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Research Article

Design of a Digital Service Information System for Web-Based Wedding Management Invitation System

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Abstract
The Digital Wedding Invitation Management System provides a modern solution for efficiently managing wedding invitations in digital format. This research is driven by the increasing need for a platform that allows couples to create, manage, and distribute wedding invitations online, in response to contemporary lifestyle changes and the complexities involved in organizing weddings today. This system aims to simplify the invitation process by offering tools that allow couples to personalize and share invitations while enhancing interaction with guests through digital communication features. Developed using Agile methodology, this system benefits from iterative development and continuous user feedback, ensuring that it meets the evolving needs. This system is built on the Laravel framework, known for its scalability and reliability, ensuring a secure and high-performance platform. This research includes various stages, including needs analysis, system design, implementation, and thorough testing to ensure the reliability and quality of the system. The result is a user-friendly and efficient Digital Wedding Invitation Management System, which helps couples manage their wedding invitations easily, reducing the time, effort, and costs typically associated with traditional invitations. This system represents an innovative approach to digital invitation management, providing greater convenience and accessibility for users throughout the wedding planning process.

Keywords: Digital Applications; Guest Management; Laravel Framework; Online Invitations; Wedding Invitations.

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1. Introduction

Marriage is a precious moment in a person's life. In facing this celebration, the process of planning wedding invitations becomes a crucial aspect. However, in this digital era, people are more inclined to use smartphones and the internet in various activities (Chandra et al., 2022). The development of technology and the increasing trend of digitalization makes the need for innovation in wedding invitation management more urgent. The tradition of physical invitations made of paper, which are often complex in their distribution, can become less efficient. Therefore, the use of digital wedding invitations has become a more practical, economical, and environmentally friendly alternative. To prevent problems and obstacles in organizing an event, a system was created to support all the needs of event management (Pesik et al., 2022). This is where the need for a web-based Digital Invitation Wedding Management Service Information System arises.

The wedding planning process involves various aspects, such as creating invitations, managing guest lists, updating event information, and interacting with guests. In this context, the use of the Laravel framework can provide advantages in terms of data security, development efficiency, and structured code management. One of the advantages of using Laravel is its large community. Some researchers, as found by (Endra et al., 2021), states that the library in Laravel is very comprehensive, allowing for the completion of web development projects from small to medium scale very well. However, despite the clear need for digital wedding invitation management solutions, there are still not many applications that provide these features well and efficiently. This system also allows the creation of shareable links via social media, so that relatives or distant family members can access it (Arfian et al., 2022). Thus, the aim of this research is to design and develop a Digital Invitation Wedding Management System service using the Laravel framework, in order to provide an innovative solution for managing wedding invitations digitally.

The development of digitalization in various aspects of life, including event planning, has made digital wedding invitation systems a popular alternative to conventional physical invitations. Some previous studies have raised similar topics, but generally are limited to basic features such as creating digital invitation designs and simple RSVP systems. Research by Chandra et al. (2022) and Arfian et al. (2022) focusing on the development of web and mobile invitation applications using the Waterfall method and frameworks such as CodeIgniter. The systems being built tend to be static and do not yet address guest management aspects comprehensively. Then, research by Pesik et al. (2022) developing an event management application based on Flutter, which targets mobile needs but lacks flexibility in multi-role management (admin, user, guest) in the digital invitation system. Other research, Endra et al. (2021) highlighting the advantages of the Laravel framework in modern web development, including its reliability in database management and application security. However, the utilization of Laravel for wedding invitation systems is still very minimal and rarely used as the main subject in previous studies. This article comes as a differentiator by combining several important aspects such as the use of Laravel as the main framework for building a scalable and maintainable system. The application of Agile Development Method allows for an iteration of the system based on real user feedback. The development of a system that encompasses the entire end-to-end process, from ordering, filling in the bride and groom's data, digital invitations, RSVP confirmation, to a dashboard for guest data recap. Thus, this research expands the scope of the state of the art in the field of digital invitation systems, with a more comprehensive, adaptive approach, and ready for real-world implementation.

