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Document Management Application at Al-Chasanah Vocational School Jakarta

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Abstract— *Management of incoming and outgoing mail documents at Al-Chasanah Vocational School Jakarta is arguably semi-primitive and very far from the word effective and efficient in the management of incoming and outgoing mail documents. Because the management does not make use of the existing technology in its entirety, it is often the case for errors in the making, data collection and recording of incoming and outgoing mail, and making a lot of time and paper. A web-based application is an answer and solution in helping the management of incoming and outgoing mail documents at Al-Chasanah Vocational School Jakarta, build the application through a Unified Modeling Language design process to identify needs and problem solving in making applications that can support the document management process. Waterfall SDLC method is a method that the writer chooses to do the development of the application that the author has built with this method the author is helped to do a system Development. The result is this application is very helpful in the management of incoming and outgoing mail documents effectively and efficiently. The school principal has been able to make a draft letter with an unnecessary application with more paper and checking outgoing mail can also be done on the application, the law of incoming and outgoing mail is easier and faster and can print reports from the data that has been input to the application. The administration has no longer experienced duplication in numbering outgoing mail which is often duplicated. Searching for mail archives is easier and does not take much time, the archive has a secure backup because it has been stored in the database, both incoming and outgoing mail have been scanned letters.*

Keywords— *Application; Document Management; SWOT; UML; Waterfall*

I. INTRODUCTION

In an educational institution, a document is very important. Without a document, an institution will have difficulty getting the information needed. Documents are very important for an institution because a document can support and assist the activities or business processes of an institution. Letters are important components for individuals or institutions, as well as offices. Letters are also one of the written communication media that are often used in one company organization [1]. Correspondence activities have become a main activity in the world of offices. Letters become important documents in carrying out office operations [2]. Considering the importance of the letter document, therefore in an institution there is a need for good management. However, the Al-Chasanah Vocational School in handling documents is still carried out using the manual agenda system, especially in handling incoming and outgoing mail documents. Management of incoming mail documents and outgoing mail at Al-Chasanah Vocational School Jakarta is very far from effective and efficient in the management of incoming and outgoing mail documents. Because the management carried out does not utilize the existing technology so often the errors in data collection and recording and make a lot waste of time and

paper. May be due to human error to technical errors, missing papers, etc [3]. Therefore, it is necessary to hold a management change from the original manual to automatic in order to create a document management that is more effective and efficient in line with the increasingly rapid technological development as it is today. So, after we define the background there are problem. First, how to design an application that can help the administration section of the Al-Chasanah Vocational School Jakarta to create, automatic numbering, record mail delivery expeditions, and monitor incoming and outgoing email and How to develop document management applications at Al-Chasanah Vocational School Jakarta. In general, the purpose of research is to find, develop and prove knowledge [4]. The following are the objectives of this study, which are to analyze the current document management system (current system) at Al-Chasanah Vocational School Jakarta and to understand how to develop an application that can help administrative staff so that management, filing, and data collection of letters at Al-Chasanah Vocational School Jakarta is more effective, stored safely, and easier, through a business process running then to test the feasibility of the system that has been built and implemented at the Al-Chasanah Vocational School Jakarta.

