

Agile Method for Web-Based Meeting Room Reservation Case Study at: RSUD dr. Haryoto Lumajang

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Abstract— RSUD dr. Haryoto Lumajang provides meeting room facilities for coordination and official activities; however, its manual reservation process using Microsoft Excel and verbal requests has resulted in scheduling conflicts, overlapping bookings, recording delays, and limited transparency. This study develops a web-based meeting room reservation system using the Agile method to improve accuracy, efficiency, and user satisfaction. Implemented with the Laravel framework and MySQL database, the system includes reservation, verification, and archiving features, as well as a dedicated field for consumption needs to reduce miscommunication. Testing demonstrates significant performance gains. Manual input errors decreased substantially, real-time availability checks eliminated scheduling conflicts, and administrative processing became faster. User Acceptance Testing (UAT) with two respondents yielded an average score of 82.7% across 29 evaluation items and 100% across 10 additional items, placing the system in the “Excellent” category. These results indicate clear improvements in transparency, staff productivity, and user satisfaction. Future enhancements include integrating a visual availability calendar and refining system usability through continued iterative development.

Index Terms— Agile Method, Web-Based System, Meeting Room Reservation, RSUD dr. Haryoto Lumajang.

I. INTRODUCTION

RSUD dr. Haryoto Lumajang, as a regional general hospital, has various supporting facilities, including

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a meeting room used for coordination, evaluation, and official meetings. However, the meeting room reservation management, which is still done manually using Microsoft Excel and employees are required to make verbal requests to the administration staff, before receiving confirmation of their booking status, users had to periodically check by visiting the administrative office to inquire whether their booking requests had been confirmed. This condition often leads to problems such as schedule conflicts, overlapping reservations, delays in recording, miscommunication in confirmations, and a lack of transparency regarding room availability information. This condition impacts operational efficiency and hinders the smooth internal activities of the hospital. These problems reduce efficiency in administration and often cause dissatisfaction users. The following is a diagram of the current meeting room booking activities.

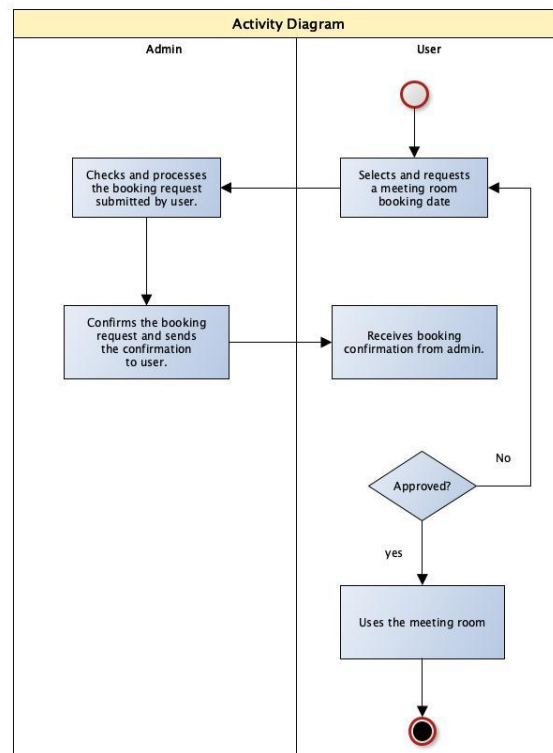


Fig. 1. Current Meeting Room Booking Activities

In previous study, the information on availability and booking of meeting rooms at Kesehatan Kerja Hospital in West Java Province is still not using technology. Therefore, the process of booking meeting rooms is still done by contacting the room administrator. Therefore, this application has been created to facilitate the booking of meeting rooms in hospitals. The schedule and room to be used are also displayed in the app. The method used to build this system is SDLC Waterfall. The results of testing the system show that implementing the Meeting Room Reservation Information System can provide more flexible information[1].

This study adopts the Agile methodology due to its emphasis on collaborative development, methodological flexibility, and iterative refinement, which are well aligned with the operational requirements of RSUD dr. Haryoto Lumajang. Agile enables rapid accommodation of user requirements, dynamic adaptation to evolving conditions, and continuous integration of user feedback throughout each development cycle. The system is implemented using the Laravel framework with a MySQL database, and the study scope focuses on online meeting room reservation processes, including reservation, verification, and archiving features. Through short, iterative sprints, Agile facilitates timely evaluation of system increments, early detection of inconsistencies, and sustained alignment between system functionalities and user expectations. The methodology's adaptability and its capacity for continuous quality improvement make Agile a more effective approach than traditional development models for the web-based meeting room reservation system evaluated in this case study.

In line with the development of information technology, the need for a system capable of managing meeting room reservation by digital is becoming increasingly important. A web-based system was chosen because it has advantages in terms of ease of access, flexibility[2], and can be integrated with any device by the internet. It is hoped the web-based meeting room reservation process can be completed faster, more transparently, and more structured, minimize scheduling conflicts, improve verification and communication processes, thus minimizing potential errors and increasing the work effectiveness of administrative staff[3][4].

