Room Loan Information System at the National University Web-Based

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A R T I C L E I N F O	A B S T R A C T
	The National University conducts daily lecture activities. In addition, the National University has several activities outside of lectures that use space in the campus building so that the activities can run well. In borrowing a room, students still have to ask the schedule directly by visiting the room provider. Which still requires quite a long time. Room lending system is a system that can overcome problems for room lending at the National University. Submitting a loan can be done online. Every loan will be saved by the system. With this application it is hoped that it can help to make it easier to use to make room loans more easily and efficiently.

1. Introduction

Technology is a media that can be used more easily to process and can overcome a problem [1]. With the development of information and communication technology, the spread of data and information is very fast and easy. With the information system that can be used to collect data, the process becomes information and distributes it to users [2]. National University is a college in the field of education almost every day carrying out lecture activities, the National University also supports an activity carried out outside of the lecture. One example is seminars, deliberations, meeting meetings, seminars and others.

The lack of information about the room availability schedule makes it difficult to borrow space [3]. In activities carried out outside the recovery also need to use the room so that it can run well to borrow the room. Scheduling space borrowing is still done manually [4]. The process of borrowing space still requires a very long time and the data still often overlaps. To overcome these problems, a room lending information system will be carried out which includes data recording, room lending and making the report [5]. With the web-based room lending system, it can easily borrow space [6].

With the rapid development of technology, it can help in overcoming a problem that was originally done manually [7].

2. Research methods

2.1 Waterfall method

The warterfall method is one of the systems development cycle models which includes several stages. Starting from system analysis, system design, implementation, system evaluation, and system usage. with no support for complete software produced [8]. In the picture below is the stage of the waterfall method.
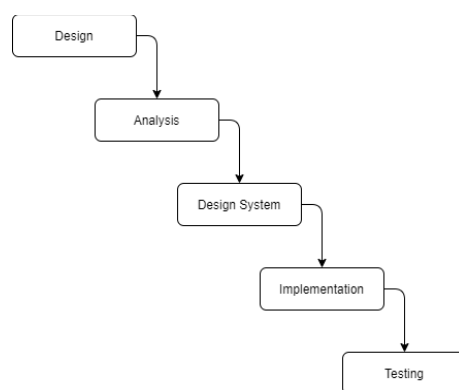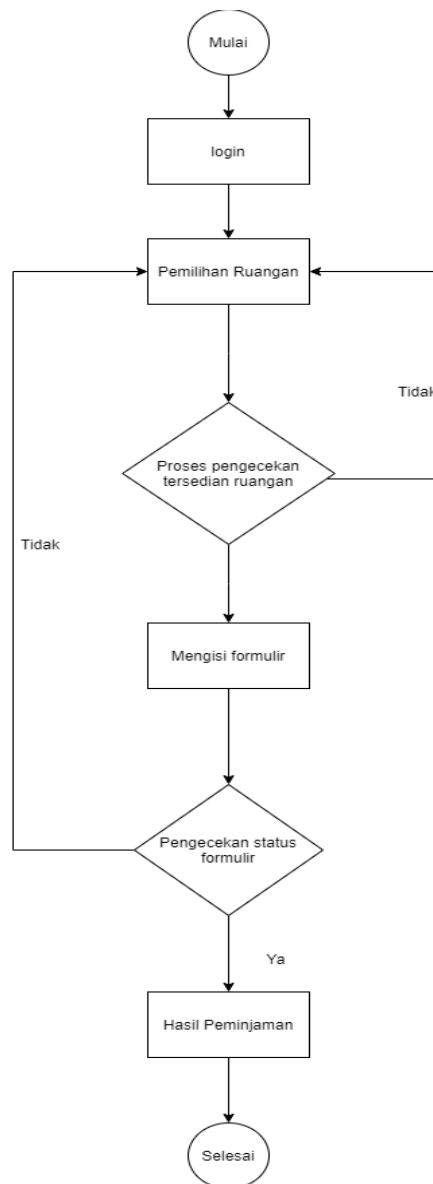
Fig 1. Waterfall method

a.   Design
    At this stage design for the needs in making the system
b.   Analysis
    At this stage the analysis is carried out to analyze the need for a related system of room lending at the National University.
c.   System planning
    In this stage the researcher will make a good system design from the room loan modeling.
d.   Imepelementasi
    At this stage is the stage where the program is implemented in the field (testing) starting from the installation of the system that will be used later.
e.   Testing
    At this stage carried out from the previous stage if there are bugs or system errors to make system improvements.

Fig 2. System flow

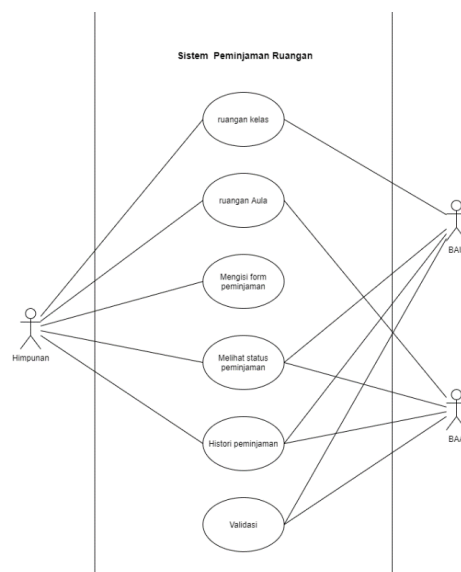Creating a research flow in order to make it easier to explain the flow of the system.

2.2 Need analysis

Needs analysis is an elaboration of an information system to evaluate problems and needs so that improvements can be proposed. After analyzing the room loan to carry out activities beyond recovery at the National University, which is still done manually by submitting a letter and asking for the availability of the room, we need a system to make it easier to make loans that can see the availability of the room and borrow online.