II. STUDY LITERATURE

There are several definitions to completed the reasearch, the system is a series of two or more interconnected components, which interact to achieve one goal. Most systems consist of smaller subsystems that support larger systems [5]. Another definition of the system is a network of procedures that are interconnected, gathered together to carry out activities or to do certain goals [6]. Another definition of the system is, a network of procedures made according to an integrated pattern to carry out the company's main activities [7]. In technology era, we need to automize the process which use the information systems. Information systems can be defined technically as an interrelated entity. Components that collect, process, store, and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination and control, information systems may also help in analyzing problems, visualizing complex subjects, and creating new products. Information systems contain information about people, places, and things in the organization or the surrounding environment. With the information, we mean the data that has been formed becomes meaningful and beneficial to humans. While data is a flow of raw facts that represent events that occur in an organization or physical environment before being organized and arranged into a form that can be understood and used [8]. Another definition of information systems is a system within an organization that brings together the needs of daily transaction management, supports operations, is managerial, and strategic activities of one organization and provides certain outside parties with the reports needed [6]. Based on this understanding it can be concluded that information systems are a system contained in the component that collects, processes, stores, distributes, manages information to support the needs needed and supports decision making based on information that has been processed in such a way. In this researce we need to archive the document. Document is any written material or film, other than a record, which is not prepared because of the request of an investigator. Other definitions of documents are very important for organizations because documents are a source of information for information. Without documents, the organization will have difficulty getting the information needed. In the narrowest sense the document only includes written sources. In a specific sense the document only covers state papers, such as agreement letters, laws, concessions, grants, and so forth [9]. Based on the understanding of the previous document, it can be concluded that the document is a written material that becomes a source of information needed by individuals or institutions. The document is also an authentic proof that can be justified. Various media that keep changing from time to time neatly stored in accordance with archival procedures. So, in this reasearch the document need to archives. The Electronic archives are archives contained in electronic storage media, which are produced, communicated, stored and / or accessed using electronic equipment [10]. Other definitions, electronic archives or often called digital archives are archives that have undergone changes in the physical form of sheets of paper into electronic sheets. The process of converting files from sheets of paper into electronic sheets is called media transfer [11]. Based on the previous understanding, it can be concluded that electronic archives are archives that are highly dependent on manual archive systems because electronic archives are changes in the physical form of sheets of paper into electronic sheets which are contained, produced, communicated and stored using electronic equipment.

III.METHODS

A. *Research Steps*

In conducting this research the author takes steps taken systematically so that what is desired can be achieved [12]. The flow chart of this study can show how the author in carrying out the steps in making this research. The following is a picture of the flow diagrams of the research that the researcher did.

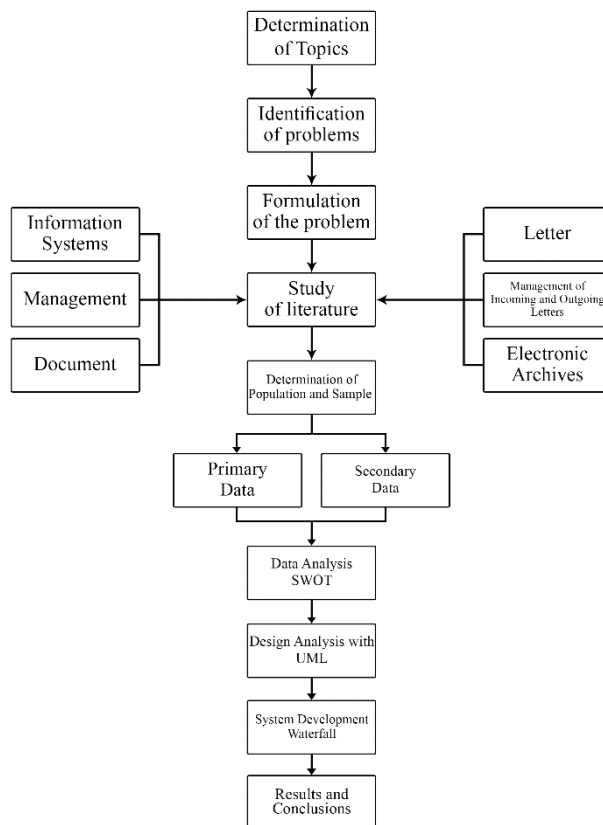


Figure 1 Stages of Research

In figure 1 it can be seen that the author has 10 steps, are; determining the topic that is the initial step of this research determines the topic of the research discussion, problem identification is to determine the focus of the problem and solutions that can be proposed as problem solving, the third step formulation of the problem in this step the researcher formulates the existing problem, literature studies by reading theories and some of the results of previous research that can help researchers, determine population and samples from research sites, retrieve primary data and secondary data from those produced at the research site, SWOT analysis, UML Design Analysis, the last step of developing the system using waterfall.

