



Web-Based Room Loan Management Services Using Web Based RAD Method

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ABSTRACT

At the moment, the information service System in every campus is very important, and students are also currently enthusiastic to conduct activities on campus by utilizing the facilities provided by the campus, therefore it is necessary to do to design the information system of lending management services through the website, because the current System is still manual, which is the user of the room in the process is still done by meeting the administrator. This requires a relatively long process that makes it difficult for users and administrators. Then in the data logging of the room that has not been integrated in a system will complicate the administrator if you want to give access to the user room. The method for designing the application uses the RAD (Rapid Application Development) method. RAD is a model of software development process that belongs to the incremental technique (multilevel), the RAD method used is iterative (recurring) in developing the system, in the creation of the RAD model that works, in the development stage set the need (requirement). The stages of creating this Web application utilize PHP and Mysql. From the results of this research user and user can easily manage the management of room lending.

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1. Introduction

At each university today, they often carry out campus activities both in the campus yard and in the room by utilizing existing facilities. With so many activities it is necessary to increase services for students to be better with the use of information system technology.

National University is the oldest private university in Jakarta and the second oldest in Indonesia. It was founded on October 15, 1949 at the initiative of leading figures who gathered in the Association for the Advancement of Science and Culture (PMIK). Until now the National University is still standing tall, and continues to issue Student alumni who are equally fair in the development of Technology, therefore in every activity carried out on campus and utilizing existing facilities and infrastructure, it is necessary to improve Student services to be better by means of utilizing information system technology.

One of the services provided by the National University Management is to provide facilities and infrastructure services to students in the form of borrowing or room licensing to support all activities at the National University, therefore requesting permission to borrow space use is very important, with a web-based system can facilitate users and administrators in managing the room.

2. Literature review

2.1. Rapid Application Development (RAD)

RAD is the process of software development which in its development is relatively short ie the system can be completed within 30-90 days where in system development, the model is the one that works. RAD itself has three stages among which are:



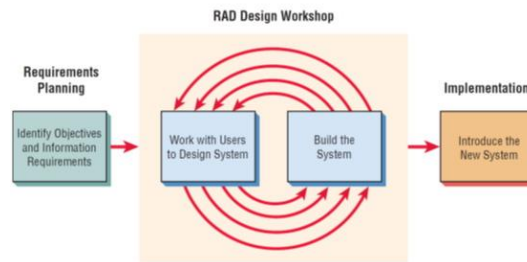


Fig 1. Stages of the RAD Method

a. Requirements Planning

Users discuss with Analyst to determine the needs of the system and the need to achieve goals.

b. System Design

Analysts provide a design system that has been designed, and make revisions if there is a mismatch with the system design.

c. Implementation (Implementation)

Design that has been approved by the user is given to the programmer and the programmer develops the design. But before the system was published to an institution, and carried out the stages for testing the system.

2.2. PHP

PHP (Hypertext Preprocessor) is a "programming language that is processed on a computer server. PHP programming is Open Source (free). In creating a website you can also use HTML (static website) programming, the content and pages are consistent. Meanwhile, by making a website using PHP called a dynamic website where there is data stored in the database, and also every page can change according to the actions of the user.

2.3. MySql

MySql is an "open database management system". Its use is to store data and manipulate the data needed for example, adding, editing and deleting data.

3. Research Methods

RAD is a method of improving software that is relatively short, with the aim of the system can provide or meet the expectations of its users.

RAD has 3 stages including:

a. Requirements

Users discuss with analysts to determine the needs of the system. With observation, interviews, and the preparation of actors.

b. System Design

The design process is to design a system that refers to the documentation of user needs.

c. Implementation

Implementation is the level of the programmer to develop a design (program), and do the testing of the system. The software used is Sublime Text.

4. System Design

A. Requirement Planing

System requirements for a room loan management service website at Universitas Nasionala, namely:

Table 1
User Needs

No	User Needs
1.	Students can see the home page
2.	Students can see the View Room Menu
3.	Students can see the available rooms and rooms that have been lent
4.	Students can apply for a room loan, by filling out the form provided.

Table 2.
Admin Requirement

No	Admin Requirements
1.	Admin is able to login
2.	Admins are able to manage room data
3.	Admin can see data on room loan requests
4.	Admin is able to give approval to the room loan request

B. System Design

The design system design used is Unified Modeling Language. UML is "a visual modeling pattern for object-based system programming tools". In designing the system, a Usecase Diagram is made, to give an overview of the processes and features of the website accessed by the user.