II. METHOD

In this study, Agile method was chosen as one of the approaches because it emphasizes collaboration with the institution, it is mean RSUD dr. Haryoto Lumajang, flexibility, and iterative development. Agile method can accommodate user needs more quickly[5], changes can be responded to dynamically[6], and the resulting system is more in line with the hospital's operational needs. Agile allows developer to respond quickly to changing needs and produce more adaptive and higher-quality systems. Agile have six phase they are

requirement, design, coding, testing, deployment and feedback.

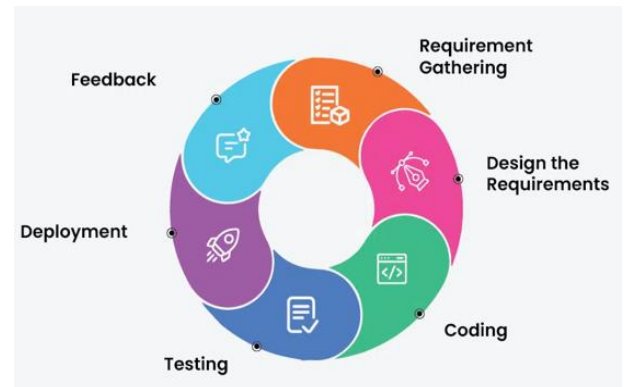


Fig. 2. Phase of Agile Method

The first step researcher took was to requirement. At this step, collaborate with stakeholders to understand and prioritize project requirements with a focus on delivering value. This phase includes techniques such as user stories and workshops for effective communication. an analysis is conducted to identify the system users' needs through interviews and surveys with the Administrative Department and employees of RSUD dr. Haryoto Lumajang to understand the meeting room reservation process.

The second step is design, researcher was analysis of both technical and non-technical requirements is conducted. Requirements are converted into tasks that can be carried out by dividing them into smaller, more manageable portions. at order to obtain early input and guarantee alignment with stakeholder expectations, developers create visual representations of the solution at this step, such as wireframes or prototypes. Technical design is analysis a hardware, software and network connection requirement. Non-technical design is analysis, for operational have many features such as user management, monitoring and reporting, data management and storage, data security and backup, a stable system with minimal disruptions. They want have 2 users, that is employee and admin. Admin must have full control over other users' access. The interface should be intuitive and easy to understand, allowing the admin to manage data without special training. Processes such as room booking approvals must be fast and automated. Employee have login must be simple yet secure. The system should be accessible from various devices. The system must provide clear information regarding schedules, booking status, or other relevant data.

Third step is coding. This research develop using the Laravel framework and MySQL database. Laravel is a useful PHP framework and we can create web-application easily with this application. It uses the popular MVC (model-view-controller) design[7]. Because a framework offers multiple modules with their connections pre-integrated, it streamlines the development process. Laravel is currently known as the best programming tool for PHP-based web development that is very interactive and intuitive[8]. MySQL is the most popular database used on websites, built to be fast

and small, especially for websites[9]. MySQL is very popular for use with websites written in PHP because PHP and MySQL work together very well[10]. We use Laragon local server. Laragon is often praised for being fast, lightweight, easy to set up, and very portable, making it a great choice for building and managing modern web apps. Its design focuses on both stability and speed, with a simple and flexible setup. The platform is built to be as streamlined as possible, offering only the essentials needed for development. Laragon requires very little setup, allowing users to quickly get their projects running without much trouble. Its control panel has simple start and stop buttons that make it easy to use[11]. For user interfaces, researcher use React JS. React JS is a library for building composable user interfaces, and ReactJS is considered one of the best solutions for front-end development. It is fast, scalable, flexible, powerful, and widely popular within the developer community[12].

Fourth step is testing. Every iteration must include testing to guarantee the software's functioning and quality. While integration tests ensure that various components of the system function as intended, unit tests are designed to validate specific components. End users test the software in real-world situations as part of User Acceptance Testing (UAT) to make sure it satisfies their needs also use black box testing. Black box testing focuses on testing from the user's perspective. The testing is concentrated on the system functions, which are adjusted according to the test results from both the admin and user sides[9]. User Acceptance Testing (UAT) ensures that the developed product meets user needs and expectations[13]. UAT process conducted directly by users to ensure that the software meets the requirements and is acceptable[14]. In this UAT process, the system was tested by 4 users, they are 2 person as administrator, 2 as employees who wanted to book a meeting room.

Last step is deployment and feedback. After testing process is completed, then the system is deployed to the server and developer team's forwards the system to the Administrative Department at RSUD dr. Haryoto. So that it can be accessed and used by users online through a web browser. Feedback process references from result of UAT. The results of this testing are documented as proof of system acceptance. The testing method uses a questionnaire with a Likert scale rating.

III. RESULT AND DISCUSSION

In this section, authors present each agile phase.

A. Requirement

At this stage, interviews were conducted to identify user needs and surveys were conducted with the Administration Department and employees of Dr. Haryoto Regional General Hospital to understand the meeting room booking process.

