Monitoring Information System of Progress Reporting Research and Community Dedication (P3M) at P3M Units of Jember State Polytechnic (POLIJE)

Ely Mulyadi[1] , Didit Rahmat Hartadi[1], Gede Wiryawan[1], Khafidurrohman Agustianto[1], Prawidya Destarianto[1]

[1]Department of Information Technology, Politeknik Negeri Jember, 164 Mastrip Street, Jember, 68124, Indonesia

Email : ElyMulyadi@polije.ac.id

Abstract. The Research and Community Service Unit (P3M) is one of the units in the Jember State Polytechnic (POLIJE) as the manager of research and community service activities. One of the problems in the P3M unit is the process of collecting research and service report documents which are still carried out conventionally with manual habbit, so that the can't monitor the progress of lecturers' reports with frequent delays in submitting reports. As a solution, it is necessary to implementating from SIMILITABMAS document reference to make a system that is adapted as internally in unit to the Monitoring Information System for Research Progress and Community Service Reports built on an online website as a tracer in real time in report collection activities with the aim. Increase in lecturer productivity to be more disciplined and to create integration, transparency and supervision between lecturers and officers of the P3M unit.

Keywords : P3M, Information System, Monitoring, Researches, Services Community

1. Introduction

The Research and Community Dedication Unit (P3M) is one of the units at the Jember State Polytechnic (POLIJE) as the manager of research and community dedication activities. P3M has a vision to become an Institute for Research and Community Dedication with international quality standards in supporting the vision of the leading Jember State Polytechnic in Asia in 2025.

P3M has a very important role in the tri dharma of higher education, namely the implementation of research and community dedication for educators and education circles. Every research and dedication carried out by educators and education personnel must always be reported and received approval from the P3M unit, either independently financed or financed by the government through the Jember State Polytechnic (Polije) and Dirjen DIKTI [1].

Researchers and servants who want to be funded by the government are obliged to submit a proposal according to the funding scheme. Of all proposals submitted, several reviewers will select their administration and their novelty, so that later proposals will pass and do not pass.

Applicants who pass will receive funding through the P3M unit for research and dedication, and are obliged to be accountable for the correct use of these funds. The P3M unit will provide the funds in

stages according to the percentage of the progress and final results of research and dedication, namely the first stage is 70% and the second stage is 30%. 70% disbursement of funds is based on 70% of progress activities and 30% is disbursement in accordance with the final results of research and community dedication.

In order to have an orderly administration in disbursing research and dedication funds, it is necessary to monitor the reporting of the progress of the research and dedication results, both the results of research and dedication as well as the reporting of the use of funds. So far, P3M still uses a manual model in receiving progress reports on the results of research and community dedication. This has caused many problems, including the place where the archives are full, the need to destroy old archives, the search for old archives is difficult, there is no recapitulation of obedient and disobedient researchers or servants, and review of progress reports must be carried out at the P3M unit. Progress reports have urgency in the research and dedication process, especially for proposals that are approved using grant funding from institutions so that activities and budgets must be transparent so that they are easily monitored by P3M unit staffs

2. Methodology

The research concept is applied of the waterfall model which are software development method with systematic and sequential as shown in Figure 1.
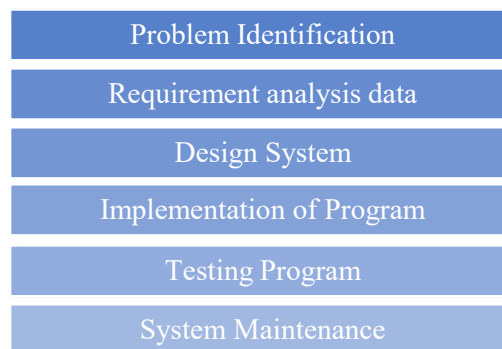
| Problem Identification |
| Requirement analysis data |
| Design System |
| Implementation of Program |
| Testing Program |
| System Maintenance |

Figure 1. Methodology.

2.1. Problem Identification

The first stage is to identify the problem is not monitored the progress reports of research and dedication by P3M unit staff where there are often delays in collecting progress reports by the lecturers.

2.2. Requirement analysis data

Analysis of data requirements is done by looking for literature to be used as input and output in the system by analyzing the input variables listed on the progress report menu on SIMLITABMAS by Kemenristekdikti. This Progress Report Monitoring Information System is used to assist monitoring activities on progress reporting and the final report on the results of research and community dedication in order to improve the performance of the P3M Unit. In this system all progress reporting activities of research and dedication activities will be managed digitally, so that all documents can be accessed anytime and anywhere by all stakeholders.