The novelty in this research is the ability to present digital wedding invitations by developing an integrated end-to-end web-based system, which includes features for theme booking, event data entry, guest management, and RSVP confirmation, all within a single platform. Unlike previous research that only focused on the appearance of digital invitations or simple RSVP systems, this system can integrate comprehensive functionalities for four user roles (admin, super admin, user, and guest) within a single Laravel-based system architecture. This research explicitly uses the Agile Development approach in the development cycle, allowing for incremental development based on direct user feedback. The information system development utilizes Laravel as the main framework to ensure scalability, security, and ease of

deployment, which has not yet been optimized in similar digital invitation systems. In addition, this information system offers an enhanced user experience through personalization features, digital data management, galleries, and interactive dashboards that have not previously been integrated in similar research. Thus, the designed system serves not only as an invitation platform but also as an efficient, flexible, and user-friendly wedding management tool.

2. Literature Review

Research on event management information systems, particularly digital wedding invitations, has evolved along with advancements in technology and changes in societal lifestyles. In this section, several relevant scientific works will be discussed to provide a theoretical foundation and identify research gaps.

Digital Wedding Invitation
Chandra et al. (2022) designing a mobile web-based wedding invitation application using the Waterfall method. The main focus of this research is on the design aspects of invitations that can be accessed online by guests. However, this research has not accommodated features for guest management or automated attendance confirmation. This indicates limitations in terms of interactivity and completeness of the system.

Usage of Modern PHP Framework
Endra et al. (2021) comparing the Laravel framework with native PHP in web application development. The results show that Laravel excels in terms of development efficiency, security, and code structure. Laravel also has comprehensive documentation and a large community, making it the right choice for developing complex applications such as digital wedding invitation systems.

System Development with Agile Method
Fahrezy & Kurniawan (2023) emphasizes that the use of the Agile method in software development provides high flexibility and quick response to changes in user needs. Agile is considered suitable for small to medium-scale information system projects, as it allows for rapid iterations and integration of features based on real feedback.

Digital Event Management
Pesik et al. (2022) developing a Flutter-based event management application. The system manages basic aspects of the event, such as schedule and location, but does not specifically address the distribution and management process of invitations. This highlights that there are still few systems specifically aimed at the complex and integrated needs of wedding invitations.

Customization and Personalization Needs
Arfian et al. (2022) highlighting the importance of personalization elements in digital invitations. The system built allows users to select templates and themes, but does not provide space for users to manage content comprehensively, such as filling in the couple's information, stories, photo galleries, and guest lists.

Based on the literature review above, it can be concluded that although there are several digital wedding invitation systems that have been developed, most are still limited to design or visual aspects. There has been little research that combines key features such as multi-level user management, RSVP (attendance confirmation), social media integration, and an interactive dashboard into a single web-based system. This is the gap (research gap) that this study aims to fill.

Various studies have developed web and mobile-based digital invitation systems, but most of these studies still have limitations in terms of functionality and system development approaches. Several key gaps that were successfully identified in this study are as follows:

1. Limitations of Features in Previous Research
   Previous research, such as by Chandra et al. (2022) and Arfian et al. (2022), generally only focuses on the aspects of creating and displaying digital invitations, without paying attention to

comprehensive guest management aspects, such as RSVP, attendance list, or event gallery integration.

2. The Lack of Implementation of the Laravel Framework
   Although Laravel is widely known as a powerful and secure framework for web development, its use in digital invitation systems is still limited. Research by Endra et al. (2021) highlighting the advantages of Laravel, but has not yet been specifically applied to a complex multi-user digital wedding information system.
3. Lack of Iterative Approach in Development
   Most previous systems were built using traditional approaches such as Waterfall, which are less flexible in accommodating changes in user requirements. This approach is less effective for dynamic applications that require continuous user feedback. This research fills that gap by implementing Agile methods, enabling an adaptive and user-oriented development process.
4. There is no integrated end-to-end system yet.
   Most applications only offer partial solutions, such as template creation for invitations or simple data input. There has not yet been any research that explicitly designs an end-to-end system that encompasses the entire process from booking a theme, managing bride and groom data, uploading galleries, to disseminating invitation links and managing attendance confirmations within one integrated platform.

Thus, the main gap addressed in this research is the lack of an integrated, interactive digital wedding invitation system based on the web, which is developed iteratively using Laravel and an Agile approach, capable of efficiently managing the entire invitation process and responsively addressing user needs.