System requirements consist of two main users are: (1)Administrators have full control user access, can manage users, monitor and report meeting room bookings, manage and store meeting room data, ensure data security and backup, and maintain system stability

with minimal disruption, need responsive and user-friendly interface, and a fast and integrated meeting room booking approval process. (2) Employees can login and access clear information about meeting room schedules and meeting room booking status.

B. Design

1) System Architecture

The web-based meeting room reservation information system serves as a platform where employees and administrators do not meet face-to-face to make room reservations. The administrator manages reservations by verifying or rejecting them. The system stores the verification results, requiring a database as a data storage medium, while employees make reservations through the website.

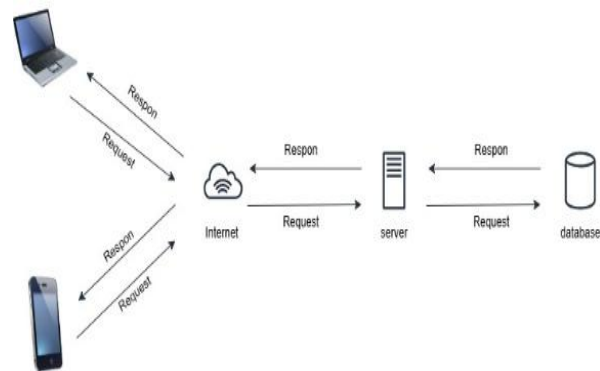


Fig. 3. System Architecture

Based on figure 3, Admin sends a request for system access via the internet and receives a response granting permission to access the system. Employee sends a request for system access and receives a response granting permission to access the system. When the employee wants to make a reservation, the system responds by displaying the reservation form. Employee makes a meeting room reservation through the system, and the reservation form data is stored in the database, after which a notification of the reservation is displayed on the admin dashboard. Admin receives the meeting room reservation notification and decides whether to verify or reject the reservation through the system. The verification results are then stored in the database and sent to the employee dashboard. Database displays the data sent by the system.

2) Activity Diagram of Admin

This diagram illustrates the workflow of the system being designed on the admin side. The admin will receive notifications of new room reservation requests' when employees make a reservation. The admin can then confirm whether the booking is accepted or rejected.

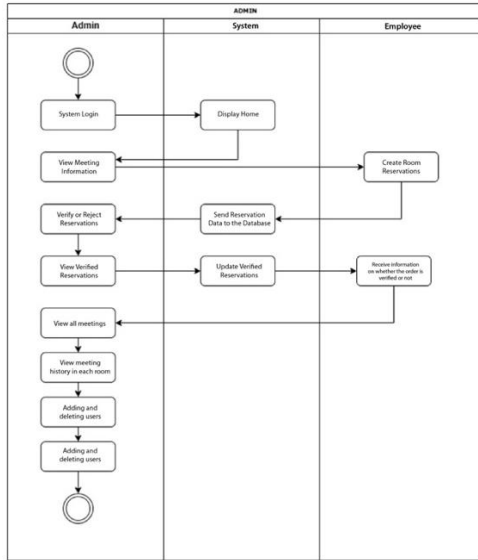


Fig. 4. Admin Activity Diagram

The proposed system makes it easy for employees to submit meeting room reservations, which are then stored in a database and verified by an administrator. The administrator manages the entire reservation process, including approving or rejecting requests, viewing meeting schedules and histories, and updating verified data. In addition, the administrator can manage meeting rooms and user accounts, while employees receive notifications about the status of their reservations.

3) Activity Diagram of Employee

Employee can fill out the meeting room reservation form, check the rooms, and request whether or not food is included.

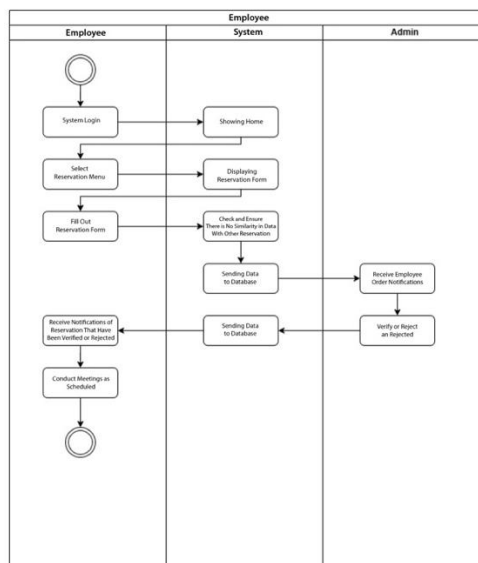


Fig. 5. Employee Activity Diagram

The proposed system enables employees to log in, access the booking menu, and submit meeting room reservations through a structured form containing meeting details and catering information. The system automatically validates schedule availability and detects potential conflicts before storing the request in the database. Administrators receive booking notifications and are responsible for approving or rejecting requests, including providing justification for rejections. The system then updates the database accordingly and notifies employees of the final decision, allowing them to proceed with approved bookings.

