IMPLEMENTATION OF MANAGEMENT INFORMATION SYSTEM WEBSITE-BASED LETTER ARCHIVES

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ABSTRACT

The development of an institution currently requires Information Technology, at the level of commercial institutions and non-commercial institutions. The development of this technology is expected to support ongoing work so that it is easier and more systematic. One technology that is often used is the Management Information System. With this Management Information System Technology, it is hoped that users can store data easily and access it again quickly. In this study, the author tries to implement a Correspondence Management Information System with a case study at the Faculty of Informatics Engineering at Bhayangkara University Surabaya. This information system includes incoming and outgoing letters, with several supporting tools so that it can handle scanned and input data manually.

Keywords: *Management information System, Mailing System, Information Technology*

1. INTRODUCTION

The development of Information Technology has been very broad. And become one part in the development of the agency or institution. One of the Information Technology needs is a Management Information System. Without a Management Information System, an agency will be difficult to develop in the current era. It will even become an obstacle if it does not keep up with the times. Even today, there have been many developments in Information Technology that lead to the development of Machine Learning. Or even use Artificial Intelligence to manage the data, as in the research of B. M. Mulyo (2018).

There are so many choices of Management Information Systems that can be developed in an agency. One of them is the Mail Archive Management Information System. The need to store incoming and outgoing letters is a separate requirement of an agency.

Outgoing mail data needs to be checked for incoming mail numbering, whether it is appropriate or not. The archive format that needs to be tidied up and made into a system becomes an agency requirement, to be more efficient to be accessed and processed. Incoming mail data needs to be stored in softcopy so that it is not lost and can be checked historically. Sending letters for each agency level can have a certain code so that it has a number prefix that can be the same as a different code.

Retrieval of data for checking or if needed is also important. Several levels of users can access different information. Display for data retrieval Mail can be different. A higher level user can access the user below it with the existing conditions.

2. ISSUE

The problem to be solved is how to implement a Website-Based Mail Archive Management Information System. This Mail File Management Information System consists of 2 main problems, namely Incoming Mail Management and Outgoing Mail Management.

How to save Incoming Mail by entering several parameters according to the letter, after that upload a scan of the Incoming Letter along with the input parameters. Making Outgoing Letters with criteria in accordance with their respective sub-agency. One of the criteria is the Nomenclature Number on Outgoing Letters, namely:

1. Each Study Program has a different code.
2. There are 13 types of letters according to mutual agreement.
3. Each type of letter and study program has its own number
4. All numbers will return to number 1 every month

There are users who distinguish different access that can be used compared to others. Users have the ability to view mail data, enter mail data, change mail data (with certain limitations), and delete letters (according to provisions). The case study used is the Faculty of Informatics, Bhayangkara University, Surabaya.

3. OBJECTIVE

The purpose of implementing this Management Information System is to make it easier for users (lecturers), who are assisted by admins (TU staff) to manage outgoing and incoming letters in an organized and archived manner. So that the manufacturing process is easy and no letter data is lost. Statistically, the Faculty can also monitor and be considered if needed.

4. THEORETICAL BASIS

The purpose of implementing this Management Information System is to make it easier for users (lecturers), who are assisted by admins (TU staff) to manage outgoing and incoming letters in an organized and archived manner. So that the manufacturing process is easy and no letter data is lost. Statistically, the Faculty can also monitor and be considered if needed.

4.1 Information Technology

The Information Technology industry is the fastest growing and most volatile industry, and companies must continue to innovate and improve technology. At the same time, they also need to increase shareholder wealth by efficiently creating corporate value with the given resources. Thus, in corporate finance, many studies have assessed the impact of capital structure and its determinants on firm value or performance (Y. Kim and C. hee Kim, 2021).