3. Methods

Agile is a software development method that focuses on an iterative and evolutionary approach, emphasizing team collaboration and the limited yet relevant use of formal documentation. The goal is to build quality software at an effective cost and within the required timeframe, which can adapt to changing needs from stakeholders (Raharjana, 2017). This method is a variation of the Agile approach that involves simple steps that are repeated throughout the development process (Fahrezy & Kurniawan, 2023). The Agile method emphasizes the involvement of users and developers throughout all stages of development, the gradual delivery of products, and the ability to respond to changes that occur (Prihantoro et al., 2024). Agile The Development Method involves several stages, including planning, implementation, testing, documentation, distribution, and maintenance (Zulkarnaini et al., 2019).

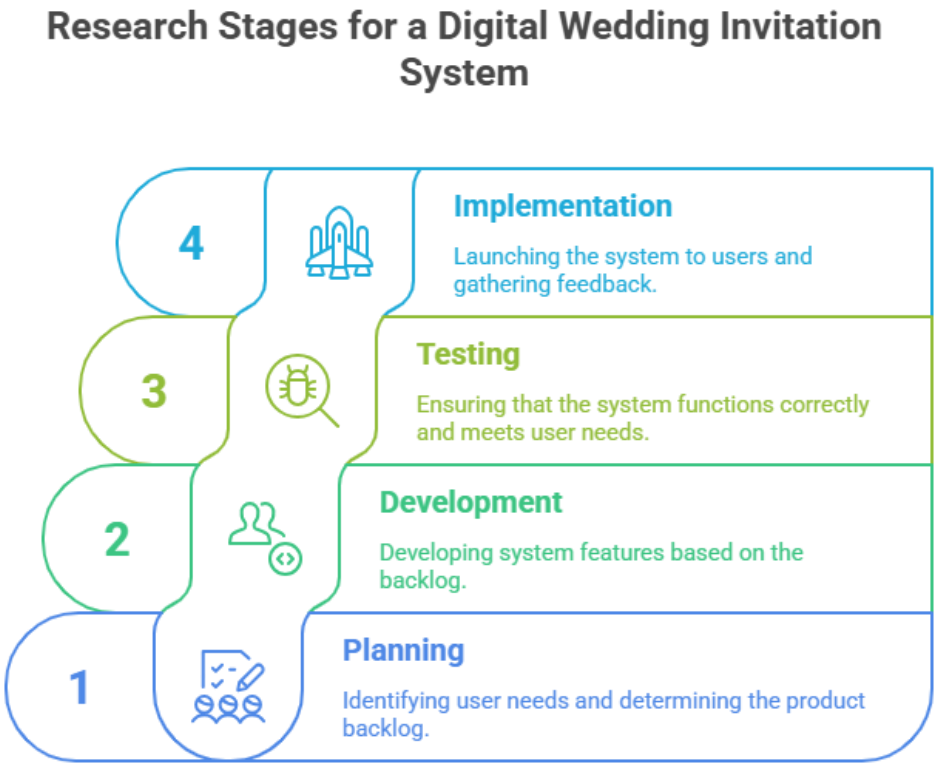

Figure 1. Agile Model Development Stage

Planning

Planning in the context of Agile Development Method is the stage where the development team plans the steps to be taken in the next iteration. This involves identifying, selecting, and scheduling the features to be developed, as well as estimating the time and resources needed. The following are the research method steps that are conducted:

Development

At this stage, the development team (programmers, designers, and testers) works to complete tasks in the sprint backlog and holds daily scrum meetings to discuss progress, challenges, and daily work plans.

Testing

At this stage, the system developer demonstrates the sprint results to the product owner (representative of the users) to obtain feedback from the product owner and other stakeholders.

Implementation

Maintenance is the stage where launched applications are continuously monitored, fixed, and updated according to user needs and feedback. This involves handling bugs, routine updates, and adding new features to enhance user experience.

4. Results

In the needs analysis phase, researchers must formulate the system needs, software, hardware, and applications necessary to solve the identified problems. This analysis phase is the most crucial stage in the creation of this system. Therefore, a method is needed to serve as a guide and reference in the development of the system being created. The following are the specifications of the needs for the system that will be created as a proposed system:

Super Admin
Super admin can log in, access the dashboard, manage order data, manage product data, user account data, and manage admin account data.

Admin
Admins can log in, access the dashboard, manage order data, and view summaries of all orders.

User
Users can log in, register, place an order for invitation themes, fill in the bride and groom's information, fill in event details, fill in the story data, upload pre-wedding gallery, fill in the guest data to be invited, share the invitation link to the guests, and view a summary of guest attendance.

Guest
Guest who are invited can view the invitation page and confirm their attendance.