4) Use Case Diagram

Use cases diagram are used to illustrate the features available in the proposed system, as well as their relationships with end users in their roles to operate the system. Use case diagram is a type of diagram that serves to visualize the interaction between actors and the system within an information system.

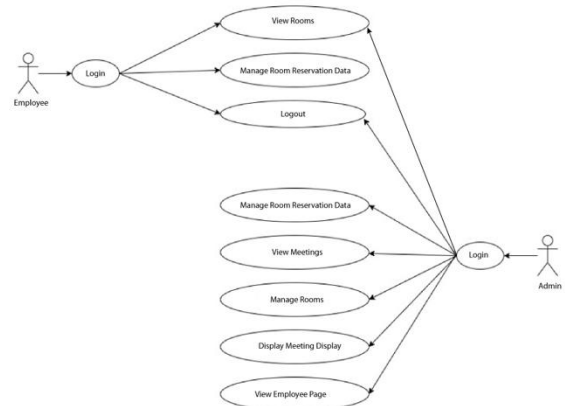


Fig. 6. Use Case Diagram

In figure 6, illustrates two actors, they are admin dan employee. Employee is user who acts as the target of the system to carry out daily room reservation activities. Admin as user responsible as the system administrator and manages the system as a whole. Each actor has specific roles to operate the system, starting with the admin who manages room reservations from employees, including verifying and rejecting orders, adding and deleting rooms, adding and deleting employee accounts, viewing upcoming and past meetings, displaying meeting details, and accessing the employee page. Meanwhile, employees use the system to view meeting schedules that have been verified by the admin, create new meeting reservations by filling out the reservation form, and receive notifications whether a meeting has been rejected or verified.

5) Database Analysis

This section describes the database analysis, which is conducted using an Entity Relationship Diagram (ERD) design. An Entity Relationship Diagram (ERD) is a graphical notation in conceptual data modeling that describes the relationships between data storage entities[15]. The ERD is used to model the data structure and the relationships among data, as this process is relatively complex[13].

The figure below presents the ERD of the Web-Based Meeting Room Reservation Management Information System at RSUD Dr. Haryoto Lumajang.

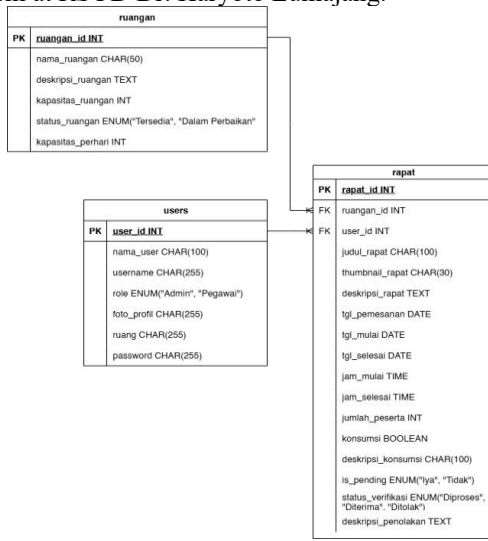


Fig. 7. Entity Relationship Diagram (ERD)

Figure 7 shows the database has three entities and many attributes, which are interconnected. Room table stores information about each available meeting room. Each room has a unique id (room_id), a room name, and an optional description such as location or available facilities. In addition, this table records the maximum participant capacity and the room availability status, which can only take the values "Available" or "Under Maintenance". Users table's contains data on system users. Each user has a unique ID (user_id), full name, username, and an encrypted password used for login. Users are also assigned a role, either "Admin" or "Employee," along with additional data such as a profile photo URL. Meeting table's is used to record all meeting reservations. Each meeting has a unique ID (meeting_id) and is linked to both a room (room_id) and the user who made the reservation (user_id). Other recorded information includes the meeting title, description, booking date, start and end date and time, number of participants, and whether catering is required. If catering is needed, the catering details are also recorded. Furthermore, this table stores the reservation status, indicating whether it is still pending approval (is_pending), along with the administrator's verification status ("In Process," "Accepted," or "Rejected") and the reason for rejection.

C. Coding

This step developer was carried out by implementing program code to build the system to be used. Various required features were added to facilitate users in performing their tasks, such as online meeting room booking, schedule notifications, and the management of user and room data. The entire development process was conducted based on the previously designed system architecture to ensure that the system operates in accordance with the specified requirements and objectives.

