

# Online Application of Hotel Management (Case Study The Wing Ed Hotel of Politeknik Negeri Bali)

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**Abstract**—A lot of hotel management so far is still using manual methods or general computer application. It has many disadvantages, i.e., lack of accurate recording, requiring complex processing to produce report. Based on these conditions, special online software needed to manage hotel, which has the advantage able to be accessed all the time from all over the world, easier and faster for the person who is in charge of hotel management. Recently people use the internet to obtain travel information when they plan their travel. The Tourism Department Politeknik Negeri Bali today has an education hotel called The Wing Ed Hotel, a commercially hotel managed by intern staff. This hotel will be an example of the implementation of this hotel management system. The development of this software use the Waterfall method, a sequential and systematic software development method consisting of: analysis, design, coding and testing. The tourism information systems support organization's business processes. The application provides facilities in accordance with business fields and user authority i.e. hotel marketing and hotel operation. All transactions carried out on each business field have been integrated and processed automatically to produce fast, easy and accurate information in the hotel management.

**Keywords**—online application, hotel management, waterfall system

## I. INTRODUCTION

Tourism is known to be one of the sectors that may take benefits of the development in the information and communication technology [1-3]. The sector is rich with information that can be distributed to a large audience easily using ICT [2-4]. The technology has a huge role to the success of the e-commerce of the tourism industry [3-5]. So far, there are still many management of a hotel that uses manual methods and / or semi-computer methods. Manual methods that are still found include the use of brochure, forms and notes in marketing, handling guests, from recording guest check-in, in-house services such as food and drink services, laundry, transportation to calculating fees to be paid when guests check out. Some of the hotel management operations, such as the making of reports, have indeed used computers but still use software that is still general system, so it still requires expertise and precision to process data to obtain correct and accurate reports.

Today the progress of information technology, especially the internet sector is very rapid, which allows the use of this

technology in all fields, including in fields including hotel management. The internet-based marketing method and its potentials to grow the tourism industry [6]. The tourism and hospitality industries have widely adopted information technology (IT) to reduce costs, enhance operational efficiency, and most importantly to improve service quality and customer experience [7]. The internet plays an important role in providing this information to the tourists [8]. The tourism industry is made up of three major components: transport sector, accommodation sector and attraction sector [9].

With the use of this information technology in the form of creating a web site, many benefits can be obtained, including ease of access to information, because the internet can be accessed easily both in terms of place, time and devices used. These benefits are very meaningful because the hotel operational management becomes easier and faster.

The Tourism Department of Politeknik Negeri Bali has developed an educational hotel called The Wing Ed (Widya Nusa Graha Education) Hotel, which is a commercially managed hotel by the Tourism department but is operated entirely using staff both lecturers, administration and students from the Tourism Department. The establishment of this hotel is indeed intended as a hotel education laboratory, which is a hotel that is devoted to being a hotel where it provides operational experience with a true hotel atmosphere to all lecturers and students.

Management of The Wing Ed Hotel so far still uses manual methods and some use computers. Operations that are still carried out manually, these are brochure, records of check-in using certain forms, services during in-house guests such as recording food and beverage services, laundry, etc. using notes. The results of manual recording using the forms and notes are then recapitulated using a computer to produce the financing (bill) that must be paid by guests at check out. Another operation that is carried out using a computer is making reports such as occupancy rate reports, income reports and hotel operational financing reports. The use of computers to support operations still uses general software available on the market today, such as Microsoft Word, Microsoft Excel, not using special software intended for the operations of The Wing Ed Hotel.

The management of hotels that still use manual methods and use computers with general software has many disadvantages, among others, inaccurate recording done in all

areas of hotel operations, still requiring complicated processing to be recapitulated in computers, requiring the expertise and accuracy of computer operators to produce reports accurate and correct. All of the problems that come from the use of special software that is intended for operations, especially about hotel revenue. The operational management issues in the Wing Ed Hotel will be used as an example of the implementation of this software. Based on the description above, the author considers it necessary to design a web-based software template for the hotel management system that can function as a hotel management tool.