B. Data Collection

The methods used to collect the data is as follows:

1. Observation

The author in this study, collecting data with direct observations of the object of research, by noting important things related to the title of the final assignment so that data can be obtained that can support the making of this system. This observation was carried out by the writer by jumping in and taking part in all activities in the activity section in the management of Al-Chasanah Vocational School Jakarta. By using observations, it is very easy for the author to analyze and record the object of research in order to find data in real and clear before the author.

2. Interview

This interview was conducted by the author to ensure that the data obtained is accurate and appropriate to identify the needs of the system to be made. This method is only as an amplifier after observations made by the author for the process of making a system that will solve the problem and meet the needs in the administration section of Al-Chasanah Vocational School Jakarta. With the existence of the interview the author can create a system that is desired and needed by administrative staff.

3. Literature review

Library study is a data collection method that the author does by studying various theories, looking for information related to the problem under study. The theory and information obtained by the author by examining various sources such as books and scientific articles that are relevant and related to the application to be built.

C. SWOT Analysis

SWOT analysis is a strategic planning method used to evaluate strengths, weaknesses, opportunities (opportunities), and threats in a project or a business speculation. The four factors that form the SWOT acronym (strengths, weaknesses, opportunities, and threats). This process involves determining the specific objectives of business or project speculation and identifying internal and external factors that support and which are not in achieving that goal. The SWOT analysis can be applied by analyzing and sorting things that affect the four factors, then applying them in SWOT matrix images, where the application is how strengths are able to take advantage of existing opportunities, how to overcome weaknesses that prevent the advantages of existing opportunities, then how strengths are able to deal with existing threats, and the last is how to overcome weaknesses that can make threats become real or create a new threat. [16]. The following is a table of results from the SWOT analysis based on the results of interviews from the principal of the Al-Chasanah Vocational School Jakarta.

TABLE I

Parameter	Current Process	Proposed
Strengths	The process of recording incoming mail records and outgoing mail has used a ledger, archive storage has also been used order.	This system is designed to be able to help automatic numbering so there is no duplication of numbering on outgoing mail, making letters more efficient and effective. Reducing paper use in making letters because checking letters has been obtained on the application, and security of mail archive be better.
Weaknesses	Often the occurrence of duplication of the numbering of outgoing letters, the archives of the letter do not have a backup, and the loss of the archives of the letter and the ordering book from the storage area.	Human resources who do not understand the importance of technology, so lacking in maintenance issues with the system.
Opportunities	Can be done the development of current business processes to create a system that can assist in the management of mail documents to replace the current process which is fairly ancient in document management.	Can trigger development in applications to be able to manage and manage other documents.
Threats	If there is a fire, all data will be burned and the company will have no backup at all.	The existence of hackers who always try to break through the security of each system, as well as flowers and viruses that spread in cyberspace that can damage application performance can even make the application down.

D. Business Process Analysis

The following is a business process of managing outgoing mail at Al-Chasanah Vocational School Jakarta use rich picture diagrams, show on figure 2.

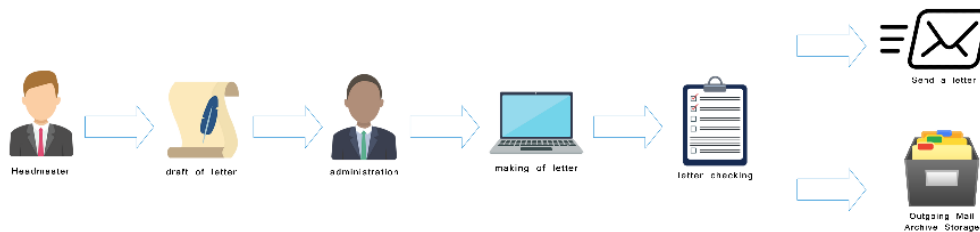


Figure 2 Outgoing mail management process

Figure 2 explains that there are several stages in Al-Chasanah Vocational School Jakarta in managing the outgoing letter. In figure 2, it is explained that the headmaster drafts a letter with a piece of paper and then submits it to the administration for making a letter using a computer after it is printed out the letter which will be examined by the principal. If the letter has an error, the letter will be repaired. If the letter is correct, then the

principal will be signed and given the legitimacy of the stamp on the letter, then the letter is made into two copies. The original letter is sent to the recipient of the letter and the duplicate letter is stored as an outgoing mail file. The following is a business process from managing incoming mail at Al-Chasanah Vocational School Jakarta.

