Developing a Web-Based Information System for Tour Package Ticket Purchases (Case Study: Bersukaria Tour)

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Abstract. The expansion of the tourism industry's information system is one opportunity for growth, as a result, Bersukaria Tour was used as a case study in this study. Bersukaria is one of the MSMEs in Semarang which is engaged in tourism. Although Bersukaria already has a website, its operational procedures and interface design should yet be improved. As a result, the authors create the website to optimize business process flow and enhance visual appeal. The method used is the waterfall which involves the Bersukaria team to find out the needs of the application to be developed. Black box testing is used in the application testing process so that built-in application functionalities can be validated. If there are features that need to be improved, they can be adjusted immediately. The online ticket information system on the website is able to have a positive impact because tour participants do not need to queue and pay offline, making it easier for participants to make reservations. Additionally, participant data is kept in a database, and the website allows users to see updates to the participant quota. The findings of this study should help Bersukaria Tour in creating and improving the website system and increasing interest among local and international audiences in visiting Indonesia's tourist destinations.

Keywords. Information System, Tourism, Website Development

1 Introduction

Along with the sloping curve of Covid-19 patients in Indonesia, it is expected to have a positive impact on the revival of the tourism sector after the pandemic. In the Indonesian economy, the tourism sector is linked to many other economic sectors and actors [1][2][3]. According to the Central Statistics Agency report, 212,332 foreign visitors arrived in Indonesia in May 2022. Comparing this number to the 111,057 visits in the preceding month, it increased by more than 91.19 percent [4]. Due to its attractive natural characteristics, friendliness of its people toward visitors, and distinctive local culture, Indonesia is a tourist destination that is always fascinating for international visitors.

One of the opportunities to develop the tourism sector lies in the development of information technology. In order to introduce and promote tourism potential to the larger population, information technology must be used. Technological advancements can also have a big impact on raising market share and making products more appealing. Additionally, it is anticipated that the performance of the tourism business would be aided by the quicker and simpler sharing of information [5].

However, this initiative ran into several issues, one of which occurred in the Bersukaria Tour. Bersukaria is one of the MSMEs in Semarang which is engaged in tourism. The problem with Bersukaria Tour is that users (tourists) still register manually by entering their email addresses and password. Additionally, Bersukaria Tour's payment system still relies on manual payments, with customers visiting the company's website to select vacation packages and other services. Finally, the user completes a Google form to submit payment information. The mismatch between the user's payment amount and the package prices they choose to purchase is another issue that Bersukaria Tour has. Additionally, Bersukaria's website currently lacks local and international banks' payment systems with virtual account billing options. Furthermore, Bersukaria believed that the design of their website was less appealing and effective.

According to earlier studies [6][7][8], purchasing tickets online is more straightforward for customers and organizers. Tickets may be delivered fast, and consumers don't need to come or pay cash on delivery (COD). The waterfall method, which is recommended for system development [6][7], was used to build the website. The author created the website using the PHP programming language, and MySQL is a core aspect of

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the system design for the database [9]. Black Box Testing, which tries to rid the system of faults and defects, was used in previous research to test the system [10].

As a result, the waterfall technique is the system development methodology used in this study. In addition, CSS, HTML, and JavaScript are used to develop the project. The database was created with MySql, and the server is XAMPP. Bootstrap is used as a Front end framework, which is a group of tools and technologies for building web applications [11]. Black box testing is then used to test the system. The purpose of this project is to create an information system for purchasing tickets for tourist attractions. In addition, the selection of packages with a total price for users and real-time quota updates is developed using a website that has been designed in such a way. Bersukaria Tour expects this research to assist them in developing and optimizing their web system in order to make it simpler for users to decide which tours they wish to attend and book tour packages.

2 Research Methods

The system development technique used in this study is the System Development Life Cycle (SDLC), which is the Waterfall method. The waterfall system stages employed in this study are as follows [12]:

1) Analysis
   In order to determine the needs for the development of the Bersukaria website, the authors interviewed representatives of Bersukaria Tour during that time. A review of the literature was also done to gather data on research related to websites that sell tickets online.
2) Design
   At this point, the author develops use cases, activity diagrams, sequence diagrams, and class diagrams to represent a system design. However, only the class diagram for purchasing online tourist tickets will be explained in this research. A class diagram is a visual representation of the architectural layout of a program under development. A class diagram seeks to develop a logical model of a system under construction.
3) Code Code
   At this stage, bootstrap is being used to implement the created design. The project's development also uses HTML, JavaScript, and CSS. The database was created with MySQL, and the server is XAMPP.
4) Test
   The author uses black box testing to complete the testing step. Black box testing attempts to remove faults and errors from the system.

3 Result and Discussion

The research entitled "Developing a Web-Based Information System for Tour Package Ticket Purchases (Case Study: Bersukaria Tour)" obtained several results and discussions. This system development platform uses a website, as implied by the title. MySQL is the database used, and bootstrap and PHP are the programming languages.

3.1 Analysis

Zoom video conferencing was used to conduct interviews with Bersukaria Tour in order to understand their needs. From the interviews, data obtained that the functional requirements of the Bersukaria web include that users can log in and register using Google accounts and social media accounts, search for tour packages, and buy tour packages. In addition, users can also use a variety of banks to make payments.

3.2 Design

The class diagram, which contains methods and attributes, will be explained at this stage. A line connects each class in the class diagram called an association. The class diagram on the website is shown in Figure 1. The class diagram is a development of use cases, activity diagrams, and sequence diagrams that have been made.

