THE DESIGN OF HOTEL RESERVATION INFORMATION SYSTEM USING UNIFIED SOFTWARE DEVELOPMENT PROCESS

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ABSTRACT

A hotel is a type of lodging service business complete with eating and drinking facilities and other facilities. However, not all hotels have their own reservation system, and eventually many use third-party services, namely Online Travel Agency (OTA). Unfortunately, not all OTAs have reservation facilities for groups or complete vacation packages (hotel packages, cars, meals, and tourist attractions). Generally, the hotel also limits the number of available rooms (allotments) sold on OTA. Therefore, the hotel is expected to maximize its website so that guests can make reservations without going through third parties.

In analyzing system requirements and modeling them, the author uses UML (Unified Modeling Language). The output target of this research is the design of the Hotel Reservation Information System design.

Keywords: hotel, reservation, uml

I. INTRODUCTION

According to the Decree of the Minister of Tourism, Post and Telecommunication No. KM 94/HK103/MPPT 1987 Hotel is a type of accommodation that uses part or all of its parts to provide lodging services, food and beverage providers, and other services for the general public and is managed commercially.

With changing lifestyles, the function of the hotel has changed, not only as a place to stay, but also to hold meetings, gatherings, wedding receptions, seminars, exhibitions, and even performances.

There are several ways to order hotel services, starting from coming directly to the hotel, ordering through travel agencies either online or offline, and we can also make reservations through the hotel website.

The reservation process, which is carried out by coming directly to the hotel, takes a long time and we are not sure we will get what we want, because the room we want to order is full. While the reservation process through travel agencies both online and offline can save time and effort in the process of searching and ordering hotel services. But unfortunately, the hotel also provides a limit on the number of rooms provided for travel agencies as well as the promos they have. Therefore, the hotel should have a website that can make the reservation process in order to attract more hotel visitors.

II. LITERATURE REVIEW

According to Adi Soemarno, a reservation is a reservation of a place desired by a guest before the guest arrives.

According to Peter Franz Renner in Endar Sugianto the definition of a room reservation for a hotel is a room reservation made some time in advance, obtained from various sources through various booking methods to ensure that guests get a room at check-in.

According to Endar Sugianto states, there are several sources of reservation sources, namely:

1) Company
Reservations through this route usually have regular subscriptions in every tourist destination, even to the point of having a certain price according to the initial agreement.

2) Travel Agent

Travel provides services in the form of information to prospective tourists who will travel.

3) Airport Representatives

Hotel employees whose duties are at this airport are called airport representatives (airport dispatchers) who are in charge of serving guests who have made room reservations for hotels or those who have not. For those who have not been offered and made direct bookings to the hotel, and for those who have been processed to go to the hotel as soon as possible.

4) Airlines Agency / Airline Company

Airline companies, apart from being a means of transportation, are also partners in filling hotel room occupancy rates. Tourists need not only transportation advice but also a means of staying at their destination, so sometimes guests ask the airline to find a place to stay. Even now the airlines are officially offering direct flight packages with lodging and meals.

5) Government

The government is a fertile source of guest arrivals because the government often travels for business and has many sources such as state-owned enterprises, departments, and local governments.

6) Central Reservation System

There are two types of central reservation systems, namely an affiliate reservation network or a reservation network for hotels that have business chains such as Hyatt, Hilton, Intercontinental, and others.

7) Individual

Individuals are a source of free room reservations, anyone can make a reservation. Booking this room can be done in various ways ranging from telephone, e-mail, fax, and so forth. This individual room booking helps in increasing revenue because the price is more expensive than the contract rate to other travel agents.

8) Booking Engine

Booking a room through a booking engine is connected via the internet network. This booking engine depends on the hotel's website to market the rooms for sale.

In Febriantara's research (2012) with the title "Online Influence and Offline Reservation for All Season Hotel Room Occupancy Rates in Legian Bali". The purpose of this research is to determine the effect of Online Reservation and Offline Reservation either simultaneously or partially on the Occupancy Rate of All Season Hotel Rooms in Legian-Bali. The results of his research show that there is an influence between Online Reservation and Offline Reservation on the Room Occupancy Rate of the Legian All Season Hotel. Partially, the online reservation variable has a significant effect on the room occupancy rate, while the offline reservation has no effect on the room occupancy rate.

In Tsalis' research (2011; Heintzman, 2020; Gomez et al., 2020; Pasar & Dunga, 2020; ) entitled "The Effect of Website and Personal Reservations on Room Occupancy Rates at Aston Kuta Hotel & Residence Bali. The purpose of this research is to know the effect of reservation through the website and personal tab simultaneously or partially on Room Occupancy Rate at Aston Kuta Hotel & Residence Bali. From the results of simultaneous research, between reservations through the website and personal, there is a real influence. Based on the calculation results, the value of determination (R2) = 71.9 means that the variable occupancy rate of the rooms at
Aston Kuta Hotel & Residence is 71.9 percent influenced by the reservation variable, through the website and through personal and the remaining 28.08 percent is caused by other factors.

