# Design of Web-Based Archive Management Information System

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## INTISARI

Saat ini perkembangan teknologi sudah berkembang begitu pesat, saat ini informasi sudah dikelola dengan teknologi komputer, dimana sebelumnya masih menggunakan cara konvensional. Begitu pula dengan sistem pengelolaan arsip surat masuk dan surat keluar. Tata Usaha di SMA PGRI 1 Padang dalam pencarian arsip sering menemui kendala karena memerlukan waktu yang cukup lama dan terkadang arsip yang dicari tidak ditemukan, karena setiap harinya banyak surat masuk dan surat keluar. Menyadari hal tersebut maka diambil judul Rancang Bangun Sistem Informasi Manajemen Kearsipan di SMA PGRI 1 Padang Provinsi Sumatera Barat Berbasis *Web* dengan menggunakan *framework CodeIgniter* yang diharapkan dapat memudahkan bagian Tata Usaha dalam proses pencarian dan pendistribusian arsip dilakukan dalam waktu yang singkat. Pada perancangan ini Metode *Waterfall* adalah metode pengembangan sistem yang digunakan. Menggunakan aplikasi ini, admin dapat mengelola user, Staf Tata Usaha dapat menambah, mengedit, menghapus dan menyimpan surat masuk dan keluar karena sudah berbasis *web*, Kepala Tata Usaha dan Kepala Sekolah dapat melakukan pencarian arsip surat masuk dan surat keluar serta dapat mencetak laporan surat perpriode. Implementasi dari aplikasi kearsipan ini hasilnya menjadi lebih efisien karena arsip surat masuk dan surat keluar sudah terkomputerisasi.

*Kata kunci:* Sistem Informasi, Arsip, Surat Masuk, Surat Keluar, Framework Codeigniter

## ABSTRACT

*Currently the development of technology has developed so rapidly, now information has been managed with computer technology, where previously it was still using conventional methods. Likewise with the archive management system for incoming and outgoing mail. Administration at SMA PGRI 1 Padang in searching for archives often encountered problems because it took a long time and sometimes the archives you were looking for were not found, because every day there were many incoming and outgoing letters. Realizing this, the title of Archival Management Information System Design at SMA PGRI 1 Padang West Sumatra Province using the Web-based CodeIgniter framework is expected to facilitate the Administration in the process of searching and distributing archives in a short time. In this design the Waterfall method is a system development method used. Using this application, the admin can manage users, Administrative Staff can add, edit, delete and save incoming and outgoing mail because it is web-based, the Head of Administration and the School Principal can search the archives of incoming and outgoing mail and can print a periodic letter report. Implementation of this archiving application results to be more efficient because the archives of incoming and outgoing mail are computerized.*

*Keywords: Information Systems, Archives, Incoming Mail, Outgoing Mail, Codeigniter Framework*

## INTRODUCTION

One of the indispensable needs for information technology today is the need for information systems[1]. In the current era of globalization, school education institutions urgently need the role of information technology in terms of data processing[2]. One of which is an archive management system to support the smooth running of operational activities, as well as speed up the work process so that it is more effective and efficient or avoid waste of time and energy, facilitate in management so that archives are maintained properly and regularly, in order to easily reinvent the required archives, to save on archival storage and to maintain the confidentiality and sustainability of the archive[3].

Archival activities in most schools still use manual recording by distinguishing incoming and outgoing letters, compiling based on the letter agenda number, for example at SMA PGRI 1 Padang.

As the documents grew, it became difficult to search again, due to the absence of clearer laying information on the cabinet shelves. Data may be lost, damaged and difficult to search due to its manual storage[4]. Then in the mail search requires a long process because it has to flip the book. In addition, there is often a loss of important documents due to the absence of a clear record of borrowing and return of documents[5].

Considering the role of archives is very important, it is recommended that archives be managed using a good and correct archive management system. Archive storage is said to be good when at the required time the required archives can be found easily, quickly and precisely[6].

Therefore, one of the ways that can be the solution of the problem by designing an application of archival management information system that is expected to help the process of distributing web-based archives by using the CodeIgniter Framework[7].