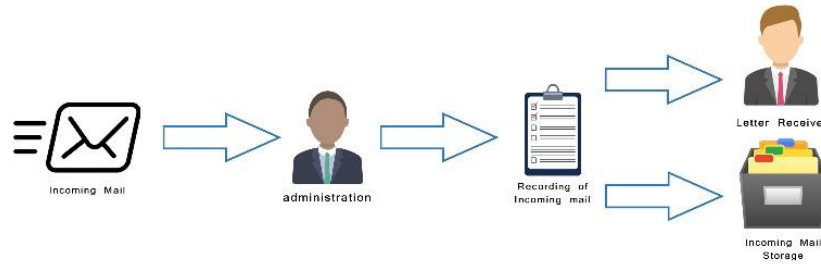


Figure 3 The process of receiving incoming email

Figure 3 describes the stages of receiving incoming letters at Al-Chasanah Vocational School Jakarta. In figure 2 it is explained that the incoming letter is accepted by the administration, after which the letter is checked. After the letter, has been checked, the data will be recorded and the letter will be submitted to the principal regarding the letter of entry. After that the incoming letter is stored as an archive.

E. System Design Analysis

During this time the management process of incoming documents and outgoing letters conducted at Al-Chasanah Vocational School Jakarta is still in a primitive way and far from the word efficient and effective, therefore the authors propose to create a document management application that can solve and help solve problems in Al -Chasanah. Based on the results of the analysis, a system design analysis will be made using the UML (Unified Modeling Language) method. In this design analysis through several stages of design with Use Case Diagrams, Sequence Diagrams, and Class Diagrams.

1. Proposed Use Case Diagrams



Figure 4 Proposed Use Case Diagrams

Figure 4 explain the limits of the interaction of each user to the system. Admin has the right to full access to the application to check each menu can run properly. The principal has access to enter the application, draft letters, manage outgoing mail, view and print incoming mail and outgoing letters. The administration has access rights into the application, making outgoing letters directly or forwarding from the draft letter that has been made by the principal, noting the sending of letters on the expedition menu, recording the letters that have been received on the incoming mail menu, see incoming mail and outgoing mail and print the data.

2. Proposed Sequence Diagrams

a. Proposed Sequence Diagrams Login

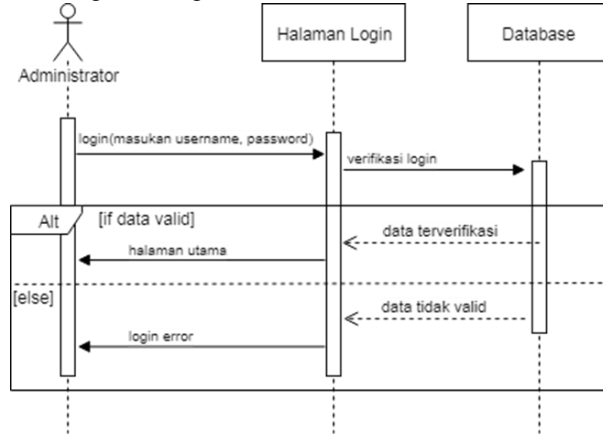


Figure 5 Proposed Sequence Diagrams Login

Figure 5 explain each user login process with the data they have, the system will check the data on the database if the data entered is correct, the system will bring up the application's main page, but if the data entered is incorrect, the system will display a failed login pop-up.

