



Mobile-Based Development of Meeting Room Management Application at PT.Jiwalu Studio

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ABSTRACT

The role of technology greatly helps human life in completing its activities faster. PT. Jiwalu Studio Karawang has begun to use technology, for example, such as online-based attendance with a mobile application. Besides that, there are also activities that have not utilized technology, namely meeting or meeting activities. To use a meeting room, employees must first ask the room administrator about the availability of a meeting room. The meeting room agenda that day will be recorded by the administrator through the meeting agenda book. From the process of borrowing the meeting room, it was deemed too time and energy consuming because everything was done through the administrator. Therefore, development a meeting room management mobile application is created which is expected to be a solution for all employees. In developing this meeting room management application using Prototype method. This method is in accordance with the problems that occur, developers and users will be able to communicate with each other during the system design process.

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1. Introduction

The role of technology really helps human life in completing its activities faster. With technology, every activities in work or life have been done. One of work field is PT. Jiwalu Studio Karawang has begun to use technology, for example, online-based attendance with mobile application. Besides that, there are also activities that have not utilized technology, it is meeting activities.

A meeting is an association between several parties both in the scope of international, national, and regional which has a specific purpose and has been arranged and organized by presenter [1]. A meeting is an association between several parties both in the scope of international, national, and regional which has a specific purpose and has been arranged and organized by presenter [1]. To use meeting room, employees must first ask for admin about availability of meeting room. Then admin will check directly into the room to see which room can be used. The meeting room agenda that day will be recorded by the admin through the meeting agenda book. From the above activities, it was wasting time and energy. Therefore, it is necessary to develop for booking or meeting room management mobile application which is expected to be a solution for employees of PT. Jiwalu Studio Karawang. With the development of this mobile application, if employees want to see the

schedule for using the meeting room, make a booking of the meeting room, it can be done through the mobile application without having to go through a room administrator.

2. Research Methodology.

In the research methods, several researchs have been carried out previously to complete this research. Research have been conducted by [2], [5] Information System for Borrowing Space and Goods needs to be done by adding SMS Notification feature, the notification is one system can be applied at university. This system is used to be able to improve the manual system to a computerized system so that it can be accessed both via desktop and mobile and can provide detailed and efficient loan information using database. This study uses waterfall method, and for system design using Unified Modeling Language (UML). The research to create an android-based meeting place reservation information system was carried out by [3] using the System Development Life Cycle (SDLC) method. The design of web-based room loan information system for a university is also carried out by [4], the method used to analyze the problem is PIECES (Performance, Information, Economic, Control, Efficiency, Service). Making the application made by [6] is an application to arrange of booking meeting rooms at the Office of the Governor of Bangka Belitung Islands Province was done manual process and the method used is a prototype.

In this research, the researcher uses Prototype method. Several research using the prototype method, namely research conducted by [7] using a three-dimensional printer on chocolate design. Research with results an application for ordering clean water was carried out by [8] with prototype method. In oil and gas sector, a prototype method is also carried out to monitor gas oil drilling [9]. Pototype method is also carried out to control the water tower to control the water not to be wasted. [10]. Prototype method consists of several steps, such as communication, rapid planning and design modeling, prototype formation, and system submission and feedback.[11]

1. Communication

Communication is early step of prototype method. The developer will communicate with users, they are administrator and several employees of PT. Jiwalu Studio about desired information system. Then, it will be known the main problem that occurs is that the process of booking meeting rooms is still manually through the admin. Therefore, a mobile-based meeting room reservation information system was created with the aim of making the process more flexible because it can be done through each smartphone, using the internet for database access and the system, it has two logins, namely admin and employees.

2. Rapid Planning and Design Modeling

This step is carried out after obtaining the results of the communication between the developer and the user. To make this design quickly, using Unifield Modeling Language (UML) which is consists of Use Case Diagrams, Activity Diagrams, Class Diagrams and Sequence Diagrams. As for the database design the researcher using entity relationship diagrams and Logical Record Structure (LRS)

3. Prototyping

At this step, prototype of information system will be made based on the results of communication and rapid planning and design modeling before. The results of this prototype describe the pages and features in information system will be made.

