Analysis of Mobile-Based Archive Management Information System Design

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ABSTRACT

Information technology has become a very common thing in today's society, therefore with the existence of fast and easy information technology it is expected to be able to process the desired information. At this time the existence of information systems presents a new innovation. The rapid development of information technology has penetrated into various sectors including offices. In the digital era, people are increasingly aware that communication technology is an important tool in dealing with the increasingly rapid flow of information. Information has developed and arrived in the digital era, one of which is information processing which has developed from conventional to digitally managed. As a memory center for organizations or agencies, letters are something important and need to be stored properly. But storage is still done conventionally, it will be difficult when you want to do a search. This study aims to design a mail archive information system using qualitative methods as a research method, UML as a system design that will facilitate the flow of research in designing systems and using a waterfall as a system development method. The results of this study are in the form of a design for a mail archive information system which is expected to be able to solve this problem.

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1. INTRODUCTION

Information is the most important element for both individuals, business entities or other agencies. The current development of information has propagated in the digital era, namely the change from conventional data processing to now being managed digitally with the help of computer technology. Information in the form of data that was previously managed and stored in archives in the form of books (paper base), is now managed and stored in digital form [1]

Office work related to managing letters and documents is called filing [2]. This job has an important role for an organization, namely as a source of information and as a memory center by the organization. The Indonesian government also pays considerable attention to records and archives, namely by enacting laws and regulations governing the National Archives. This proves that archives and archives are quite important [3].

The person who handles this letter is usually referred to as the secretary, in the field of Public Information Management at the Archival Office of Communication and Informatics this is also carried out especially in the management of incoming and outgoing letters. However, currently existing letters are still stored on archive shelves in cupboards, making it difficult to find letters that will be needed. In addition, letters that are still stored manually are more likely to be lost than letters that are stored digitally [4].

Therefore this study designed a mail archive information system which is expected to facilitate the Office of Communication and Informatics, especially in the field of Public Information management, in managing existing letter archives.

2. RESEARCH METHOD

This research method uses a qualitative research approach. Qualitative research methods as scientific knowledge is commonly used and practiced by social scientists. Qualitative research was conducted to acquire knowledge through understanding and discovery. The qualitative research approach is a process this research and understanding is based on methods of studying social phenomena, human problems. In this study, researchers obtain a complex picture of the word and research, explain in detail the point of view of the respondent, and conducting research in natural situations [5].

In the system development method, the researcher uses the waterfall method. The waterfall system development method is a device development method systematic and sequential software The waterfall method is used because this waterfall method is a method that works in a structured and systematic way, starting from the stage of analyzing the required system requirements, then continuing with analysis, moving to the design stage, then coding, and ending with testing or trials, and carrying out maintenance.[6].
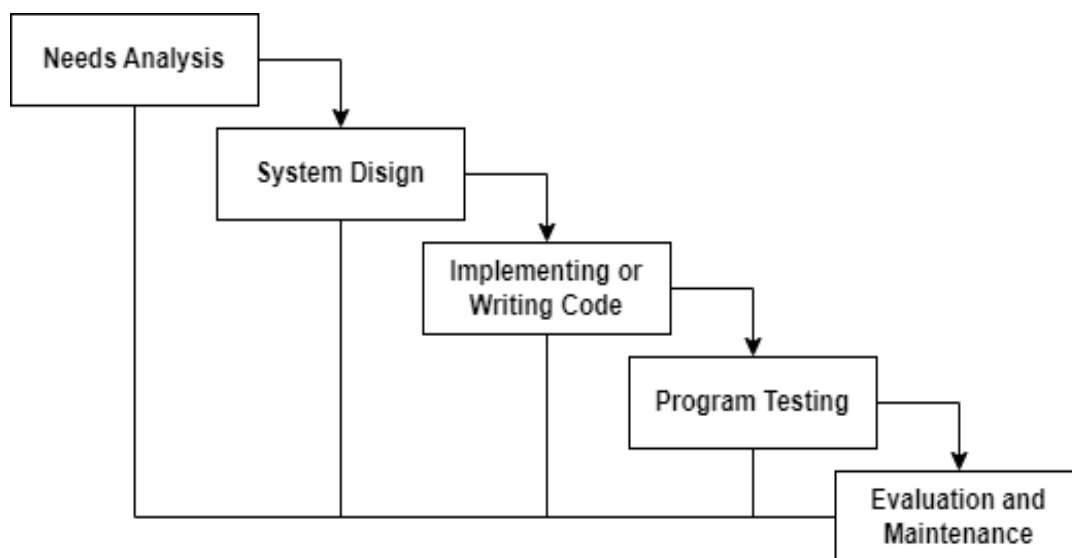