Perl Hypertext Prepocessor is programming for the creation and development of a web and can be used to coincide with HTML[8]. PHP is a very easy scripting because it has a lot of references[9]. CodeIgniter is an open source php framework and uses MVC (Model, View, Controller) procedures to make it easier for developers or programmers to create a web-based system without having to create it from scratch[10].

CodeIgniter is one of the Frameworks with complete and clear information[11]. Listening program CodeIgniter that has comments to clarify the use of one program. MVC is a programming concept, where programming logic, database queries, and its appearance are separate so that the building code of a system looks simpler and structured[12]. Web is a page of some pages that contains information data in the form of writing, photos, video, sound, and other animations provided over an internet connection to help create a system[13][18].

## METHOD

Waterfall Method is a method that approaches systematically and sequences starting from the level of system needs and then heading to the stage of analysis, design, coding, testing or verification, and maintenance[7][16]. It is called waterfall because step by step passed in this method must wait for the completion of the previous stage, namely requirement stage[14][17].
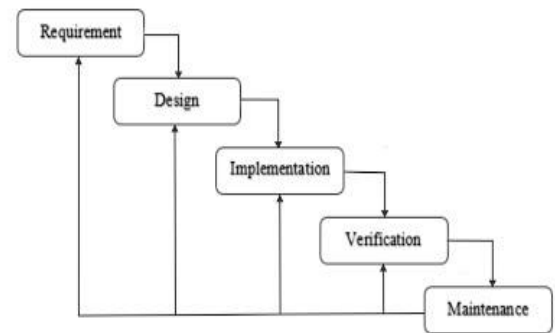


Figure 1. Waterfall Method[15]

## 1. Analysis of running systems

System analysis can be defined as parsing from a data system to a component with the aim of recognizing and knowing the problems, opportunities, obstacles that take place and the needs so that improvements can be proposed.

A flowmap is a graphic image consisting of the steps and order of a source code. Flowmap efficiently serves to describe the flow or rules in a system created. The process of processing and archiving incoming and outgoing letters that are running at SMA PGRI 1 Padang in general can be seen as follows:
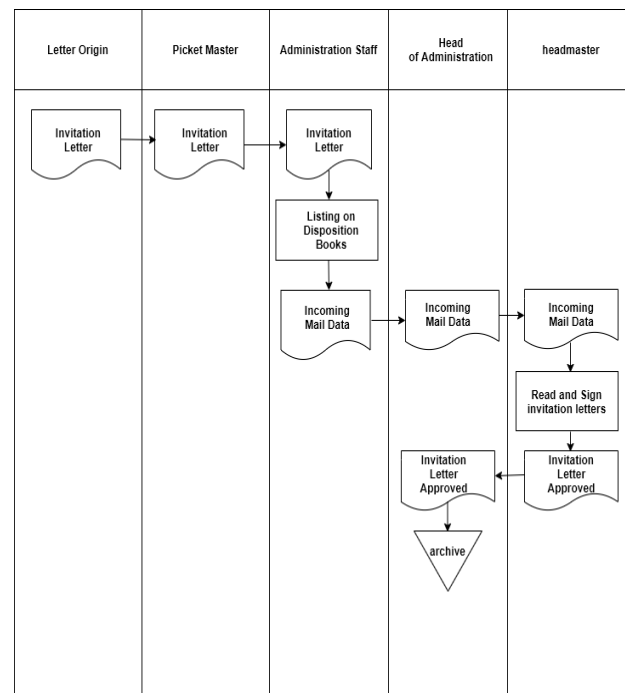


