

System Design for Ordering and Digitizing Website-Based Bus Tickets

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
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ABSTRACT

In the business world, generally users and company owners need something innovative to help support performance and make it easier to use or search for product data. The presence of this website-based internet will make it easier for all groups to be able to access all forms of information, including utilizing this media to be able to connect relationships between customers and the company's products, one of which is ordering bus tickets. Based on the various conveniences and uses that the internet has, a "Use of Information Systems in Ordering and Digitizing Website-Based Bus Tickets" was developed. This system was created with PHP, MySQL and Bootstrap software. This information system is designed to provide convenience in terms of ticket ordering services and obtaining other information needed by customer.

Keyword : Bus Tickets; Booking; Website; Information Systems; Codeigniter

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1. INTRODUCTION

A bus is a land vehicle designed to transport many passengers. Buses can have a capacity of up to 300 passengers. Buses have many types. Starting from midibus and minibuses to large buses. Large buses are usually used for long distance services. There are many types of large buses, such as urban transit buses and intercity buses which are attractive and there are also school buses or campus buses which do not always attract fares. Buses can be used for scheduled city trips, scheduled long trips, school, rental, or tourism. In general, bus ticket sales are still mostly done in the classic way, namely going to the bus stop and then ordering bus tickets directly at the bus terminal. Or many people buy it through bus agents (Jannah, A., et al 2023).

Currently, technological developments are very rapid. Everything can be done with technology, including ordering bus tickets. Moreover, with the emergence of the Covid-19 virus pandemic, technology has become the only way to keep all activities running. The use of technology in ordering bus tickets can really help. With technology as a booking medium, people don't need to queue long or even jostle to buy bus tickets. People only need a good internet network then open the online bus ticket booking website, and then order bus tickets. Even with the online booking feature, people can book bus tickets in advance so they don't run out of tickets. The aim of writing this journal is to make people aware that technology can also make it easier for us to order bus tickets (Sari, I.P., et al 2021).

2. MATERIAL AND METHOD

A. Information Systems

According to Abdul Kadir (Sari, I.P., et al 2022) in a book entitled Introduction to Information Systems, "Information systems include a number of components (humans, computers, information technology, and work procedures), there is something that is processed (data becomes information), and is intended to achieve a goal or objective".

According to Bonnie Soeherman & Marion Pinontoan in the book entitled *Designing Information Systems, Concept & Cases with Visio*, "An information system is a series of components in the form of people, procedures, data and technology (such as computers) that are used to carry out a process for producing valuable information for decision making".

According to Indrajani in a book entitled *Introduction to Database Systems*, "An information system is any organized combination of people, hardware, software, communication networks, and data resources, which collects, transforms, and disseminates information within an organization".

B. Website

A website is usually defined as a collection of pages that display information, text data, image data, animation data, sound, video and/or a combination of all of them, both static and dynamic, which form an interrelated series, each of which is connected to a network of pages. (hyperlink). It is static if the information content of the website is fixed, rarely changes, and the information content is directed only by the website owner. It is dynamic if the information content of the website is always changing, and the information content is two-way interactive coming from the website owner and users. An example of a static website is one that contains a company profile, while a dynamic website is something like Booking Tickets or Shopping. In terms of development, static websites can only be updated by the owner, while dynamic websites can be updated by both users and owners (Ichsan, A., et al 2023).

C. Code Igniter

CodeIgniter is a framework created using the PHP language, which can be used for fast web development. The framework itself can be interpreted as a structure of libraries, classes and run-time infrastructure that can be used by programmers to develop web applications quickly. The purpose of using a framework is to make it easier for web developers to develop robust web applications quickly without losing flexibility. The CodeIgniter framework was chosen because CodeIgniter was developed by the open source community and according to the author it is very easy to learn. CodeIgniter also uses the MVC (Models-View-Controller) concept which separates data and presentation, making it possible to develop a web quickly and simplifying the web management process (Ramadhani, F., et al 2022).