2.3. Design System

The design of the progress report monitoring information system design uses UML (Unified Modeling Language) diagrams using use case diagrams and activity diagrams. According to [2], before starting the development phase, first the system modeling is carried out using the Unified Modeling Language (UML). The description of the two diagrams as follows

2.3.1. Use Case Diagram

Use case diagrams are made to find out how system after the computerized process [3]. The use case description can be seen in the following figure, where this use case diagram shows a functional description of the system, what actors can do to the system as shown in Figure 2.
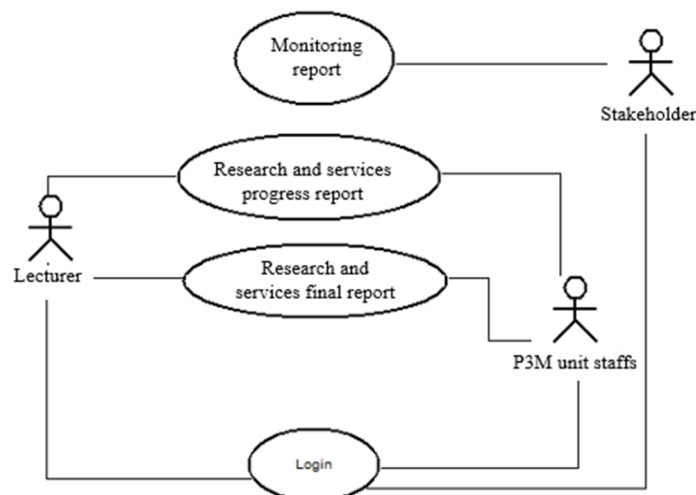

Figure 2. Use Case Diagram.

2.3.2. Acitivy Diagram

Activity Diagram in this study describes the activities of the process that has been designed in the previous use case.

- Login Acvitity Diagram

    In the Login Activity diagram starting from the user opening the website url, the login form page will appear. Then the user enters the username and password, in this case the username will be set as the NIP number as shown in Figure 3.
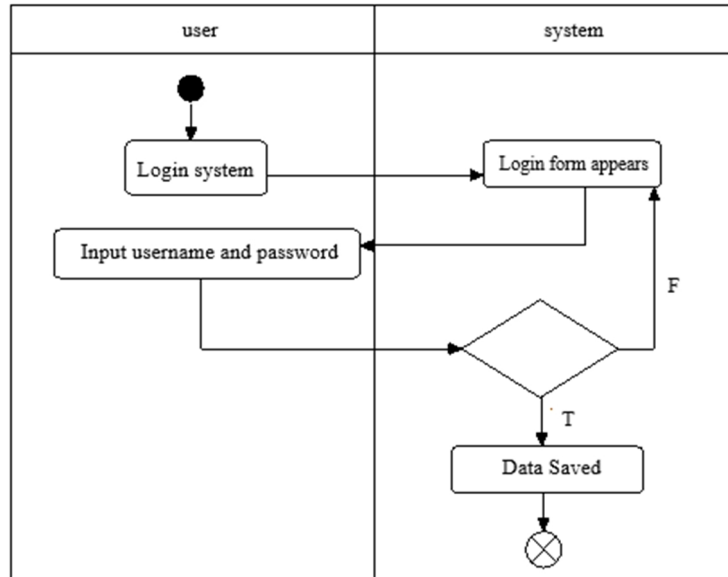
Figure 3. Login Activity Diagram

- Reports Progress activity diagram

    In the Activity diagram of the research and dedication progress report starting from the lecturer selecting the progress report menu then selecting the type of report whether research or community dedication then the system will display the data input form page for the progress report. Next, the lecturer uploads the progress report file and then saves the data. If a mandatory output is required, the system will display a mandatory output input form to be filled in. Then the officer will get realtime notifications for each progress report that has been entered for verification as shown in Figure 4.
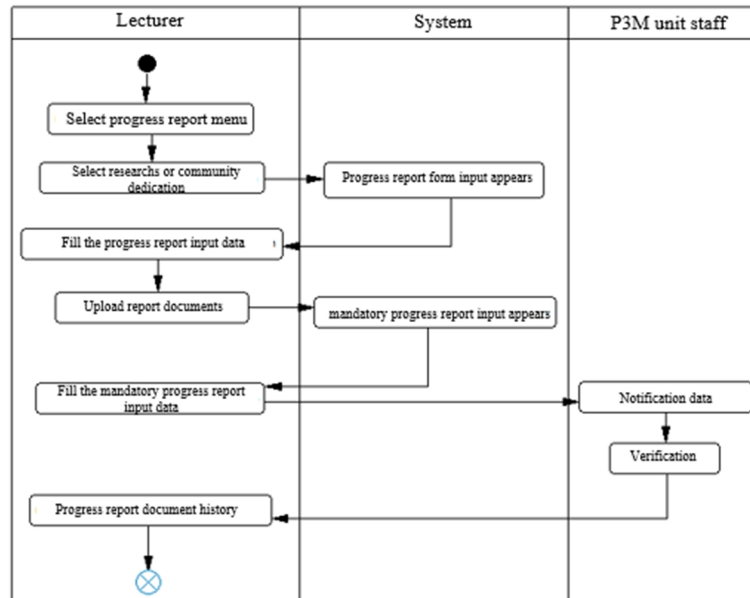
Figure 4. Report Progress Activity Diagram.