4.2 Management Information System

The development of a student's ideological and political education management information system can improve the intelligence and stability of the ideological and political education management, as well as improve the ability to share and utilize teaching resource information. The test results show that the development of an education management information system for Political and Ideological Student Education, in this paper, has good scheduling and resource management skills, has good application value in practice (H. Qiao and L. Tan, 2018).

The communication system of underlying references eMule protocol, file entity shared in the secondary Cloud-P2P network, the ubiquitous knowladge cloud prototype system is based on eMule protocol to implement the communication between the nodes of knowladge file transfer and multi-thread download function.

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In order to evaluate the application performance of this system, the simulation check is taken. In the simulation process, all the embadded system is constructed. The Computer network and System is tested and the accuracy result is shown in Figure 1. The Result shows that this system has high precision and the overall system is stable and realiable.

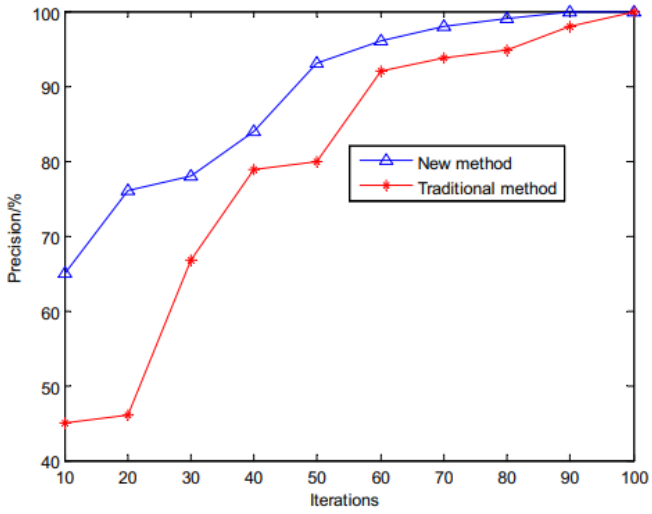

Figure. *1 Comparison results of survey accuracy*

4.3 Mail File System

The e-Surat application is used by the Central Java Provincial Archives and Library Office as an active Web-based dynamic archive management application referring to the standards set by the National Archives of the Republic of Indonesia. Active dynamic archive management with e-Surat application support can facilitate the process of mail management, archive distribution, archive storage and archive shrinkage. Utilization of the e-Surat application is based on the needs of employees in managing active dynamic archives quickly and precisely (A. D. L. Tarigan, and J. Jumino, 2018).

4.4 Flowchart

The Research found that 70% of students were able to solve problems involving sequences of statements (i.e. without resorting to selection or repetition) using Flowcharts or Python. Therefore, the ability to solve problems involving a sequence of statements is a good initial predictor of success/failure in solving problems with more complex control structures such as selection and repetition (C. Cabo, 2019).

4.5 Entity Relationship Diagram

Knowledge representation is considered as one of the main challenges in knowledge-based systems. Currently, the knowledge graph is the most modern knowledge representation model, which has been used in critical knowledge-based systems. On the other hand, Entity Relationship Diagram (ERD) for relational databases is the most widely used model in information systems (A. Elfaki, A. Aljaedi and Y. Duan, 2019). Figure 2 shows how this task is attainable in our proposed model. We call this task as “general search”, which means searching the whole database without defining a specific table.

```
?- member(X,Y),value_of(2, X).
X = course_id,
Y = courses ;
X = c_id,
Y = course_registration ;
```

Figure 2. *Code for general search*

5. ANALYSIS AND DESIGN

Entry Letter is a letter obtained from an External Party from the Faculty which is intended for the internal party of the Faculty. While Outgoing Letters are all letters issued by the Faculty or Study Program, for example external parties or internal parties themselves. The initial design that was made was making a Flowchart diagram, to find out what processes were needed. The main flowchart model that will be discussed has two parts, namely General Letter Flowchart and Nomenclature Number Making Flowchart.