Figure 1. Waterfall Method

The stages of the waterfall method are as follows [7]:
1. Needs Analysis, is the first stage of the waterfall model. This stage is the collection and processing of data in making the system.
2. System Disign, this stage is the planning process to design the user interface of the system to be created. Its function is to make the implementation process easier because it already has a clear picture.
3. Implementing, the implementation phase is the process of changing the system design into a program form
4. Program Testing, this stage is a system test that has been completed, the goal is to see whether the system is running as planned.
5. Maintenance, the last stage in the waterfall model is evaluation and maintenance. At this stage the system has been implemented directly. If discrepancies are found, improvements will be made to the system so that it functions as it should.

2.1 Theoritical Basis
1. Information System
The information system is a combination of two words, namely system and information. The system comes from the Latin (Systema) and Greek (Sustema) is a unit consisting of components or elements that are connected together to facilitate the flow of information, material or energy to achieve a goal [8]. Information is a collection in the form of data that has been processed into something that has meaning for the recipient or reader and has benefits for decision making at the right time[9].

The information system is a system that contains an overview of the Data Processing System (SPD) which is equipped with communication channels used in the data organization system. The process elements of the information system include collecting data (data gathering), processing stored data, and disseminating information [10].

In addition, information systems are also said to be components where these components are interrelated with one another to achieve the desired goals. The information system manages an existing data so that it can be used as meaningful information for the recipient [11].

2. Letter Archives
Archives are one of the many important information that supports administrative or bureaucratic activities. Archives are stored information from all activities within the organization which are the center of memory and assist in decision making, are of interest to other organizations, and as an extension within the organization [12].

A letter is a means of communication in conveying information or a written statement from one party to another, either on his own behalf, or the position held by an agency, organization or company [13]. Correspondence is an activity in conveying information containing information by using a piece of paper as a means of communication [14].

Thus the mail archive is a repository of information in the form of letters to an agency, organization or company. In the mail archive there is what is called incoming and outgoing letters. Incoming letters are letters received by an organization/company that come from a person or from an organization [15]. Meanwhile, outgoing letters are letters that are sent as an answer or response to the contents of letters received from organizations, offices and have a beneficial effect on both parties [16].

3. RESULTS AND DISCUSSION
3.1. System Planning
1. Use Case Diagram

Usecase is a diagram that shows the relationship between actors and usecases , which are used to analyze and design a system [17]. In the use case diagram below there is only one actor involved in the system, namely the officer. The officer's duties are to input incoming mail, input outgoing mail, add user data, recap reports of incoming mail, and recap report outgoing mail. The use case diagram design can be seen in the following figure:
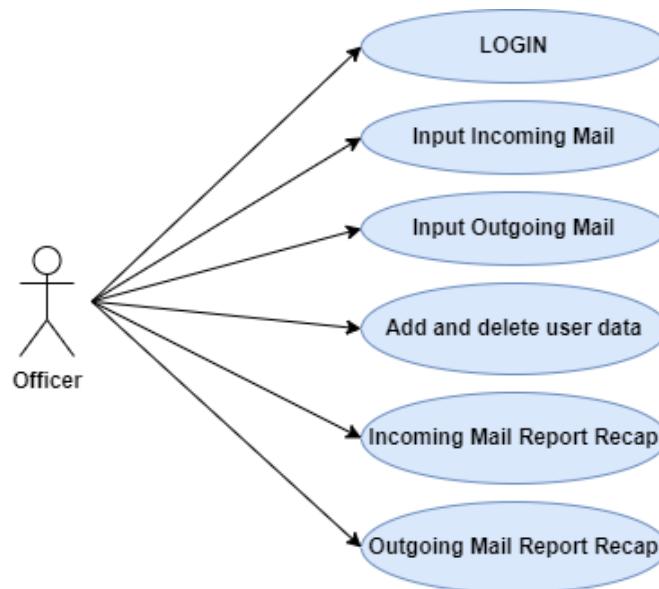

Figure 2. Use Case Diagram

2. Activity Diagram

Activity diagram is an explanation of the work flow of a system that exists in the software and is not a description of actor behavior. Definition Activity diagram is a diagram that explains a workflow or activity in the program being designed. This flow or activity can be in the form of menus or business processes contained in the system. In Indonesian, an activity diagram is a diagram that models the processes that exist in a system, the process sequence of a system is depicted vertically [18].

