Design Of An E-Commerce Information System For Concert Ticket Sales Based On A Website

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Article Info	ABSTRACT
Keywords: Design, E-Commerce, Information System, Ticket Sales, Website	The development of information technology, particularly the internet, has had a significant impact on various aspects of life, including business and commerce. One of the most noticeable effects is the increasing popularity of online transactions or e-commerce. E-commerce systems provide convenience for consumers to carry out transactions online without the limitations of place and time. In the entertainment industry, especially music concerts, online ticket sales through e-commerce systems offer practical solutions to address the issues arising from conventional methods. This research aims to design and develop a website-based e-commerce information system for concert ticket booking. The system is designed to provide users with convenience in booking concert tickets online, accessing the latest information about concert schedules and locations, and selecting flexible payment methods. The research methodology used is the waterfall approach, which consists of the stages of data collection, requirements analysis, system design, implementation, testing, and system maintenance. The results of this research show that the website-based e-commerce concert ticket system can improve transaction efficiency, expand market reach, and provide users with easier access. Additionally, the system is expected to enhance user satisfaction by providing fast, practical, and flexible services. It is hoped that the system will continue to evolve through feedback and suggestions from users to further improve functionality and user convenience in the future.
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INTRODUCTION

The development of information technology, especially the internet, has had a significant impact on various aspects of life, including business and trade. The internet is not only used as a means of communication but also as a medium to access various information quickly and efficiently. One of the tangible impacts of this development is the increasing popularity of online transactions, commonly known as e-commerce. According to research by Laudon and Traver (2020), e-commerce has become one of the main drivers of business digitalization because it offers cost efficiency and broader access for consumers.

The increasing mobility of people and the ever-changing needs of consumers require businesses to adapt and provide faster and more efficient services. In the entertainment industry, particularly in music concerts, ticket demand often becomes a problem for customers

who are far from the sales location. Many stores still use conventional methods in selling tickets, where customers have to come directly to the location to make a purchase. This condition is less effective, especially for those with time and distance constraints. As a solution, the Technology Acceptance Model (TAM) by Davis (1989) shows that technology adoption, such as e-commerce, is driven by the perceived usefulness and ease of access.

Therefore, more modern and practical solutions are needed to address this issue. A website-based e-commerce system allows ticket purchase transactions to be made online without distance and time constraints. This is supported by a study by Pavlou (2021), which shows that e-commerce adoption not only facilitates consumers in ordering tickets but also helps concert organizers in terms of sales and promotion management. This system can increase operational efficiency, reduce promotional costs, and expand market reach, both geographically and demographically.

One example of the implementation of this technology is the project to design an e-commerce ticketing system for music concerts based on a website. With this system, the ticket purchasing process can be done online through the website provided, such as "www.konser.id". This system is designed to facilitate transactions between the admin as the ticket sales service provider and the buyer as the customer, making the concert ticket trading process more practical, faster, and more efficient. Research by Chen and Holsapple (2020) supports this by stating that e-commerce accelerates business interactions and increases customer satisfaction due to the availability of real-time information and products.

The advantages offered by e-commerce in concert ticket sales are not only limited to ease of access for consumers but also the system's ability to increase sales and expand the company's reach. With this web-based system, stores or ticket providers can improve sales systems, strengthen product branding, and increase the number of customers. Meanwhile, consumers benefit from the ease of ordering tickets, saving time, and having more product choices. A study conducted by Ameen et al. (2021) shows that e-commerce platforms can increase customer loyalty through a more efficient and easily accessible experience.

Based on this, the design of a website-based e-commerce concert ticket information system is expected to provide solutions to the challenges faced by the entertainment industry, especially in terms of concert ticket sales. This system not only increases transaction efficiency but also provides long-term benefits for companies and consumers.

METHOD

The research method used in the design of the e-commerce concert ticket information system is carried out through several structured stages, starting from data collection to software development using the waterfall approach. The research steps are divided into two main parts: data collection and software development.

