

Developing Information System for Managing and Booking Rooms and Facilities in a Retreat House

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Abstract

One well-known retreat place in West Java is the Pratista Retreat House, which is located in Cisarua, West of Bandung. It is managed by monks from the Order of Sanctae Crucis. This retreat house complex is quite large and has more than 60 rooms which can accommodate more than 200 retreat participants. Retreat participants generally rent rooms in groups. This house also provides several facilities that can be rented. Based on the survey results, reservations for retreat houses and facilities are conducted via telephone or other communication media. This creates problems both for the public (it is difficult to find a free time slot) and the manager (it is difficult to get reports of room availability timely). A community service activity by a team from Parahyangan Catholic University was working to develop an information system consisting of two website modules, each used by the managers and the public. The core features of the website for managers are for managing assets, orders, and viewing various reports. Meanwhile, the features for the public include viewing room and facility information, placing orders, and managing orders. The system has been developed, launched, and utilized by the Pratista management and is available to the public. The website for the public is available at <https://pratista.oscsangkristus.or.id/>.

Keywords: *booking website, information system, religious retreat*

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Introduction

The term retreat used in the Christian community is taken from the French word, *la retraite*, which means to withdraw, be alone, and distance oneself from daily activities. Thus, retreat can be interpreted as resigning, isolating oneself, distancing oneself from daily activities in a quiet place to specifically devote oneself to religious contemplation, away from daily routines (Sukoco, 2021; Tinenti, 2023). The main objective of a retreat is to do spiritual practice; exercitia spiritualia or spiritual exercises. By carrying out spiritual exercises, it is expected that humans can maintain their health or spiritual freshness so that they are open and responsive to God's work of love and ready to follow His guidance. Retreats also make Christians more competent in practicing spiritual activities, such as praying, conducting mental examination, self-reflection, meditating, etc (Mangunhardjana, 1985). Apart from that, by participating in retreat activities, participants also have the potential to gain a new perspective on things, improve their lifestyle, become a new person with sufficient spiritual intake, gain new relationships with fellow retreat participants, and strengthen their relationship with the Creator. In general, retreat activities in Indonesia are carried out by Catholic and Buddhist institutions (Kusuma, Prihandono & Utami, 2023).

One of the widely known retreat place in West Java is the Pratista Retreat House, which is located in the Pratista Complex. This complex is located in the Cisarua hills, on Jalan Colonel Masturi No. 591, Cimahi, West of Bandung (Figure 1.a.) and was founded in 1986 by OSC (Ordo Sanctae Crucis) monks. The Pratista Complex consists of three main parts, namely the Holy Cross Community (OSC Monastery and Novitiate Monastery), Retreat House, and Grha ILSKI (Indonesian Christ Liturgical Institute). In the complex, there are 5 buildings available for retreats or recollections or seminars, as follows:

- a. Wisma Pratista which has 27 rooms with a maximum capacity of 100 people (for public retreats).
- b. Pondok Mitra which has 18 rooms with a maximum capacity of 54 people (for general retreats).
- c. Pondok Sembilan which has 10 rooms with a maximum capacity of 30 people (for general retreats).
- d. Pondok Tapa which has 4 rooms with a maximum capacity of 8 people.

- e. Grha ILSKI (for private, family, or meeting retreats) has 7 rooms (1 suite and a regular room) with a maximum capacity of 14 people. This cottage is provided specifically for personal or family retreats (Figure 1.b.).



Fig. 1. (a) Location and area of the Pratista Retreat House in Cimahi; (b) Example of Pratista retreat cottages

For retreat purposes, Pratista provides spiritual guides that can be booked. Apart from that, facilities such as a campfire, meeting room, chapel, projector, sound system, etc. are also provided. These can be booked separately. All ages and groups are welcome at this place. Except for Pondok Tapa, which can be booked for individuals, reservations for retreats are made in small groups (for example 5 people) to large groups (for example 100 people). Retreat participants can be classified based on their age into children, teenagers, adults, and the elderly, or based on profiles such as students or employees. This grouping is intended so that retreat activities can be designed according to the goals and needs of each group.

