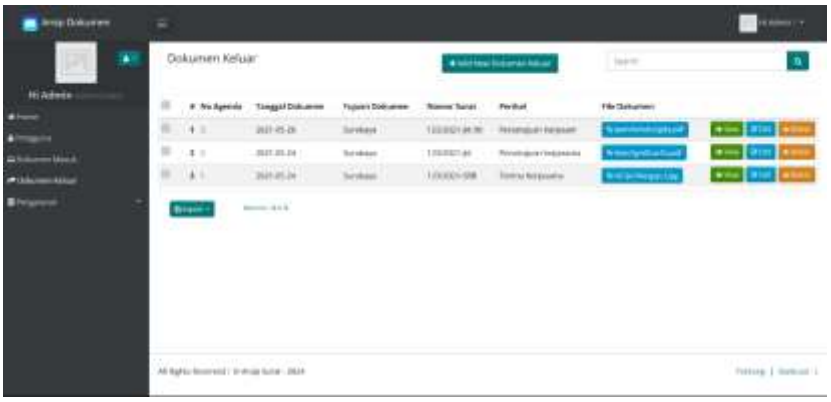

Figure 12. Outgoing Document Page

g. Add Outgoing Documents page

This page contains the activities in addition to outgoing documents. Activities carried out include filling in the document date, document destination, document number, subject and also the outgoing document file. This page can be accessed by admins and *users*.

Figure 13. Add Outgoing Documents page

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h. Authority Page

This page contains the levels of users in accessing this document archives site, namely admin and *user*. The highest level is the admin because the admin is the manager of the document archive site. This page can only be accessed by admins.

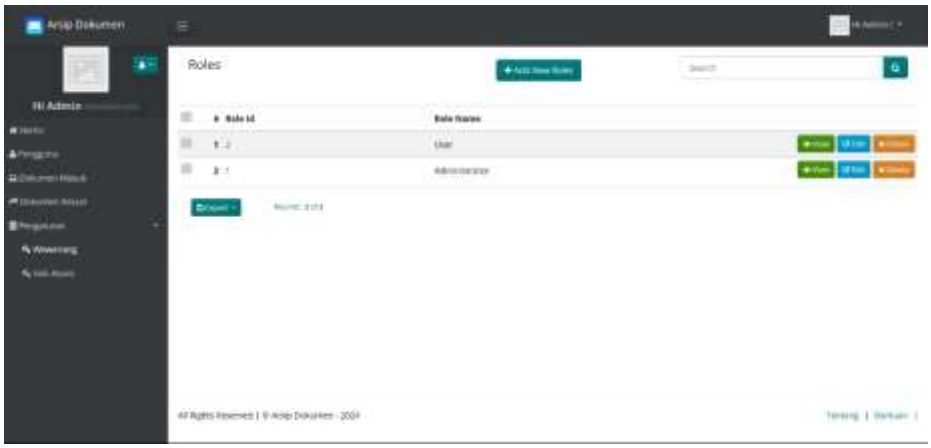

Figure 14. Authority Page

i. Access Rights Page

This page contains the data of each user's permissions on the *mailing website*. This page can only be accessed by admins and serves to manage each account in the document archive website access. Activities on this page include adding, editing, viewing and removing access rights for each user.

