
Design and Development of College Archives and Correspondence Applications

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Abstract: This study aims to develop a web-based archiving and correspondence application to improve the efficiency and effectiveness of archiving and delivery of correspondence on the smart campus. The method used is the software development method. This research involves data collection through interviews and observations to understand the process of archiving and delivering correspondence on smart campus. The developed application can help users to archive and deliver correspondence more efficiently and effectively with features such as correspondence search, automatic archiving, and task and notification settings. The results showed that the use of web-based archives and correspondence applications can increase the efficiency and effectiveness of archiving and delivering correspondence on smart campuses by reducing time and costs, and increasing the accuracy and security of correspondence and archive management.

Keywords: Archiving, Correspondence, Software Development

1. Introduction

Nowadays, all activities of human life are inseparable from electronic activities and the Internet. Even now, we can communicate with a visual display. Which of course is supported by the development of multimedia? Seeing developments today, it is possible that future computers will be able to respond to human actions and understand human language. Will be able to respond to human actions and understand human language. However, there are still communication technologies that are carried out in writing, which at this time cannot be replaced by various communication equipment. Currently cannot be replaced by various communication equipment. The communication is correspondence. Letters are used by agencies to support its

daily activities, especially in the delivery of information. According to the State Administration Institute (LAN), archives are all kinds of forms of evidence of organizational or company goals such as papers, files, photos, forms of evidence of organizational or company goals such as paper, files, photos, the archive contains important information regarding policies, decisions, procedures to the activities of an institution. Meanwhile, according to Law number 7 of 1971 explains that archives are manuscripts made and received by various types of institutions, government, private or individual bodies in any form institutions, governments, private entities or individuals in any form, either in single or in groups in government activities group in government

activities. For this reason, a communication media for archive management and correspondence is needed that allows correspondence services to be carried out easily, accurately and structured, easy, accurate and structured. The system is also able to search for letter data that has been thus the letter data has been stored in a structured and well-organized storage media, making it easy to find the data. Structured and well organized, making it easy to find and retrieve back.

The use of multimedia technology in the development of web-based archive and correspondence applications. Application development by paying attention to the UI/UX display that is user friendly and not boring to the user by paying attention to aspects such as design, user interface, and user interface and not boring users by paying attention to aspects such as design attractive design, button placement, features that are easy to understand and also color display that is friendly to the eye. In this context, research on the utilization of multimedia technology in the development of archive and correspondence-based. Development of a web-based archive and correspondence application to improve support smart campus can be an interesting topic to be explored and researched further. So that in the future it can be applied to various academic activities such as promotion of lecturers, accreditation and support in internal quality assurance where all data is recorded internal quality assurance where all data is well documented.

2. Research Metode

This research is the application of the waterfall R&D model. Waterfall method is one of the approaches in software development. In this method, software development is divided into phases that must be completed sequentially, similar to the flow of a waterfall, where one phase must be completed before moving on to the next phase.

Therefore, the researcher concluded that the waterfall method was most suitable for this research. In this study, researchers will build software, namely an archive and correspondence application. The application will be made web-based so that it can be accessed anywhere and anytime by the parties involved.

Below are the stages of research:

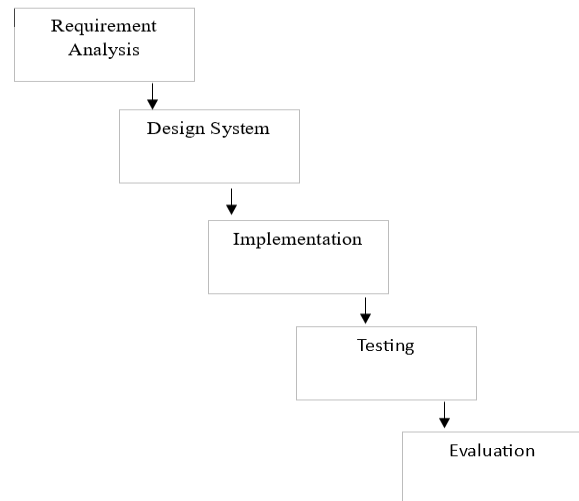


Figure 1. Waterfall Model

2.1. Requirement Analysis

Requirements analysis is the process of identifying, gathering, and evaluating the information to understand the needs and requirements of a system, project, or organization. The purpose of a requirements analysis is to clearly define the stakeholders' wants and needs and to outline the requirements that must be met to achieve those goals.