Based on the survey results in February 2023, the procedures for booking rooms and facilities can be summarized as follows:

- a. Participants make reservations via telephone, WhatsApp (WA) application, or face-to-face (come directly to the Pratista receptionist).
- b. The receptionist records each room reservation at Wisma Pratista, Pondok Mitra, Pondok Sepuluh, and Grha ILSKI in separate books and divided by month. Orders for rooms other than those are carried out separately in another book.
- c. Participants pay down payments (DP) based on certain conditions.

In processing reservations, there are certain criteria, for example when Pondok Sepuluh has been booked by monks or nuns, then Pondok Mitra cannot be filled. If cancellation occurs, the deposit is refunded only if another group rebooks the unit that was previously cancelled.

The manual reservations discussed above have several weaknesses, as follows:

- a. The reservations via telephone or WA may cause errors which can cause chaos during the retreat or recollection or seminar event.
- b. The public cannot easily find vacant periods of each retreat house as they have to ask the receptionist who handles the reservation.
- c. Because financial management is still done manually, the management can not easily get the latest and accurate reports for financial audit purposes.

The impacts of those problems on Pratista management include:

- a. There could be "financial leaks" to the disadvantages of Pratista management.
- b. Because the public is unable to book rooms easily, room occupancy is below expectation, and so is the income.

During the Covid-19 pandemic, especially in the period of 2020 to 2021, room reservations and bookings in all buildings fell drastically. In 2022, OSC intends to revamp revenue-generating systems, including room reservations, with the aim of, among other things, boosting room bookings. Pratista also intends to have an information system that can be used by the public to book rooms online and produce various reports in real-time that can be analyzed. The results of the analysis can later be used to develop Pratista as well as spiritual activities that are needed by the people and are right on target.

A computerized information system for an organization is a system that integrates hardware, software, data, procedures, and people in managing, processing, storing, and distributing information in accordance with the organization's needs. The system can help organizations to increase efficiency, improve decision-making, and increase competitiveness (Laudon & Laudon, 2014). In this digital era, various organizations have been using information systems.

Lots of web-based information systems for booking hotel rooms have been developed. Nawassyarif discussed some examples of the system used by the public (Nawassyarif et al., 2022). The problems of Pratista management can be resolved by developing a web-based

retreat house management and reservation information system (IS), which is similar to a hotel room reservation system. A similar IS for retreat houses has been developed for *Rumah Pembinaan Carolus Borromeus (RPCB)* Syantikara, which is located in Yogyakarta (Adithama et al., 2017). It provides features for reservation and reporting. In the form for reserving rooms, among other things, users fill out check-in and check-out dates, the guest type, and the number of participants. There is no selection of building or room, which means that there is only one building used for retreat, each room with the same rent price. Pratista on the other hand, has 5 buildings, with different roles. Wisma Pratista, Pondok Mitra, and Sembilan are for general retreats. Pondok Tapa can be reserved for individuals who intend to contemplate by him or herself. Grha ILSKI is provided specifically for personal or family retreats. Certain rules are applied for each building, including the room rent. The public may choose the building in which they will stay. Therefore, compared to RPCB, the information system for Pratista is somewhat more complex, as it should implement the constraint for each building, and the room availability must also be managed for each building.

The proposed system is used by Pratista management and the public by accessing the website. Problems or obstacles experienced by the public and managers can be overcome by providing the following features:

For public:

- a. Browse the complete information on houses and facilities.
- b. Search houses and rooms based on the number of person, purpose, and the desired periods.
- c. Book retreat houses for both individuals or groups.
- d. View orders that have been placed or order history and manage orders (such as change requests or add rented facilities).

