



Online Application of Hotel Point of Sales: System Development Life Cycle of the Wing Ed Hotel of the Bali State Polytechnic

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ABSTRACT

Purpose: This research aims to design and develop a web-based application, which will make it easier, faster and accurate for the hotel management both in operations and hotel supervision. The application also has the advantage of being able to be accessed all the time from all points in the world with various media.

Method: The development of this application is carried out using the Waterfall method, which is a sequential and systematic software development method consisting of analysis, design, coding, and testing. The analysis is the process of gathering software requirements. Design is a software design process. Encoding is the process of translating designs into a form that can be read and done by a computer. Testing is the process of testing the results of coding to ensure results are free from error and according to what is needed.

Result: Online Point of Sales Application at The Wing Ed Hotel Bali State Polytechnic provides facilities in accordance with business fields and user authority as follows: Manager, Front Office Officers, Restaurant Officer, and Laundry Officer. All transactions carried out on each business field have been integrated and processed automatically to produce fast, easy and accurate information at the hotel point of sales. This has fulfilled the needs of the hotel revenue information system as planned previously.

Novelty: Produce online applications that simplify and speed up hotel operations because the entire process has been done automatically.

KEYWORDS: Hotel System, Point Of Sales, Software Design, Web, Waterfall System.

1. INTRODUCTION

So far, many small hotel management use manual and/or semi-computer methods (Firdaus & Kuswoyo, 2009). Manual methods that are still being found include the use of forms and notes in handling guests. Some of the hotel management operations have used computers. However, they are still limited to using software that is still a general application, so it still requires expertise and accuracy to process data to get correct and accurate reports (Hasanah, 2013).

Today, the advancement of information technology, especially the internet, is very rapid (Haryanti, 2010), which allows the use of this technology in all fields, including the field of hotel management. By utilizing this information technology in the form of making a website, many advantages can be obtained, including easy access to information, both in terms of place, time, and equipment used. In addition, this application can process data automatically, so that it can produce accurate income reports (Priyadna & Yulianto, 2013). This study aims to build web-based software for a point-of-sales system that can function as a hotel management facility.

The Department of Tourism of the State Polytechnic has an educational hotel called The Wing Ed (Widya Nusa Graha Education) Hotel, which is a hotel that is managed commercially by the Department of Tourism but is fully operated using staff from both lecturers, administration, and students majoring in Tourism. The establishment of this hotel is intended as a hotel education laboratory, that is devoted to being a hotel to provide an operational experience with a real hotel atmosphere to all lecturers and students. Operational management at Wing Ed Hotel will be an example of a case for developing and implementing this software.

2. METHODS

This research is targeted to produce software for hotel points of sales, in this case, the point of sales of The Wing Ed Hotel of the State Polytechnic of Bali. This is done using the SDLC (System Development Life Cycle) method or Waterfall system or also called a linear sequential system, which is a method of sequential and systematic software development (Mahmood & Rehman, 2015) that consists of stages namely Analysis, Design, Encoding, and Testing. The flow chart of this information system development can be seen in Figure 1.