The data collection in this research is based on several sources. Literature studies are conducted to gather information from scientific articles, journals, case studies, and websites relevant to e-commerce and online ticket sales. This method is supported by recent research by Smith and Chaffey (2020), which emphasizes the importance of literature in understanding current e-commerce practices, particularly in the entertainment industry. Additionally,

observations of both conventional and e-commerce-based concert ticket sales systems are conducted to analyze the advantages and disadvantages of the existing methods, as suggested by Laudon and Traver (2021), who emphasize the importance of direct observation in validating e-commerce best practices. Documentation is also used as an additional data collection technique, referencing existing systems, as described by O'Brien and Marakas (2019), who recommend the use of documentation in technology-based management systems. The second stage is software development, which uses the waterfall method. This method is a sequential and systematic approach to software development. According to Pressman and Maxim (2020), the waterfall method ensures that each development stage is completed sequentially and thoroughly before moving on to the next stage. The first stage is requirements analysis, where key elements of the system, such as ticket ordering features, customer data management, and payment systems, are thoroughly identified. This is consistent with research conducted by Sommerville (2021), which emphasizes the importance of requirements analysis in service-based software development.

After the requirements are analyzed, system design is conducted, which includes the creation of the structure and workflow of the e-commerce system. At this stage, designing an intuitive and easy-to-understand user interface is a primary focus. Effective interface development, according to Nuseibeh and Easterbrook (2020), is key to improving the user experience in an e-commerce system. A good design must clearly consider the transaction flow and the integration of system elements to ensure operational efficiency. Next is the implementation stage, where the system design is translated into relevant programming languages, such as HTML, CSS, PHP, and MySQL. At this stage, all system features, such as online ticket ordering, ticket availability checking, and payment processing, are implemented according to user needs. A study by Sommerville (2021) also asserts that good implementation must consider data security and system integration across various platforms.

Once implementation is complete, system testing is carried out. The purpose of testing is to ensure that all features function according to the specifications and that there are no errors in system functionality. According to Farooq and Abbas (2021), comprehensive software testing is essential to ensure that the system operates without bugs and can handle various usage scenarios. If any errors are found, corrections are made until the system functions optimally. The final stage is system maintenance, where the developed system is continually updated and adjusted to meet user needs or technological developments. Ongoing maintenance, according to a study by van Vliet and Hane (2019), is crucial to ensuring that the system remains relevant and secure amid rapid technological advancements.

Some advantages of the designed e-commerce system include the ease of managing business online, flexibility in terms of time and location for users, and efficiency in transaction processes. However, as highlighted in the research by Ameen et al. (2021), tight market competition in the e-commerce industry and consumer data security are challenges that must be addressed with appropriate strategies. With the research method described, it is expected that the design of this e-commerce concert ticket information system can provide a more efficient and effective solution for service providers and consumers.

RESULTS AND DISCCUSION

System Requirements Analysis

The SKUY Music Concert Ticket system offers convenience for music enthusiasts, particularly in ordering tickets online without the need to visit physical ticket outlets. The payment process can be done online through a transfer based on the specified payment amount. The current system for purchasing tickets on the SKUY Music Concert Ticket Website for the WHY DON'T WE "Tour Ticket" operates as follows.

First, customers access the official website at www.konser.id. Then, they must register or log in using their username and password. Next, customers click on the available category icon, scroll down, and select the "Event" icon. On the event page, customers choose the desired ticket, such as the "Tour Ticket." Once the ticket is selected, customers are required to fill in their personal information completely. Afterward, they select their preferred payment method. Once the payment is successfully processed, customers will receive a booking confirmation via the registered email.

