Design of Reservation Information System

M D Rahmatya\textsuperscript{1*}, M F Wicaksono\textsuperscript{2}, D P Sari\textsuperscript{3}, M N Mubarok\textsuperscript{4}
\textsuperscript{1,2,4} Universitas Komputer Indonesia
\textsuperscript{3} Universitas Pendidikan Indonesia

Email: *myrna@email.unikom.ac.id

Abstract. The objective of this research is to design reservation information system. The system approach method was used to analyze the system is an object-oriented approach and the system development method used is the waterfall. The system was designed not only as a promotional medium but also as an information system that allows customers to make a reservation for event locations and payments through the website. Therefore, the result of this study can help customer to have adequate information about the tourist site and make a reservation anytime and anywhere.

1. Introduction
Reservation is the process, manufacture, order (place, goods, etc.) to others. In this modern era, place reservations for various events are familiar. Moreover, more and more interesting locations can be used as the location of special events. Generally, this relatively attractive location is far from urban areas. A location far from urban areas is often in demand by many people because it has beautiful scenery. However, behind the many interested ones, the available information is still minimal. Some have used social media as a promotional medium. But still, information that can be obtained through social media accounts is incomplete. Likewise, for customers who want to make a reservation must visit the location to get complete information and make a reservation agreement. Meanwhile a computerized system is more efficient, especially that we are living in information age [1]. This is why a good events reservation system is needed to make this task easier [2]. Online reservation systems make it easy for customers to be able to make reservations and get adequate information anytime and anywhere via the internet [3 - 5].

Many of tourist site have a beautiful panorama and a calming atmosphere. Many of them used as the location of events. However, not much information about the tourist site is available on the internet. Promotion and information are limited to the tourist site Instagram feed. To be able to get more information, the customer must contact or visit the tourist site. Most of the customers come from out of town. The tourist site does not have any other media to expand the reach of its promotions, where customers can get adequate information about the procedures and costs of renting event locations.

Therefore, it is necessary to design a website that can present adequate information about the tourist site. By designing this information system, advantages of reservation system such as time saving, 24-hour service, access to information from anywhere, present personalized offers to their customers and much more will be achieved [6]. Another study conducted in Indonesia (2018) concluded that information system can improve quality of data processing so that the delivery of information can be received easily and quickly [7].
Research conducted in 2011, Integrated Information System for reserving rooms in Hotels, designed an information system that can help front office managers, especially in allocating rooms and reserve for groups and taking right decisions [1]. The study entitled Analysis and Design of Training Room Reservation Management System Based on SSH Framework, has transformed the training room from paper-based appointment management to online appointment management, and established a good interactive platform between teachers and training room management [8].

Both studies have the topic of reservations. But the two did not discuss the reservation and payment. Therefore, this research aims to create promotional media for tourist site. It also serves as a medium for customers to make reservations and payments.

2. Method
The system approach method used to analyze the system is an object-oriented approach and the system development method used is waterfall model. Waterfall model is a linear sequential Software Development Life Cycle (SDLC). This model is named waterfall because its diagrammatic representation looks like a cascade of waterflow. This is also known as classical lifecycle model. It has five stages which are requirements, the design of system and then implementation, verification and finally is maintenance as shown in Figure 1. Tight control is maintained over the life of the project via extensive written documentation, formal reviews and approval by the user and information technology management occurring at the end of most phases before beginning the next phase [9].

This research focus to create a design of information system, so only two steps in the waterfall process that will be done, which are requirements analysis and system design. The system design will be described using UML. UML is used to support system modeling and development [10]. The system designed is illustrated through the use case.

3. Results and Discussion
The results of this study can help introduce the tourist site to all Indonesian and global communities, and provide adequate information through the website. In addition, the system designed will make it easier for customers to make reservations and payments. Similar research has been conducted focusing on systems that can help in managing room reservations [1] [8]. However, the previous research did not focus on manage reservation and payment.
The current reservation system starts with the customer coming to the tourist site or by telephone. Customers who are out of town have difficulty getting information related to promos in the tourist site as well. Then the process of recording payments is done by recording payments in a book. The data storage is still in the form of a document archive so it is difficult to search for data when needed and requires a relatively long time in data processing and reporting. Here are the proposed system procedures: customers can view information and make event reservations through the website. The reservation process on the website will help customers determine the event reservation date. If a certain date has been booked by another customer, then the customer cannot choose that date. After making a reservation, consumers will be given an invoice. Payments can be made via bank transfer and confirmed through the website.

Figure 2 shows use case of the design of reservation system. The actors involved are customers and operational staff. The two actors are connected with promotions, registrations, reservations, and payments. Customers can see promotions on the website. However, to be able to make a reservation, customers must register first. After registering, customers can make reservations and payments via bank transfers confirmed through the website.

![Proposed Use Case](image)

Figure 2. Proposed Use Case

The operational staff actor can add and update promotions on the website. The operational staff can also see customers’ reservations and payments. The operational staff will check the customers’ reservations and payments and then validate them.

The two core processes are described in the form of activity diagrams, namely reservations and payments. Figure 3 shows the reservation activity diagram. Starting from customers who make reservations through the system, the operational staff will check the reservation made by the customer to ensure that the reservation date does not conflict with the scheduled event that will take place. After the reservation is verified, the customer will be asked to pay the reservation fee.

Figure 4 shows the flow of payments made by customers. Customers who have already made payments will fill out the payment confirmation form accompanied by uploading proof of payment. Operational staff will verify the payment receipt uploaded by the customer. After being verified, the customer will get a notification and the customer can print a verified proof of payment as a valid proof of reservation.
Figure 3. Activity diagram of reservation
In addition, the storage of reservation and payment data in the database will facilitate reporting and minimize human error, especially in reporting and checking event schedules to avoid event schedule
4. Conclusion
The design of reservation information system can be completed and can help customer to get adequate information and also makes it easy for them to be able to make reservations and payments through the website. With this reservation system, customers can know when the right time to make a reservation. The system will help customers to find out certain dates where reservations cannot be made. In addition, the storage of reservation and payment data in the database will facilitate reporting.

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