In Tatu's research (2019) entitled "Development of a Web-Based Hotel Ranaka Management Information System and Reservation". The purpose of the research is to develop an information system that can make web-based online reservations, and can manage hotels transparently, effectively, and efficiently. The results of the research that the system built can help facilitate guests to see various related information such as types of room types, room rates per night, contact, and the Ranaka Hotel company profile. In addition, this system can also make it easier for guests to make room reservations, both in terms of the process of checking available rooms, to making online payments. This system can help the admin work in managing master data, staff data, and reservation data and can help reduce the occurrence of fraud in the recording.

In Prabowo and Retnoningsih's research (2017) with the title "Hotel Room Reservation Information System at Hotel Posters MICE" the research results obtained that the application can make it easier for employees to record guests who will stay, speed up the search for guest status, and can speed up report generation.

In Hodayatun et al's research (2017) with the title "E-Reservation Application for Room Reservations at Hin's Hotel" the results of the study are that the e-reservation application at Hin's Hotel Jakarta can provide the information needed by guests and the hotel. For hotel management, it can improve the effectiveness of booking work faster, more accurately, and on time because the data processing is carried out by the system, and the data is stored in a database so that it is safer, neater and maintained. Improve the quality of service because it makes it easier for guests to make reservations without having to come to the hotel. As a promotional media as well as to improve the image of the hotel.

III. METHODS

The research methodology is described in order to facilitate the process of analysis and design of application design and divided into several stages.
The stages and research activities carried out are as follows:

1. **Study of literature**
   
   At this stage, the literature is collected, both from previous studies and from scientific journals.

2. **Identification**
   
   Then at the problem identification stage, identification of existing problems is carried out.

3. **System analysis**
   
   Then at the analysis stage, an analysis of the current system is carried out. So that we can know well, what are the needs of the system model that must be built.

4. **System Design**
   
   At this stage, a geographic information system model is created, making Use Case Scenarios, and making interface designs.

5. **Proposed System Design**
The design proposal made is a proposal for the design of a hotel reservation information system.

IV. RESULTS AND DISCUSSIONS

In order to improve services for prospective hotel guests, a hotel room reservation facility is needed electronically via the internet network. Through this service, prospective guests are expected to obtain information about the location and condition of the hotel and can obtain complete information about room rates for each class in addition to the room layout (swimming poolside, boulevard side, park side) to be ordered. Regarding the room layout, visitors can first choose the position of the building to be occupied (back-side, front-side, side-side).

Based on the results of the analysis, the following are the System's Functional and Non-Functional Requirements:

**Table 1. System's Functional Requirements**

<table>
<thead>
<tr>
<th>ID</th>
<th>Deskripsi</th>
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<tbody>
<tr>
<td>ERS-F01</td>
<td>Users can display general information about the available hotel and package options.</td>
</tr>
<tr>
<td>ERS-F02</td>
<td>Users can display information about the currently available bookable room options.</td>
</tr>
<tr>
<td>ERS-F03</td>
<td>The system created must be able to provide up-to-date information on hotel reservation data.</td>
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<tr>
<td>ERS-F04</td>
<td>The user can make a room reservation if the user feels that it matches the price/rate, layout, and service configuration (with/without breakfast, internet connection, etc.).</td>
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<tr>
<td>ERS-F05</td>
<td>Users can finalize room reservations after making a transfer first</td>
</tr>
<tr>
<td>ERS-F06</td>
<td>The system can send proof of booking electronically, by recording all booking information, including the room reservation date (check-in date and check-out date)</td>
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<tr>
<td>ERS-F07</td>
<td>Users can search for rooms based on available room classes</td>
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<tr>
<td>ERS-F08</td>
<td>The system must be able to provide daily reports to the management to make it easier for them to make decisions</td>
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**Table 2. System's Non-Functional Requirements**

<table>
<thead>
<tr>
<th>ID</th>
<th>Deskripsi</th>
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<tr>
<td>ERS-NF01</td>
<td>The application has a user-friendly configuration that makes it easy to use even for first-time users.</td>
</tr>
<tr>
<td>ERS-NF02</td>
<td>The application has a good interface and is attractive to use.</td>
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This application has 8 use cases and 2 actors. Visitors are actors who make room reservations or just see information about hotels and available packages. The administrator is the actor whose role is to finalize the order confirmation after first seeing the transfer data from visitors who make reservations.
The following is the realization of the Use Case in the Design Stage:

1) Use Case View General Info

![Fig 2: Use Case Diagram](image)

![Fig 3: Class Diagram Design Use Case View General Info](image)
Fig 4: Use Case Design Sequence Diagram View General Info

2) Use Case View Room Info

Fig 5: Class Diagram Design Use Case View Room Info
3) Use Case Search Room

4) Use Case Fill Order
5) Use Case Order Confirmation
6) Use Case Login

7) Use Case Confirm Reservation
8) Use Case Create Daily Report
This system was developed in order to maximize the reservation process at the hotel. The combination of hotel reservation and internet technology has become a rising trend today. Online reservation as an imperative way of growing the advertise for the lodging incorporates an exceptionally critical impact on the improvement of the lodging. The system design using UML has been able to produce a hotel reservation system design that fits the needs.

REFERENCES