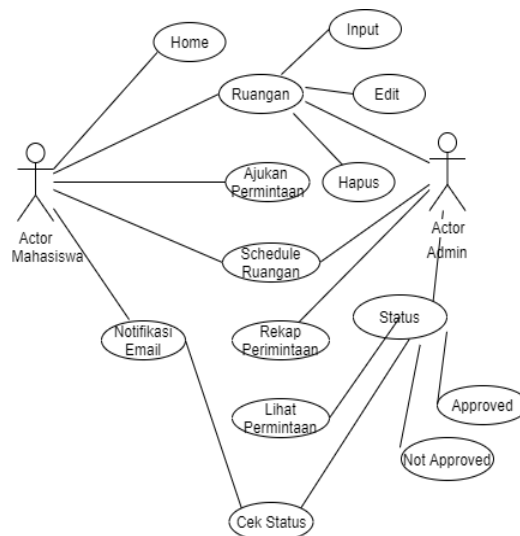


Fig 2. Usecase Diagram

In the Usecase Diagram there are two users namely admin and user (Student). Admin is able to access all menus contained on the website, manage the room from room input, approve room requests and delete rooms. As for users, users can only access the room view menu, room schedule and room requests.

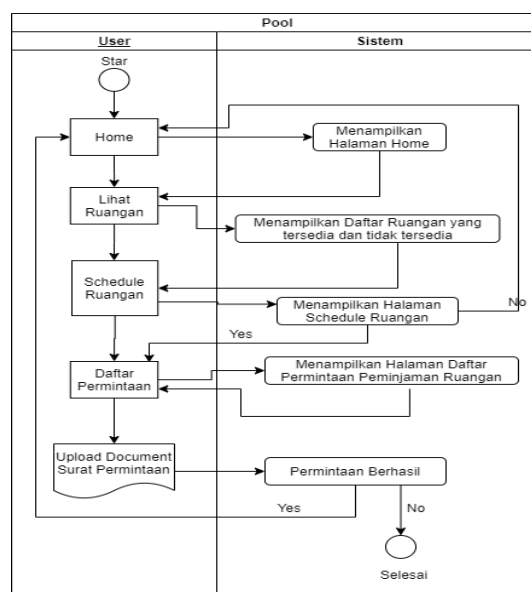


Fig 3. Activity Diagram

In the Usecase Activity Diagram describes the path of user procedures on the website. The flow starts from seeing the room, looking at the room schedule to the room loan request.

C. Implementation

a) User page

1) Home

On the main page for users there is information about the Photo Room in the National University.



Fig 4. User page

2) See room

On the user page on the room view menu there is information about the room name, description, and a picture of the room.

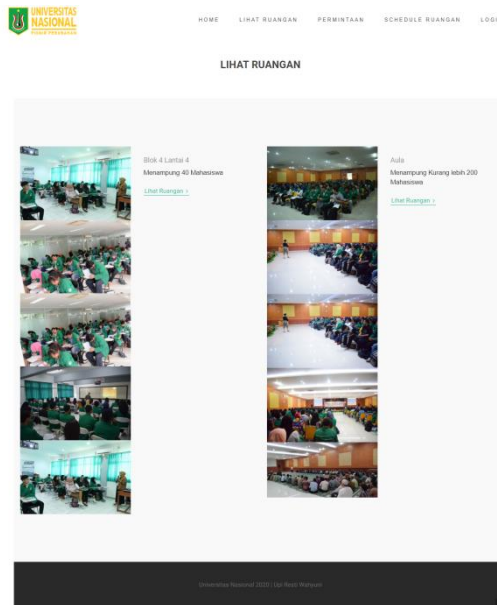


Fig 5. See room

3) Room request

This menu is for the user to submit a room loan request by filling out the form provided, then the user uploads the room loan statement.

Fig 6. Room Request Form

4) Room Schedule

Menu for users to see the room schedule that has been lent to students.

No	NIM	Jurusan	Nama	Email	Tanggal	Ruangan
1	12184675	Sistem Informasi	Rani Rumiati	upnecff@gmail.com	2020-05-14	Aula

Fig 7. Room Schedule

b) Admin page

1) Login

Admin page to access the Room Loan dashboard.

Fig 8. Admin Login page

2) Home

On the admin page there is information on the amount of data from the Room Request, Room Data, and Room Schedule.