4. System Submission and Feedback

At this step, the developer will provide prototype that has been made to the user. The aim is to valuate and get feedback from the results of prototype that has been made

3. Result and Discussion

The design of the meeting room management application will add several improved features including the convenience and efficiency in booking meeting rooms. By using modeling RUP is also one of the methodologies used in software development, especially object-oriented software activities model development using Unified Modeling Language (UML) [1]

3.1. Communication

This step is expected to be able to get the best ideas to contribute to the running system. These ideas can be obtained from system developers or also obtained from recipients of results or systems. At this step, there are several ideas that can be used as reference for developing better system. The system developed specifically will focus on setting up the meeting room booking system which is equipped with features including, notification if the application has been accepted by system and the status is being processed, notification if the application has been accepted by system and the status is accepted or rejected, saving booking transaction data, booking failed, the meeting room has been filled, the incorrect entering data, re-checking the completeness of the data, successful booking information, saving booking transaction editing data, successfully saving the latest booking data, successfully deleting booking transactions, successfully adding rooms, failed add room and save the latest room data. The output information of the application is expected to be successfully received by the user using various media such as email or communication media. In addition, a special dashboard is also provided to informs the booking status of employees to prevent double bookings, notifications are given by system to several media regarding booking status and the availability of meeting rooms.

3.2. Rapid planning and design Modeling

3.2.1. Necessity Analysis.

PT. Jiwalu Kreasi Studio Karawang, there are several designs needed to booking meeting rooms. Necessity analysis on design of mobile-based meeting room reservation information system at PT. Jiwalu Kreasi Studio Karawang can be described as follows:

- a) User Needs, in this information system there are two users who can interact each other in this system, they are the employees of PT. Jiwalu, and admin. The varies interaction and varies information needs of each users is different. Employee Needs Scenarios include creating an account to log into the system, viewing meeting room booking schedules, making meeting room bookings, viewing meeting room booking calendars, viewing user meeting room booking history, editing room bookings.
- b) Admin needs, the scenarios of admin needs include admins can log into the system, admins can activate employee accounts, manage meeting rooms, add rooms, change rooms, delete rooms, manage meeting agendas, add room booking transactions, change room booking transactions, delete room booking transactions, download PDF meeting room booking transactions, log out or exit the system.
- c) System needs, it includes saving account data of employees who have registered into database system, validating user accounts who are logged in, displaying dashboards of users who have successfully logged in, displaying meeting room schedule menu page, saving meeting room booking edit data into database, display meeting room calendar menu page, display the contents of the meeting room booking schedule button by month, display the contents of meeting room booking schedule button by week, display the contents of meeting room booking schedule button by day, display the booking history menu page, search for data and display booking history data room based on the date or time period that the employee entered, displays meeting room booking form from the room booking menu, saves the user's room booking form data into database, the user can view the entire meeting room booking history that he has done before, can change the meeting room booking, display the account activation menu page, activate employee accounts by admin, display the meeting room menu page, save additional meeting room data, save change meeting room data, delete meeting room data, display the entire list of meeting room booking transactions on the booking transaction menu, display add form and change room bookings, save form data add or change room bookings, print meeting room booking transactions into PDF, remove users from the system or log out.

