INCOMING AND OUTGOING LETTER SERVICE FOR THE ACADEMIC SECTION OF LAMBUNG MANGKURAT UNIVERSITY

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ABSTRAK

Letter services in the academic section of Lambung Mangkurat University include students and alumni. The manual correspondence system, i.e. the proposer of letters must come directly to the Academic Section, becomes an obstacle for students and alumni who are out of town. From these obstacles, the solution is in the form of building a mailing service information system in the website-based academic section that can assist in the service of the letter. The analytical method used is the PIECES method, which is the analytical method as the basis for obtaining more specific issues. The analysis is described by discussing UML to stakeholders. The design uses Laravel with MySQL MariaDB database. The website is designed with 10 tables with 3 user levels, namely proposer, coordinator, and leader. Testing this system using Black Box with 49 test scenarios. The results of the design of the academic section of the correspondence website can be built. Blackbox testing gives 100% results according to all functions on the academic letter service website.

***Keywords**: Academic, Blackbox, Letter, UML, Website.*

I. INTRODUCTION

The Academic section of Lambung Mangkurat University has the task of carrying out services in the academic field which functions to carry out services and evaluation of education, research and community service, carry out student registration services and academic statistics alumni [1]. In the implementation of academic services there are several letter services, namely:

1. PIN request letter service
2. Letter of Curriculum Decree issuance service
3. Letter of Decree issuance service
4. Letter of introduction issuance service
5. Letter of KRS/KHS (student study plan / study result) Revision service
6. Letter of reference for Certificate writing error service

The letter service is useful for both students and alumni. As for the system that is currently running at the Academic Section of Lambung Mangkurat University, it is manual, i.e. letter proposers must come directly to the Academic Section to submit a letter, so students or alumni who are outside the city experience problems if they want to submit a letter to the Academic Section. The management of letters in the academic section has not been integrated so that the letter submission process has problems. In addition, we can know that the situation in early 2020 in Indonesia and several other countries was attacked by the Covid-19 pandemic which made face-to-face restrictions imposed, this could make it difficult to submit letters issuance to the Academic Section.

From the problems stated above, a solution to overcome this problem was obtained, namely by building a website for the Mailing Service Information System at the Academic Section of Lambung Mangkurat University. The results of this study resulted in a mailing service system that could facilitate students, alumni and the academic department in processing application letters. In addition, incoming and outgoing mail data can be controlled and stored properly.

II. METHODOLOGY

The object of research in this research is the process of submitting a letter in the academic section of ULM which is carried out by students and the ULM faculty. In the process of submitting a letter there is a system that is running in this academic section. The correspondence system is a system that accommodates students or faculties who want to take care of correspondence, which usually can be submitted in the academic section. The parties who play a role in this system are the academic staffs.

The process of submitting a letter proceeds according to a predetermined flow. The flow that has been determined can be seen as follows:

The steps from the flow of Figure 1. are as follows:

1. Applicants come directly to the Academic section of Lambung Mangkurat University
2. Applicant submits a letter to the Academic section, according to the needs
3. The Academic Section informs the terms and conditions for submitting the letter that the proposer wants to submit.
4. Applicant completes the required files
5. Applicants submit files to the Academic
6. The Academic Section checks the completeness of the files
7. If the file is complete, the letter will be disposed of to the leadership, and if not, the Academic section will contact the applicant concerned.
8. The letter is distributed to the leadership.
9. If approved by the leadership, the letter will be processed and if not, the letter will be returned to the proposer.
10. Once approved and processed the letter will be given back to the proposer.
11. Done.