## II. RESEARCH METHODS

This research is targeted to produce software for hotel management, in this case the hotel management of The Wing Ed Hotel of the State Polytechnic of Bali. This is done using the SDLC method (System Development Life Cycle) or Waterfall system or also called a linear sequential system, which is a method of sequential and systematic software development [10] which consists of stages namely Analysis, Design, Encoding and Testing. The flowchart of this information system development can be seen in Fig. 1.

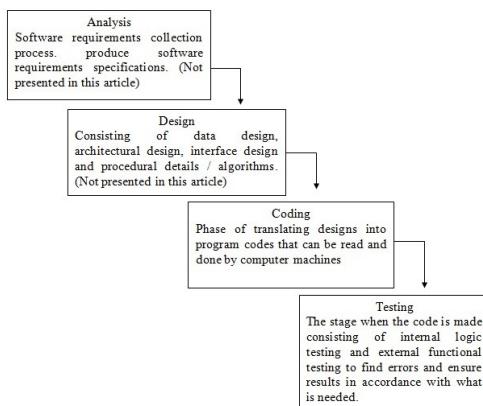


Fig. 1. SDLC information system [11-14].

In the analysis phase, a software requirements collection process is carried out, such as the information domain, performance and interfaces needed. This stage will produce software requirements specifications presented in the form of data models in the form of ERD (Entity Relationship Diagram) [15], process models in DFD (Data Flow Diagram) and transition models in the form of STD (State Transition Diagram). This article only focuses on the final results of the research in the form of software products so that the results at analysis stage are not presented in this article.

Design is a multi-step process that follows up on the results of the analysis phase, consisting of data design in the form of database structure design, architectural design in the form of program structure design, interface design and procedural details / algorithms to be applied in the next step, making program codes. This article only focuses on the final results of the research in the form of software products so that the results at this stage are not presented in this article.

Encoding is the process of translating designs into program codes that can be read and done by computer machines. In this case coding will be used using the PHP Triad program which consists of the PHP programming language, MySQL database and Apache server [10]. This stage is to realize the results of analysis and design in the

form of software products and this stage is presented in this article.

Testing is the stage when the code is made consisting of internal logic testing and external functional testing to find errors and ensure results in accordance with what is needed. Tests are carried out internally by developers with results as shown in this article.

## III. RESULTS AND DISCUSSION

Development of online application software hotel management systems using the PHP Triad program which consists of the PHP programming language, MySQL database and Apache server. In addition, Dreamweaver support software is also used to help create a user interface [16-18]. The coding results are as follows :

### A. Home Page

The system can begin to be used by providing initial information and an overview of available facilities and how to order them in the form of a hotel index as shown in Fig. 2.

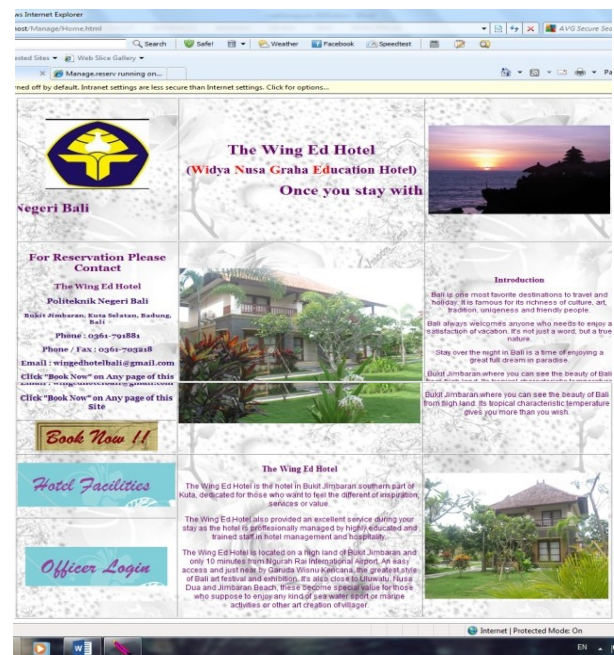


Fig. 2. Home page.

### B. System Elements

Writing the following program codes follows the parts that have been prepared in the form of a menu on this home page, namely: Marketing Module, Officer Front Office Module, Officer Restaurant Module, Laundry Officer Module, and Manager Module.