D. Bootstrapping

Bootstrap web technology is a framework for building responsive web designs. This means that the web display created with the bootstrap framework will adjust to the screen size of the browser that will be used, whether on a desktop, tablet or mobile device. This feature can be activated or deactivated according to your own wishes, so you can create a website for desktop viewing only and if it is rendered by a mobile browser, the appearance of the website you create cannot adapt to the screen. With Bootstrap, web developers can save time in designing the appearance of the application.

In Bootstrap, CSS, HTML and also JQuery plugins are available for typography, forms, buttons, tables, grids, navigation and various other interface components (Habibi., et al 2023).

E. MySQL

According to Betha Sidik in a book entitled *MySQL for users, administrators and web application developers*, "MySQL is a database management system software that is very popular among web programming, especially in the Linux environment using PHP and Perl scripts" (Satria, A., et al 2023).

MySQL is the most popular database used to build web applications that use a database as a source and data manager.

3. RESULTS AND DISCUSSION

A. System Analysis

The stage of analyzing the basic things needed in implementing an application creation or development project. This stage is the initial stage in system development, the things to do are:

1. Define general problems in detail.
2. Arrange decision alternatives or options to be chosen
3. Determine the criteria or decision comparisons that are important to be executed according to needs.

4. Determine the priority level of each decision that has been made

B. System Development

The stage where the data/problem solving of the application that has been designed is translated into a predetermined programming language [13]. The sequence of steps taken is:

1. Building a system for the user and a system for the cashier.
2. Determining the priority order of decisions based on user needs.
3. Translating each design that has been made into a programming language.

C. Writing Program Code

This program testing is the final stage where the new system is tested for its capabilities and effectiveness so that system deficiencies and weaknesses are found which are then reviewed and improvements are made to the application to make it better and more perfect

This era of increasingly rapid technological development makes business competition in any field more varied. There are many business methods used by a company to attract as many consumers as possible.

Starting from placing advertisements, distributing brochures and selling via internet media.

According to I Wayan, reservations in English are reservations which consist of the words "to reserve" which means to prepare or prepare something beforehand. Meanwhile, in general, reservations are reservations for facilities including buses. Furthermore, according to Yoeti, reservations or reservations are also called bookings. Sometimes we cannot differentiate between the meanings of reservation and booking because they both have the same meaning. The server has access rights to collect real-time data from clients and enter this information into the database. This information can later be used by all mobile clients to complete their tasks and in this case for ordering tickets. After that, the web server must be protected from overload requests because overload requests can cause the server to go down and the server response time to be longer. Web service is an application software that is independent so that it is not affected by the type of platform, therefore it will be accessible to the network to provide its methods. If two business entities are different, the web service will use XML to exchange data.

On a website, the interface is a part that is directly related to website users. The aim of the site interface design is to make the site look more attractive, easy to understand and easy to operate and to become the identity of our site.

D. Main Page

This page is an initial display for users who want to order and see information about available bus companies.



Fig 1. Main Page Image

E. About Us Page

This page explains the bus companies that are currently operating and finds the ticket discount interface.



Fig 2. About Us Page

F. Bus Counter Facilities Page

This page will explain what facilities will be provided by the bus company.

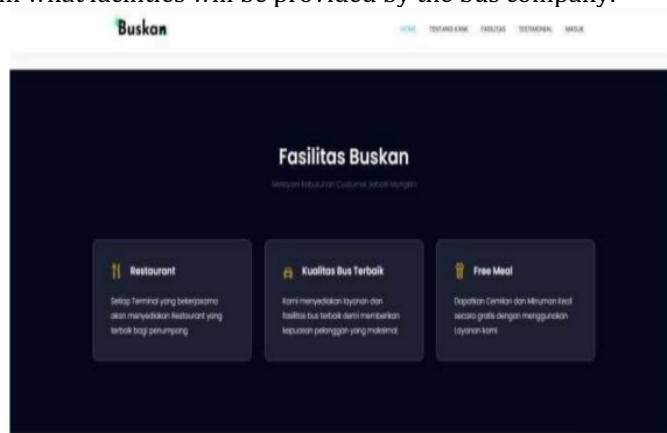


Fig 3. Bus Facilities Page

G. Bus User Customer Testimonial Page

This page will explain the testimonials given directly by users of the bus website.