Figure 1. System Requirements Analysis

The proposed system for purchasing concert tickets through the website www.konser.id is as follows:

1. The customer accesses the official website at www.konser.id.
2. The customer logs in using their username and password.
3. If the customer does not have an account, they can register first by filling in their personal information completely.
4. After logging in, the customer can place a concert ticket order on the order page.
5. On the order page, the customer selects the concert ticket they wish to purchase.
6. The customer chooses the desired ticket, such as the "Tour Ticket."
7. The customer then selects their preferred payment method.
8. Available payment methods include bank transfer, Gopay, and credit/debit card.
9. Once the payment is successful, the customer will receive a booking confirmation via their registered email.
10. The admin will also receive confirmation of the order and the payment method chosen by the customer.
11. Afterward, the admin will send the booking confirmation to the customer via email.

With this system, the concert ticket booking process is expected to be easier, faster, and more efficient.
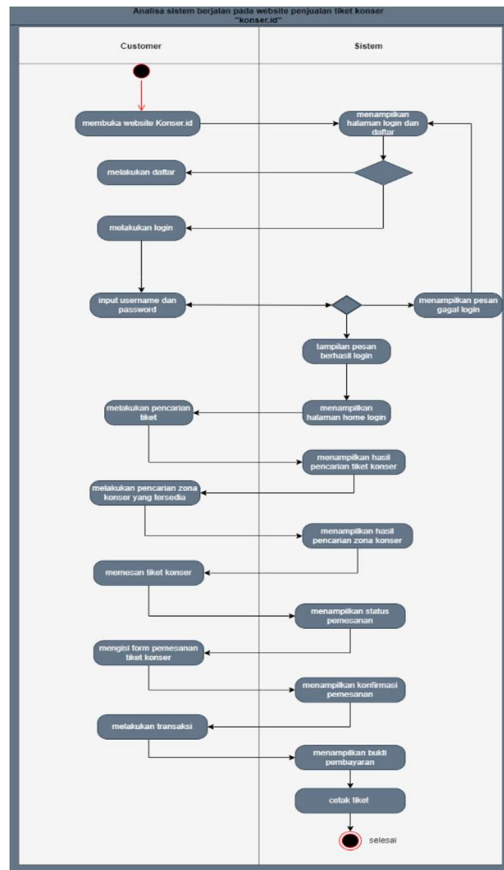
Figure 2. Activity Diagram

System Requirements Specifications

To operate a computer, supporting devices are needed to facilitate and speed up the operation of the system itself. In supporting the design of the SKUY e-commerce ticket information system based on a website, several minimum hardware and software specifications must be met. The required specifications are as follows:

1. Hardware Specifications
   a. Operating System: This system requires Windows 10 as its operating platform.
   b. Processor: The computer must be equipped with at least an Intel(R) Celeron(R) CPU 847 with a speed of 1.10GHz.
   c. RAM: A minimum of 4 GB of RAM is needed to support optimal system performance.
   d. Hard Disk: A minimum storage capacity of 500 GB is required to store system data and the database.
   e. Mouse: A standard input device such as a mouse is also necessary to facilitate easier operation.
2. Software Specifications
   a. Text Editor: The development tool used to write the code is Visual Studio Code.

b. Web Server: The system is run using XAMPP version 5.6.37 as a local server to run web-based applications.

c. Database: Data management in the system is performed using MySQL as the primary database.

d. Database Tools: phpMyAdmin version 4.8.2 is used as a tool to facilitate database administration.

e. Programming Language: The system is developed using the PHP programming language.

3. Supporting Software Specifications

a. Database: To create diagrams and database models, Microsoft Office Visio 2016 is used.

b. Browser: Browsers such as Google Chrome and Mozilla Firefox are required to access and test this web-based system.