At this stage the researcher does several things in order to make a conclusion on the object being studied:

1. Identification of the parties involved. in the correspondence process in the department of computer engineering and informatics, the parties involved are lecturers, administration, head of the study program and head of the department.
2. Collect relevant data and information from the parties involved. information collection is done by interviews, questionnaires, observations, and other data collection methods.
3. Analyze the data and information that has been collected to identify the workings, flow of activities, and emerging needs of the correspondence and archives process. This is useful in understanding the problems or solutions that can be provided. From the results of the analysis, it can be concluded that the problems that occur during the correspondence process are the complexity of administrative bureaucracy and data that is not stored properly.

2.2. Design System

System design is the stage in the system development cycle where the requirements that have been identified during needs analysis are transformed into a concrete plan or blueprint for system implementation. At this design stage, the main focus is

on developing the structure and technical specifications that will guide the implementation process. System design involves several aspects, including:

1. **System Architecture Design** where this stage determines the general structure of the correspondence system to be created, including how the parties involved will interact. The architecture design includes decisions about the hardware and software components that will be used and how they will be connected. In terms of hardware, computers and internet networks are available and suitable for use.
2. **Software Design** compiles detailed specifications for each software module or component. This includes the selection of algorithms, data structures, and logic needed to meet the functional requirements of the system. In building this correspondence website using mysql software and applications for web design using Adobe XD, visual studio code, web server XAMPP, dan web browser Chrome.
3. **Designing the user interface** to suit the user's needs and ensure a good linkage between the user and the system. This includes visual elements, navigation, and user interaction. The menu that will be created in the archive and correspondence website display is the mail service menu and archive service.

System design is a critical step in system development, as mistakes or shortcomings in this stage can impact the entire development cycle. Its main purpose is to create clear guidelines and plans for the development team that will implement the system.

The advantages of the waterfall method are that the structure or way of working is clear and easy to understand. Furthermore, it is easy to manage because each phase has clear documents and results. This method is suitable for projects that are fixed. While the disadvantages of this method are that it is not flexible to changing requirements. Difficulty handling large and complex projects. Users can see the final result only at the end of the development cycle. In this research, it is not so influential because it will be used when the system has been completed.

2.3. Implementation

System implementation consists of developing program code and databases. at this stage the researchers were assisted by students and other research colleagues in making the website. The data used as the basis for making the website is data that has been requested at the research site.

2.4. Testing

Testing is an important part of the software development cycle to ensure that the system or application being built functions as desired and meets user requirements carried out

at this stage to ensure that the application built can run properly in accordance with the analysis and design. System testing in this study lies in the process of making letters and archiving whether it can run well.

2.4. Evaluation

The evaluation stage in system development or software projects is very important to assess performance, implementation success, and fulfillment of project goals. The evaluation carried out is in the form of design evaluation. The design that is made capable must be able to meet all the needs of the system and whether the design has been used effectively and efficiently.

3. Research Result

This research on the utilization of web-based archive and correspondence applications has been completed and tested. This application is temporarily operated by the operator where the operator is the department admin. The menu on this website is in the form of two main menus, namely mail services and mail archives.

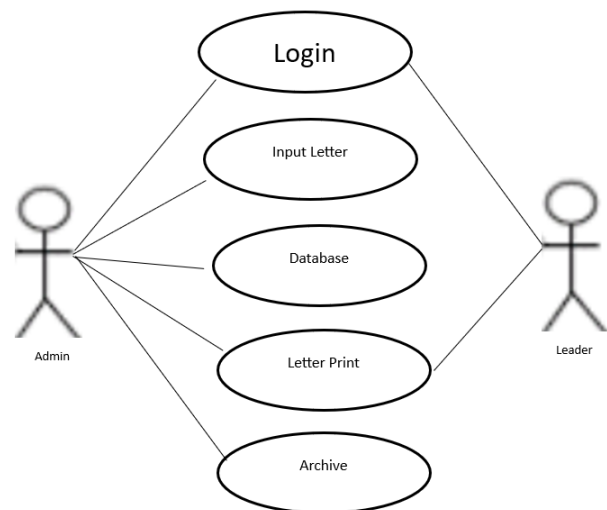


Figure 2. Use Case Diagram

The use case diagram above illustrates between admin and leaders. Where the activities that can be done by the admin are login, input letters then enter the database and then can be printed and automatically enter the archive menu. while the leader, in this case the head of the department, logs in then can only see which letters will be processed and then digitally signed.