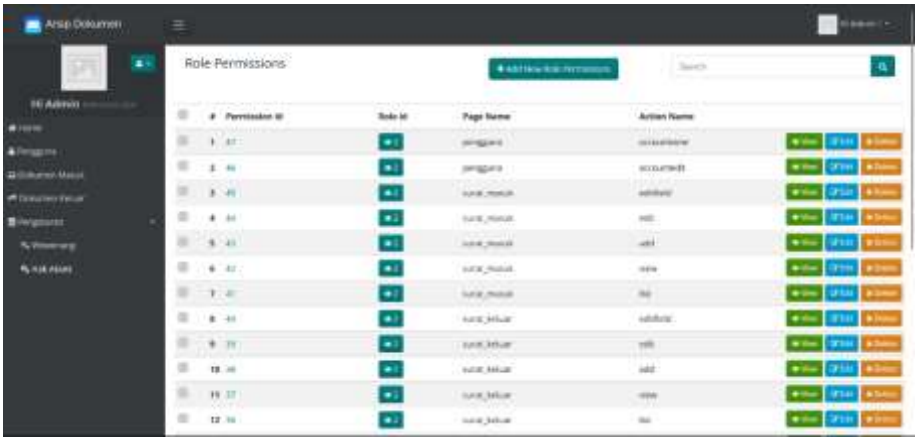

Figure 15. Access Rights Page

j. Print View of Incoming Document and Outgoing Document Reports

This view can be accessed by both admins and *users*. To print a report, users must go to the Incoming Documents menu to print the incoming document report and the Outgoing Document menu to print the outgoing document report.

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Arsip Dokumen
The Amazing and Awesome

Phone: +2335400000000
Email: info@Arsip Dokumen
Web: http://localhost/arsipdok/

Dokumen Masuk

#	No Agenda	Nomor Dokumen	Tanggal Dokumen	Tanggal Terima	Asal Dokumen	Perihal	File Dokumen	Penerima
1	4	9098-JKt-2021	2021-05-12	2021-05-26	Surabaya	Kerjasama	jpy5cfwhdlx3bz4.pdf	admin
2	3	12345678	2021-05-26	2021-05-26	Surabaya	Kerjasama	v7j0bps_3wk65fc.pdf	admin
3	2	8199882	2021-05-25	2021-05-26	jabiren	Kerjasama	n681yqz29f4d53s.pdf	admin
4	1	PLK/123345	2021-05-24	2021-05-24	Surabaya	Perjanjian Kerjasama Antara dua perusahaan	h7td8ly3cpavxi1.jpg	admin

Figure 16. Print Incoming Document Report

Arsip Dokumen
The Amazing and Awesome

Phone: +2335400000000
Email: info@Arsip Dokumen
Web: http://localhost/arsipdok/

Dokumen Keluar

#	No Agenda	Tanggal Dokumen	Tujuan Dokumen	Nomor Dokumen	Perihal	File Dokumen
1	3	2021-05-26	Surabaya	123/2021-jkt-90	Persetujuan Kerjasam	qwmz0v5obs2gtky.pdf
2	2	2021-05-24	Surabaya	123/2021-jkt	Persetujuan kerjasama	4ekix7gm95zw1fa.pdf
3	1	2021-05-24	Surabaya	123/2021-SRB	Terima Kerjasama	ivb7pc36wzgqn_f.jpg

Figure 17. Print Outgoing Document Report

3.3 Testing

The website that has been designed is then tested for feasibility using blackbox testing. Blackbox testing is useful to find out whether every feature or menu on a document archive site can run or not.

Table 1. Test Table *BlackBox*

No	Pages	Part	Scenario	Expected results	Test Results
1	*Login*	Login *button*	The user fills in the *registered username* and *password* then presses the *Login button*	Can display *admin* dashboard page	Succeed

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2	*Login*	Login *button*	the user fills in the wrong *username and* password *and then presses the* Login button	A notification appears *that the username* or *password* is not registered	Succeed
3	*Dashboard*	Menu List	Admin selects Incoming Documents menu	Can view the Incoming Documents page	Succeed
4	*Dashboard*	Menu List	Admin selects Outgoing Documents menu	Can view the Outgoing Documents page	Succeed

4. CONCLUSION

The implementation of a web-based document archiving information system in Commission C of the North Sumatra Provincial DPRD has a positive impact in increasing efficiency and effectiveness in document management. Systems that used to be manual by writing in books and still storing documents in cabinets, now archiving documents can be stored digitally and easily in searching documents. By using the Research and Development method by designing models using several UML diagrams such as use case diagrams, activity diagrams and class diagrams. The result is a web-based filing system for incoming and outgoing documents. This site has been tested with blackbox, the results found that the features in the system can run well and are suitable for use. Overall, the implementation of this system contributes positively to the performance of Commission C of the North Sumatra Provincial DPRD in carrying out its duties and responsibilities, especially in document management.

5. ACKNOWLEDGEMENTS

This journal is the result of research for practical work assignments at Commission C DPRD North Sumatra Province

6. DECLARATION OF COMPETING INTEREST

We declare that we have no conflict of interest.

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