b. Proposed Sequence Diagrams Draft Letter

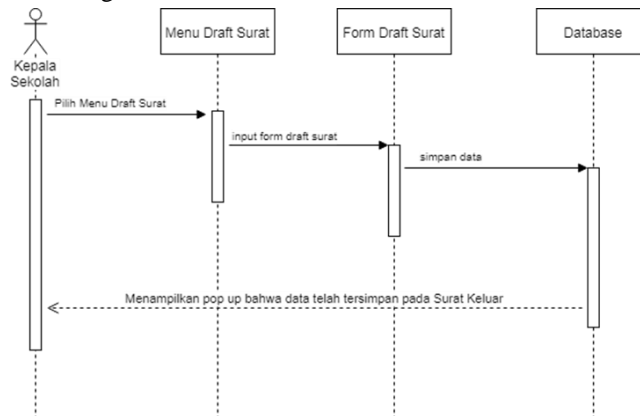


Figure 6 Proposed Sequence Diagrams Draft Letter

Figure 6 describes the principal in using the draft page, when the principal makes a draft letter, the principal chooses the draft page and then prepares the data in the draft letter menu such as the order to make a letter or enter the contents of the letter. After the storage process is carried out on the database the data that is successfully stored will appear on the draft page and also automatically enter on the outgoing page to be followed up or equipped with all data letters by the administration in making outgoing mail.

c. Proposed Sequence Diagrams Outgoing mail

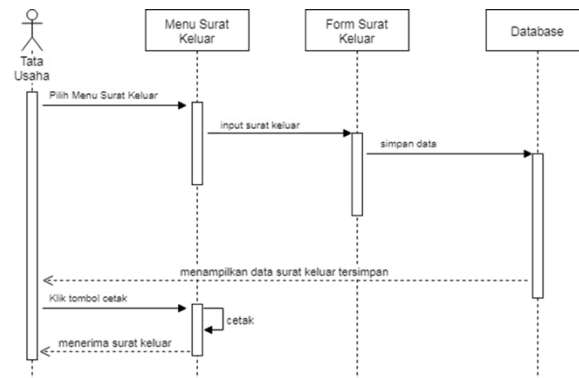


Figure 7 Proposed Sequence Diagrams Outgoing mail

Figure 7 describes the administration in making an outgoing letter, when the administration wants to make an outgoing letter, the administration selects the outgoing mail menu and then adds an outgoing letter to make an outgoing letter after completing the data out the system stores data in the database. After that the administration prints a letter that has been made and the system raises a letter out with a pdf form ready for printing.

d. Proposed Sequence Diagrams Expedition

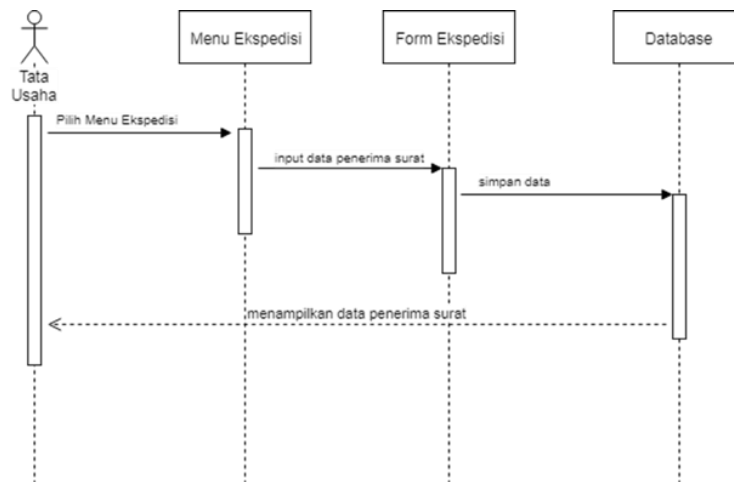


Figure 8 Proposed Sequence Diagrams Expedition

Figure 8 illustrates the administration of the data in the mail expedition data, the administration of sending out letters to the recipient of the letter then after the letter is received by the recipient of the letter, a recording is carried out in the application by opening the expedition menu. Mail delivery data entered in this menu then the system will save to the database and then display data on the expedition page.