3.2.2. Diagram Design

The use case below explains how employees log in and enter the system, starting with account registration, if it has been successful, the next step is for employees to be able to enter the room booking system. Make reservation and the others. While on the Admin side, able to manage transactions made by employees and manage meeting rooms

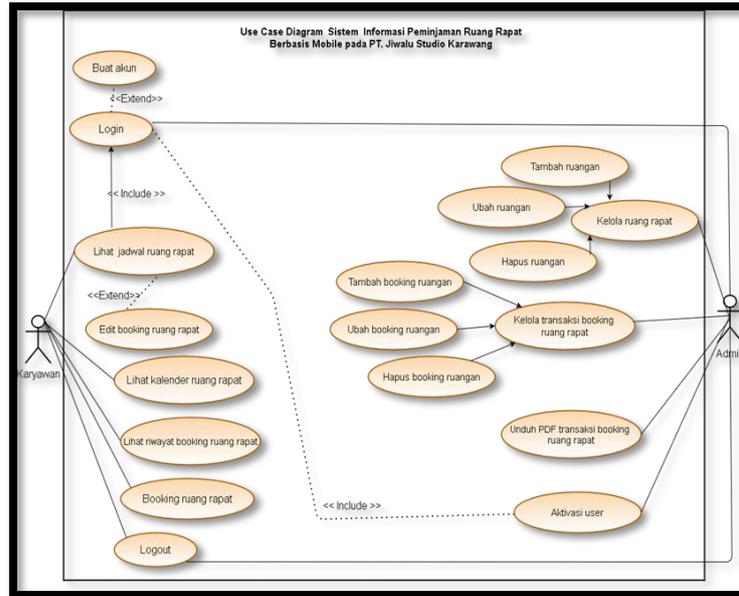


Figure 1. Diagram Use Case Diagram of Booking Meeting Room

The following is illustrates diagram on the dynamic relationship or collaboration between a number of objects in the Meeting Room booking System.

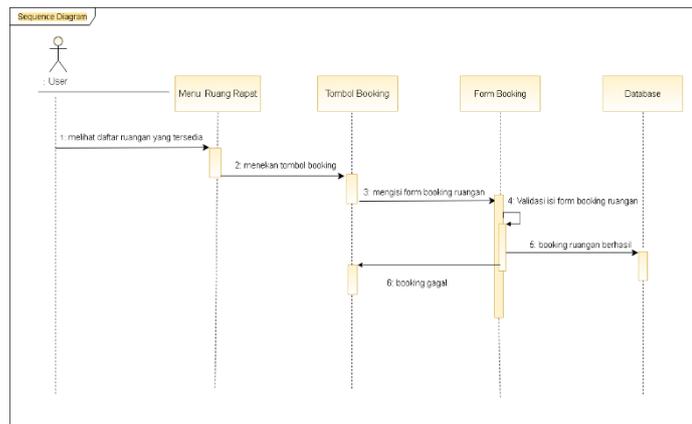


Figure 2. Sequence Diagram of Booking Meeting Room

In the ERD design in Figure 3, there are several tables involved to form the meeting room booking database. It consists of room table, employee table, admin table, booking transaction table and confirmation table. All of the tables above are all used to be able to provide support for the formation of mobile application for setting up or booking meeting rooms at PT Jiwalu Studio which is connected to database. The database is a collection of interrelated data. Data itself is a fact about objects, people, and others. Data is represented by values (numbers, strings of characters, or symbols [2]

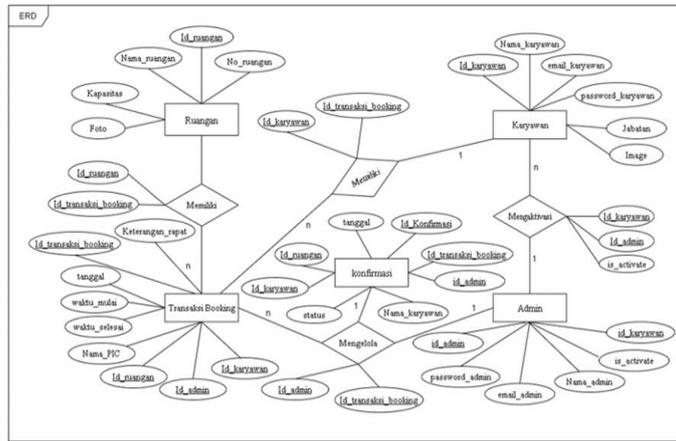


Figure 3. ERD Diagram of Booking Meeting Room

The formed Class Diagram is a relationship between the Room table, Employee Table, Booking Transaction Table, Confirmation table and admin table that has been occurred.

