

Analysis of Hotel Website Based on ISO 9126

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Abstract—The growth of information technology in the world of rapid development has an impact on the spread of the amount of software. Software maintenance is required to support the quality of the software. Software quality can be measured in terms of product and process. Some examples of the positive impact of improving software quality include profit, lack of costs incurred for maintenance, and increased productivity. One way to test the quality of the software from the product side is using the ISO / IEC 9126 model testing by using four scales, namely usability, functionality, reliability, and efficiency. The black box method is a testing method that can be used to test the functionality of a software. Value analysis is also used in this study to measure the boundaries of each field available in this application. Hotel software is a web-based software developed in 2019. The purpose of this software is to facilitate hotel reservations. This research aims to test the software that has been developed for hotels. The research steps began with a literature study on the black box testing itself and analysis of the boundary value. Then, I will test the three features available in the application. Finally, I will test the available fields using boundary value analysis. The result is that there is no error in the functionality test, but there is an error test in the limit value analysis test.

Keywords— Black Box; Quality of Software; ISO 9126, Hotel Website

1. INTRODUCTION

The advancement of information technology has developed rapidly from time to time, both from simple aspects related to daily life as well as in the business industry and other matters, including the rental business. The development of this rental business is not only carried out for goods or services but also requires reservations so that the goods or services have proof that they have been booked and rented. This is inseparable from the information system that helps all manual and assisted processes make it easier to place orders and leasing.

The hotel industry is one of the leasing fields that is developing new ways to achieve their mission by leveraging the power of existing information and applying a network-centered concept to make room reservations [1]. Reservation systems are a very attractive area of information technology in the hospitality sector. A new challenge for hotel managers in this technological era is how to integrate new, complex, and diverse IT systems and services into their existing business operations [2]. Competition between companies is getting tighter and tighter and the rapid development of information technology can be a challenge and an advantage for a company's business processes. On the market there are various hotel reservation platforms with integrated interfaces for various distribution channels and two-way communication to enter and process reservations with the hotel website in the PMS (Property Management System) system to ensure that the allocation of the number of rooms for guests is available.

The website must also be useful for Functionality, Reliability, Usability, Efficiency, Maintaintality and Portability. Besides, the use of information systems as a supporting factor is needed to efficiently handle the high market competitiveness and offer the high-quality services demanded by hotel clients [3]. dynamic pricing means that hotels will change room rates every day or even within one day if current market information reveals the need for adjustment. Their first feature is the importance of owning a hotel because the objective of each hotel is to meet accommodation capacity, to increase sales and profits. This requires a media for the website so that it can bridge the customer and hoteliers so that the reservation process can be done well. In addition, today's web applications are capable of assisting complex transactions in a safe and relatively short time. The website can be used as a medium of information, communication, and publications that can influence customer perceptions of the company or product offered. Organizational development will increase along with the improvement of the quality of website services provided [4]. The advantage of a quality website is that users can feel satisfaction when they get the information they want. A good website will also attract more visitors so that it has an impact on the number of customers and the transactions handled will also increase considerably.

However, to ensure that the website we use is in accordance with quality website standards, testing is necessary. In this study, the quality standard from ISO 9126 is used as the basis for the quality model designed [5]. This model requires collecting data from observation (testing), then it can be concluded that the website-based ordering system model is effective or not. The set of criteria is then linked to the characteristics and sub-characteristics of the ISO 9126 quality model to further define quality in the measurement matrix. Comprehensive specifications and evaluation of the quality of software products are key factors to guarantee quality. There

are two core approaches that can be followed to ensure product quality. First, by guaranteeing the product development process, and the second by evaluating the quality of the final product [6].

In order to evaluate the quality of the final product, a set of quality characteristics is needed that describes the product and forms the basis of the evaluation [7]. A set of characteristics and their relationship is the quality model [7] which provides the basis for the specification of quality requirements and quality evaluations. Therefore, the main purpose of this software is to assist hotel managers in monitoring rental logs and make it easier for customers to browse and make reservations directly through the website. In this journal, the author will try to test and review whether the software developed meets the requirements of the ISO 9126 standard [8], [9] and black box tools for testing.

2. METHODOLOGY

In this research, the object to be studied is the website owned by hotel. This study aims to test the functionality of the administrator and dashboard by the customer, but only a few important functions such as create, delete, update only and also the booking function by the customer, so that not all aspects of the software will be tested. One of the modules chosen to be tested is the administrator module. Testing will be carried out using the black-box method. There are three pages to be tested, the first is the admin master data page.