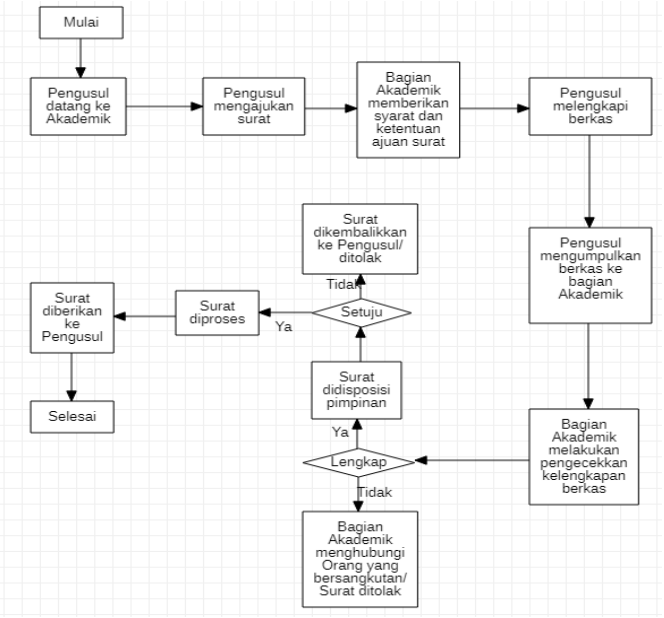

Figure. 1. Flow of Submission of Letters in the Academic Section

System weakness analysis is carried out to overcome problems or weaknesses of the existing and ongoing system. In conducting the analysis of system weaknesses, the PIECES [2]–[4] analysis method is used. Analysis with this method is used to obtain the main points of the problem specifically. With this method, it is hoped that several problems can be obtained which can then be determined the main problem. By using this method there are several aspects to be analyzed, namely performance, information, economy, security, efficiency and service. Based on the results of the field analysis, the results of the analysis of the weaknesses of the existing system in the academic sub-section of the Lambung Mangkurat University rectorate along with the solutions offered, are shown in the following table I.

TABLE I
SYSTEM WEAKNESS ANALYSIS RESULTS

No	Aspect	Problems With Existing Systems	Solution
1	*Performance*	The process of submitting letters is still done manually, namely by coming directly to the academic field of the rectorate by bringing the necessary files and supporting files.	It is necessary to create an information system that makes it easier for users to submit letters, web-based that can be accessed with a web browser, so that the submission process can be done anywhere and anytime.
2	*Information*	Information about the files needed for letter submission is often not fully reached by the applicant. This results in the applicant going back and forth to submit a letter because the file submitted is incomplete or there is an error in file collection	By creating an information system that can display information regarding the necessary administrative requirements.
3.	*Economy*	Every time they send a letter of application, the academic staff provides more and more forms for several types of letters and files given by the applicant as well as from paper media so that the more users the more paper is wasted, automatically a lot of money is spent both by the academic staff and the applicant.	By using a web-based information system, the academic staff can minimize budget expenditures for the procurement of forms.
4.	*Control*	Considering that we are currently still in a pandemic period so that staff are enforced to work from home (wfh) with a rolling system, this results in if the staff who handles wfh correspondence happens to be unable to serve mailing problems. So this has an impact on applicants who cannot submit letters.	By creating an information system that can simplify the process of submitting a mailing system.
5.	*Efficiency*	The process of searching for outgoing and unprocessed letters sometimes takes a long time because the search process is done manually, this causes the letter recording process to be slow.	By creating an information system that can make it easier for staff to find out the number of letter records.
6.	*Service*	The submission system service can only be done during working hours, namely from 08.00 AM - 16.00 PM.	By creating an information system that can be accessed at any time.

III. SYSTEM DESIGN

The system design uses the Unified Modeling Language (UML) [5], [6] for the visualization of the design model and documentation of the artifacts of the system. The application used in making UML is draw.io by making use case models [7]–[9] diagrams and Activity Diagrams [10]–[13].

A. Use Case Diagram Design

Use case diagrams explain the interactions between actors and the information system created. Which in the design of this system consists of 3 actors, namely the proposer, coordinator and leader. The coordinator is an employee of the rectorate academic staff. The leader is the Chancellor of Lambung Mangkurat University, the proposer is the proposer. In this system, one actor can have more than 1 activity that can be performed. The use case diagram of the mail system design can be seen in Fig. 2. following.

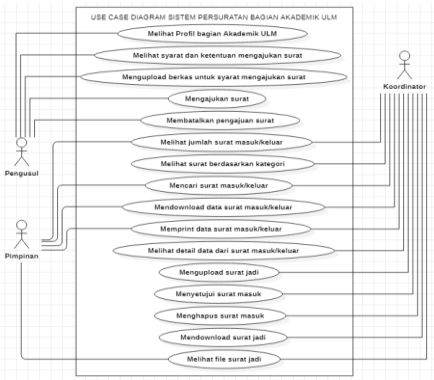

Figure. 2. Use Case of ULM Academic Letter Issuance System Design

B. Activity Diagram Design

Activity Diagram is a technique in describing logic, business processes and workflows in many cases. Which in this diagram is usually described in a more complex way the existing business activities. Which in this case the Activity Diagram describes the workflow of the proposed system. Activity Diagram consists of macro and micro Activity Diagrams. Activity Diagram macro describes the entire workflow, while Activity Diagram micro describes the description of each use case that has been created. The following is an Activity Diagram of the proposed macro in this system.

