

Designing "WIBIZZ" as a Bus Rental Website to Facilitate the Booking Process and Rental Management

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ABSTRACT

This journal discusses the design and implementation of a bus rental website with the name "WIBIZZ" which aims to increase efficiency in the bus rental ordering and management process. In the current digital era, using websites as a platform to provide bus rental services has become an attractive solution for transportation service providers. This research focuses on the design and implementation stages of a bus rental website that is user-friendly, responsive, and has adequate features to meet user needs. The methods used in this research include user needs analysis, web-based interface design, and development using the latest technology. The result of this research is a bus rental website that can be used by prospective renters easily and efficiently. The features provided include searching for bus schedules, route selection, online ticket ordering, payment management, as well as reporting and tracking rental status. It is hoped that with this website, the bus rental ordering and management process will become faster, more efficient and transparent for service providers and prospective renters. In addition, increasing efficiency in bus rental operations is expected to improve service quality and overall user experience.

Keywords: *Bus Rental Website, Online Booking, User-friendly, Operational Efficiency, Responsive.*

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1. INTRODUCTION

1.1 Case Background

In the era of globalization and development of information technology, transportation is one of the sectors experiencing significant transformation. The increasing mobility of the population and the need for efficient, comfortable and safe means of transportation are becoming increasingly urgent demands. One mode of transportation that remains a mainstay in addressing mobility needs is land transportation, especially buses.

Bus rental is one of the transportation alternatives that is often chosen by tourist travel groups, companies, schools and other community groups. On a larger scale, the government also often uses bus rental services to transport the masses to certain events or activities. However, the bus rental process which is still conventional with manual ordering, complex administration, and lack of transparent information often becomes obstacles for service providers and prospective renters.

The use of information technology, especially the development of a bus rental website, can be an effective solution to overcome this problem. With a bus rental website, it is hoped that the bus rental ordering and management process will become easier, faster and better organized.

Apart from that, using the website also makes it easy for prospective renters to understand information related to schedules, prices and services provided, thereby increasing user satisfaction.

1.2 Research Purpose

The aim of this research is to design and implement a bus rental website that is user-friendly and has adequate features to facilitate the bus rental ordering and management process. By optimizing information technology and utilizing the sophistication of the website, it is hoped that it can increase the operational efficiency of bus rentals and provide a better experience for prospective renters.

1.3 The Scope of Research

This research will include analyzing user needs in the bus rental process, designing a web-based website interface, and developing a website using the latest technology. Website development will focus on main features which include searching for bus schedules, route selection, online ticket ordering, payment management, as well as reporting and tracking rental status.

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1.4 Benefits of Research

This research is expected to provide benefits for several parties:

- a. Bus Rental Service Providers: Can increase efficiency in the bus rental ordering and management process, improve service quality, and expand market reach through digital platforms.
- b. Prospective Bus Renters: Have the convenience of finding information, ordering tickets, and monitoring rental status quickly and accurately.
- c. Government and Related Institutions: Can optimize the use of bus transportation for mass events and activities with an organized process.

1.5 Writing Systematics

The writing of this journal will be divided into several chapters arranged systematically. Chapter 1 is the Introduction, which includes the background, research objectives, research scope, research benefits, and the writing systematics. Chapter 2 will discuss the literature review on bus rental websites and the latest technologies used. The subsequent chapters will review the stages of design, implementation, and evaluation of the developed bus rental website.

It is hoped that this research can make a positive contribution to the development of information technology in the transportation sector and provide a significant contribution to advancing the bus rental industry in this digital era.

2. LITERATURE REVIEW

2.1 Web Interface Design

Website is a collection of data consisting of various interrelated web pages, which are managed by individuals, groups or organizations. An effective website displays attractive visual elements and operates according to the demands of its users. [1]. User interface (UI) or user interface is a visualization of a product that acts as a link between the system and the user, where the UI visualization can include an attractive combination of colors, shapes and text in a mobile application [2]. Web interface design is a critical element in bus rental website development, as it can influence the user experience. Principles such as intuitive layout, availability of clear information, and readability of elements will shape the overall impression of a website [3].

2.2 User Interface

User interface is a series of graphical visualizations that can be understood by the individual using a computer, and is designed in such a way that it can be interpreted by the computer's operating system and function as expected. The user interface is an important element that contributes to increasing traffic on a website, because users interact with programming logic through the user interface [4]. A good user interface is the key to increasing user interaction with a website. Design principles such as intuitive layout, clear navigation, and appropriate use of color can help improve user experience [5]. Presenting information that is easy to understand through a friendly interface will help prospective renters understand the ordering process.