For managers:

- a. Enter and manage assets, which are buildings, rooms, and other facilities.
- b. Input information (e.g. conditions) related to the Retreat House and booking procedures
- c. Manage and verify room reservations and other facilities.
- d. Get real-time reports of booking transactions, room occupancy, facilities usage, and income.
- e. Review a dashboard displaying various visualizations for monitoring or analyzing purposes.

The development of information system that is used by Pratista management and retreat house bookers is intended to resolve the problems described previously.

Methods

The system development was conducted by a team consisting of lecturers, students, practitioners, consultants (designers of retreat house booking business models and procedures), leaders, and managers of the Pratista Retreat House. The activities were carried out in the computer laboratory of the Informatics Department, Parahyangan Catholic University, Bandung, and the Pratista Complex, on Jalan Colonel Masturi Cimahi, West of Bandung. The activities starts from February 2023 until December 2023.

The method of service activities adopts the concept of information systems development and software engineering with a prototyping approach (Bourgeois, 2014; Pressman & Maxim, 2020). The main stages of software development are: requirements analysis, system design, implementation (coding the design), testing, and launching. For development with a prototyping approach, software prototypes can be developed more than once, each prototype is evaluated by potential users. The feedbacks are used to improve or modify and add software features.

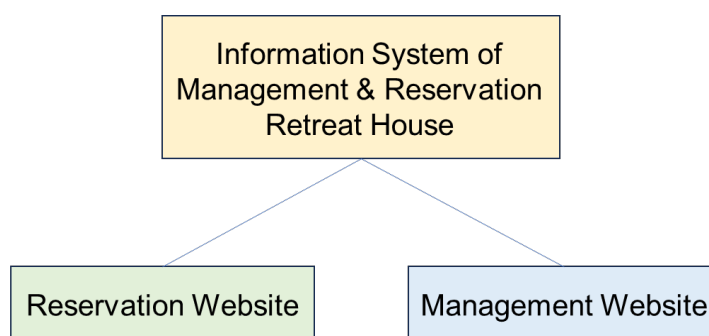


Fig. 2. Components of the information system

The information system components are designed by referring to theories about users, software (in the form of websites), and databases (Laudon & Laudon, 2014; Wallace, 2021). Users consist of two groups, namely the public and the managers. The web-based information system consists of two website modules, which are a website each for bookers and retreat house managers (Figure 2). These two websites access the same database, so the data on the two

websites is always consistent. The community service activities that had been carried out are described as follows.

When choosing a framework, various frameworks can be used, for example, Laravel, Ruby on Rails, React.js, and ODOO. Therefore, before creating a website, it is necessary to select the frameworks suitable for the purposes and expertise of the developer team. After reviewing the frameworks, the service team chose ODOO (<https://www.odoo.com/documentation/17.0/>). Regarding features for house or room booking, ODOO has the advantage of providing features related to booking and managing products and services in organizations that can be customized, so that the website development can be completed before the end of 2023. After ODOO was selected, 4 students were trained to use and develop software in the ODOO environment. The training was performed by a practitioner from a software development consultant who has mastered ODOO.

At the requirements analysis stage, the first activity was learning about the retreat house, the rooms and facilities for rent, the organization structure and its business model, stakeholders, procedures, rules that apply to the booking process, and needed reporting features. This activity was carried out by conducting a survey at the Pratista Retreat House complex in Cisarua, Cimahi, holding meetings with the management of the Pratista Retreat House (see Figure 3), as well as by studying the available documents that had been prepared by the hired consultant.



Fig. 3. Early coordination meeting in Pratista

Next, the developer team prepared an SRS (Software Requirement Specification) document. The main contents of this document are: business model and rules related to booking retreats, procedures for using the website, identification of potential website users, functional

requirements (detailed features for each user group), description of data recorded by the system, reports content and format, and non-functional requirements (frameworks, Database Management Systems, internet browsers, data security provisions, and system access speed).



Fig. 4. Early coordination meeting among the developer team

After the SRS had been completed, through several appointments and coordination meetings (see Figure 4), the development team created a website prototype or mock-up in the form of an interface for each user group. This prototype is used as the basis for designing databases and websites.