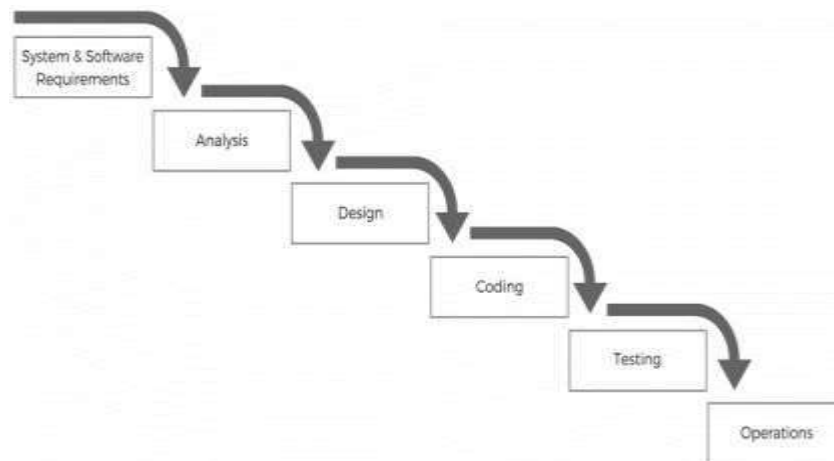


Fig 1. SDLC Information system

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), process models in DFD (Data Flow Diagram), and transition models in the form of STD (State Transition Diagram) (Pasi et al., 2017); (Flanders & Jannidis, 2015). 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 the results in the analysis and design stages 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 (Williams & Lane, 2004); (Ariani et al., 2020). 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.

3. RESULTS AND DISCUSSION

Development of online application software point of sales systems using the PHP Triad program which consists of the PHP programming language, MySQL database, and Apache server (Hidayat, 2014); (Farida & Efendi, 2010). In addition, Dreamweaver support software is also used to help create a user interface. The POS (Point of Sales) system is a system used to handle hotel operations starting from when guests make room reservations (Utama, 2015), and check-in processes, as long as guests stay at the hotel (in-house), use hotel service facilities such as eating and drinking in the restaurant, laundry clothes, until the checkout 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. The coding results are as follows (Permana, 2015); (Dedi et al., 2020):

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 Figure 2.



Fig 2. Home page b. System elements

Writing the following program codes follow the parts that have been prepared in the form of a menu on this home page, namely: Module Officer FO, Module Officer Restaurant, Module Laundry Officer, and Module Manager (Leader). These modules can be accessed after checking user authentication in the form of checking usernames and passwords, as shown in Figure 3.



Fig 3. The input of username and password

1. Manager Module

This module is provided for Manager users who provide several facilities, such as master data input for the room, restaurant, laundry, Check Transaction Report, and replacement of username and password. The lead module can be seen in Figure 4.



Fig 4. Manager module

2. Front Office Officer Module

This module is provided for Front Office Officers 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 Figure 5.



Fig 5. The front office module

3. Restaurant Officer Module

This module is provided for Restaurant Officer users who provide several facilities, such as: handling transactions and changing usernames and passwords. The Restaurant's main module can be seen in Figure 6.



Fig 6. Restaurant module

4. Laundry Officer Module

This module is provided for Laundry users who provide several facilities, such as handling transactions, and changing usernames and passwords. The Laundry's main module can be seen in Figure 7.



Fig 7. Laundry module

5. Administrator Module

This module is provided for Administrators, namely people who will carry out system maintenance both from the database and the system as a whole. Maintenance techniques for the database are carried out through the MySQL Database Management System (DBMS) as shown in Figure 8. System maintenance, it is done to the system's source code through Dreamweaver and PHP programming, as shown in Figure 9.



Fig 8. Mysql database maintenance

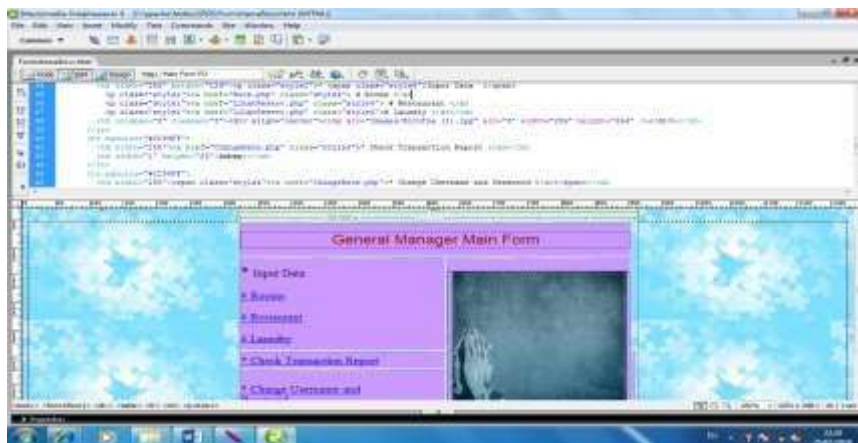


Fig 9. System maintenance with Dreamweaver c. System Operation Cycle

1. Preparation of master data by Manager.

The master data is the basic data that will be used in the transaction process at the point of sale 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 manager in accordance with their authority through the manager module. Forms of input master data, with examples of parent data rooms, can be seen in Figure 10, the other parent data is analogous to Figure 10.