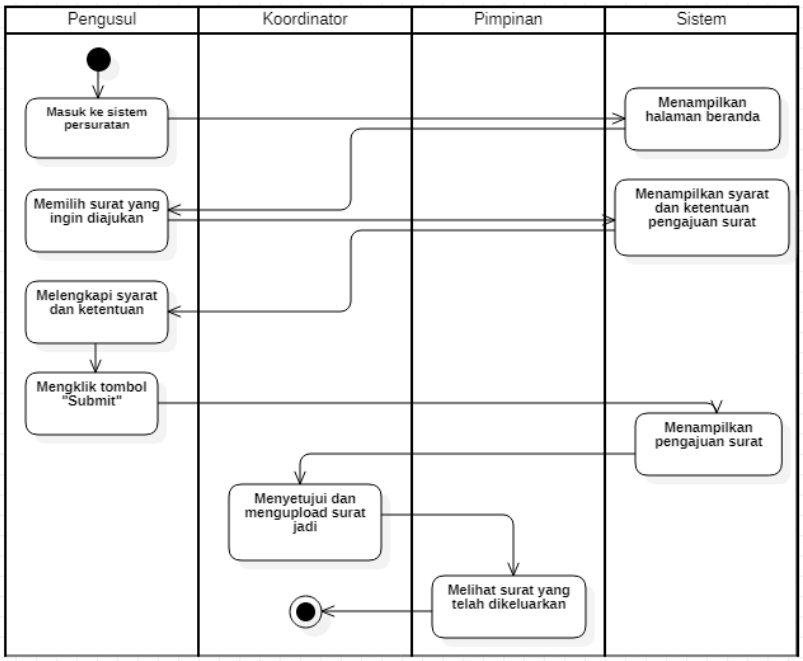

Figure. 3. Macro Activity Diagram

C. Database Design

The database is designed to function properly to accommodate employee data, leave requests, and promotions so that they can be presented in the information system. The database used is MySQL MariaDB. Database design includes designing entities and their attributes, designing data type formats and field lengths, designing Conceptual Data Model (CDM) diagrams and Physical Data Model (PDM). The tool for drawing CDM and PDM is Power Designer. The Conceptual Data Model design of proposed system is shown in Fig. 4.

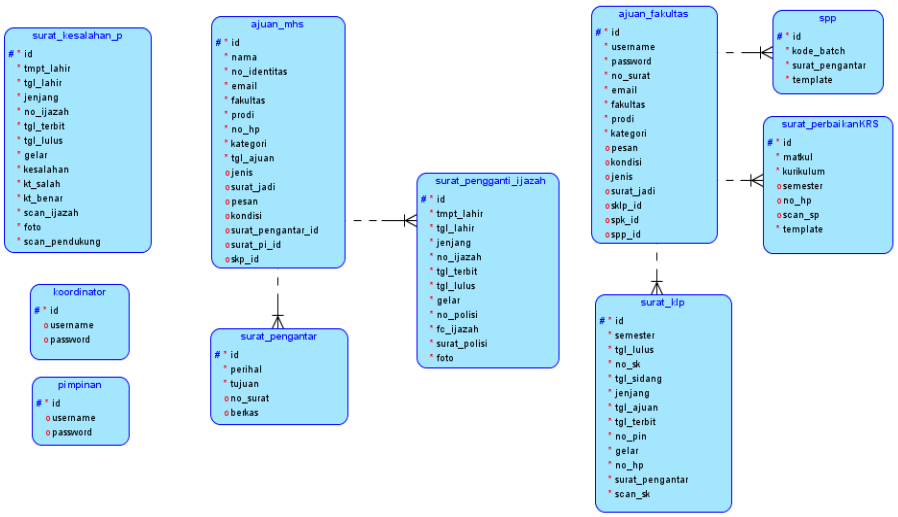

Figure. 4. Conceptual Data Model Design

1) Conceptual Data Model Design

CDM is a process to build a conceptual data model design that is used in processing information systems that are made independently. In the CDM mailing information system is built to explain how the structure of the table and its relationship with other tables. The following is the entity identification table. Database implementation using MySQL MariaDB [14]–[16] with code implementation using PHP with Laravel framework [17]–[20].