a. Login Activity Diagram

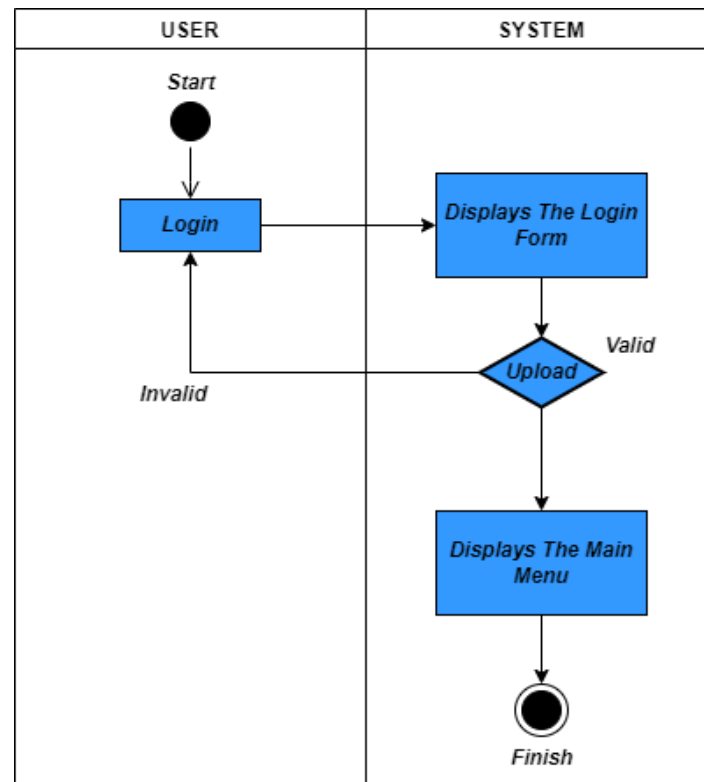The following is an activity diagram on the login menu.

Figure 3. Login Activity Diagram

b. Mail Archive Activity Diagram
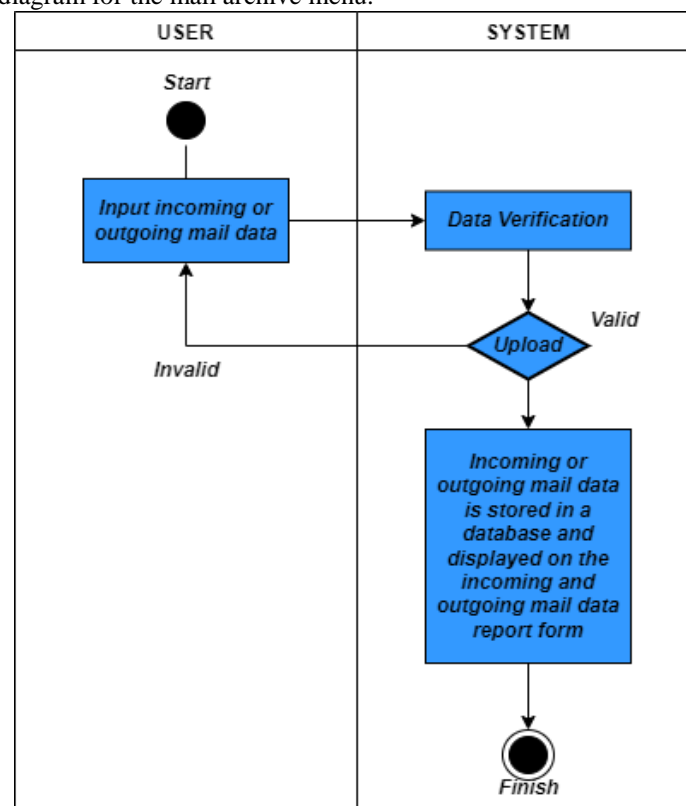   The following is an activity diagram for the mail archive menu.