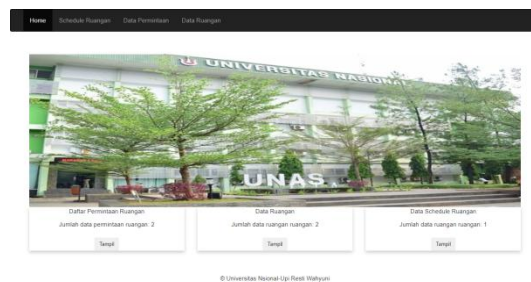
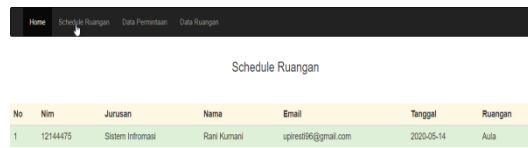


Fig 9. Dashboard Main Page

3) Room Schedule

Information on the room data, name, NIM, department and the date of room loan approval approved by the admin of the room loan request.

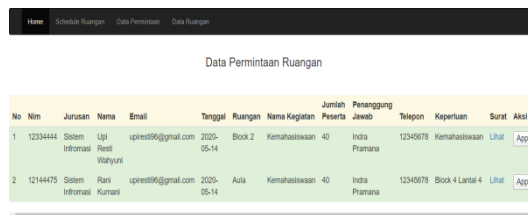


No	Nim	Jurusan	Nama	Email	Tanggal	Ruangan
1	12144475	Sistem Informasi	Rani Kumari	upiresti9@gmail.com	2020-05-14	Aula

Fig 10. Room Schedule

4) Request Data

This data information is from Users who have submitted Room requests by filling out Room Loan requests and also uploading a certificate. In this menu the admin gives approval (permission) to students / users to access the room. And students will receive approval from the admin through email notifications.

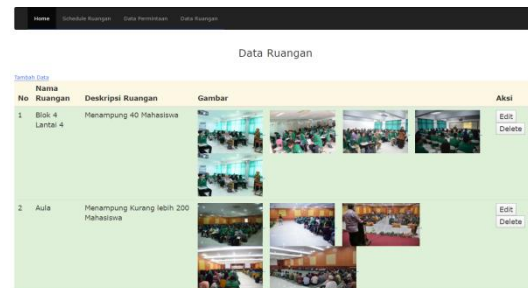


No	Nim	Jurusan	Nama	Email	Tanggal	Ruangan	Nama Kegiatan	Jumlah Peserta	Penanggung Jawab	Telepon	Kaperluan	Surat	Aksi
1	1233444	Sistem Informasi	Upi Resti Wahyuni	upiresti9@gmail.com	2020-05-14	Block 2	Kemahasiswaan	40	Indra Pratama	12345678	Kemahasiswaan	Lihat	Approve
2	12144475	Sistem Informasi	Rani Kumari	upiresti9@gmail.com	2020-05-14	Aula	Kemahasiswaan	40	Indra Pratama	12345678	Block 4 Lantai 4	Lihat	Approve

Fig 11. Room Request Data

5) Room Data

This room data menu contains room information, and room descriptions that have been admin inputted previously.

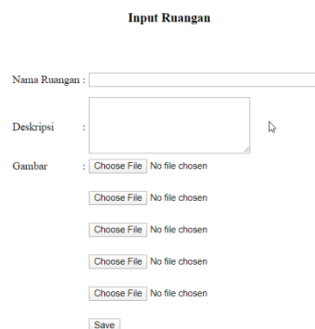


Nama Ruangan	Deskripsi Ruangan	Gambar	Aksi
1. Blok 4 Lantai 4	Menampung 40 Mahasiswa		Edit Delete
2. Aula	Menampung Kurang lebih 200 Mahasiswa		Edit Delete

Fig 12.Room Data

6) Add room

On this page for the admin to add rooms available at the National University, there are room names, room descriptions, and room images.



Input Ruangan

Nama Ruangan :

Deskripsi :

Gambar : No file chosen

No file chosen

No file chosen

No file chosen

No file chosen

Fig 13. Room Input

5. Conclusion

The conclusion of designing a website using the RAD method is as follows:

- The RAD method is very easy to implement in creating an application website.
- This room loan management website is very supportive for students if they want to borrow a room and there is no need to go to campus to fill out forms and submit a certificate
- Make it easy for admin in managing lending data, the data is already stored in the database

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