2.3 Use of Mobile Technology

It is important to consider the use of mobile technology in bus rental website development. With more and more users accessing the internet via mobile devices, responsiveness and good display on various screen sizes are crucial [6].

2.4 Online Transaction Security

The security of transactions via the internet is a major concern for buyers, considering that all transactions are carried out online [7]. Transaction security is the ability of a shop to manage control and maintain confidentiality of online transactions carried out by consumers regarding the information they have provided [8]. In the online rental system, transaction security is crucial. Implementation of security protocols such as SSL/TLS for encryption of user data when making online orders and payments is very important to protect sensitive information [9]. The use of strong authentication methods is also necessary to prevent unauthorized access.

2.5. Information System

Information technology is defined as the technological tools used by companies to produce, process and disseminate information in various forms. Thus, information technology is able to provide efficient and effective support for company operations and reduce costs in business activities [10].

An information system is a system that exists within an organization that connects daily transaction processing needs that support the organization's managerial functions in the context of strategic activities. The main goal is to provide reports required by external parties [11].

The implementation of information systems in an organization or company has an important role in carrying out the data or information management process. The main goal is to increase the efficiency of using technology that supports various company activities and also to support the management decision making process [12].

2.6. Usecase Diagram

Usecase diagram is a representation of the function of a system from the user's point of view, where the usecase operates by describing various interactions between users/actors and the system [13].

3. RESEARCH METHODOLOGY

3.1 Framework of Thinking

Figure 3.1 below shows the framework of thinking carried out in the design process of the bus rental website "WIBIZZ".

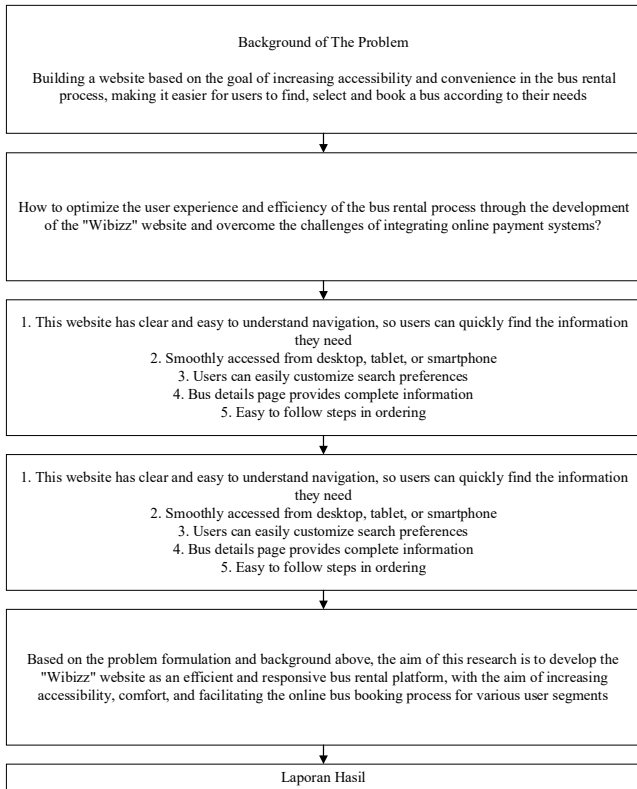


Figure 3.1 Framework of Thinking

3.2 Use Case Diagram

a. Admin Use Case

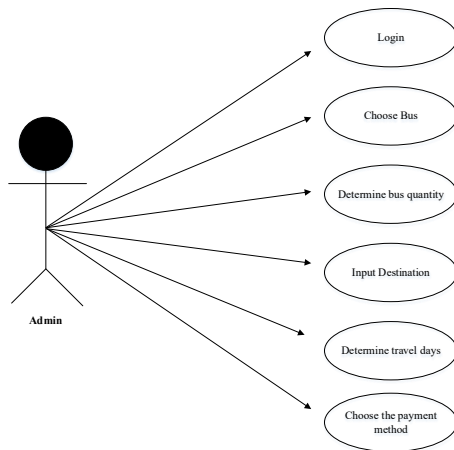


Figure 3.2 Admin Use Case

The admin has a role as a management server on the web. The admin also has access, of course, to manage data according to the menu provided. There are several display menus, namely the login menu to enter the web system. The bus selection menu contains several bus displays that consumers will order and are in demand and suitable. The menu determines the number of bus orders so that renters can determine

their needs based on the number of buses needed. The menu is for determining the location you want to go to, and the last menu is the menu for determining transaction payments.