Figure 4. Mail Archive Activity Diagram

c. Report Activity DIaram
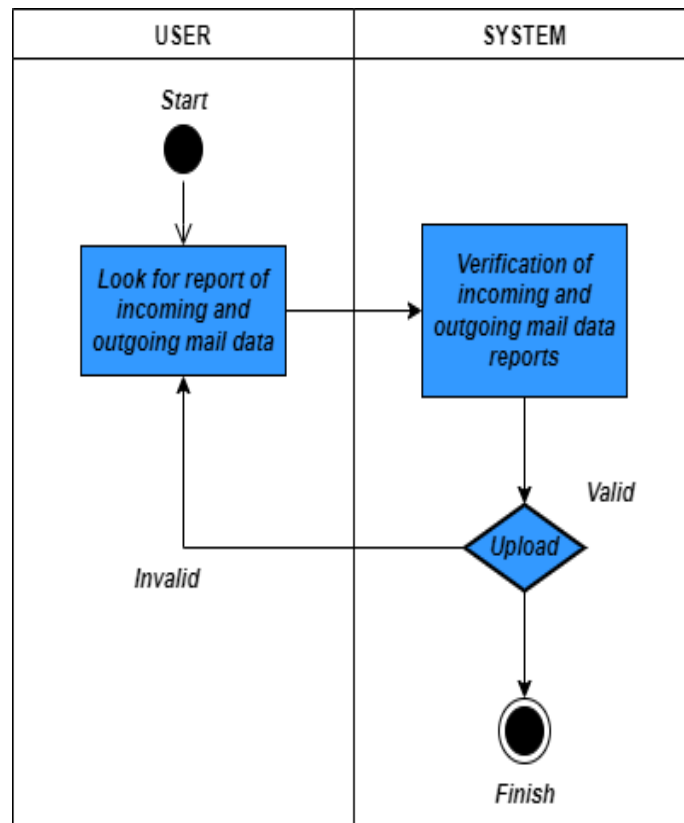   The following is an activity diagram for the report menu.

Figure 5. Report Activity Diagram

3.2. System Implementation

1. Admin Login Form, When you open the application, the first thing that will appear is the login form . At this stage both the admin and the officer must enter a username and password in order to enter the system.

Figure 6. Admin Login Form

2. Admin Main Page, After a successful account login , you will be immediately redirected to the main page. The following is the appearance of the Admin Main Page. On the Main Page view there is a Profile menu, incoming mail data menu and outgoing mail data menu. User data menu In addition there is a report menu .
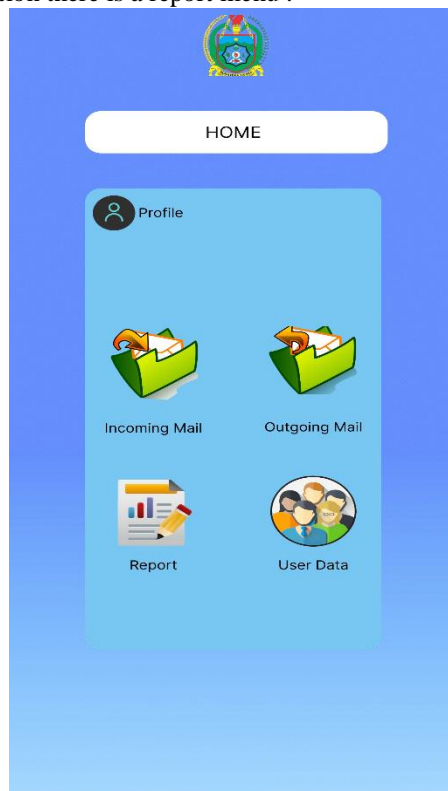
Figure 7. Admin Main Page

3. Incoming Mail Menu Display, The following shows the incoming mail menu. In the incoming mail menu display, we can see the mail data that has been entered and entered by the officer.
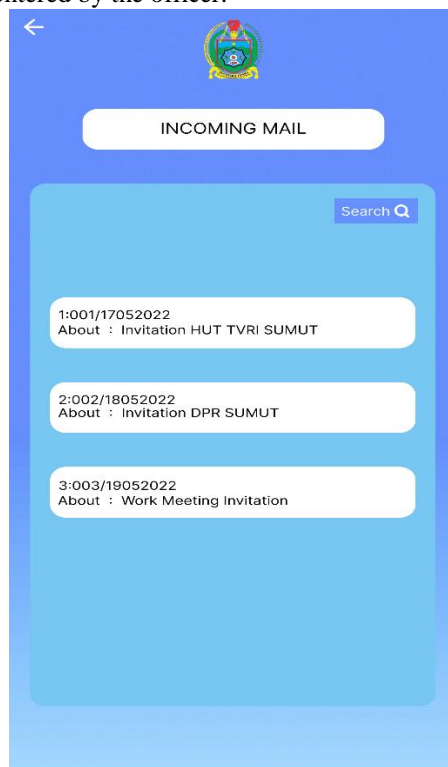
Figure 8. Incoming Mail Menu Display