Database Design
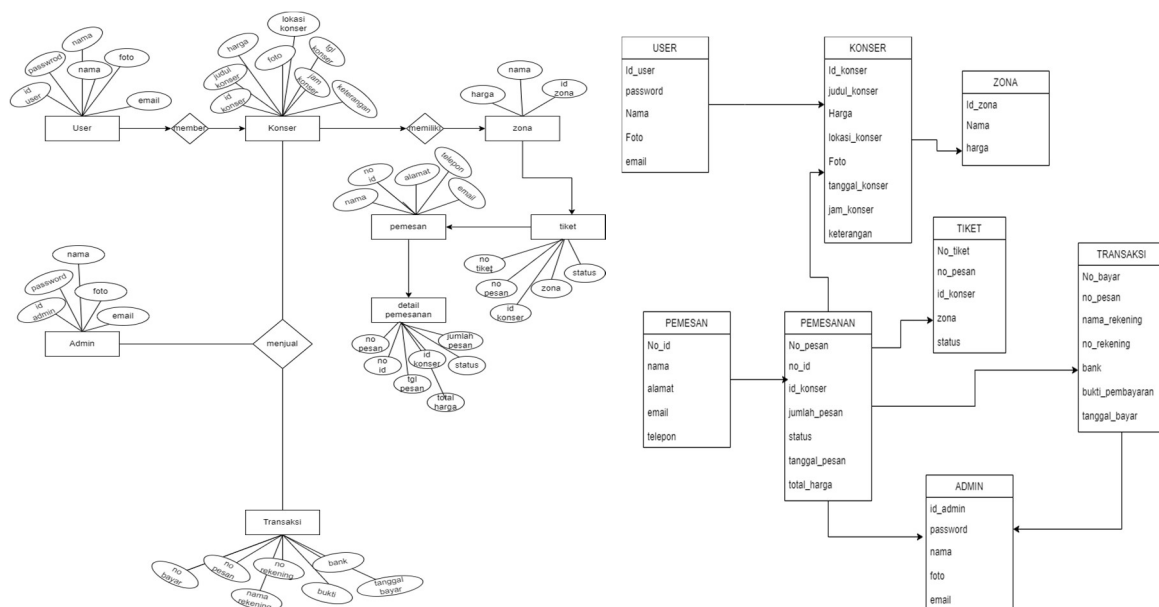
Figure 3. ERD Design and LRS Design

System Design
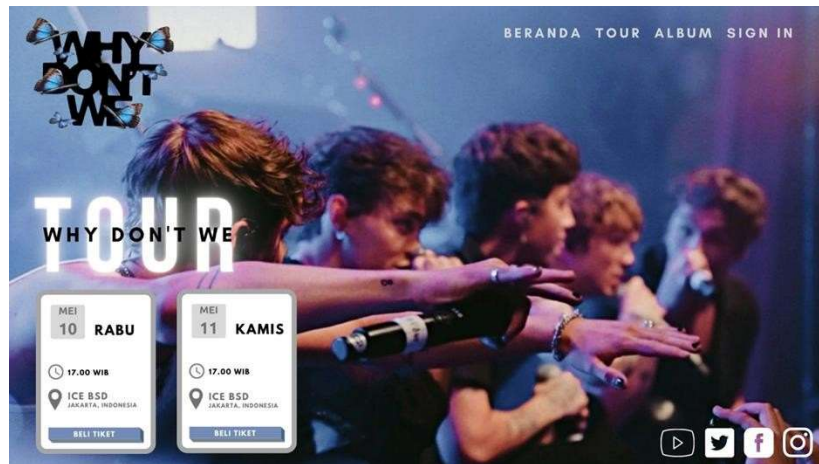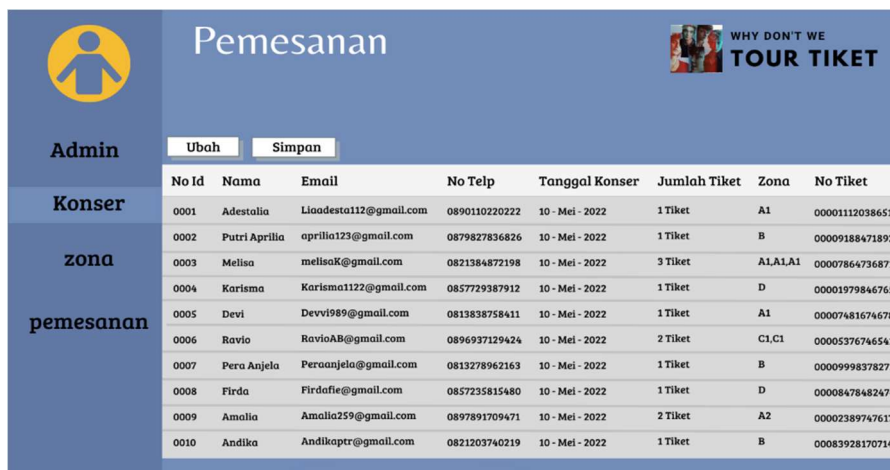