Figure 2. Ongoing incoming mail archiving procedure

In the picture above there are several users such as Letter Origin, Picket Teacher, Administrative Staff and Principal. Where each user has their duties and uses.
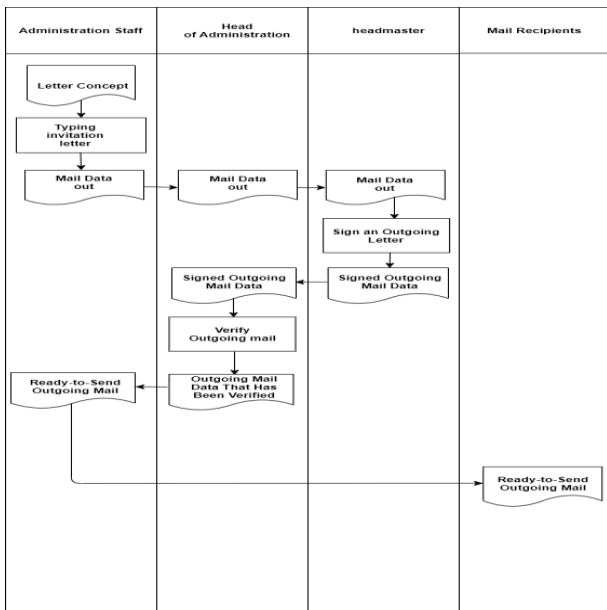
Figure 3. *Ongoing outgoing mail archiving procedure*

The picture above is the process of archiving outgoing mail if it has not used the system or is a conventional mail archiving process that is commonly done at SMA PGRI 1 Padang which is considered still less effective so that a computerized system design is needed that will facilitate the archiving process.

## 2. Analysis of the System to be developed

Here is the design of Flowmap from the application that will be developed on the archival management information system at SMA PGRI 1 Padang.
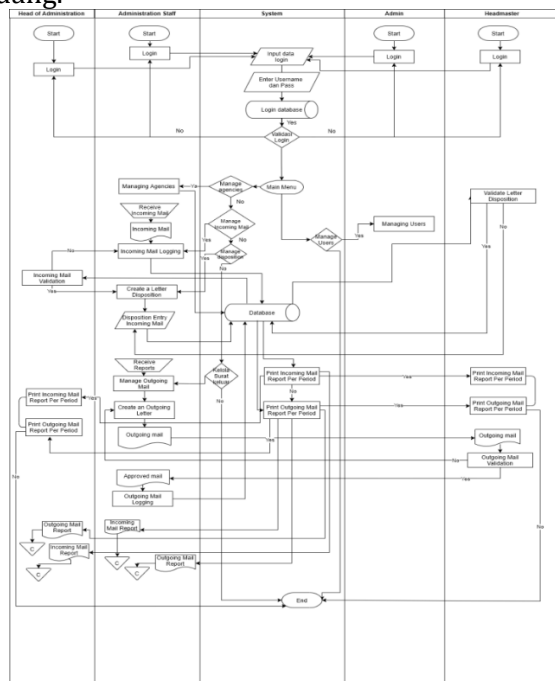


Figure 4. *Flowmap* system built

Based on the picture above, it can be explained that there are four actors who are divided into access each. Where when the administrative staff login can login into the system by entering the username and password on the system. When the administrative staff successfully enters the system, the administrative staff can perform the process of logging incoming mail based on the letter received.

The incoming mail data is entered into the database. Based on the incoming letter, the head of administration validates the incoming letter. If the incoming letter has been approved by the head of administration then the administrative staff queues the disposition of the letter then the principal validates the disposition of the letter. The disposition of the letter that has been validated by the principal is entered into the database. Based on the incoming letter, administration, administrative staff and principal can print the report of the entry letter perpriode to be archived on the administration and administrative staff.

Furthermore, the administrative staff can manage outgoing mail, make outgoing mail. An outgoing letter was sent to the principal for approval. Based on the letter approved by the administrative staff to record the outgoing mail and the data is entered into the database. Based on the data, administrative staff, head of administration and principal can print a report of the letter out perpriode and archived in the administrative staff and head of administration. In addition, admins can manage user data that can access the system.

## 3. User Analysis

Table 1. User Analysis

| No | User | Hak |
|---|---|---|
| 1 | Admin | In addition to having access rights as a system admin, admins can also manage user data. |
| 2 | Administration Staff | Receive incoming mail, log incoming mail, create a mail disposition, create agency data, , queue the disposition of incoming mail, create outgoing mail, log outgoing mail and print reports of incoming mail and |