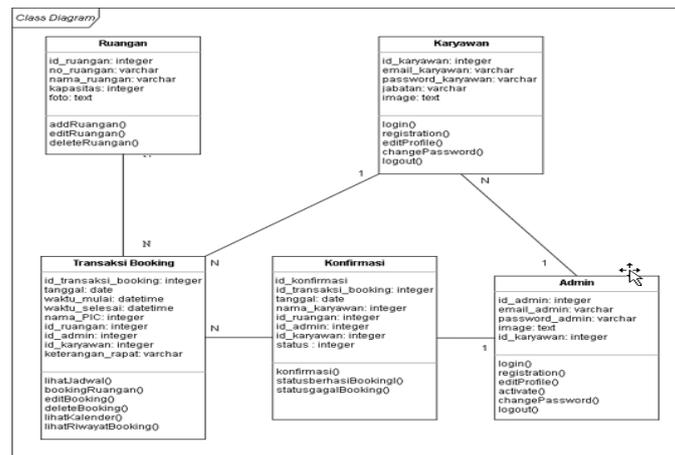


Figure 4. Class Diagram of Booking Meeting Room

3.3. Prototyping

Prototype is process carried out to create display system design or design to made as an example in developing product that will serve as an illustration for users directly. Employees can enter the mobile application by registering first.



Figure 5. Form Login Display



Figure 6. Account Registration Display

In Figure 7. Explains the conditions when employees are able to login and enter mobile applications and able to carry out the transaction.



Figure 7. Employee Home Display



Figure 8. Room Calendar Display

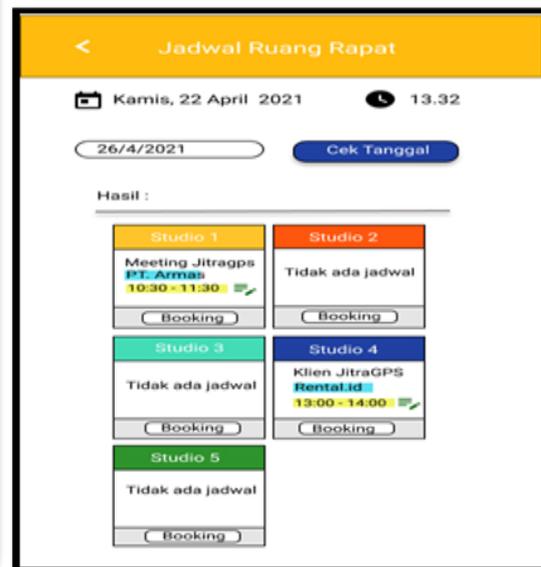


Figure 9. Meeting Room Schedule

In Figure 8, calendar is displayed when an employee will make an order process. And employees are also safe knowing the condition of the meeting room as shown in Figure 9.

The system is able to display the history of meeting room bookings to be able to provide detailed information about room and display list of available meeting rooms.

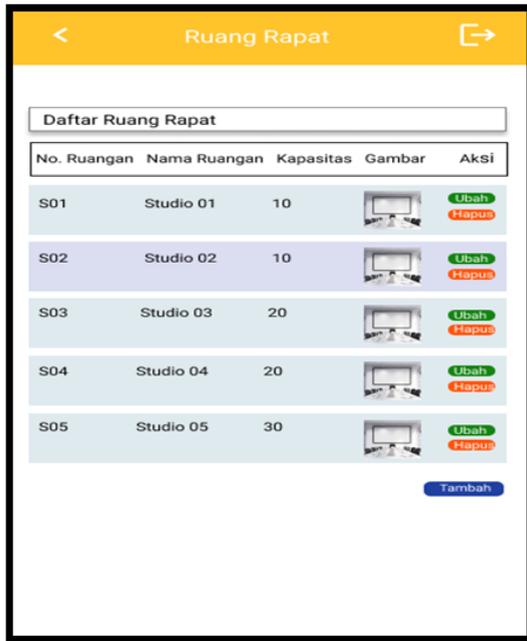


Figure10. List Meeting Room



Figure 11. Hystory of Booking Meeting Room

Every employee who will make online booking must fill out the room booking form completely. And then the admin will be able to see the book status as shown in Figure 13.