At the system design stage, the development team designed the database table schema along with the relationships between tables, functions on the back-end (which accesses database tables), and front-end (which provides interaction with users and reads input data from the user). The design results (Table 1) were discussed and evaluated at the team coordination meetings so that the designs comply with the SRS document and are ready to be implemented.

Table 1. Example of *front-end* designed menu

Front-end Menu	Description
Home	Home page
Gallery	Pictures of cottages and facilities
About us	General information about Pratista
Activities	Information of Pratista activities
Support	Other information
My Account	Managing user account
Order	Order or reserve rooms/cottages/facilities
Login	Log in
Sign Up	Sign up (for new users)

The results of the back-end design were the methods for the controller classes provided by ODOO which are called when the user selects the menu on the front-end. Apart from that, a View (in XML format) was also designed.

Next, programs were created on the back-end and front-end using the Python programming language. These activities were conducted over several sprints (short development/implementation cycles). The first sprint was the implementation of features for data management users, namely features for managing master data (buildings, rooms, and rental facilities). The next sprints were creating features for the public (gallery, sign up, log in, my account, support, activities, about us, and retreat house bookings). The last sprints included work on features for users whose roles are receptionists and features for Pratista management (reports and dashboards).

After the features of the information system had been completed around 80% (of the target), a demonstration was held before the potential users at the Pratista Retreat House in August 2023 (see Figure 5) to obtain feedback regarding the developed features.



Fig. 5. Prototype demonstration at Pratista

The feedback received from the progress demo was then used to improve features for each group of users. Simultaneously with these activities, additional features (which had not yet been worked on) were also implemented.

After the features were completed, a manual document, especially for Pratista management users, was made. Organizing UAT (User Acceptance Test) activities and training for potential users were performed at the end of November 2023 (see Figure 6). This test involves two

potential ordering users and a managing user. For UAT, 30 scenarios or test cases were prepared for management users and 59 scenarios for public users. Examples of scenarios for the managers are depicted in Table 2. The entire scenario was designed so that all features could be tried.



Fig. 6. The activity of User Acceptance Test (UAT)

Table 2. Example of test scenario for management user

No.	Scenario	Test Results
Managing Assets		
1	Add a cottage - Name: Pondok Sebelas - Tariff: Rp 300.000 / person - Capacity: 20 - 50 Orang - Description: New cottage in Pratista - Category: Small Group and Cottage - Tax: 0%	Asset is recorded and is correct
2	Change rent tariff of LCD projector to Rp 200.000	Change is recorded and is correct
Evaluating orders		
1	Evaluating order no. S00233	Correct
2	Approve the order	The status is recorded and is correct
3	Send bill (without down payment) to the customer	The bill is sent correctly
Approve booking payment		
1	Evaluating proof of payment sent by customer of invoice number INV/2023/00089	Information is correct
2	Approve the payment	The payment status is recorded and is correct
3	Input the payment	The payment value is recorded and is correct
Disapprove booking payment		
1	Evaluating proof of payment sent by customer of invoice number INV/2023/00088	Information is correct
2	Contacting the customer via chat feature on the invoice page and inform that the proof is invalid	The payment status is recorded and is correct

When performing the UAT, it was found that all scenarios could be executed correctly. The weakness found in the website was related to the information displayed, as follows:

- a. General information about Pratista that needs to be improved.
- b. Some of the photos in the gallery and booking feature were unsatisfying and should be replaced.
- c. The payment destination account needed to be revised.

Based on the findings above, the website content was then improved accordingly.

After being improved, the website was then installed and launched on the UNPAR Bureau of Information Technology (BTI) server so that it could be accessed by the public and Pratista managers.

Results and Discussions

After conducting the activities discussed in the Methods section, the developer team has completed the information system. A discussion of each component is given below.