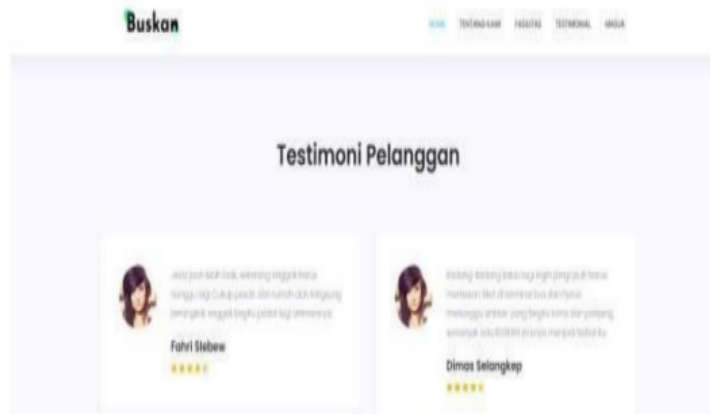


Fig 4. Testimonial Page

H. Login Page

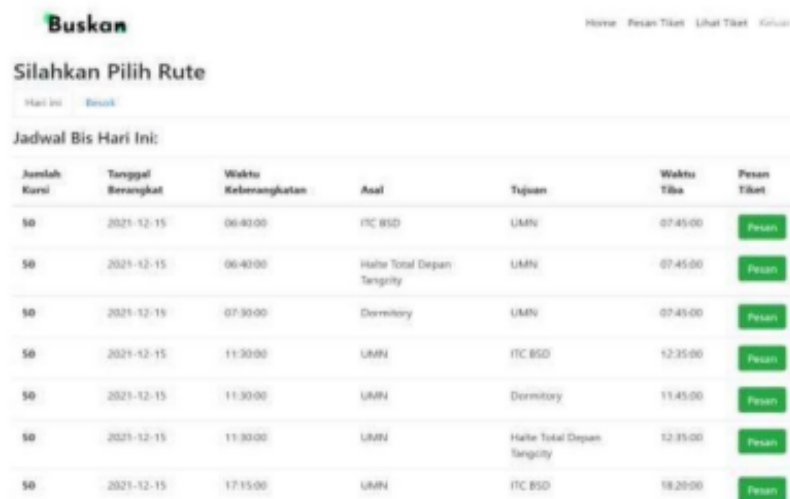
This page is for logging in before making an order to provide identity for the ticket.



Fig 5. Login Page

I. Bus Ticket Booking Page

This page is used to make orders for bus tickets, users will be able to make orders according to the route the customer requires.



Jumlah Kursi	Tanggal Berangkat	Waktu Keberangkatan	Asal	Tujuan	Waktu Tiba	Pesan Tiket
50	2021-12-15	06:40:00	ITC BSD	UMN	07:45:00	Pesan
50	2021-12-15	06:40:00	Halte Total Depan Tanggry	UMN	07:45:00	Pesan
50	2021-12-15	07:30:00	Dormitory	UMN	07:45:00	Pesan
50	2021-12-15	11:30:00	UMN	ITC BSD	12:35:00	Pesan
50	2021-12-15	11:30:00	UMN	Dormitory	11:45:00	Pesan
50	2021-12-15	11:30:00	UMN	Halte Total Depan Tanggry	12:35:00	Pesan
50	2021-12-15	17:15:00	UMN	ITC BSD	18:20:00	Pesan

Fig 6. Bus Ticket Ordering Page

J. Bus Ticket Page

This page can see what tickets have been ordered by the user in very complete detail. For each ticket, a QR CODE will even be provided to digitize the ticket without having to use the conventional method, namely hard.