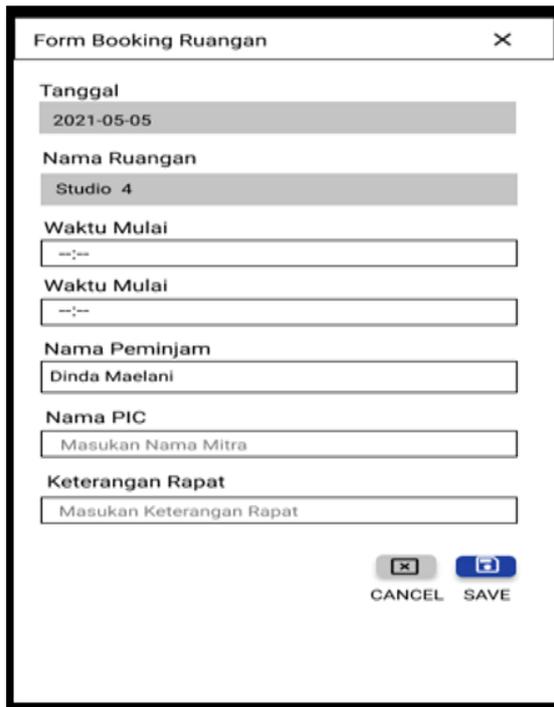


Figure 12. Form Booking Meeting Room

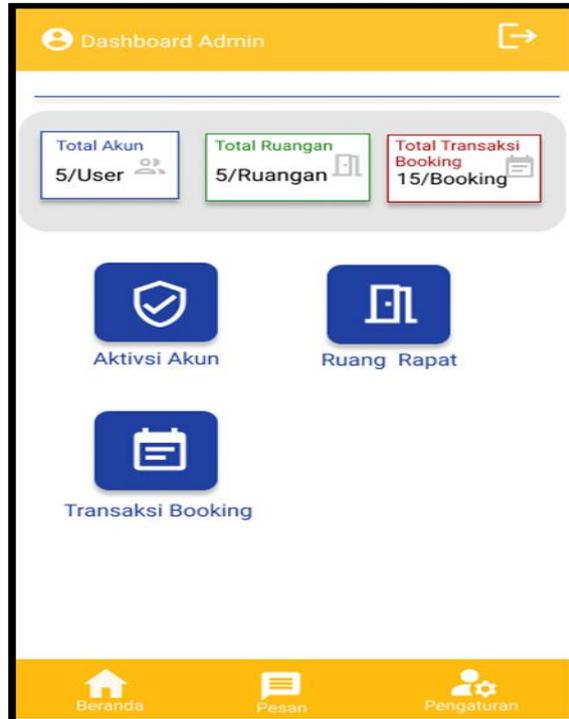


Figure 13. Dashboard Admin Display

3.4. System submission and feedback

Submission is the last step of the development process. After testing is complete and final feedback is obtained, the application is ready to apply.

4. Conclusion

Based on the results of this research, it can be concluded that this meeting room booking mobile application is designed with prototype model as software developer used, where this model can help the process of making the develop system or software. The design of this mobile-based meeting room booking system is expected to be a solution for PT. Jiwalu Creative Studio Karawang. With this mobile application, employees who want to view meeting room schedules, to make bookings, it can be done through mobile application that is already installed on each phone. The booking process becomes faster without asking for a room administrator.

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