Reservation Website for Public

This website can be used by the public, potential visitors, or retreat participants by clicking <https://pratista.oscsangkristus.or.id/>. This website provides information about retreat houses, which includes profiles/general information, cottages, rooms, and facilities provided. The users can learn about the cottages, rooms, and available facilities, the website also provides a gallery with clear and interesting photos. In summary, the following are the features provided to users:

- a. View profile information and history of the Pratista Retreat House.
- b. View information about the lodges, Grha ILSKI, and other facilities.
- c. Check the availability of Pratista houses, cottages, and Grha ILSKI in certain date ranges.
- d. Make reservations for rooms at Pratista's house, Pondok Mitra, and Sepuluh for retreat or recollection in groups and additional facilities as needed.
- e. Make room reservations at Pondok Tapa within a certain date range for individuals or families.
- f. Make room reservations at Grha ILSKI for individuals or families.
- g. Upload proof of payment to the information system for processing by Pratista.
- h. View all orders, invoices, and bills.

The procedures for booking retreat houses for groups or private rooms implemented on the website are in accordance with business procedures formulated by the consultant hired by the Pratista management. When ordering rooms, the verification and payment process is carried out outside the website features, because room orders must be evaluated manually by the manager based on certain considerations. Some examples of how the website pages look to customers are given below.

Home Page

This is the first page that appears when the public enters the website (Figure 7). This page provides brief information about the Pratista Retreat House as a whole. Photos and information about the various facilities are available.

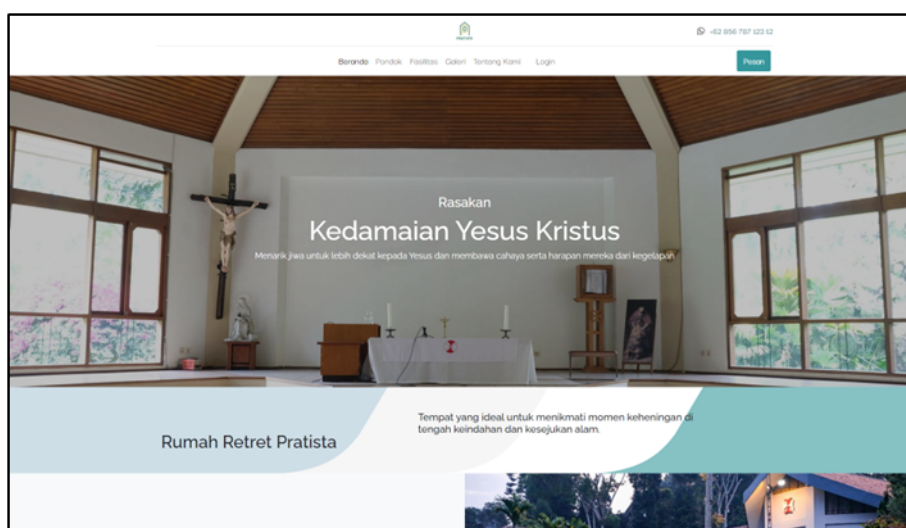


Fig. 7. The homepage

Cottage Booking Page

The procedure for booking a cottage starts with checking the availability of the cottage in the desired date range (Figure 8). After that, visitors are asked to enter data regarding the people who will stay overnight, such as the number of men (adults and children) and the number of women (adults and children). After booking a room at the cottage, visitors can also order facilities, for example, a campfire, projector, or others for certain dates. Orders will be added to the shopping cart (Figure 9), which can still be deleted/updated. If the contents of the basket are final, visitors can finalize the order transaction. Next, the order will be evaluated by the manager, and if approved, payment can be made according to the agreement.