Bus ID	Rute ID	Tanggal Berangkat	Waktu Berangkat	Asal	Tujuan	Waktu Tiba	Nomor Kursi	Tiket Digital
51	1212	2022-06-23	06:40:00	Medan	Padang	07:45:00	1	Lihat
4	1111	2022-06-22	06:40:00	Medan	Jakarta	07:45:00	1	Lihat
4	1111	2022-06-22	06:40:00	Medan	Jakarta	07:45:00	2	Lihat
9	1515	2022-06-22	11:30:00	Medan	Lhouksemauwe	12:35:00	1	Lihat

Fig 7. Bus Ticket Page

4. CONCLUSION

With the bus ticket booking website, the booking system can make it easier for people to order bus tickets. With information technology, purchasing or ordering bus tickets becomes safer. Booking tickets via the website also helps reduce the spread of the corona virus. Tickets that were previously printed conventionally in the form of tickets generally often lost. This QR-based ticket booking website will make it easier for customers to scan tickets to continue their journey.

REFERENCES

- Jannah, A, Meuraxa, A.M, & Azzahrah, A. 2023. "Web Based E-Commerce System Design at EXO Shop Using The Waterfall Method". Hanif Journal of Information Systems. Vol. 1 No. 1, 2023.
- Sari, I.P., Al-Khowarizmi, A., & Ramadhani, F. (2021). User Interface Prototype Using User Centered System Design Method in Motorvice Information System. 2021 International Conference on Computer Science and Engineering (IC2SE) 1, 1-6
- Sari, I.P, Batubara, I.P, Al-Khowarizmi, A, & PP Hariani. (2022). Perancangan Sistem Informasi Pengelolaan Arsip Digital Berbasis Web untuk Mengatur Sistem Kearsipan di SMK Tri Karya. Wahana Jurnal Pengabdian kepada Masyarakat 1 (1), 18-24
- Ichsan, A, Siambaton, M.Z, & Nasution, K. (2023). "Android-Based Practical Work Student Registration Form Application System Design". Hanif Journal of Information Systems. Vol. 1 No. 1, 2023.
- Sari, I.P, A Syahputra, N Zaky, RU Sibuea, & Z Zakhir. (2022). Perancangan sistem aplikasi penjualan dan layanan jasa laundry sepatu berbasis website. Blend sains jurnal teknik 1 (1), 31-37
- Hariani, P.P, Sari, I.P, & Batubara, I.H. (2021). Implementasi e-Financial Report BUMDes. IHSAN: JURNAL PENGABDIAN MASYARAKAT 3 (2), 169-177
- Sari, I.P, A Azzahrah, FQ Isnaini, L Nurkumala, & A Thamita. (2022). Perancangan sistem absensi pegawai kantor secara online pada website berbasis HTML dan CSS. Blend sains jurnal teknik 1 (1), 8-15
- Sari, I.P, & Ramadhani, F. (2021). Pengaruh Teknologi Informasi Terhadap Kewirausahaan Pada Aplikasi Perancangan Jual Beli Jamu Berbasis WEB. Prosiding Seminar Nasional Kewirausahaan 2 (1), 874-878.
- Habibi, F, Qathrunada, I.F, & Anggraini, T. (2023). "Design and Build a Tourism Website Using Shopify Framework". Hanif Journal of Information Systems. Vol. 1 No. 1, 2023.
- Sari, I.P, A Jannah, AM Meuraxa, A Syahfitri, & R Omar. (2022). Perancangan Sistem Informasi Penginputan Database Mahasiswa Berbasis Web. Hello World Jurnal Ilmu Komputer 1 (2), 106-110.
- Sari, I.P, & Batubara, I.H. (2021). Perancangan Sistem Informasi Laporan Keuangan Pada Apotek Menggunakan Algoritma K-NN. Seminar Nasional Teknologi Edukasi dan Humaniora (SiNTESa) 1 (2021 - ke 1