b. Bus Owners Use Case

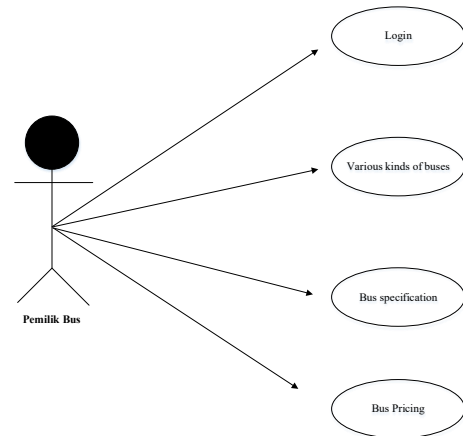


Figure 3.3 Bus Owner Use Case

Bus owners also of course have some access to be able to manage several menu displays that match the display above, namely the login display. Of course, bus owners also have to log in first. In the various buses menu, bus owners can enter several buses that can be used. In the bus specifications menu, bus owners must enter the specifications of the bus so that consumers know what facilities are available on the bus. The last menu is a menu for the price of the bus.

c. Customer/User Use Case

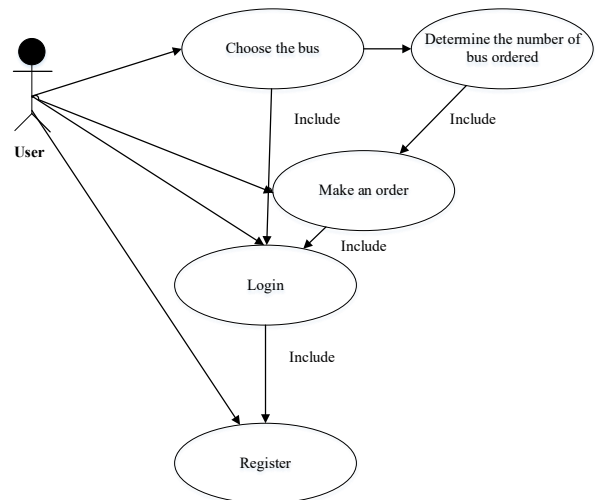


Figure 3.4 User Use Case

Bus renters or consumers have several menu displays available, namely there are several pages, the first menu is to log in, renters must log in first, a bus display menu is available so that prospective bus renters can choose which bus is appropriate, a menu to select the number of buses what will be ordered, and for the last menu, namely the menu for making payment.

3.3 Data Flow Diagram (DFD)

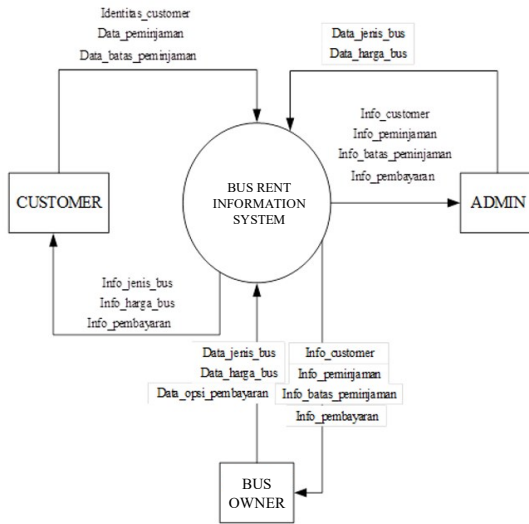


Figure 3.5 Data Flow Diagram

The Data Flow Diagram (DFD) from the "WIBIZZ" information system illustrates the flow of data between the main entities in the system. This DFD includes entities such as "Customer," "Admin," and "Bus Owner." When a customer wants to rent a bus, he submits a request through the user interface. The request then flows to the bus reservation system managed by the admin, where validation and scheduling takes place. Data flows from the reservation system to the bus inventory section by bus owners to ensure availability. Next, information about the booking and schedule is sent back to the reservation system to be confirmed to the customer. After confirmation, data about the reservation and price is submitted to the customer to process payment. Upon successful payment, the payment status is passed back to the reservation system, which then instructs inventory to secure the selected bus.

3.4 Entity Relationship Diagram (ERD)



Figure 3.6 Entity Relationship Diagram

The Entity Relationship Diagram (ERD) in the "WIBIZZ" information system describes the structure and relationships between the entities involved in the business operation. First of all, there is the entity "Customer," which represents the individual or organization doing the bus

rental. The "Rental" entity acts as a link between "Customer" and "Bus," indicating that each "Rental" is associated with one "Customer" and may involve one or more "Bus" units.