In the mail service menu there is a letter setting menu, in this menu the letter creation process will be carried out. If it has been completed, the admin can directly print the letter. The following can be seen the menus of the web-based archive and correspondence application:

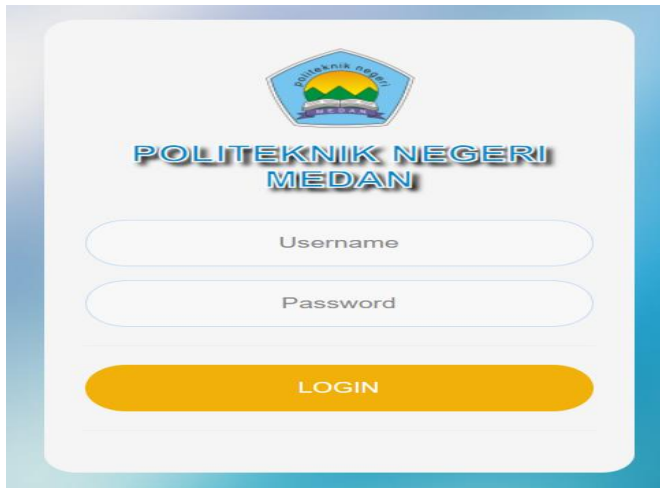


Figure 3. Login Page

This menu can be accessed by the operator by entering the username and password, and then the following menu will appear:

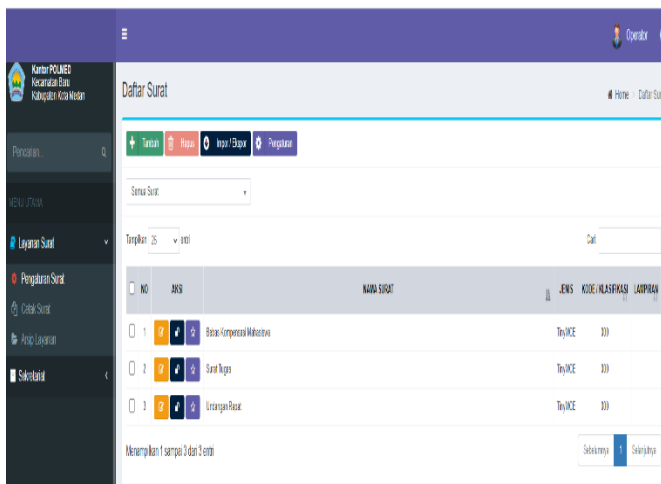


Figure 4. Dashboard

on the mail service menu there are add menu, delete, import/export data and settings. In the add menu there are 3 menus, namely general where we can make paper settings such as margins, paper size. At this stage the operator will also input the letter code according to the letter to be created.

The settings menu contains electronic signature settings. Electronic signatures can only be used by people who have been registered in the database before. To be able to do an electronic signature, you must first log in.

The add letter menu is similar to Microsoft Word, where the menu used is the same as in there are also file, edit, view, insert, format, tools and table. The available toolbar is also the same as microsoft word where we can choose the font, font size, left-right alignment, space then whether we want bold, italic and underline writing. on this menu the contents of the letter are inputted.

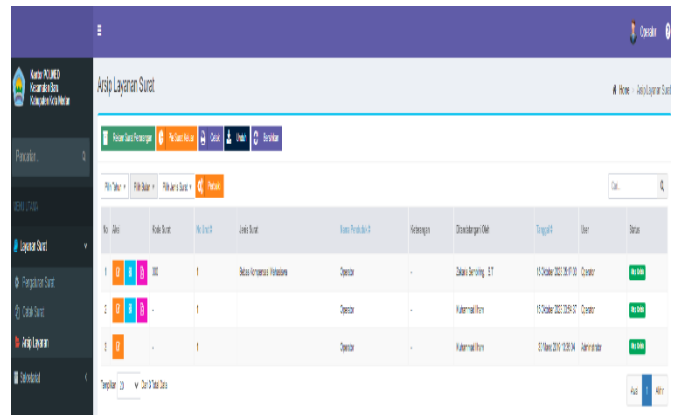


Figure 5. Add Letter page

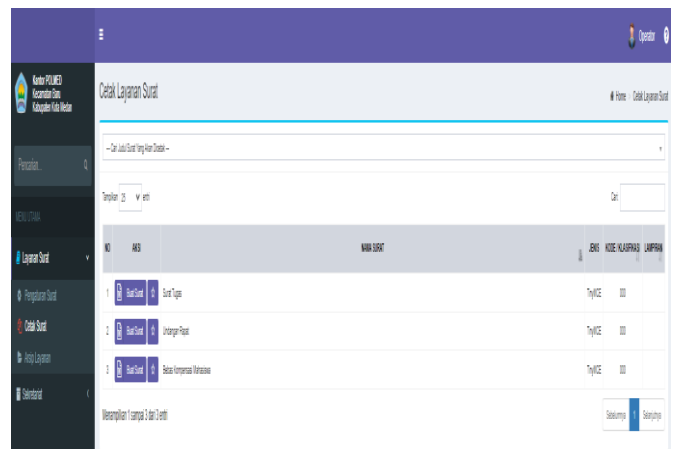


Figure 6. Letter Print Page

Letter printing can be done by searching for the title of the letter to be printed. Then the letter to be printed will appear. Select the desired letter then find the name that will sign the letter. Input the letter number, letter date, then click print.