e. Proposed Sequence Diagrams Incoming Mail

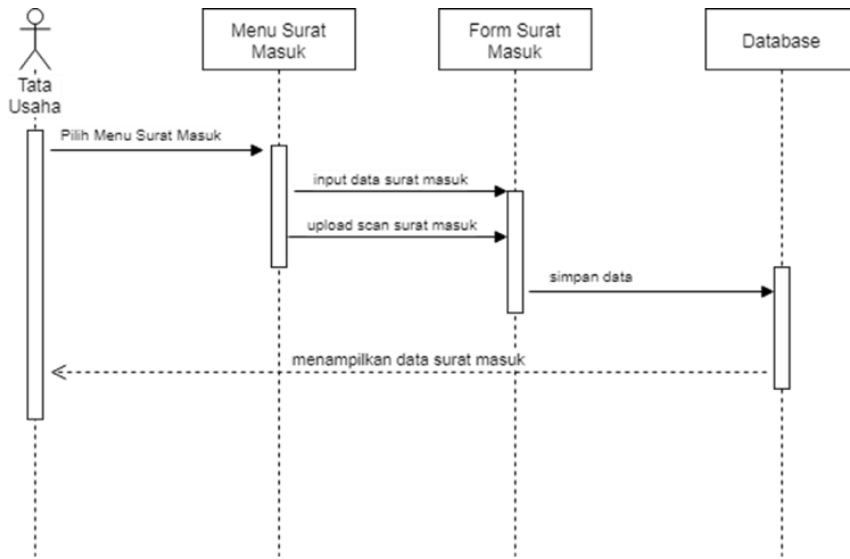


Figure 9 Proposed Sequence Diagrams Incoming Mail

Figure 9 describes the administration of inputting incoming mail data, administration of receiving letters from internal or external parties of the foundation, then administration of inputting data from received letters and filing letters by uploading scans from letters that have been received. The system will store all data that has been entered in the database and then the data will be displayed on the incoming mail menu.

f. Proposed Sequence Diagrams Letter Report

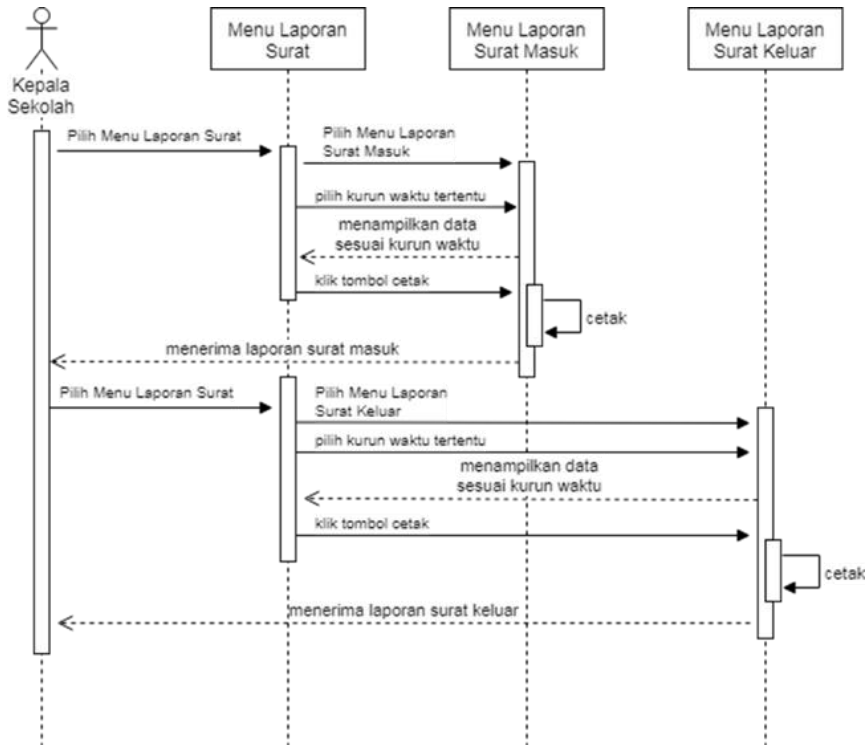
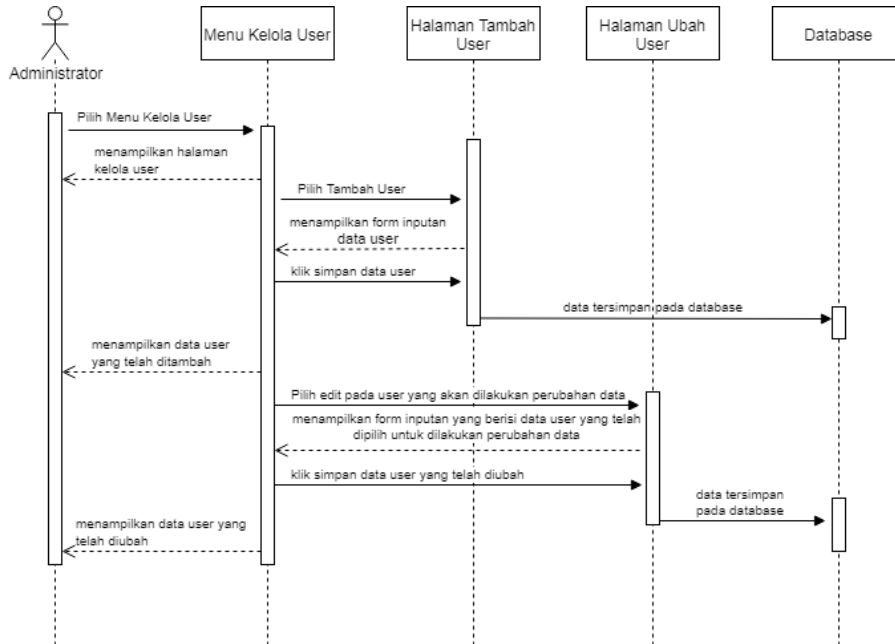