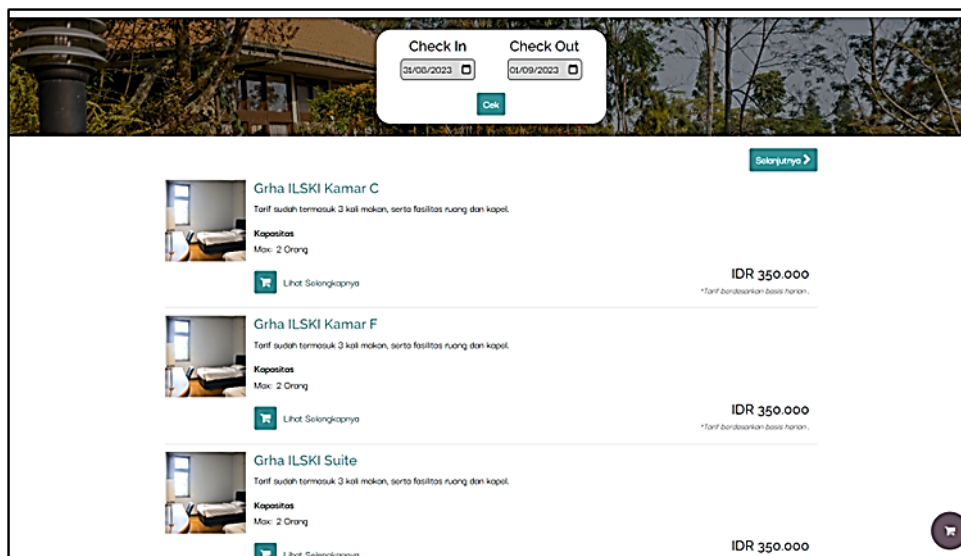


Fig. 8. Order page: Cottage selection after date selection

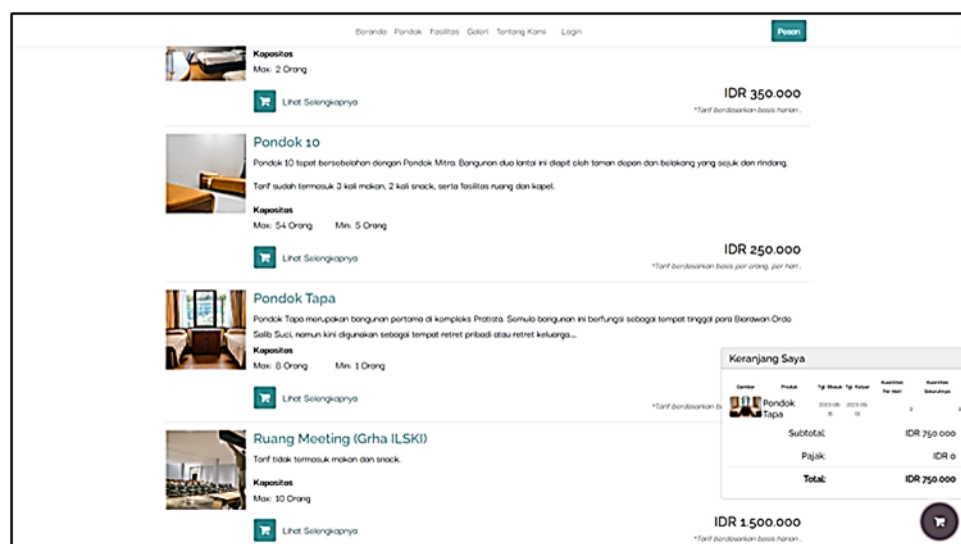


Fig. 9. Example of basket content

Management Website

This website is used by Pratista managers, namely admin or receptionist users. It provides features to view, manage, and organize all assets (cottages, rooms, and facilities), as well as handle or verify rental transactions for retreat houses, cottages, and facilities. In summary, the features for admin or receptionist users are:

- View, add, and change assets (cottages, rooms, facilities);
- View, confirm, and change (e.g. cancel) cottage or room and facility orders;
- Create, confirm, and change invoices based on the orders placed by customers;
- View visualization reports (dashboard) and print various reports.
- Manage data (writings, articles, photos) displayed on the ordering website.

Some examples of website page displays are given below.

All Assets Page

On this page, managers can add or change cottages, rooms and facilities (Figure 10).