This page can be used to add, remove, and modify products to the website. The second is the product category ordering. This page can be used to add categories to the website. The last one is the book page from the customer. Based on literature studies, to get good software a software testing process must be carried out.



Figure 1: Method of Research [10]

These are very important things to do to ensure quality software. One way that can be used is a black box. In black box testing, there is a method called boundary value analysis. This method can be used to determine the limit value in software. Meanwhile, to test the functionality used the black box method. This method can determine whether a certain part of the website is functioning properly or not. Based on this, the methodology used will be described in the following diagram, can be seen Figure 1.

Based on the picture above, there are several stages based on the steps the author took in writing this journal. The first step taken by the author is to collect data in meeting the needs of literature study by looking for data sources such as e-books, journals, and official websites like previous studies. From these data, it can be used as an idea in making ideas which later can be used as a reference as a reference in writing journals that discuss the hotel industry.

After the data is collected, the next step or step is where the author will analyze each element and service contained in the Web-based Hotel Software. Then the next stage is to observe and directly analyze the application in the use of each function in the Web-based Software by testing all existing functions. The third step is to analyze each function in Web Based Software regarding the previous steps that have been taken so that later the purpose of using Hotel Software is correct and correct. In the next stage, stages will be carried out in analyzing the quality of the application using this hotel software.

3. RESULT AND ANALYSIS

In the analysis of the Web-Based Hotel Reservation Software, the writer will use black box testing or testing, where the test will be carried out directly by looking at the existing system or application without having to understand the program structure. The application of analysis in black box testing is based on boundary factor analysis.

3.1 Examples of Testing

The test function to be carried out in this journal is the Reservation Module, there is a room booking interface and a table room booking functionality test. There are several fields available that will be tested on the booking room page. The first is the 'Check In'

button the user can enter on what date he wants to check in at the hotel, the second is the 'Check Out' button the user can enter what date he wants to check out, the third is the 'Person' button the user can enter how many users In one room, the fourth is the 'Accommodation' button, the user can choose what facilities he wants, the fifth is the 'Book Now' button. The Add Room Module has an add room interface and a table add room functionality test. There are several fields available to test in the added room. The first is the 'Save' button, Enter the Room Name, Enter Room Accommodation, Enter the Room Description, Enter the Room Occupant Capacity, and Enter the Room Rate. An Administrator Action Module on all page fields, there are several available fields that the page will test available to administrators. The first is the 'View' button, 'Cancel' button, 'Check In' button, 'Check Out' button, 'Edit' button, and 'Delete' button.

3.2 Administrator Actions Module

Figure 2 shows the Action on the Admin page on the website.

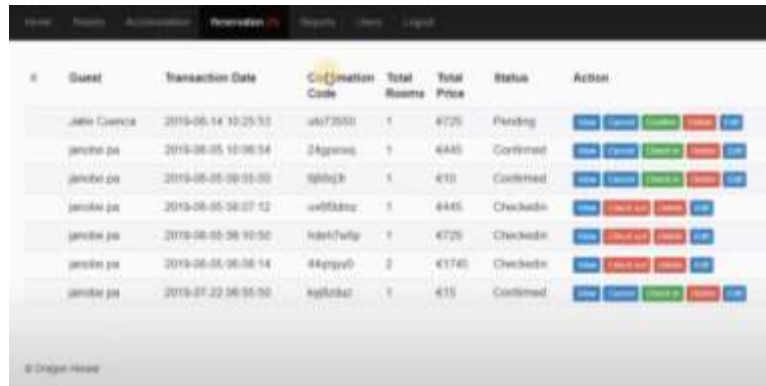


Figure 2: Administrator Actions Module

Table 1 is the test terms of the administrator page functionality. There are several available fields that the page will test available to administrators. The first is the 'View' button the admin can see all data from the user, the second is the 'Cancel' button the admin can cancel inputting user data, the third is the 'Check In' button the admin can see what date the user wants to check in, fourth is the 'Check Out' button, the admin can see what date the user wants to check out from Hotel, the fifth 'Edit' button if there is a guest registration error, the 'Delete' button admin can delete data that is not important and there may be double data. . This will make it easier for the admin to manage room bookings on the Hotel Website.

The following is the admin page's Action functionality test table.