A Use Case Diagram works by describing the types of interactions between users and the system through a narrative about how the system is used.

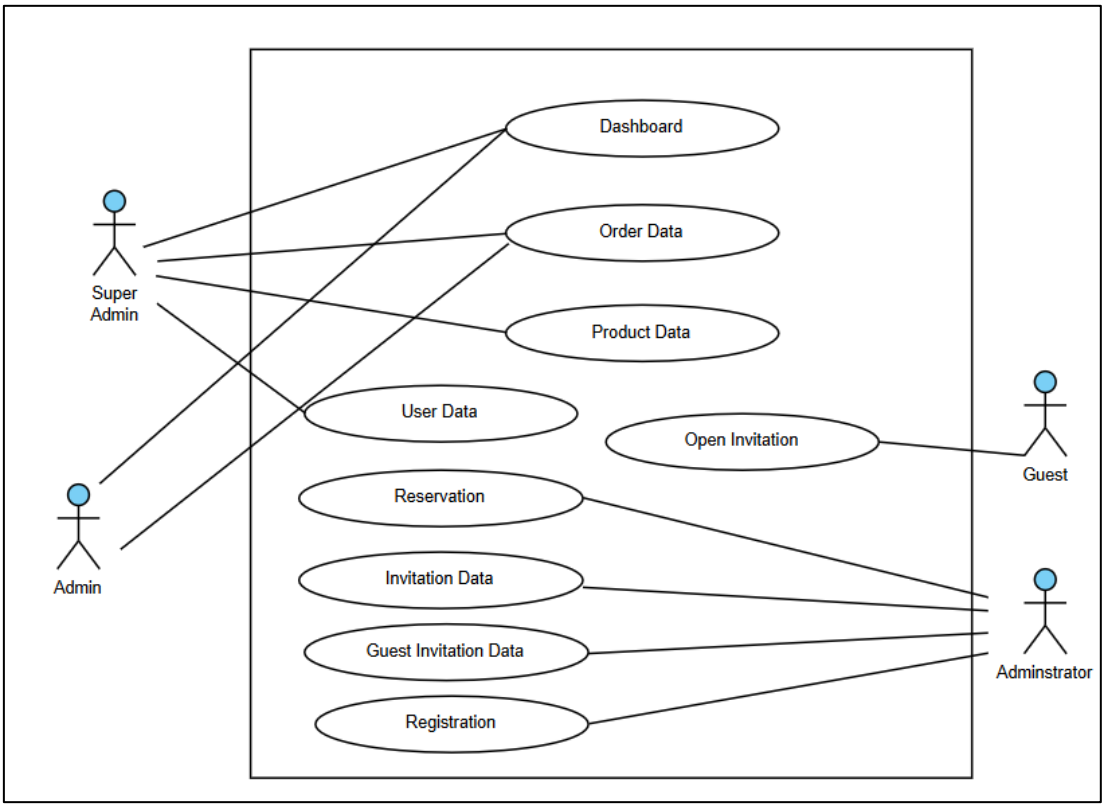

Figure 2. Use Case Diagram for Digital Invitation Wedding Management System

Database Design

The database design is illustrated using an Entity Relationship Diagram (ERD), as shown in Figure 3, which depicts the relationship between one entity and another. In this digital wedding invitation management system, there are 9 tables representing entities, each with its attributes.