1) Database

This section provides a data visualization related to the implementation of the database design used by the author to develop the Web-Based Meeting Room Booking Management Information System at RSUD dr. Haryoto Lumajang. The visualization of the implemented database design is intended to give a clear understanding of how data is organized, related, and accessed within the system.

a) User Table

The table below represents the users table, which is used to store user data for both employees and administrators.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint		unsigned	No	None		AUTO_INCREMENT	Change Drop More
2	nama_user	varchar(100)	utf8mb4_unicode_ci		No	None			Change Drop More
3	username	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	role	enum('Admin', 'Pegawai')	utf8mb4_unicode_ci		No	None			Change Drop More
5	foto_profil	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	ruang	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	email_verified_at	timestamp			Yes	NULL			Change Drop More
8	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
9	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
10	created_at	timestamp			Yes	NULL			Change Drop More
11	updated_at	timestamp			Yes	NULL			Change Drop More

Fig. 8. User Table

User table have eleven atributs used to store user data.

b) Meeting Table

The table below represents the meetings table, which is used to store meeting booking data such as date, time, room, meeting title, meeting description, and meeting thumbnail.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint		unsigned	No	None		AUTO_INCREMENT	Change Drop More
2	ruangan_id	bigint		unsigned	Yes	NULL			Change Drop More
3	user_id	bigint		unsigned	Yes	NULL			Change Drop More
4	judul_rapat	varchar(100)	utf8mb4_unicode_ci		No	None			Change Drop More
5	thumbnail_rapat	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	deskripsi_rapat	text	utf8mb4_unicode_ci		No	None			Change Drop More
7	tgl_pemesanan	date			No	None			Change Drop More
8	tgl_mulai	date			No	None			Change Drop More
9	tgl_selesai	date			No	None			Change Drop More
10	jam_mulai	time			No	None			Change Drop More
11	jam_selesai	time			No	None			Change Drop More
12	jumlah_peserta	int			No	None			Change Drop More
13	konsumsi	enum('iya', 'Tidak')	utf8mb4_unicode_ci		No	None			Change Drop More
14	deskripsi_konsumsi	varchar(100)	utf8mb4_unicode_ci		No	None			Change Drop More
15	is_pending	enum('iya', 'Tidak')	utf8mb4_unicode_ci		No	Tidak			Change Drop More
16	status_verifikasi	enum('Diproses', 'Diterima', 'Ditolak')	utf8mb4_unicode_ci		No	Diproses			Change Drop More
17	deskripsi_penolakan	text	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
18	created_at	timestamp			Yes	NULL			Change Drop More
19	update_at	timestamp			Yes	NULL			Change Drop More

Fig. 9. Meeting table

Meeting table have nineteen atributs used to store user data.

c) Room Table

The table below represents the rooms table, which stores room data such as room name, room description, room capacity, and room status.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint		unsigned	No	None		AUTO_INCREMENT	Change Drop More
2	nama_ruangan	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	deskripsi_ruangan	text	utf8mb4_unicode_ci		No	None			Change Drop More
4	kapasitas_ruangan	int			No	None			Change Drop More
5	status_ruangan	enum('Tersedia', 'Dalam perbaikan')	utf8mb4_unicode_ci		No	Tersedia			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

Fig. 10. Room Table

Room table have seven atributs used to store user data.

2) *User Interface*

The following subsection presents the interface visualization, which represents the system's user interface of the Web-Based Meeting Room Booking Management Information System at RSUD dr. Haryoto Lumajang. Below are the system interfaces for both administrators and employees, as well as the meeting display.

a) *Landing page*



Fig. 11. Landing page interface

Figure 11 represents the landing page interface displayed before login to the system.

b) *Admin Dashboard*

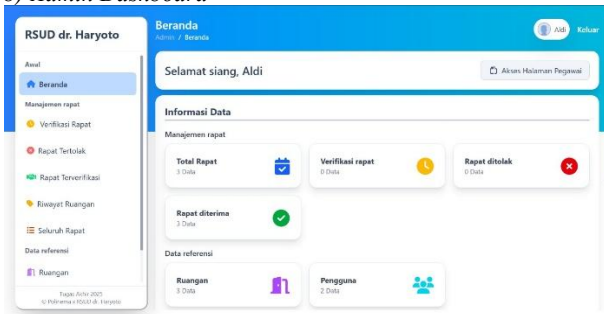


Fig. 12. Admin Dashboard

Figure 12 shows the home page of the admin account. After entering the correct username and password, the system directs the administrator to the home page, which contains various menus used by the admin to manage the system.

c) *Meeting Verification*

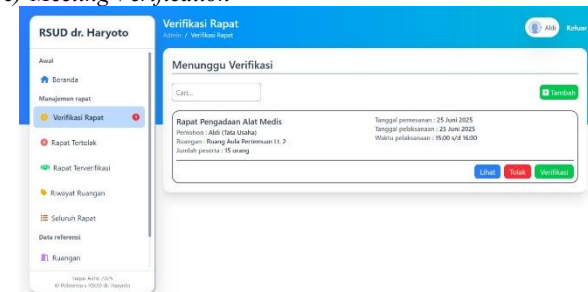


Fig. 13. Meeting Verification Interface

Figure 13 shows the meeting room booking verification page managed by the administrator. On this page, the admin can either verify or reject room booking requests after reviewing the meeting details.