4. Outgoing Mail Menu Display, The following is the display of the Outgoing mail menu. In the outgoing mail menu we can see the outgoing mail data, which has been input by the officer.
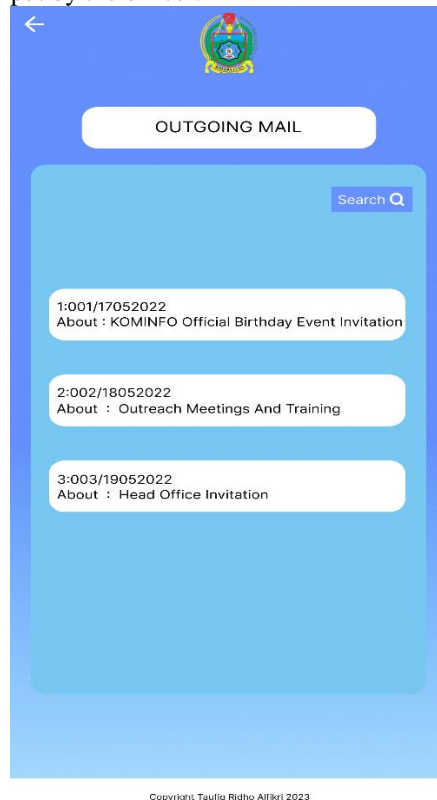

Figure 9. Outgoing Mail Menu Display

5. Incoming Officer Mail Menu, The following is a display of the officer's incoming letter menu. In the display of the incoming mail menu, officers can input incoming mail.
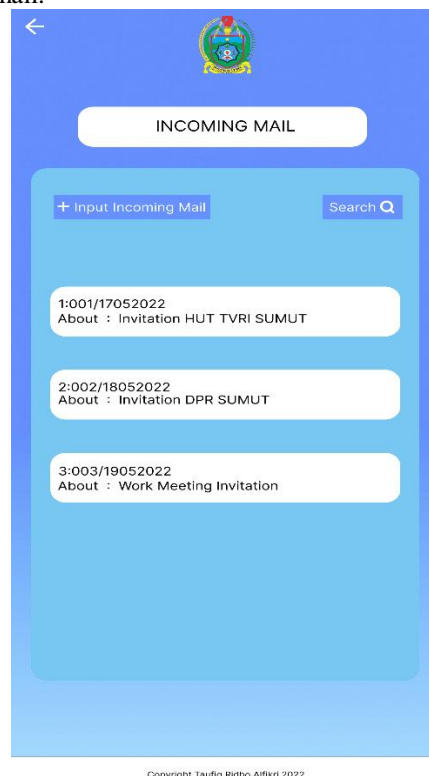

Figure 10. Incoming Officer Mail Menu

6. Exit Officer Outgoing Mail Menu Display, The following is the display of the officer's outgoing mail menu. In the outgoing mail menu, officers can input outgoing mail.

Figure 11. Exit Officer Mail Menu

7. Incoming Mail Report Menu Display, The following is a view of the incoming mail report. In the incoming mail view, you can make an incoming mail report by clicking the calendar icon and then selecting the date of the incoming letter from the date of entry to the date of entry.

Figure 12. Incoming Mail Report

8. Outgoing Mail Report Menu Display, The following is a display of outgoing mail reports. In the outgoing mail view, you can make a report on outgoing mail by clicking the calendar icon and then selecting the date of the outgoing letter from the date of issue to the date of issue.

Figure 13. Outgoing Mail Report

9. Logout Menu Display, Here is the logout view . If you want to exit the application then select or click logout . Then, it will exit and return to the login view .

Figure 14. Logout Menu Display

3.3 System Testing

In testing this letter archive information system using black box testing and this test is carried out by the head of the management of public communications. Black Box Testing is a software testing technique that focuses on the functional specifications of the software [19]. Black Box Testing works by using a control structure so that attention is focused on domain information. The advantage of using the Blackbox Testing method is that the tester does not need to have knowledge about specific programming language, testing is done from user point of view, it helps to express ambiguity or inconsistency in requirements specifications. The following are the results of the tests carried out:

Table 1. Test Result

No	Indicator	Test Result
1	Login Menu Display	Succeed
2	Display of Admin Main Page	Succeed
3	Home Menu Display	Succeed
4	Display of Incoming Mail Menu	Succeed
5	Display of Outgoing Mail Menu	Succeed
6	Display of Incoming Officer Mail Menu	Succeed
7	Display of Outgoing Officer Mail Menu	Succeed
8	Display of Incoming Mail Report	Succeed
9	Display of Outgoing Mail Report	Succeed
10	Exit Menu Display	Succeed

4. CONCLUSION

Based on the discussion above, the authors conclude that letters are one of the most important things for organizations or agencies. There fore we need a system that can manage these letters so that letters can be stored properly and can be quickly searched when needed. With the existence of a mail archive information system, it is hoped that it will make it easier for every organization or agency to store and search for letters so that work becomes more effective and efficient.

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