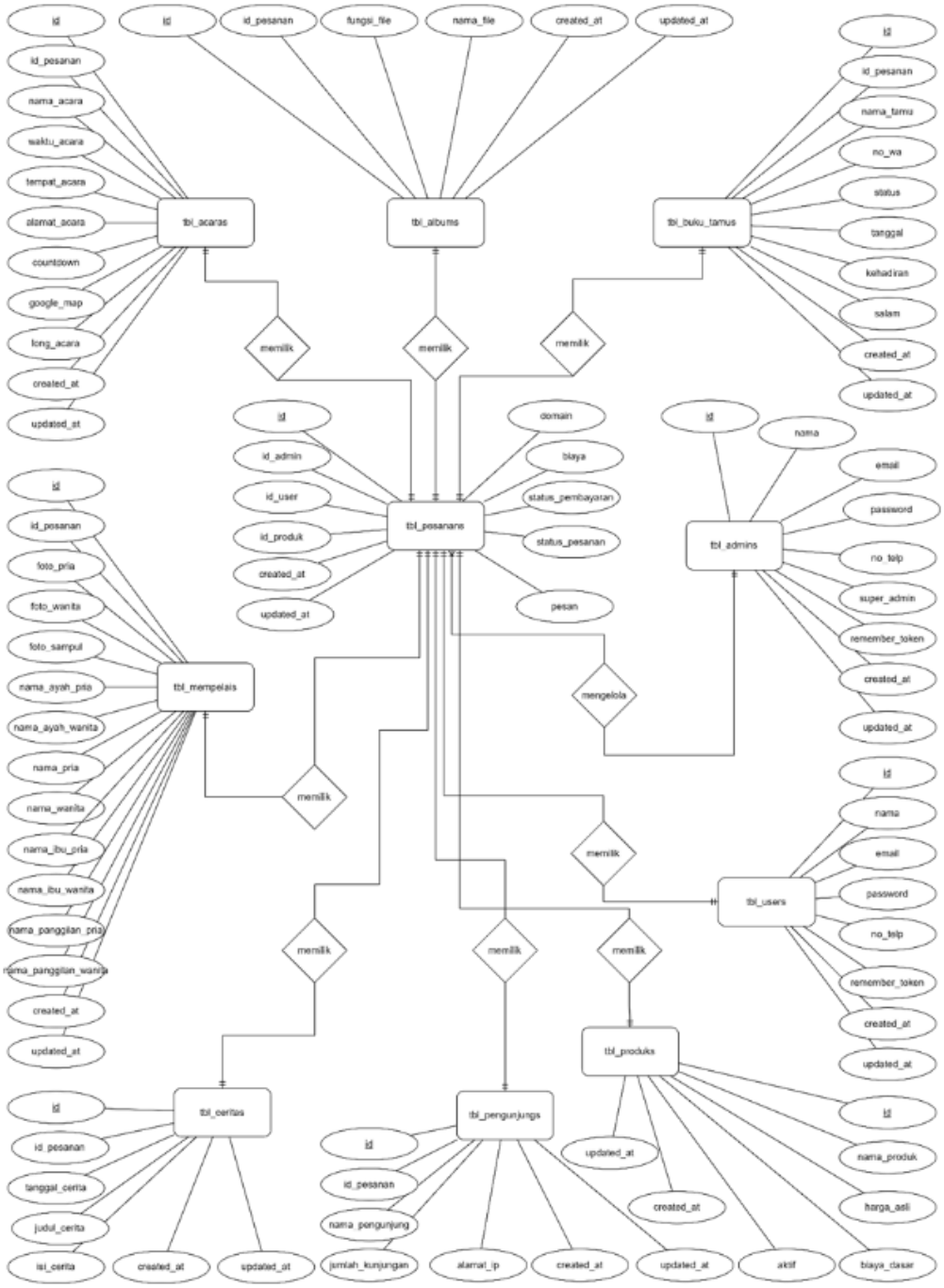

Figure 3. Entity Relationship Diagram Digital Invitation Wedding Management System

User Interface

The user interface is designed to provide ease and comfort in accessing and managing various features of the system, as shown in Figure 3 which displays the dashboard of the system. Its design ensures an intuitive experience, allowing users to easily understand the workflow and operate the system without needing complicated instructions.