d) *Rejected Meeting*

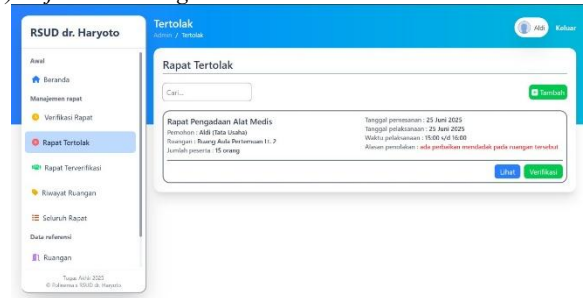


Fig. 14. Page of Rejected Meeting

Figure 14 shows the interface of meetings rejected by the administrator. On this page, the system displays rejected bookings, and the admin has the authority to re-verify them.

e) *Verified Meeting*



Fig. 15. Verified Meeting Interface

Figure 15 shows the interface of verified meetings. On this page, the administrator can view the details of verified meetings. Additionally, the admin can postpone a verified meeting if there are issues or damages in the room, and can quickly search for verified meetings using the search column.

f) *All Meetings*

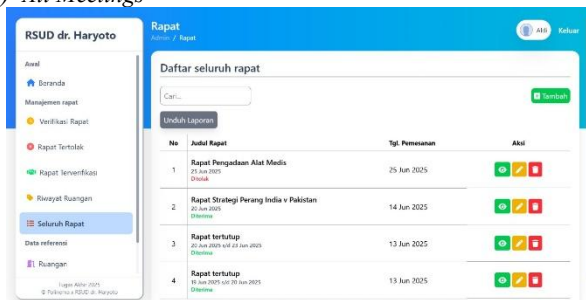


Fig. 16. All Meetings Interface

Figure 16 shows the interface of the 'All Meetings' menu. In this menu, the system displays a list of all meetings, including both rejected and verified meetings, as well as meetings that have already taken place and upcoming meetings.

g) Report

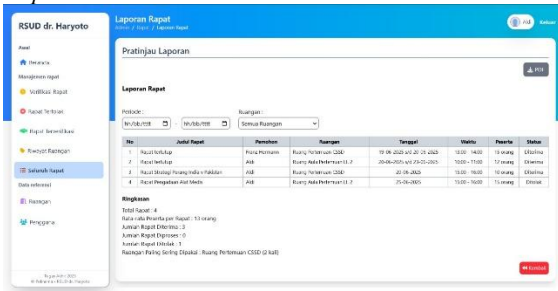


Fig. 17. Report Interface

Figure 17 shows the interface when the admin wants to download a report. This menu can be accessed from the “All Meetings” menu.

h) Login Page

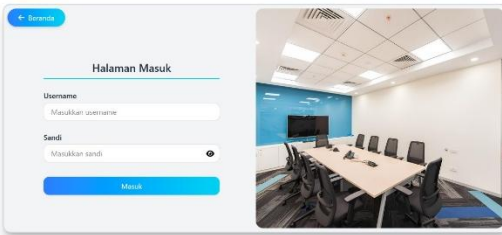


Fig. 18. Login page interface

Figure 18 shows the login page, which requires the administrator to enter a registered username and password to access the system.

i) Employee Dashboard

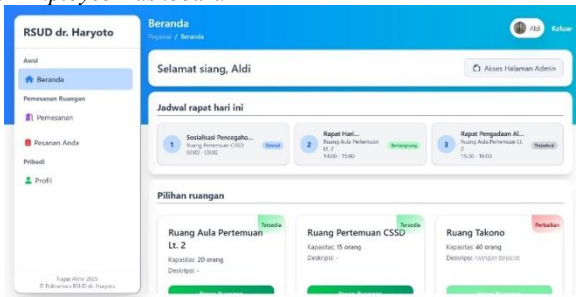


Fig. 19. Employee Dashboard

Figure 19 shows the homepage of the employee account. After entering the correct username and password, the system directs the employee to the homepage, which contains various menus used by the employee.

j) Booking Form Page

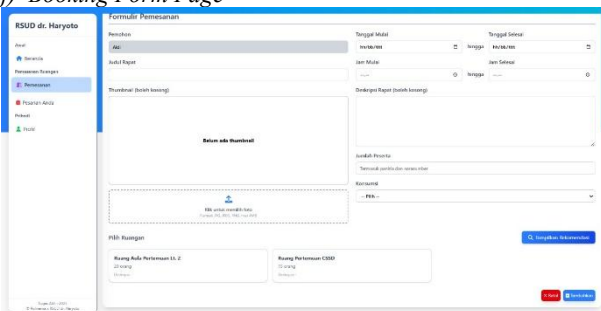


Fig. 20. Booking Form Interface

Figure 20 shows the booking form that appears when an employee makes a reservation. The form allows the employee to enter the meeting title, display image, date and time, description, number of participants, catering requirements, and the room to be used for the meeting.

k) Schedule Conflict Pop-up

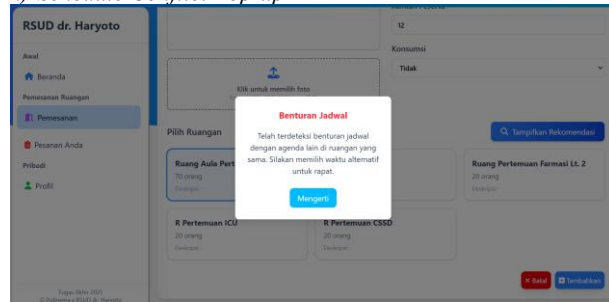


Fig. 21. Schedule Conflict Pop-Up

Figure 21 shows the rejection pop-up that appears when the added booking conflicts with another scheduled meeting.