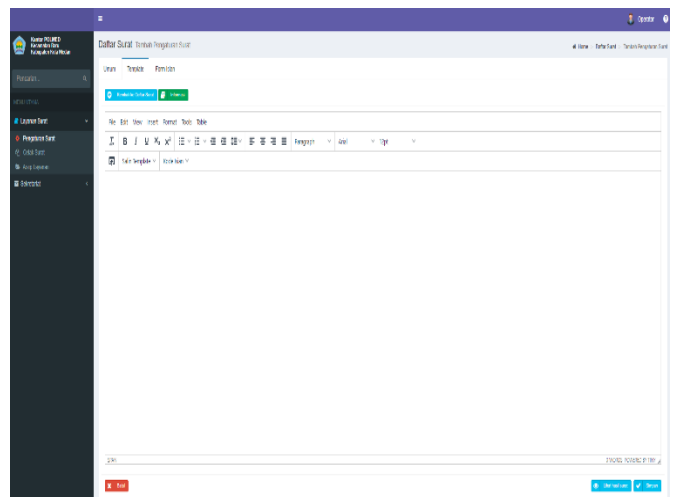


Figure 7. Archive Page

On the archive menu there are letters that have been made before. then to be able to search for the letter we want to search for it can be selected by year and type of letter. if we want to download a letter then it can be downloaded. In addition to download, there is also a letter print menu if we only want to request evidence in the form of prints.

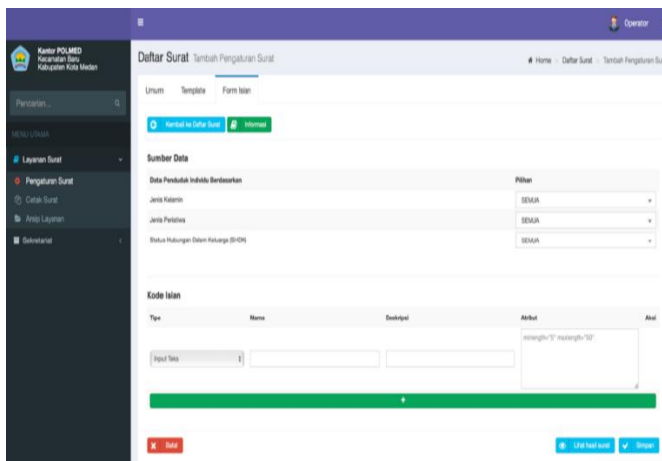


Figure 8. Data Source Page

The data source menu is where the data is taken. for example, student data in the Computer Informatics department. This data also contains lecturer and employee data. The data was previously available in the database.

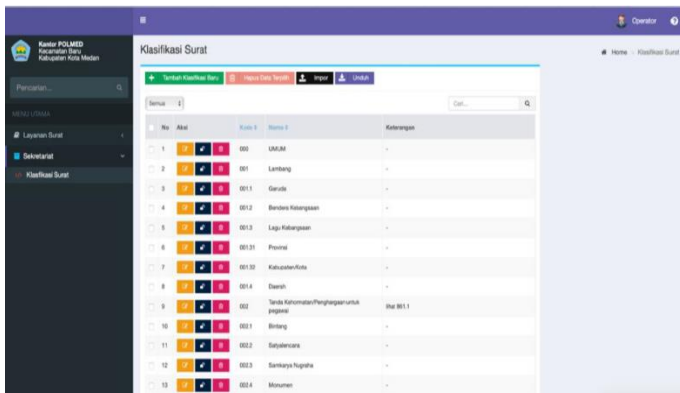


Figure 9. Letter Classification Page

The letter classification menu is the types of letters. This is taken based on all types of letters that exist.

4. Conclusion

From the results of research that has been carried out for approximately several months in the department of computer engineering and informatics, the research runs smoothly and can be completed to the maximum.

The conclusions of this research are as follows:

1. Efficiency and effectiveness, especially in letter disposition, as well as archiving that has been digitally stored.
2. Factors affecting the utilization of multimedia technology in the development of web-based archives and correspondence applications are unstable internet network constraints. The rest of the application can run well because the parties involved in making or signing letters have been resolved because they can be accessed anywhere and anytime.

The application that was created while still being tested in the research. If there are shortcomings in the system built, they will be included in the development of the system later.

The next stage of application development can be connected to the department website so that it is not separate and runs alone. Besides that it can make it easier to remember the links used.

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