Figure 4. Main Page
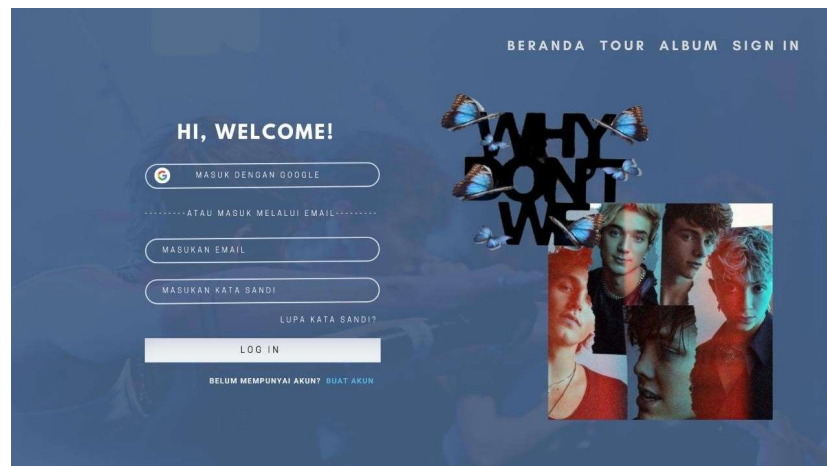
Figure 5. Login Page
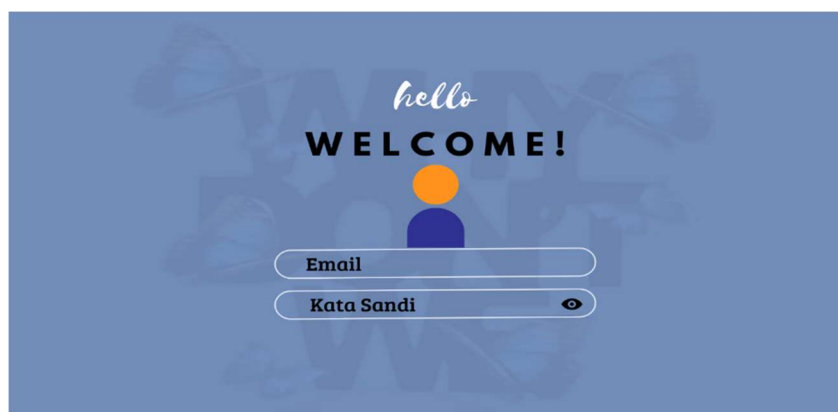
Figure 6. Admin Login Page

Figure 7. Booking Page

CONCLUSION

From the discussion presented, it can be concluded that the use of an interactive e-commerce system for purchasing concert tickets online provides many conveniences for consumers. This system allows users to view various ticket options without having to visit a ticket sales agent directly. Additionally, the information presented can be accessed faster and from anywhere as long as connected to the internet, making the system more practical and flexible. The online concert ticket sales system is a breakthrough that can meet the needs of the public, especially music lovers, by providing up-to-date information on concert schedules, locations, and performing artists. With this system, the ticket purchasing process is expected to become more efficient and enhance user comfort. For the system to continue evolving and attracting more users, it is important to receive feedback and suggestions from users for further improvement, so the website can continue to meet consumer needs more effectively and efficiently.

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