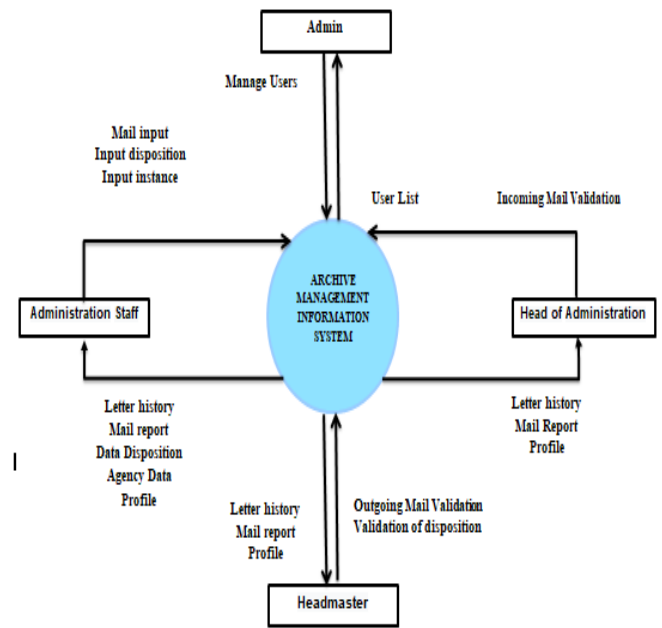| | | outgoing mail perpriode. |
|---|---|---|
| 3 | Head of Administration | Validate incoming mail, print incoming mail and outgoing mail reports. |
| 4 | Headmaster | Validation of incoming mail disposition, validation of outgoing mail approval, print incoming mail report and outgoing mail perpriode. |

## 4. Input Analysis

Input data needed to support this are archival documents in the form of letters such as decrees, letters, circulars, assignment letters, warning letters, activity permits, agreement letters, invitation letters, warrants, and document files from the archive with the type of pdf, doc, or docx.

## 5. Process Analysis

To produce a cool output in accordance with the data input above, then in the analysis stage this process will be done by the system is the management of data related to the input documents.

## 6. Output Analysis

The information that will be generated by the system based on the inputted data and the process that has been done is in the form of data management archives that are neatly arranged so as to facilitate system users when searching for incoming mail reports and outgoing mail perpriode needed.

## 7. System Planning
a. Context Diagram

Context Diagram is a diagram that describes the relationship of the association between the entity in the system and the system itself[19]. Each arrow describes the input performed by an entity and the output obtained by that entity. The Context Diagram is shown in figure 5 :



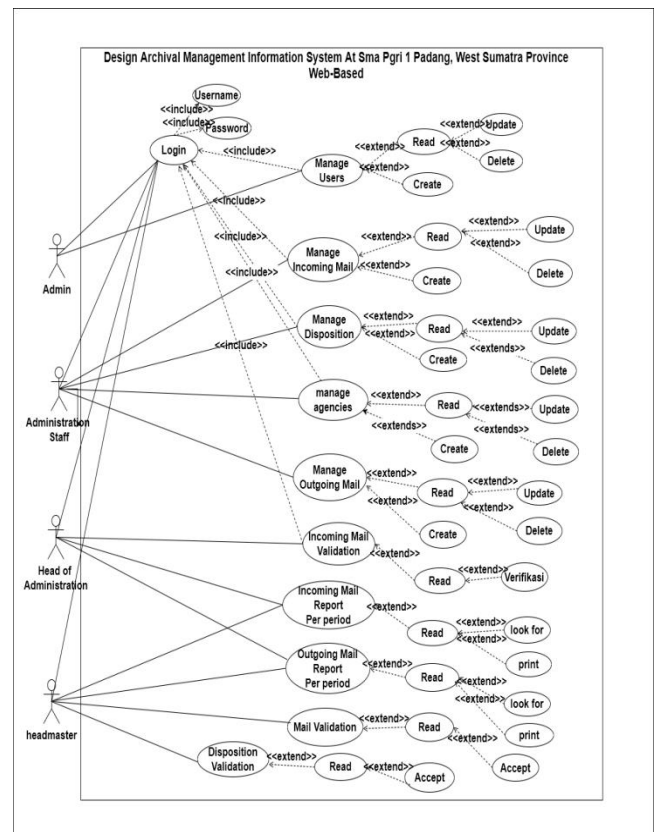Figure 5. *Context Diagram*

b. Use Case Diagram



Figure 6. *Use Case Diagram* Of Archival Management Information System

In the picture above there are 4 users, namely admin, administrative staff, administration and principal. Where each user has his own task.