Fig 10. Input master data room

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 form of reservation in the form of data input for guests who book rooms can be seen in Figure 11.



Fig 11. Guest reservation data

The next process is to check in the guest on the specified date. This process is basically a 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. Checking the presence of guest reservation data can be seen in Figure 12.

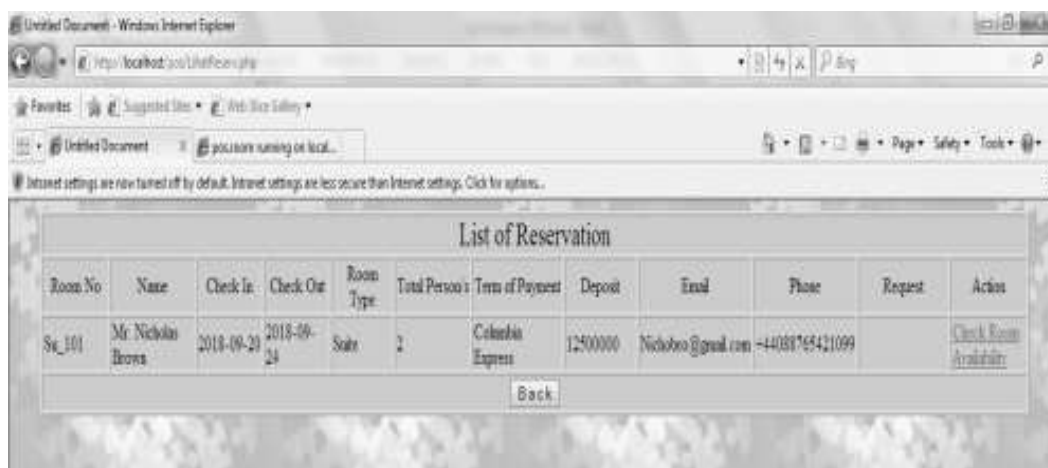


Fig 12. Check-in process

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 POS 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 as seen in Figure 13, while the transaction results are shown in Figure 14. Analog for laundry transactions.



Fig 13. Input restaurant transaction



Fig 14. Restaurant transaction results

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, the payment will be made for all hotel facilities that have been used by guests. The checkout and bill payment process is carried out through the front office module, as shown in Figures 15 and 16.



Fig 15. Check out the process



Room No	Name	Check In	Check Out	Rate	Room Type	Total Person	Terms of Payment	Deposit	Subtotal
Sc_101	Mr. Nicholas Brown	2018-09-28	2018-09-31	350000	2		Columbia Express	12500000	0

Room No	Meal Code	Qty	Meal Name	Price	Sub Total
Sc_101	F_002	2	Pavaneer Soup	37000	74000
Sc_101	F_001	3	String Cocktail Salad	35000	105000
Sc_101	B_005	2	Tea (with Lemonade)	10000	20000
Sc_101	F_002	2	Pavaneer Soup	37000	74000
Sc_101	F_003	2	Sea Food Fried Rice	50000	100000
Sc_101	B_105	2	Avocado Juice	45000	90000
			Total		463000

Fig 16. Guest bill payment

CONCLUSION

Online Point of Sales Application at The Wing Ed Hotel Bali State Polytechnic provides facilities in accordance with business fields and user authority as follows:

- 1) Manager or leader, namely 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.
- 2) Front Office Officers, namely employees who are assigned to the front office. Through the Front Office module, this officer can handle the receipt of reservations, the check- in process, the check-out process, and handle guest bills.
- 3) Restaurant Officer, namely 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.
- 4) Laundry Officer, namely 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 point of sales. This has fulfilled the needs of the hotel revenue information system as planned previously.

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