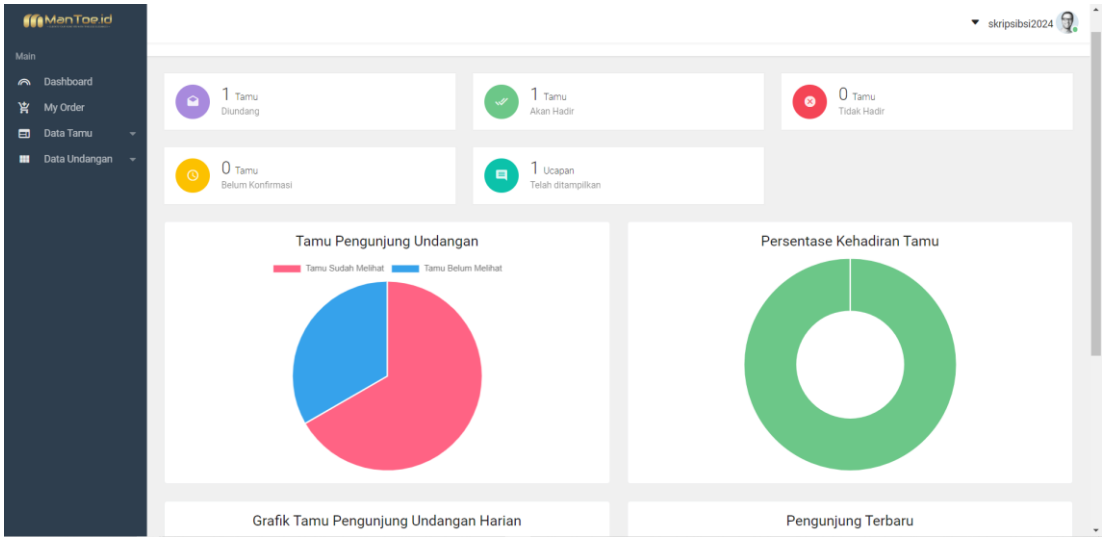

Figure 4. User dashboard page user interface

5. Discussion

The development of a web-based digital invitation service information system designed in this research successfully addresses the main challenges in conventional invitation management. This system not only facilitates couples in distributing invitations but also integrates important features needed in the modern wedding process, such as managing bridal data, guest lists, photo galleries, and digital RSVP confirmations. The use of the Laravel framework in system development has proven to provide several advantages, including development efficiency thanks to the MVC (Model-View-Controller) architecture, good security through built-in authentication features, and flexibility in integrating additional modules. Compared to previous studies that used native PHP approaches or simple frameworks like CodeIgniter, the use of Laravel provides a better structure and supports sustainable development.

In addition, the application of Agile methodology allows this system to be developed iteratively based on input from users. This process enhances the alignment between the system's features and real needs in the field. This becomes an advantage compared to previous systems that were typically built using the Waterfall method, which is less flexible in adapting to new requirements during the development process. The multi-role user feature in this system, which includes super admin, admin, user (bride and groom), and invited guests, is also an important differentiation. Each type of user is given different access and functions, allowing for personalization and more structured management. For example, the bride and groom can choose the invitation theme, manage the gallery, and view a real-time summary of guest attendance.

Furthermore, this system offers easy access and distribution of invitations through digital links that can be shared via social media or instant messaging. This not only reduces distribution costs compared to physical invitations but is also more in line with today's online communication patterns.

However, in the development of this system, there is still room for improvement, such as:

1. Integration of automatic notification features for RSVP reminders.
2. Integration of automatic notification features for RSVP reminders.
3. Improvement of cross-device accessibility, especially optimization for mobile display.

User participation in the user testing process is also an important component for future development, to obtain direct feedback that can be used to refine features and interfaces.

This research successfully designed and implemented a Digital Service Information System for a Web-Based Wedding Management System using the Laravel framework and Agile Development approach. This system is capable of providing efficient, flexible, and easily accessible digital solutions for managing wedding invitations. Various integrated features, such as invitation creation, bride and groom data entry, gallery uploads, guest management, and digital attendance confirmation, make this system a superior alternative compared to conventional methods.

The results of the system testing show that the technical approach used (Laravel + Agile) supports system stability and feature flexibility. This system provides a good user experience and is able to reduce complexity and costs in the invitation distribution process.

This system has a high practical value for use by wedding vendors, wedding organizers, or couples who want to manage invitations independently. The ease of distributing invitations through digital links is very much in line with the communication habits of modern society, which are centered on social media and instant messaging applications.

The widespread implementation of this system contributes to the reduction of paper waste and the carbon footprint generated from the production and distribution of printed invitations, eliminating the need to print hundreds to thousands of physical invitations. It reduces the use of ink, adhesives, and courier transportation. It minimizes non-degradable waste from laminated invitation cards. From an energy efficiency perspective, this system utilizes digital infrastructure that is more resource-efficient when hosted on environmentally friendly servers or using cloud services with energy optimization.

6. Conclusion

The Development of the Digital Invitation Wedding Management System is an innovation that provides a modern and efficient solution to address various challenges in wedding invitation management. This system offers a variety of features that facilitate couples in managing invitations and interacting with their guests.

The conclusion of this writing is that the efficiency and flexibility of this system facilitate couples in managing wedding invitations more efficiently and flexibly. Creation and Distribution simplify the process of creating and distributing invitations, allowing couples to focus on other aspects of their wedding. Interaction with Guests can enhance interaction with guests through features such as RSVP management and providing additional information about the event. With this application that has been created, couples can enjoy a complete, user-friendly, and secure solution, which is very beneficial for those who are getting married.

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