D. Testing

In this step, researcher use both black box testing to evaluate the functionality of the information system and UAT for both admin side and employee side, by running the features available on the website

1) Black Box Testing

a) Admin Side

Table 3 is the black box testing scenario for the admin side.

Table 1. Admin Blackbox Testing

Feature	Input	Output	Remark
Login	Enter username and password	Display dashboard	Passed
		Display “The username and password you entered are invalid”	Passed
Add meeting reservation	Enter meeting title, date and time, and room	Display verification page	Passed
		Display pop-up indicating schedule conflict	Passed
View meeting reservation details		Display meeting reservation details	Passed
Verify meeting reservation		Display pop-up “Meeting successfully verified”	Passed
Manage verified meetings	Access “Verified meetings” menu	Display “Verified meetings” page	Passed
	View details	Display	Passed

		verified meeting details			description		
	Postpone reservation	Display pop-up “Meeting has been postponed”	Passed		View room details	Display room details	Passed
Manage room history	Access “Room history” menu in sidebar	Display room history page	Passed		Edit room data	Display pop-up “Room successfully updated”	Passed
	View each room history details	Display detailed history of each room	Passed		Delete room data	Display pop-up “Room successfully deleted”	Passed
	View reservation details for a specific room	Display detailed reservation data for that room	Passed	Manage users	Search by keyword	Display data based on keyword	Passed
Edit reservation		Display pop-up “Data successfully updated”	Passed		Access “Users” menu in sidebar	Display users page	Passed
Delete reservation		Display pop-up “Meeting successfully deleted”	Passed		Add new user with name, role, username, password, and assigned room	Display pop-up “User successfully added”	Passed
Manage all meetings	Access “All meetings” menu in sidebar	Display “All meetings” page	Passed		View user details	Display user details	Passed
	View meeting details	Display detailed meeting data	Passed		Edit user data	Display pop-up “User successfully updated”	Passed
	Edit meeting reservation data	Display pop-up “Data successfully updated”	Passed		Delete user data	Display pop-up “User successfully deleted”	Passed
	Delete meeting reservation data	Display pop-up “Meeting successfully deleted”	Passed	Manage admin profile	Search by keyword	Display data based on keyword	Passed
	Search by keyword	Display data based on keyword	Passed		View admin profile information	Display admin profile data	Passed
Download report		System downloads report based on selected time	Passed		Add profile photo	Display pop-up “Photo successfully updated”	Passed
Display meeting schedule		Display meeting schedule	Passed		Edit admin profile	Display pop-up “Profile successfully updated”	Passed
Manage rooms	Access “Rooms” menu in sidebar	Display “Rooms” page	Passed	Access employee page Logout		Display employee dashboard	Passed
	Add new room with name, capacity, and	Display pop-up “Room successfully added”	Passed		Select “Yes, log out” on pop-up	Display login page	Passed

b) Employee Side

Table 4 is the black box testing scenario for the employee side.

Table 2. Employee Blackbox Testing

Feature	Input	Output	Remark
Login	Enter	Display	Passed

	username and password	dashboard Display “The username and password you entered are invalid”	Passed
Manage bookings	Access “Booking” menu		Passed
	Add new booking		Passed
	View booking schedule based on room		Passed
	View booking details in a specific room		Passed
Manage your orders	Access “Orders” menu	Display orders page	Passed
	View all orders data	Display all orders data	Passed
	Search by inputted keyword	Display data based on keyword	Passed
	View details of a specific order	Display order details	Passed
Manage profile	View employee profile information	Display employee profile data	Passed
	Add profile photo	Display pop-up “Photo successfully updated”	Passed
	Edit employee profile	Display pop-up “Profile successfully updated”	Passed
Logout	Select “Yes, Logout” on logout pop-up	Display login page	Passed

P: Poor

VP: Very Poor

WS: Highest possible score × Number of respondents

a) Admin

Table 5 is UAT question of admin side.