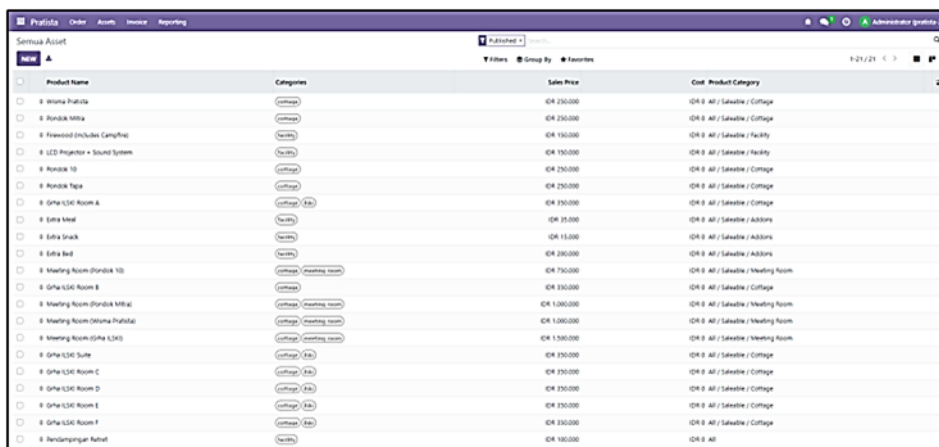


Fig. 10. Page for managing assets (cottages and facilities)

Order Page

On this page, managers can add, change, cancel, or approve orders (Figure 11).

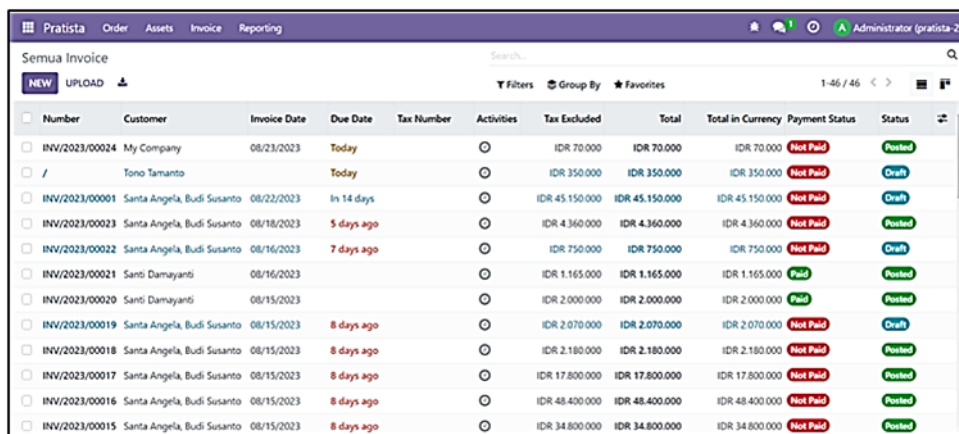


Fig. 11. Page for managing rooms and facilities orders

As discussed in the methods section above, all of the features on the website for the public as well as PratiSta management have been fully tested. The system has also been launched (at <https://pratista.oscsangkristus.or.id/>) and used by the public. So far, the management has not received bad complaints regarding the system. In the future, the system will be further developed based on the users' review.

Conclusion

The activities for developing an information system for Pratista Retreat Houses used by the managers and the public have been completed. The system consists of two modules, namely a website for the managers and a website for the public. Based on the test results of potential users, it was found that the features on each website were working well and in accordance with the requirements. Thus, it can be concluded that the methods of this activity are appropriate.

The design and implementation of features for each user group have addressed and provided solutions to the problems experienced by managers and the public (when the retreat house booking process was still done manually). Each feature has also passed the user acceptance test performed by a sample of users. Thus, it is expected that by using this system, the public can book a retreat house more easily, faster, and with correct results, while the manager can monitor room occupancy and financial transactions more easily and based on accurate data.

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