## 8. ERD

Entity Relationship Diagram (ERD) design on Archival Management Information System at SMA PGRI 1 Padang, West Sumatra Province as follows:
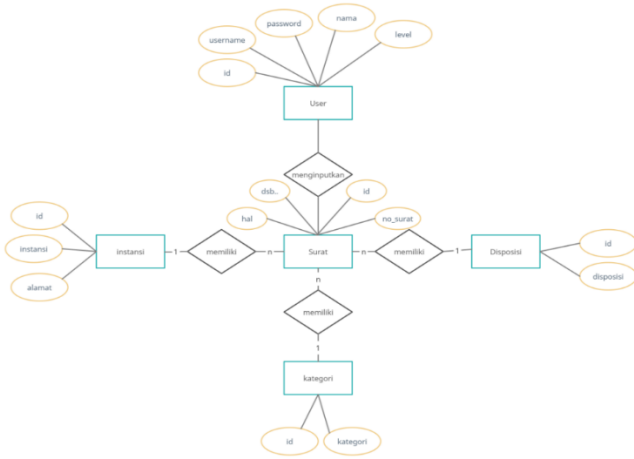


Figure 7. Entity Relationship Diagram

## RESULTS AND DISCUSSION

The User Interface describes the communication between the user and the application. User Interface can receive data provided by the user and share data with the user to help show the flow of problem tracing until a solution is encountered. The interface design stage is the stage of ensuring and designing the look of the system to be created. Here's what the Archival Management Information System Application looks like:

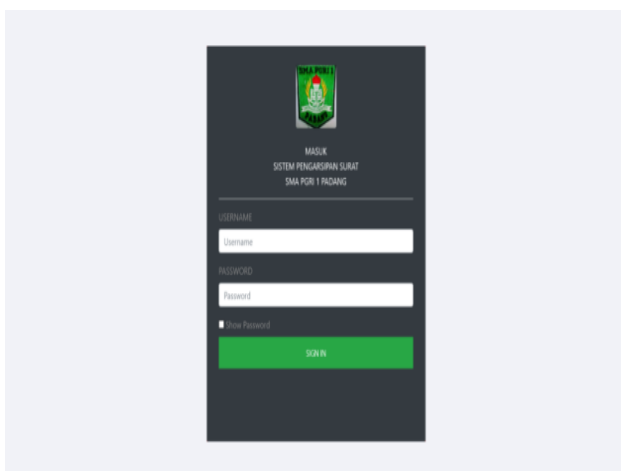a. Login Form View

The Login View is shown in figure 8:



Figure 8. Login Page

In the picture above is a page used by the user to be able to enter the system in accordance with their respective permissions by inputing username and password.

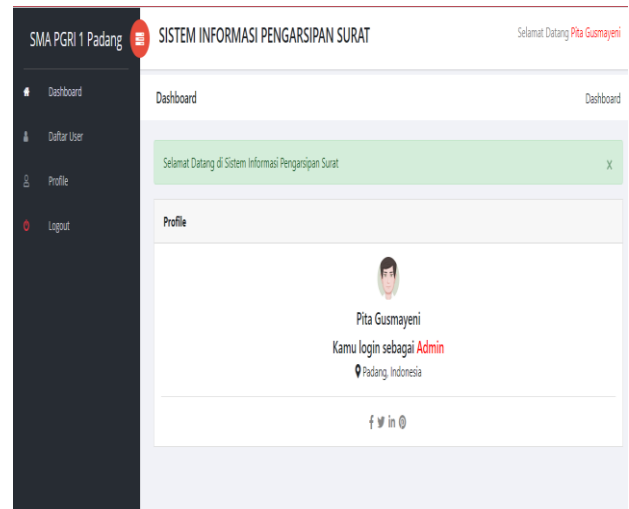b. Admin Home View

The Admin Home View is shown in figure 9:



Figure 9. Admin Home

The main page of the admin is the first page that appears when the admin successfully logins on the archival management information system at SMA PGRI 1 Padang.