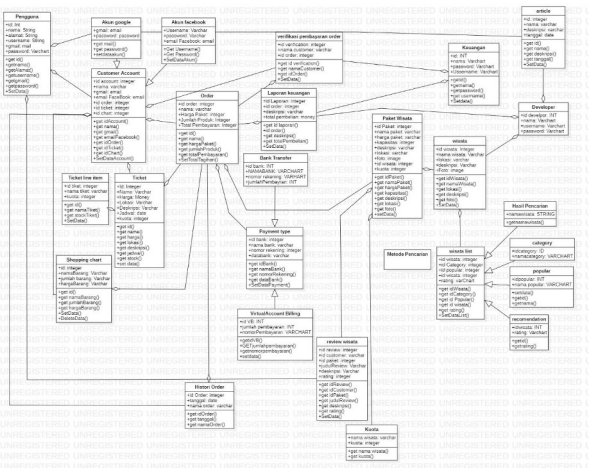

Fig. 1. Class Diagram of Bersukaria Website.

3.3 Code

The design outcomes are implemented as websites that use Bootstrap, HTML, JavaScript, and CSS in connection with a MySQL database. The results of putting the developed Front-end website module design into practice are shown below. The Homepage of the suggested system is shown in Figure 2, and it has some buttons, including home, shop, products, contact, etc. To access the desired screen, the user only needs to click the right button. A screenshot of the payment page is shown in Figure 3. By choosing the item to buy, payment can be made. The system will then display the final price that visitors must pay. A screenshot of the proof of payment will be shown to the participant afterward. As seen in Figure 4, the administrator can view the quantity of still-available quota in real-time. Also, the admin can add, update, and remove products (tourist tickets).

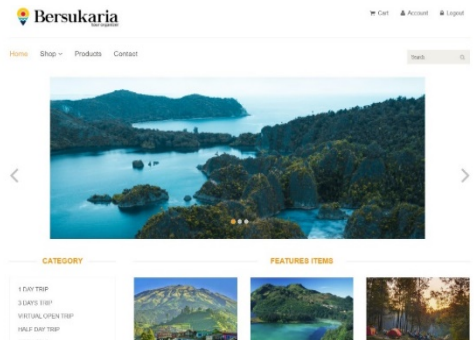

Fig. 2. The Homepage of Bersukaria Website.

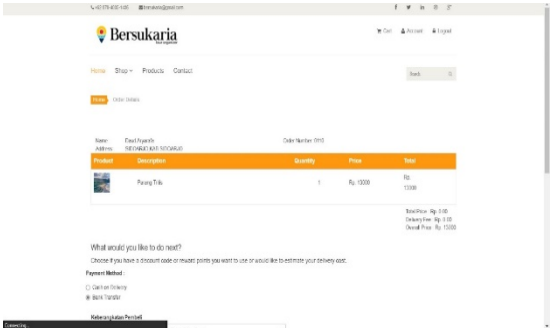

Fig. 3. The Checkout Page of Bersukaria Website.

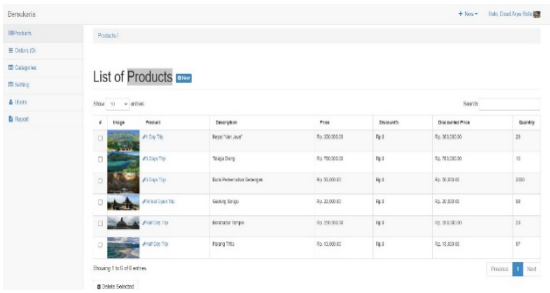

Fig. 4. Administrator Page of Bersukaria Website.

3.4 Test

Testing the system is carried out to ensure it has worked as it should and meets its objectives. After the system has been designed and manufactured, testing is conducted. This study's front-end testing was done using the black box testing technique. In addition, black box testing focuses on determining whether all system functions have been running correctly per defined needs. As seen in Table 1, the test case of checking payment page and tickets package tour has been run successfully.

Table 3. Checking Payment Page and Tickets Package Tour Test Case (Tourist).

No	Test Case	Expected Result	Result Obtained	Information
1	Payment page and billing total	User sees the bill and chooses the payment method to be made	Payment invoice appears and the user can pay the bill	Success
2	Payment status list	User sees the status of the payment whether it is being processed, accepted or rejected	Users can see the status of the payment whether it is being processed, accepted or rejected	Success
3	User Payment Invoice	Users get invoices according to purchase checkout data	User receives an invoice according to the purchase checkout data	Success
4	User tour package ticket (order accepted)	Users get tickets that can be accessed on the list of orders on the website	User tickets appear and can be accessed on the list of orders page in pdf form	Success
5	Rejected order description	User receives a failed purchase information display on the list of order page	User gets order rejection information	Success

4 Conclusion

This research entitled "Developing a Web-Based Information System for Tour Package Ticket Purchases (Case Study: Bersukaria Tour)" concluded that the process carried out using the waterfall method could be carried out according to stages. Starting with analysis, design, code, and ending with tests. At the analysis stage, interviews were conducted with the Bersukaria Tour. Then the system design is made using class diagrams. Next, at the coding stage, several system interfaces are displayed. Finally, after the system is implemented, testing is carried out with black boxes with results showing that the system has been correctly running following the defined needs.

This Web-Based Tourist Attractions Ticket Purchase Information System contributes to increasing the interest in tourist visits to boost the Indonesian economy. Conditions are expected to improve in several parts of Indonesia. Therefore, more people will travel if Covid-19 decreases. Tourist visits that involve many people continue to apply health protocols, then collaborate with technological advances, making activities easier to carry out, and the data of incoming tour participants is recorded in the system.

This research is still far from perfect. It is necessary to improve using other methods so that the results obtained are even better. Implementation of the system can be applied to other community activities by changing needs and business processes.

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