5.1 General Letter Flowchart

Figure 3 shows the general mail process that is processed by the Staff. The initial process, each admin needs to login to enter the system. The process for managing mail in general has two main parts, namely inputting letters or viewing a list of letters that have been processed.

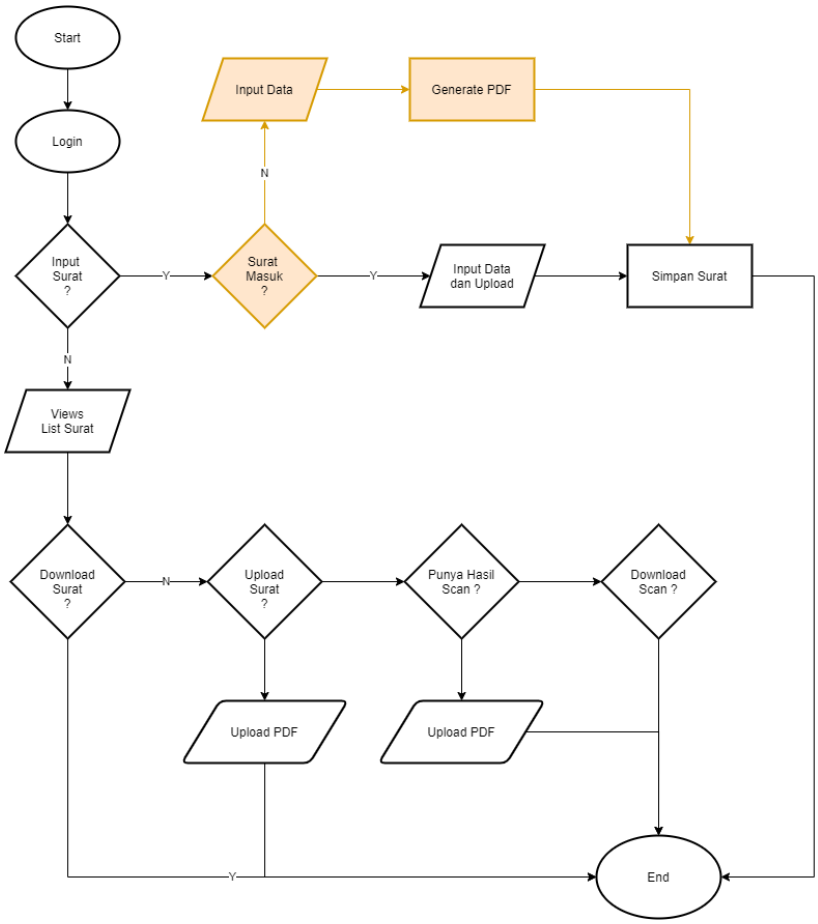

Figure 3. *General Letter Flowchart*

There are also two types of input letters, namely incoming letters and outgoing letters. The main difference between these two types is that the Incoming Letter requires scanned input in the form of a pdf, while the Outgoing Letter requires input parameters and the contents of the letter which then produces an output in the form of a pdf display. The next process of the two processes is the same, namely the storage process into the database.

Another process besides letter input is the process of viewing or updating letters. This other process, it is necessary to see which mail can be accessed. Each user has a different level, so not all end users can access the mail in the system. There are 5 Types of End Users namely

a. Administrator

b. Dean
c. Head of Study Program
d. TU staff
e. Lecturer

End users such as Deans, Study Programs and TU Staff have sub-types of end users, which depend on what study program the end users are from. This problem is divided into 3 parts, namely Informatics, Electrical, and Civil which are within the Faculty of Engineering. Other Processes in the process of Figure 1 are found in the "View Mail" section. One of the needs that is often used by Lecturer end users is to retrieve the Assignment Letter archive file. This type of letter retrieval has a fairly high requirement, so this menu can be accessed directly at the beginning.