Table 3. UAT Admin Side

Question	Test Category					Likert Percentage	
	VG	G	F	P	VP		
Meeting Management							
1	Can a new booking be added?	0	2	0	0	0	80%
2	Can bookings be verified?	0	2	0	0	0	80%
3	Can bookings be rejected?	0	2	0	0	0	80%
4	Can bookings be found on the verification page using the search feature?	0	2	0	0	0	80%
5	Can booking be found on the page using the search feature?	0	2	0	0	0	80%
6	Can the display of booking details be viewed?	1	1	0	0	0	90%
7	Can a booking be modified in the booking details?	1	1	0	0	0	90%
8	Can the list of rejected meeting be viewed?	0	2	0	0	0	80%
9	Can the list of verified meetings be viewed?	0	2	0	0	0	80%
10	Can a meeting be postponed?	0	2	0	0	0	80%
11	Can a booking be deleted?	0	2	0	0	0	80%
12	Can booking	0	2	0	0	0	80%

2) UAT

The testing method uses a questionnaire with a Likert scale rating. The answer scores used consist of: very poor (1), poor (2), fair (3), good (4), and very good (5). The evaluation process is carried out based on calculations from this scale.

$$L = \frac{(VG \times 5) + (G \times 4) + (F \times 3) + (P \times 2) + (VP \times 1)}{WS} \times 100 \quad (1)$$

Description:

VG: Very Good

G: Good

F: Fair

	history be viewed by room?							
13	Can all meetings be viewed?	0	2	0	0	0	0	80%
14	Can the meeting history report be download?	0	2	0	0	0	0	80%
Room Management								
1	Can a new room be added?	0	2	0	0	0	0	80%
2	Can a room be deleted?	0	2	0	0	0	0	80%
3	Can a room be modified?	0	2	0	0	0	0	80%
4	Can room details be viewed?	1	1	0	0	0	0	90%
5	Can a room be found on the room page using the search feature?	0	2	0	0	0	0	80%
User Management								
1	Can a new user be added?	1	1	0	0	0	0	90%
2	Can a user account be deleted?	1	1	0	0	0	0	90%
3	Can a user account be modified?	1	1	0	0	0	0	90%
4	Can user account details be viewed?	0	2	0	0	0	0	80%
5	Can a user account be found on the user page using the search feature?	0	2	0	0	0	0	80%
6	Can the employee page be accessed?	0	2	0	0	0	0	80%
System Management								
1	Can the system be logged into properly?	0	2	0	0	0	0	80%
2	Is the admin website interface	0	2	0	0	0	0	80%

	easy to use?							
3	Is the admin website interface visually appealing?	0	2	0	0	0	0	80%
4	Can the system be logged out properly?	0	2	0	0	0	0	80%

Based on the results of the questionnaire table 5, from 2 respondents with 29 questions, the percentage index obtained from 6 questions was 90%, and from 23 questions was 80%. Therefore, the average percentage obtained was 82.7%.

b) Employee

Table 6 is UAT question of employee side.

Table 4. UAT Employee Side

Question	Test Category					Likert Percentage	
	VG	G	F	P	VP		
Meeting Management							
1	Can a new reservation be added?	2	0	0	0	0	100%
2	Can the details of a reservation be viewed?	2	0	0	0	0	100%
3	Can reservation in “in process” status be deleted?	2	0	0	0	0	100%
4	Can reservation be found on your page using the search feature?	2	0	0	0	0	100%
Account Management							
1	Can the password be changed?	2	0	0	0	0	100%
2	Can the user profile be updated?	2	0	0	0	0	100%
System Management							
1	Can the user log in properly?	2	0	0	0	0	100%
2	Is the user website interface easy to	2	0	0	0	0	100%

	use?						
3	Is the user website interface visually appealing?	2	0	0	0	0	100%
4	Can the user log out properly?	2	0	0	0	0	100%

Based on the questionnaire table 6, from 2 respondents with 10 questions, the percentage index obtained from all 10 questions was 100%. Therefore, it falls into the 'Excellent' category.

E. Deployment and Feedback

After the development and testing process is completed, the system is then deployed to the server RSUD. dr. Haryoto Lumajang. Researcher submitted this project to the Administrative Department and Information Systems Department at the hospital. Thus that it can be synchronized with their original data and used within the RSUD environment.

However, several challenges arose during development and implementation, including delays in obtaining user feedback during several sprints because users had other commitments, resistance from end users who were accustomed to manual processes, and occasional data conflicts during the initial integration phase, which collectively affected the speed of development. Problems that arose during testing were resolved through corrective actions in subsequent iterations. Feedback delays were overcome by creating a more structured sharing schedule for reviews at the end of each sprint so that user input could be received and corrected. Technical issues such as data conflicts were resolved by improving database transaction handling and training users to use the system, starting with feature recognition and menu usage flows within the system.

IV. CONCLUSION AND SUGGESTION

a. Conclusion

Based on the results of the develop and testing, several conclusions as follows: digitally developed meeting room reservation forms are more accurate and no longer done manually, thus reducing the risk of input errors; website is capable of managing reservation data based on time and room automatically, allowing the admin to view, search, and organize schedules easily even when many rooms are available; website is equipped with real-time room availability checks, enabling it to automatically reject bookings with conflicting schedules. This prevents users from booking rooms on already reserved dates and times, and also facilitates the admin's verification process; there is a special column in the reservation form for consumption needs. The system can separate room reservations from consumption requests, allowing administrators to clearly

view the information and preventing users from misunderstanding.

b. Suggestion

Researchers recommend that the website be developed by adding visual features such as a room availability calendar and continuous improvements to the display to enhance the comfort and ease of use of the system. The website can also be integrated with other hospital management systems, with access rights added for management monitoring.

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