- Monitoring reports activity diagram
  In the Activity diagram, the report starts from the leader choosing the report menu then selecting the type of report, year, the leader can see the details of each report by selecting one of the titles as shown in Figure 5.
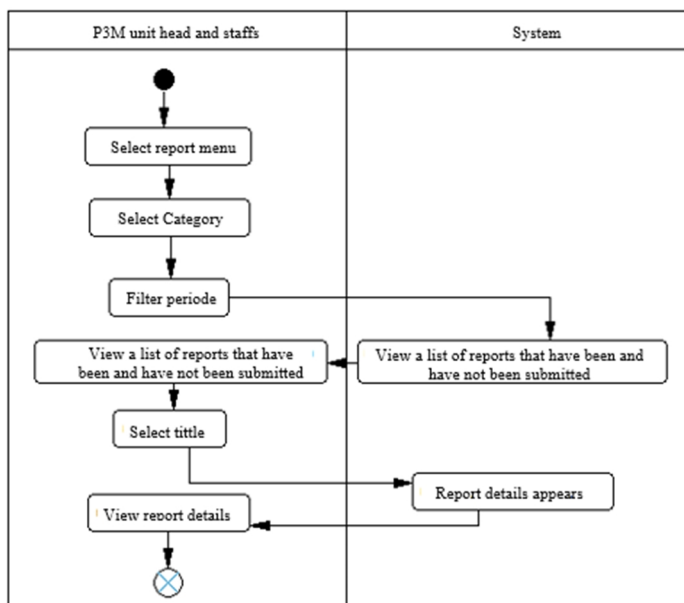

Figure 5. Monitoring Report Activity Diagram.

2.4. Implementation programs

Monitoring information system for progress reports and final reports of research and community dedication activities that have been designed, then the next stage is the implementation of the system by carrying out the program writing process.

2.5. Testing Program

System testing is a critical element of software quality assurance and represents a key study of specification, design and coding. The system testing model is by doing black-box testing of all functions in the application. Black-box testing is an application or software test that focuses on the functional requirements of the software. Besides that, there are also documentation activities of the product and the most important thing is the activity to release a product [4]. The importance of software testing that is able to be carried out with few resources but is able to produce good quality software [5]. Whether the program runs or not is also assessed by means of testing, so that the application runs smoothly as desired [6].

2.6. Maintenance System

Maintenance is the final stage, where the system can already be operated by the P3M unit and can be maintained until the system development in the next period

3. Result and Discussion

The flow of the hierarchical process of uploading progress reports and final reports according to the results of extracting needs with the P3M unit is that lecturers can input progress report documents and final reports on the P3M unit where the documents are stored digitally on a cloud server database whose data is processed so that it provides output in the form of reports that can be used as a consideration for decisions regarding the results of moniotoring by the P3M unit leaders shown in the following figure as shown in Figure 6:

Figure 6. Flow Documents Process.

Based on the user's point of view, the following results of the real system display and are explained in each of them as follows:

- Login Page

  Login is the initial display when the information system is opened where user access is divided into two categories, is P3M unit staff as an administrators and lecturers. The username and password that users will use are default and customized through the system as shown in Figure 7.
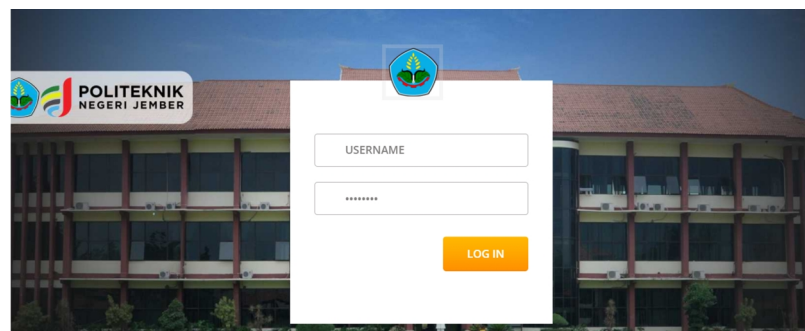

Figure 7. Login Page.