- Ramadhani, F, A Satria, & Sari, I.P. (2022). Aplikasi Internet Berbasis Website sebagai E-Commerce Penjualan Komponen Sport Car. Blend Sains Jurnal Teknik 1 (2), 69-75
- Sari, I.P, & Batubara, I.H. (2021). User Interface Information System for Using Account Services (Joint Account) WEB-Based. International Journal of Economic, Technology and Social Sciences (Injects), 462-469
- Batubara, I.H, Sari, I.P, EFS Siregar, & BS Lubis. (2021). Meningkatkan Kemampuan Penalaran Matematika Melalui Metode Penemuan Terpandu Berbantuan Software Autograph. Seminar Nasional Teknologi Edukasi Sosial dan Humaniora 1 (1), 699-705
- Sari, I.P, Al-Khowarizmi, A, & Batubara, I.H. (2021). Implementasi Aplikasi Mobile Learning Sistem Manajemen Soal dan Ujian Berbasis Web Pada Platform Android. IHSAN: JURNAL PENGABDIAN MASYARAKAT 3 (2), 178-183
- Ramadhani, F, & Sari, I.P. (2021). Pemanfaatan Aplikasi Online dalam Digitalisasi Pasar Tradisional di Medan. Prosiding Seminar Nasional Kewirausahaan 2 (1), 806-811
- Sari, I.P, Batubara, I.H, & M Basri. (2022). Implementasi Internet of Things Berbasis Website dalam Pemesanan Jasa Rumah Service Teknisi Komputer dan Jaringan Komputer. Blend Sains Jurnal Teknik 1 (2), 157-163
- PP Hariani, Sari, I.P, & Batubara, I.H. (2021). Android-Based Financial Statement Presentation Model. JURNAL TARBIYAH 28 (2), 1-16
- Satria, A, Ramadhani, F, & Sari, I.P. (2023). Rancang Bangun Sistem Informasi Penerimaan Peserta Didik Baru (PPDB) Sekolah Menengah Kejuruan Telkom 2 Medan Menggunakan Codeigniter. Wahana Jurnal Pengabdian kepada Masyarakat 2 (1), 23-31
- Sari, I.P., Syafii, R., Lbs, D.F., Setyadi, A., & Nasution, P. (2022). "Pemanfaatan fasilitas google dalam perkuliahan di fakultas teknologi informasi". Blend Sains Jurnal Teknik 1 (2), 107-113.
- Al-Khowarizmi, A., Sitompul, O. S., Suherman, S. & Nababan, E. B. (2017). Measuring the Accuracy of Simple Evolving Connectionist System with Varying Distance Formulas. In *Journal of Physics: Conference Series* (Vol. 930, No. 1, p. 012004). IOP Publishing.
- Sari, I.P., Syahputra, A., Zaky, N., Sibuea, R.U., & Zakhir, Z. (2022). "Perancangan sistem aplikasi penjualan dan layanan jasa laundry sepatu berbasis website". Blend sains jurnal teknik 1 (1), 31-37.
- Sari, I.P., Sulaiman, O.K., Ramadhani, F., & Satria. (2023). "Perancangan Sistem Manajemen Surat Berbasis Web Pada Kantor Camat Tano Tombangan Angkola". INCODING: Journal of Informatics and Computer Science Engineering 3 (2), 61-76

- Sari, I.P., Sulaiman, O.K., Al-Khowarizmi, A.K., & Azhari, M. (2023). "Perancangan Sistem Informasi Pelayanan Masyarakat pada Kelurahan Sipagimbar dengan Metode Prototype Berbasis Web". *Blend Sains Jurnal Teknik* 2 (2), 125-134
- Sari, I.P., Hariani, P.P., Satria, A., & Manurung, A.A. (2023). "Rancang Bangun Sistem Informasi Pengelolaan Arsip Materi Ajar Berbasis Web untuk Guru MAS Darul Falah". *Wahana Jurnal Pengabdian kepada Masyarakat* 2 (2), 59-65.