The process for retrieving this letter is not only limited to retrieval of letter data. Another feature is the processing of letters that are processed in the Outgoing and Incoming Mail Menu. The first is the Menu for the Admin who can make changes to the data if there is an error in making a letter. The second process is to complete the signature of the interested party, for example the Dean or the Head of the Study Program on the letter. So that the type of letter that is processed changes its status to a letter that has been validated by validation and even the end user view of the previous version of the letter is not displayed.

5.2 Nomenclature Flowchart

Nomenclature Number is a unique number that represents a letter code. This letter number is always unique and different, the rules for making this number format are not always the same for every institution. The format of the code that will be made will not be explained further because it is an internal institution policy. The discussion of the Nomenclature Number is only limited to how the Nomenclature process is made.

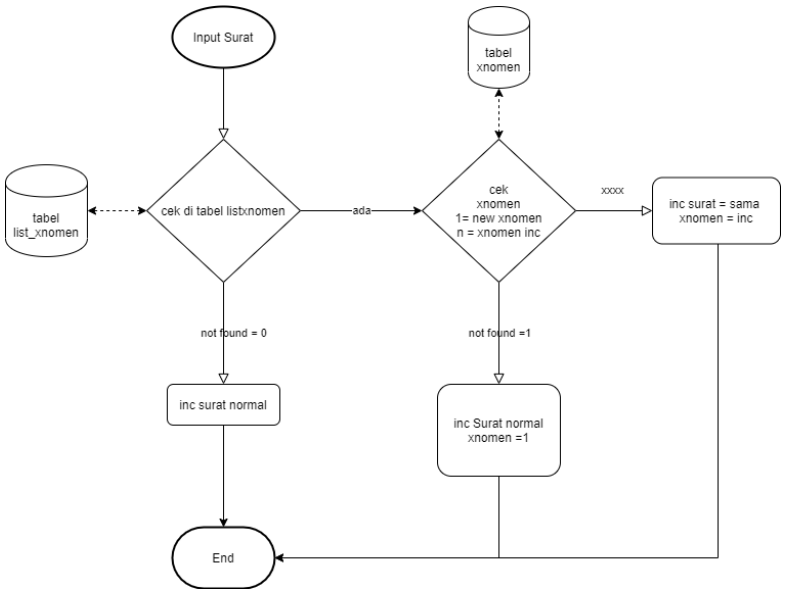

Figure 4. *Nomenclature Flowchart*

As shown in Figure 4, the process of making the Nomenclature number begins with checking from the database. If there is no data in the database, it will be created automatically on a recurring basis in each study program and month. If the data already exists, then there needs to be a double check of the code or type of letter and the order at that time. The rules used because they are internal policies of the institution are not detailed further.

6. RESULTS AND DISCUSSION

The process of filing incoming and outgoing letters on the system is very easy and fast, and can be accessed anytime and anywhere. Very helpful with urgent conditions, for example, the current COVID-19 pandemic in 2021.

This process is fast because there is no need to enter data manually from the beginning and it uses a lot of data processing rather than manual processes. Information security is sufficiently maintained with authentication at login and user level, so that there is no damage and loss of information on incoming and outgoing mail. The process of distributing mail and retrieving archives is also the main goal of processing this application. The system is also supported by the search process for incoming and outgoing mail, with input in the form of keywords that are entered into the search field. And the system display is easy to use which represents the user friendly concept. With an online database, it can be used anywhere and anytime.

Evaluations from related parties have also been carried out for the system flow, the results are quite satisfactory although there are some things that can be improved. For example, User level which has additional features, as well as other needs that are still unknown because this system is the first system to be run in this environment.

7. CONCLUSION

In this study it can be concluded that the existence of a Letter Archive Information Management System at Bhayangkara University Surabaya can improve the quality of the letter archive from the storage and retrieval process of data. The existence of a digital system helps lecturers and end users to retrieve data without fear of loss or damage. In the future, it is hoped that the design will be more complete and in accordance with the dynamics that have not yet occurred, because this system is an initial system that still has many shortcomings that can be completed.

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