- Dashboard

  The dashboard page is the initial display after the user logs into the system, where the dashboard displays information about the schedule for uploading progress reports and final reports as shown in Figure 8.
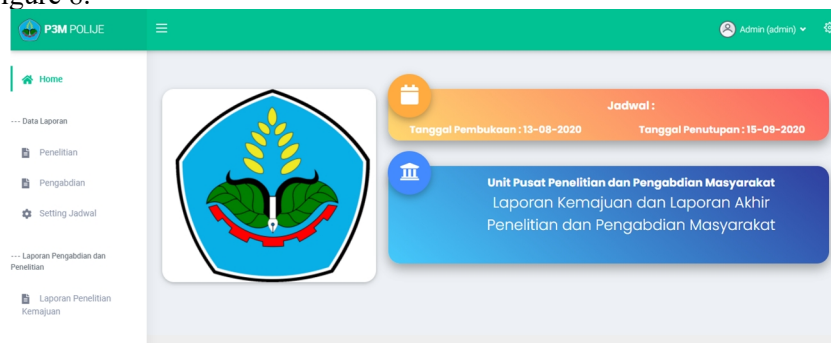
Figure 8. Dashboard.

- Report schedule upload setting

  The schedule setting menu is a feature for administrators to provide vulnerable periods to the schedule for uploading progress reports and final reports made by lecturers. This periodization feature is intended to easily classify lecturers' report upload delays as shown in Figure 9.

Figure 9. Schedule Setting.

- Monitoring submitted report

  One of the important features of the information system is the output in the form of a report where the contents of the resulting report are the classification of the delay in collecting the progress report uploads and the final report from a predetermined period as shown in Figure 10.

Figure 10. Monitoring submitted report.

- Upload the research progress report or final report document

  The upload feature of progress reports and final reports on research and community dedication is carried out using login access rights as a lecturer with a specified username and password. The procedure for uploading reporting documents is carried out by the lecturer based on the year of the research or community dedication is being carried out. On the research progress report list page, a selection of the implementation year will appear then add new data to start data filling and the document upload process and fill in mandatory outputs if available as shown in Figure 11 and 12.
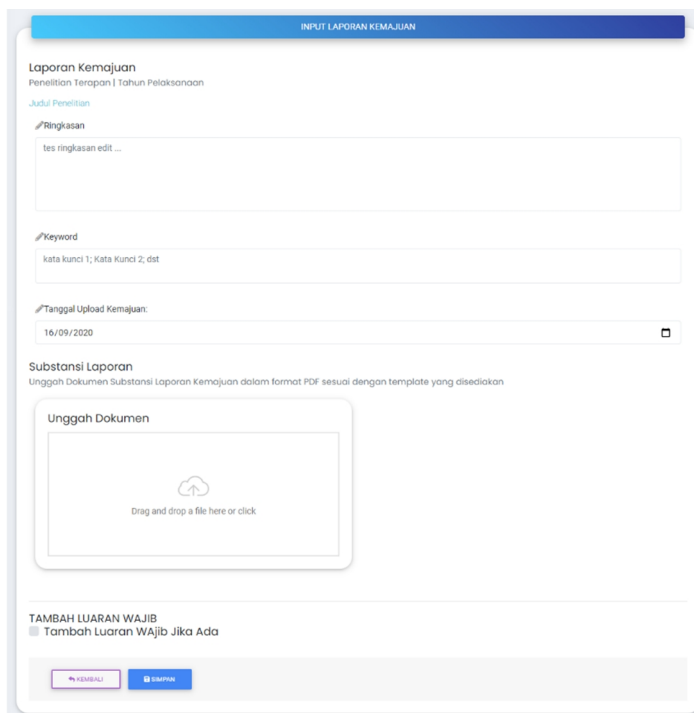

Figure 11. List data report.

Figure 12. Form input data report.

4. Conclusion

This research is the application of the Monitoring Information System for the Progress Report and the Final Report on Research and Community Dedication Activities (P3M) at the Jember State Polytechnic is based on the website. The development of a progress report monitoring information system can be used as a media tracer for the progress reporting activities of researchers and dedication dedication to create transparency and facilitate monitoring by officers and leaders of the P3M unit..

Acknowledgment

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