c. Head of Administration's Main Page View

The Head of Administration's Main Page View is shown in figure 10 :
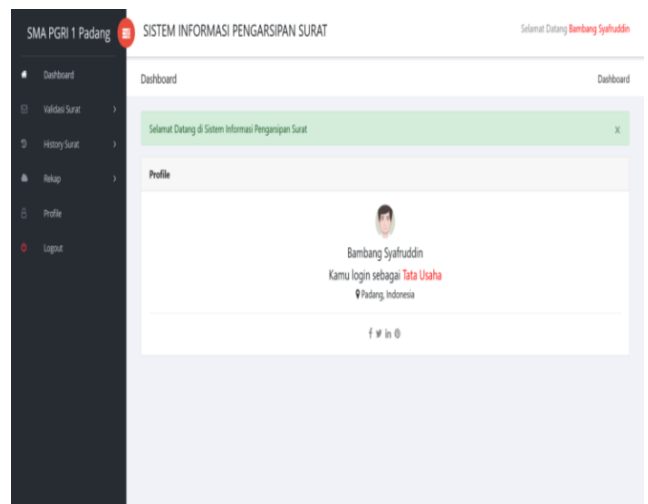


Figure 10. Head of Administration Main Page

The main page of the head of administration is the first page to appear when the administration successfully logged in on the archival management information system at SMA PGRI 1 Padang

d. Incoming Mail Menu Page View

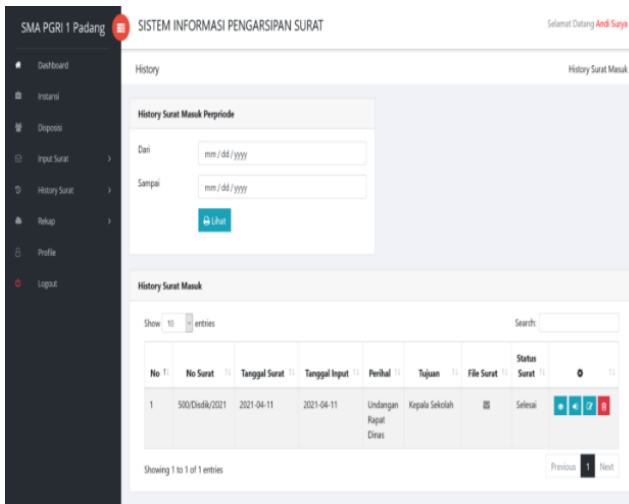The incoming mail menu page view is shown in figure 11:



Figure 11. Incoming Mail Data

The incoming mail menu page is used to view all incoming mail data inputted by the administrative staff on the system.

e. Outgoing Mail Menu Page

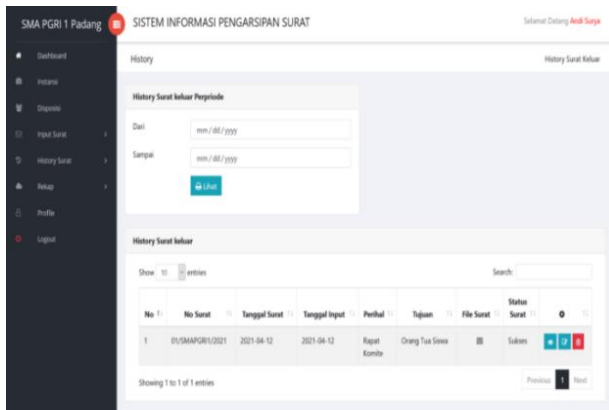The outgoing Mail Menu Page is shown in figure 12:



Figure 12. Outgoing Mail Data

The Outgoing Mail menu page is used to view all outgoing mail data that administrative staff input on the system.