1) *Marketing Module*: The marketing module is opened through the Hotel Facilities menu on the Home Page (see Figure 1) and after the menu opened, it will display a picture and description of the facilities owned by the hotel, namely room facilities and supporting facilities. The presentation of hotel facilities is intended as a marketing system to attract interest in hotel facilities. This article will be shown as an example of a suite room (Fig. 3) and restaurant (Fig. 4). These next three modules can be accessed after checking user



authentication in the form of checking username and password, as shown in Fig. 5.

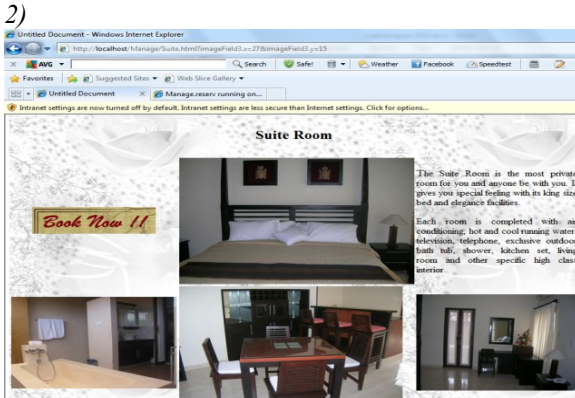


Fig. 3. Suite room.

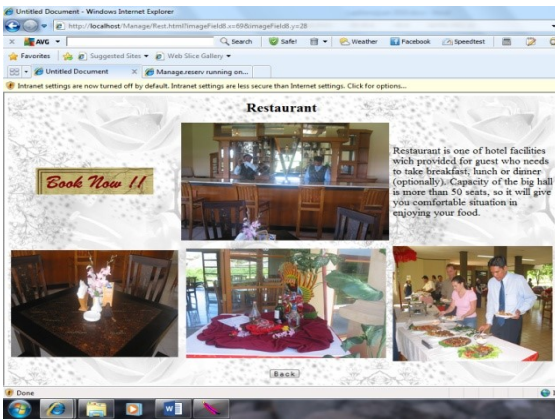


Fig. 4. Restaurant.

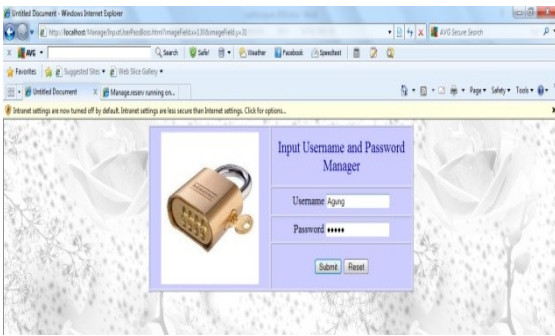


Fig. 5. Input username and password.

3) *Manager Module*: This module is provided for Leadership users who provide several facilities, such as: master data input for room, restaurant, laundry, check Transaction Report, replacement of username and password. The Manager module can be seen in Fig. 6.

4) *FO Officer Module*: This module is provided for FO users who provide several main facilities, namely: handling reservations, handling check in, handling check out and other facilities in the form of check room availability, check expected arrival list, etc. The main Front Office module can be seen in Fig. 7.

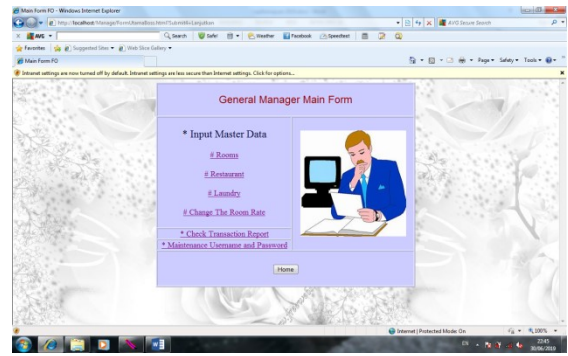


Fig. 6. Manager module.

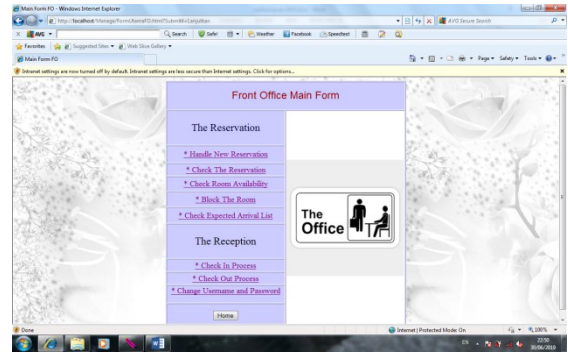


Fig. 7. The front office module.