Figure 10 Proposed Sequence Diagrams Laporan Surat

Figure 10 explains that the principal can check and print the entire data of incoming letters and outgoing letters based on the period chosen by the principal. In this menu, there are two sub menus, namely sub-reports of

incoming letters and outgoing mail reports. Here the principal can choose which parts to see for checking data. If the principal chooses one, the system will display a command to select the reporting period, after which the system will display and print the data.

g. Proposed Sequence Diagrams Manage User



Figur 11 Proposed Sequence Diagrams Manage User

Figure 11 explains that the admin manages the user. Admin can add user data to this application according to the request of the decision holder. Admin can also change user data if there is an error in inputting.

3. Proposed Class Diagrams

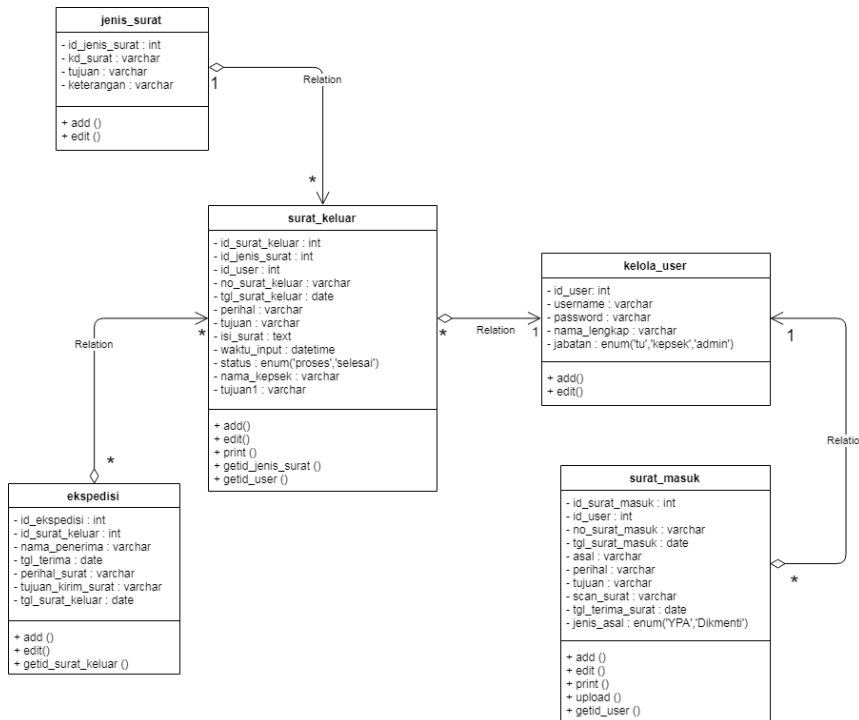


Figure 12 Proposed Class Diagrams

Figure 12 is about class diagrams that will be implemented into the application, class diagrams can also be used as a design of the table to be created. In this application 5 tables will be created, namely, table *kelola_user*, table *jenis_surat*, table *ekspedisi*, table *surat_masuk*, table *surat_keluar*.

IV. RESULT AND DISCUSSION

After analyzing business processes and system design based on SWOT analysis, now the author will display the results of the development of the system that has been analyzed and designed.

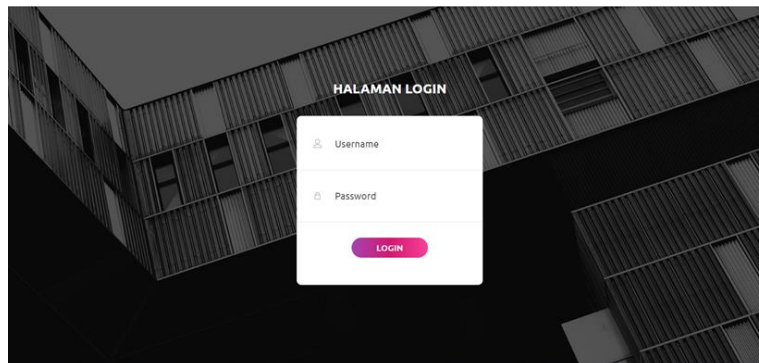


Figure 13 login page display