Table 1: Functionality Test

No	Function	Expected Result	Actual Result	Conclusion
1.	“View” button	Reservations can be viewed	True	Success
2.	“Cancel” button	Reservation can be canceled	True	Success
3.	“Check In” button	Reservation has been entered	True	Success
4.	“Check Out” button	Reservation is out	True	Success
5.	“Edit” button	Reservations can be arranged	True	Success

All results from the admin page Action function are successful. Action functions tested on the admin page are: "View" button, "Delete" button, "Check In" button, "Check Out" button, "Edit" button. When the "View" button is pressed it will enter the booking page of the order. When the "Delete" button is pressed, the order list on the admin page will be deleted. When the "Check In" button is pressed, the Check In button is replaced by the Check Out button. When the "Check Out" button is pressed, the button will disappear to indicate that the customer has checked out. When the "Edit" button is pressed, we enter the booking page to change some of the desired things. When the "Cancel" button is pressed, the booking list will be declared canceled from the admin to the customer. This indicates that all action buttons are running as planned.

3.3 Add Room Module

Figure 3 is a picture of the added room display on the website page.



Figure 3: Add Room Interface

Table 2 is the terms of the added room page functionality test. There are several fields available to test in the added room.

Table 2: Add Room Functionality Test

No	Function	Expected Result	Actual Result	Conclusion
1.	“Save” button	Room added	True	Success
2.	Enter the Room Name	Room name added	True	Success
3.	Enter Room Accommodations	Room accommodation added	True	Success
4.	Enter the Room Description	Room description added	True	Success
5.	Enter the Occupant Capacity	Occupant capacity added	True	Success
6.	Enter the room rate	Room rates are added	True	Success

The first is the 'Save' button, users can use the save button if they have made their choice, the second is the name of the room available at Hotel, the third is 'accommodation', the user can choose what facilities are available at Hotel, the fourth is 'additional room description' the user can be the reason why he wants to add a room, the fifth is 'room price' according to the budget that the user does not want. This will make it easier for users and owners to view and book rooms on the Hotel Website. The following is a table for testing the function of the add room page.

Table 3: Room Booking Functionality Test

No.	Function	Expected Result	Actual Result	Conclusion
1.	“Check In” button	Check In date added	True	Success
2.	“Check Out” button	Check Out date added	True	Success
3.	“Person” button	Number of occupants added	True	Success
4.	“Accommodation” button	Room accommodation added	True	Success
5.	“Book Now” button	Room order added	True	Success

All results from the added rooms page are successful. The main functions tested on this page include: a 'save' button, and an upload button. When the " button is clicked and all the requirements of each field are met, the data entered into each field will be stored in the database. And then, the entered data will appear on the room list page. This means that all the functions available on this page are working.

The next test is the limit value analysis test, where each field will be tested to its limit. The purpose of a value test is to determine whether the available fields can request maximum or minimum data that stops working.



Figure 4: Room Booking Interface

3.4 Room Booking Module

Figure 4 is a picture of the room booking display on the website.

Table 3 is the terms of the room booking page functionality test. There are several fields available that will be tested on the booking room page. The first is the 'Check In' button the user can enter on what date he wants to check in at the hotel, the second is the 'Check Out' button the user can enter what date he wants to check out, the third is the 'Person' button the user can enter how many users In one room, the fourth is the 'Accommodation' button, the user can choose what facilities he wants, the fifth is the 'Book Now' button if the user is sure of the order he wants. This will make it easier for an admin and user to manage room bookings on the Hotel Website.

Based on the results of the test table above, it can be seen that the test results are successful because each button is functioning properly. When the "Check In" and "Check Out" buttons are pressed, the customer will be asked to select a check in and check out date. Then the "Person" button and the "Accommodation" button are pressed then the customer is asked to select the capacity of the number of people who want to stay and the room category and facilities desired. Then the "Book Now" button when pressed, the customer order will be saved and sent to the database then the order will be sent. appears in the list of room orders on the admin dashboard.

4. CONCLUSION

Based on results from the testing and analysis , it can be concluded that the result of the functionality that was tested was success, there were admin's functionally like (create, delete, edit) and customer booking action of our focus to be tested. Application tester results indicate that running 100% according to the assets displayed correctly, direct link and to the intended target too functionality without function failed on every page. But this all only simple test but this all only simple test dan still have a chance have a bug if any input in same time and the system will crash.

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