TABLE II
ENTITY IDENTIFICATION

No	Entity Name	Description
1	ajuan_mhs	Is an entity that contains data from the applicant consisting of students.
2	ajuan_fakultas	Is an entity that contains data from the applicant consisting of the faculty.
3	surat_permohonan_pin	Is an entity that contains data for submitting a pin request letter, both in terms of the completeness of the files and the information needed to manage the pin request letter.
4	surat_kesalahan_p	Is an entity that contains data for submitting a letter of improvement in writing a diploma, both the completeness of the files and the information needed to manage a letter of improvement in writing a diploma.
5	surat_perbaikanKRS	Is an entity that contains data for submitting an application for KRS/KHS repair, both the completeness of the files and the information needed to manage the application for KRS/KHS repair.
6	surat_klp	Is an entity that contains data for submitting a graduation application letter outside the period, both the completeness of the files and the information needed to manage the graduation application letter outside the period.
7	surat_pengantar	Is an entity that contains data for submitting a cover letter, both the completeness of the files and the information needed to manage the cover letter.
8	surat_pengganti_ijazah	Is an entity that contains data for submitting an application for a replacement diploma, both the completeness of the files and the information needed to manage the letter of replacement for a diploma.
9	koordinator	It is an entity that contains top management data consisting of a coordinator.
10	pimpinan	Is an entity that contains top management data consisting of chair leader.

IV. RESULT AND DISCUSSION

A. *Result*

The implementation of the website has been successfully designed, the initial login view can be seen in Fig 5.

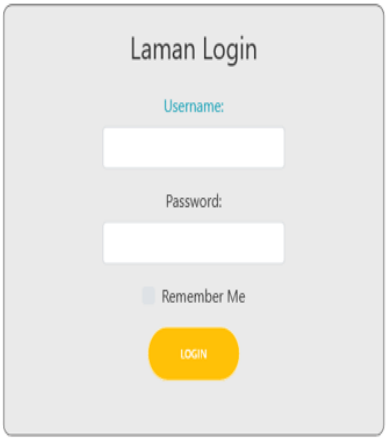

Figure. 5. Login Page

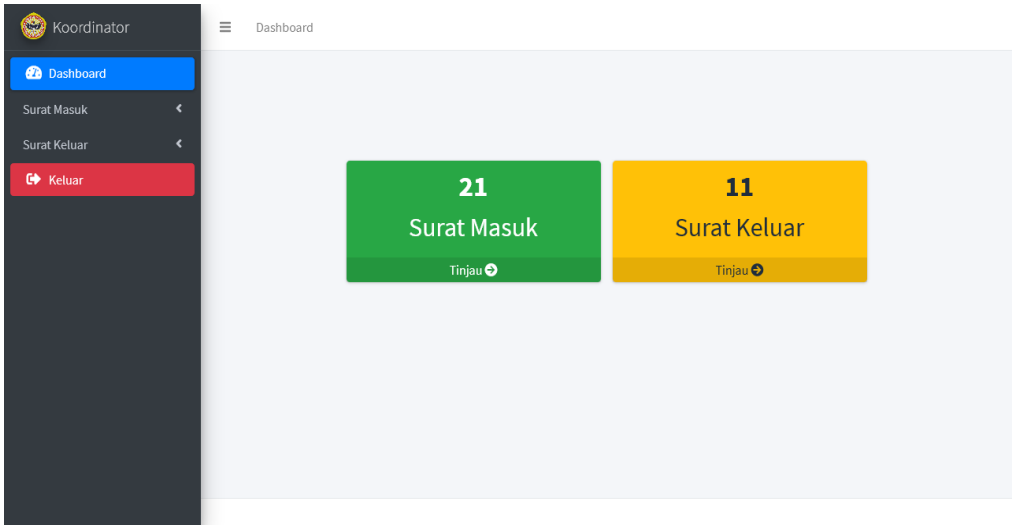

Figure. 6. Summary Page

This system provides services to students and alumni in the process of incoming and outgoing letters. The display of the recapitulation page can be seen in Fig. 6.

B. Discussion

The system is well developed and the system can facilitate students and alumni. In addition to students and alumni, this system makes it easier for coordinators of incoming and outgoing mail services as well as leaders in managing letters. This system is tested with Black Box for the suitability of the menu on the page by the tester. The test results of the 49 test scenarios matched 100% successfully.

V. CONCLUSION

The system that has been built makes it easier for correspondence services at the Academic Section of Lambung Mangkurat University. The system is designed with the old system weakness analysis stage using the PIECES method. The next stage is system requirements analysis, as well as system feasibility analysis, the design of which begins with the process using the UML design method. After that, database design and system interface design are carried out. Implementation of the system using the Laravel Framework with the PHP 8.03 programming language and in the database work using the MySQL MariaDB database. With this system, it is able to assist the Academic Section in archiving Correspondence Service data in the Academic Section that has been proposed through this system because this system already uses a database. System testing is carried out using the Black Box Testing method which aims to test the suitability and function of the system that has been designed.

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