Figure 13 is a login page display. This login page is like a gate that every user must pass before entering the system. Each user inputs an existing username and password according to the data provided by the admin. On this page if the user incorrectly enters the meal data, this login page will show a pop-up that the login failed and cannot enter the application.

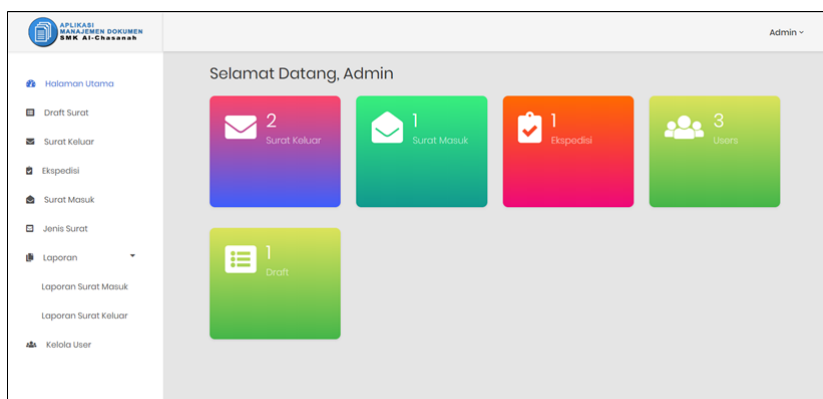


Figure 14 dashboard page display

Figure 14 displays general information from the application. On this page displays how many number of outgoing letters, incoming letters, expeditions, draft letters, and info on the number of users, contained in this application. This dashboard is very useful to help each user to see the total amount of data in this application.

V. CONCLUSIONS

Based on the descriptions that the author has explained and explained in the previous chapters, the author draws a conclusion, among others. The first result the design of the Document Management Application at Al-Chasanah Vocational School Jakarta has been successfully carried out using the Unified Modeling Language design method contained in various kinds of diagrams to simplify describing the characteristics of this application and the second is the development of Document Management Applications at Al-Chasanah Vocational School Jakarta has been successfully carried out using the waterfall development method, this built-in application has succeeded in making the management of letter documents in Al-Chasanah Vocational School Jakarta's efficient, effective and efficient, no longer over paper use.

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