2.1. System planning

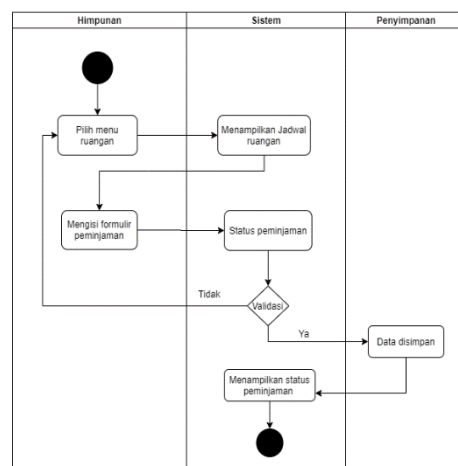Based on the results of the needs analysis, this research will design a web-based application for room lending

A.   Use Case

Fig 3. Use Case Diagrams

Description of the picture as follows:

a) Himpunan, BAA, BAU have an account to login
b) The association can see the availability of the room, fill out the loan form, see the status of the loan, and the history of the loan.
c) BAU can manage the hall room, see the status of the hall room lending, validate, and lend history
d) BAA can manage classrooms, see the status of class room borrowing, validate, and borrow history

B.   Activity Diagram

Fig 4. Activity Loan Diagram

The image skills are as follows:

From the activity diagram above, the set chooses the room menu after which the system displays the room schedule then fills out the loan form, then the loan status system and waits for the loan status to be accepted or not, if it does not re-select the room, if approved, the loan data will be saved to the storage , then the system will display the loan status.
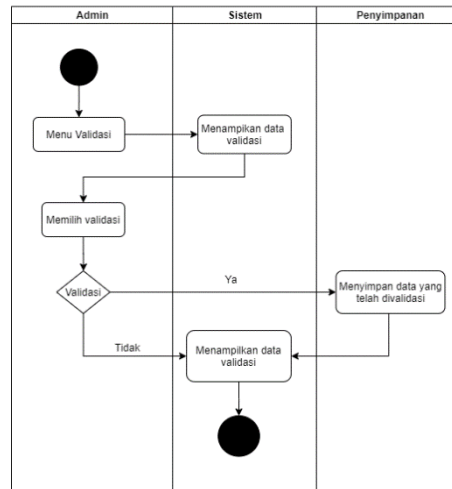
Fig 5. Validation Activity Diagram

Description of the picture as follows:

From the activity diagram flow above, BAU and BAA enter the validation menu, then the system displays the validation data, then selects what will be validated if it is not received the system will display validation data if the validation is received then the data will be saved to storage then the system will display the validated data .

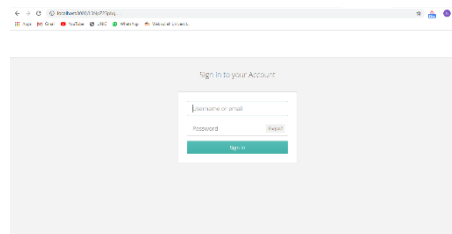## 3. Results and Discussion

3.1. Results

Fig 6. Login Display

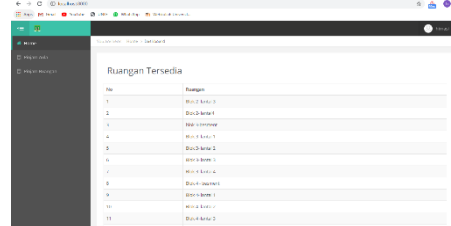In the display above is a page view to login to enter the room loan menu.

Fig 7. Display room availability

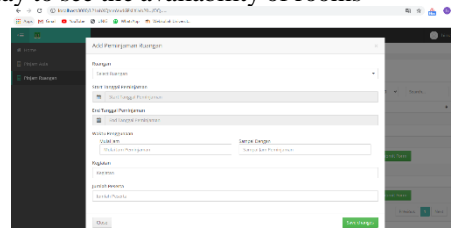In the display above is a display to see the availability of rooms

Fig 8. Display room loan form

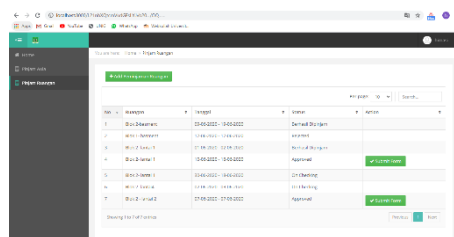In the above display, it is through filling out a form to make a room loan

Fig 9. Room Loan Status Display

In the display above to see the class room loan status.

3.2. Discussion

So that the system can run well, testing is done. The system has been carried out can be seen in table 1. Below

Table 1
System Testing

Testing scenario	Expected results	Results
Login	The system will process to the main menu	corresponding
Room menu	The system will display room availability data	corresponding
Hall menu	The system will display the hall menu	corresponding
Bottom add hall lending	The system displays the borrowed Hall menu	corresponding
Room borrower's menu	The system displays a room loan menu	corresponding
Bottom add room loan	the system will display a room loan form	corresponding
Loan status	The system will display the status of the loan status that has been processed by the admin	corresponding
Admin login	The system will process the login to the main menu	Corresponding
Manage room / hall menu	The system displays room data to be validated	Corresponding
Logout	The system will process logout to exit the loan account	Corresponding

4. Conclusion

With the existence of a room lending system at a national university, especially for community gatherings that carry out activities outside of lectures, it is easier to make room loans. The conclusion that can be drawn from the research is to make it easier to borrow space so that it is not manually. The author's expectations with the existence of this system, as follows:

a. The association can more easily and efficiently borrow space to carry out activities outside of the lecture.
b. The set can see the availability of the room.
c. BAU / BAA manage room reports more easily.

5. Reference

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