f. Administrative Staff Home View

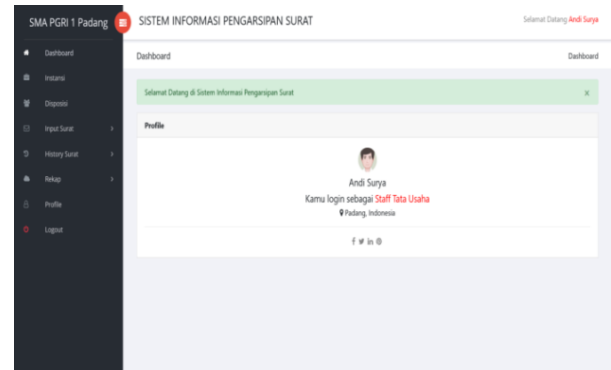The Administrative Staff Home View is shown in figure 13:



Figure 13. Administrative Staff Home

The administrative staff main page is the first page to appear when the staff successfully logs in.

g. Mail Disposition Page View

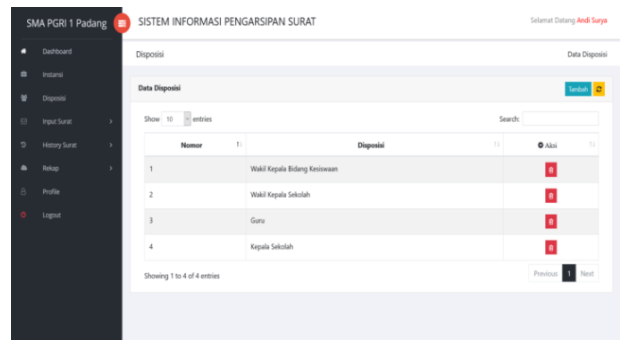The Mail Disposition Page View is shown in figure 14:



Figure 14. Letter Disposition Page

The mail dispenosis page is used for the process of adding mail disposition data on the system. The data that has been inputted by the administrative staff is stored in the database.

h. Incoming Mail Input View

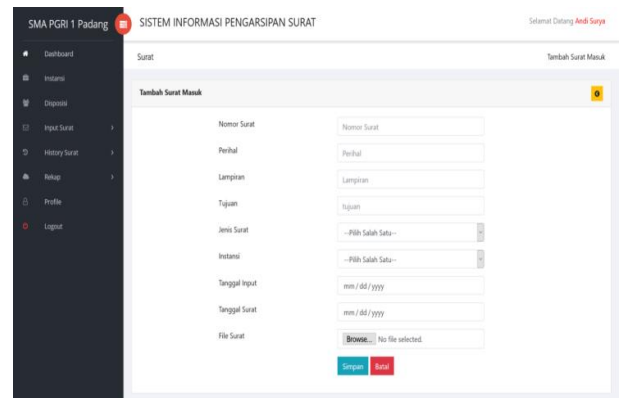The Incoming Mail Input View is shown in figure 15:



Figure 15. Incoming Mail Input

Incoming mail input is a form used by administrative staff to add incoming mail data to the system.

i. Outgoing Mail Input View

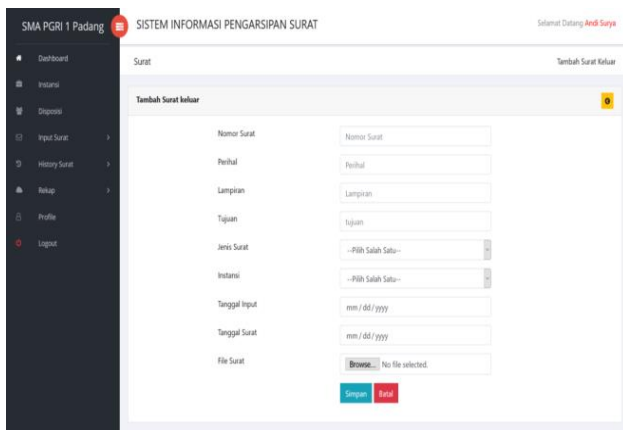The Outgoing Mail Input View is shown in figure 16:



Figure 16. Outgoing Mail Input

Input letter out is a form used by administrative staff to add outgoing mail data on the system.

## CONCLUSION

With the design and creation of this system, a Web-Based Archival Management Information System is produced to help the Administrative Department of SMA PGRI 1 Padang in improving the efficiency and effectiveness of the work process and can produce information faster and more accurately when needed. With a computerized system can minimize errors that occur and does not take a long time in the process of searching incoming mail archives and outgoing mail.

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