The "Admin" entity represents the administrator or system manager who has access to manage rental information and activities. The connection between "Admin" and "Rental" indicates that the admin has access rights to rental data in the system. On the other hand, there is the "Bus" entity which represents bus units available for rental. Each "Bus" entity has a relationship with a "Bus Owner," indicating ownership and associating the bus with a "Bus Owner" entity that may control one or more units of the bus. In this way, this ERD provides a visual illustration of how the interactions and relationships between these entities support overall operations in the bus rental information system.

4. RESULT AND DISCUSSION

4.1 Website Initial Display



Figure 4.7 Website Initial Display

Figure 4.7 is the initial display of the "WIBIZZ" website with account, order and shop/fleet menu options. In this initial display there are links to fleet or bus catalogs and admin contacts for other related services on the web. Then below there is a description of the website and several bus options.

4.2 Account Menu

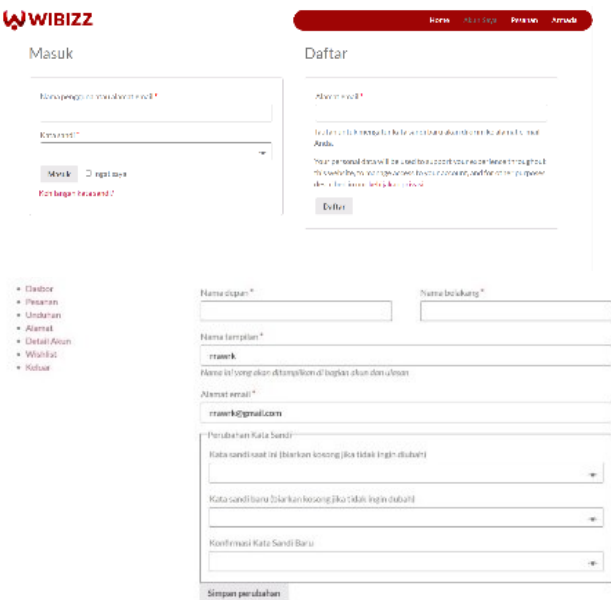


Figure 4.8 Account Menu Before and After Login

In the account menu, the user will be shown the option to log in/register. After logging in/entering the website, web users can see the user's dashboard, orders, downloads, address and account details.

4.3 Order Menu

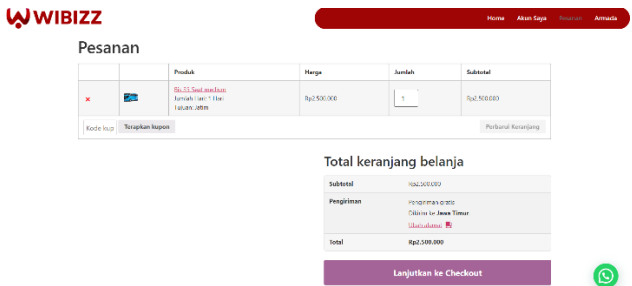


Figure 4.9 Order Menu

In the order menu, there is a list of buses to be ordered and orders that have been made as well as details of each order such as length of rental time, quantity and location of bus use.

4.4 Shop Menu

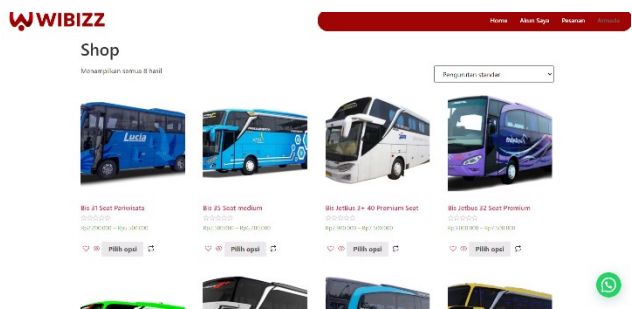


Figure 4.10 Shop Menu

In the shop menu, there are choices of buses that can be ordered. The feature provided in this menu is a feature for comparing 2 different buses, so that customers will not find it difficult to check the prices of the buses they want to order one by one.

5. CONCLUSION

In this research, a bus rental website was successfully designed and implemented that provides convenience in ordering and management, called "WIBIZZ". With a good UI/UX design approach, this website provides features for selecting destination routes, online ordering, and guaranteed customer data security. The results demonstrate the potential of web technology in improving operational efficiency and customer experience in the bus rental industry. However, keep in mind that ongoing attention is needed to the long-term development and maintenance for the sustainability of this website as a bus rental system solution.

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