5) *Restaurant Officer Module*: This module is provided for Restaurant users who provide several facilities, such as: handling transactions, changing username and password. The Restaurant main module can be seen in Fig. 8.

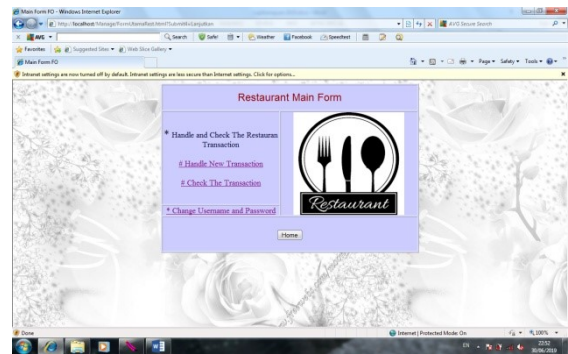


Fig. 8. Restaurant module.

6) *Laundry Officer Module*: This module is provided for Laundry users who provide several facilities, such as: handling transactions, changing username and password.

7) *Administrator Module*: This module is provided for Administrators, namely people who will carry out system maintenance both from the database and the whole system. Maintenance techniques for the database are carried out through the MySQL Database Management System (DBMS) which can be accessed through <http://localhost/phpmyadmin>.

C. System Operation Cycle

The hotel management system is a system used to handle hotel operations starting from hotel marketing, when guests

make reservations, check-in processes, guests stay at the hotel (in house), use hotel service facilities such as eating and drinking in restaurant, laundry clothes, until the check out and payment process for using hotel facilities. Cycles that occur in hotel operations are handled by this system and will be presented in the following stages.

1) *Preparation of Master Data by Manager:* The master data is the basic data that will be used in the transaction process in the hotel management at the hotel. The master data are data on room rental prices, food and food prices at restaurants, the price of laundry services and other business fields. These master data are inputted by the leadership in accordance with their authority through the leadership module.

2) *The reservation process and check in guests at the front office:* Transaction activity starts at the front office with reservations by guests handled by front office officers through the reservation module. The next process is to check in the guest on the specified date. This process is basically a confirmation / confirmation of the arrival of guests and the reception process at the hotel. The system process does not add data processing activities, only checks the availability of the guest reservation data in question.

3) *During in house and the process of using hotel facilities:* As long as guests stay at a hotel (in house) guests can use the facilities at the hotel, such as restaurants to get food and drink services, laundry for laundry services and others. For example, guests make a meal and drink transaction at a restaurant so the restaurant officer will use this management system through the Restaurant module. Data entry is done based on the room number occupied by the guest with the form of data entry form.

4) *The process of checking out and paying hotel bills:* Check out is a process when guests will leave the hotel after staying and using hotel facilities. This process is carried out at the front office and upon check out payment will be made for all hotel facilities that have been used by guests. The check out and bill payment process is carried out through the front office module.

#### IV. CONCLUSION

Online Hotel Management Application at The Wing Ed Hotel of Politeknik Negeri Bali provides modules in accordance with business fields and user authority as follows : The first, hotel marketing module, the presentation of hotel facilities is intended as a marketing system to attract interest in hotel facilities. The second, manager module, users who are authorized and responsible for all hotel operational activities. Through the Manager module, the manager has the facility to provide hotel master data and facilities to find out information on all hotel transactions. The third, front office officers module, employees who are assigned to the front office operation. Through the Front Office module, officer can handle and receipt of reservations, check in process, check out process

and handle guest bills. The fourth, restaurant officer module, the employee on duty at the restaurant section. Through the restaurant module, this officer can handle the process of buying food and drinks at a restaurant and seeing the results of transactions made by guests. The last, laundry officer module, the employee on duty in the laundry section. Through the Laundry module, this officer can handle the laundry laundering service transaction process in laundry and see the results of transactions carried out by guests. All transactions carried out on each business field have been integrated and processed automatically to produce fast, easy and accurate information in the hotel management. This has fulfilled the needs of the hotel management system as planned previously.

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