



Design of Wedding Organizer Information System at "Bella W-O" Using the Waterfall Method

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Abstract

This study addresses the challenges faced by wedding organizer services, specifically the issue of incomplete wedding package information and manual transaction processing, which can lead to data errors. The research proposes the development of a Wedding Organizer application to provide a comprehensive solution to these problems. The application is designed to offer complete and up-to-date information on wedding packages and vendor lists. It also includes features for real-time transaction handling and automatic management of order information, thereby reducing manual errors and improving efficiency. The system development follows a waterfall methodology, encompassing the stages of analysis, implementation, testing, and maintenance. Data collection is focused on key areas, including wedding package details, photogalleries, and vendor information. The application's development uses a prototype model, with stages of communication, rapid planning, and modeling to ensure an effective and user-friendly system. The application is built using the PHP programming language and a MySQL Database Management System (DBMS). This technical framework was chosen to support a robust and scalable solution that can effectively manage the complexities of wedding planning data.

Keywords: Application, design, information systems, wedding organizer, waterfall

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Introduction

The service sector is a vital component of modern economies, experiencing significant growth

driven by technological advancements. As technology becomes more sophisticated, businesses are increasingly leveraging digital platforms to market and deliver their services (Vărzaru & Bocean, 2024); . This shift to online service marketing is crucial for a company's sustainability, as it effectively bridges the gap between service providers and consumers. The rapid development of e-commerce has made it easier than ever to buy and sell goods and services online, transforming traditional business models from manual operations to information system-based approaches (Javaid et al., 2024); (Ballerini et al., 2024). This evolution presents a golden opportunity for service providers to promote their businesses on a global scale. Marriage, a deeply significant life event, is a ceremony that binds a man and a woman in accordance with legal and religious norms (Zaidah & Raihanah Abdullah, 2024).

In Indonesia, weddings are often celebrated with a rich tapestry of cultural, traditional, and religious variations. Given that a wedding is typically a once-in-a-lifetime occasion, meticulous preparation and professional assistance are essential to ensure a smooth and memorable event. While the use of Wedding Organizer (WO) services is popular among young couples, the industry still faces several challenges. Many promotions and presentations of wedding packages are incomplete, and manual transaction processing is prone to errors, which can complicate order details and customer data retrieval. The widespread use of Android-based smartphones has created a compelling need for an online booking system for wedding planners (Dwivedi et al., 2022). Such a system can facilitate orders without time and distance constraints, allowing customers to easily choose wedding concepts, including venue, tents, and bridal attire.

This study proposes the design and development of a dedicated Wedding Organizer application to address these issues. The application aims to provide a centralized platform where prospective brides and grooms can find comprehensive wedding package information and vendor references. By enabling advance reservations, the system will ensure vendor availability and streamline the planning process (Pascucci et al., 2023); (Wengler et al., 2021); (Aldoseri et al., 2024). The primary objective is to create a user-friendly application that simplifies the ordering of wedding packages, making wedding planning more efficient and enjoyable for couples. The application will be developed using the Waterfall methodology, a sequential approach to software development that includes analysis, implementation, testing, and maintenance phases (Saravanos & Curinga, 2023); (Akbar & Fauzi, 2023). It will be supported by a robust database system and a development environment that includes XAMPP, PHP, and MySQL. The application's design will be guided by UML (Unified Modeling Language) to ensure a well-structured, object-oriented system. Ultimately, this application will serve as a powerful tool to enhance the wedding planning experience, providing a complete, accurate, and automated solution for both service providers and consumers.

Methodology

This study uses the waterfall method which includes the stages of analysis, implementation, testing, and maintenance. Data collection methods include wedding package data, photo gallery data, and vendor data. The things that are carried out in completing this research are determining the methods used, data collection techniques, and the system needs needed to make program applications. The method used in this study is the waterfall method, which is often used in the creation of application systems. Methods are linear, or methods have a systematic sequence of stages. The stages in the waterfall method are as follows:

- a) Analysis, this first stage is used to analyze what must be prepared in making an application and analyze the problems faced in making an application. In this study, the analysis process is carried out by collecting data such as wedding package data, wedding gallery photo data and vendor data.
- b) Implementation (Coding), The third stage is the application of the design that has been made

into a programming language that is understood by the computer. Programming uses the PHP programming language by using the Codeigniter Framework and MySQL as its database;

- c) Testing, the fourth stage is testing or trying to run the system that has been created in the previous stage, whether the system that has been created runs as expected or not. The method used to test the system that has been created, uses the Black Box Testing method where this method can get results from the functions of any application that runs according to or not as expected by the program maker.
- d) Maintenance, this stage is the last stage, where at this stage the program creator checks or maintains the running system, whether it has an error problem or is still running according to the first result when the system is created.

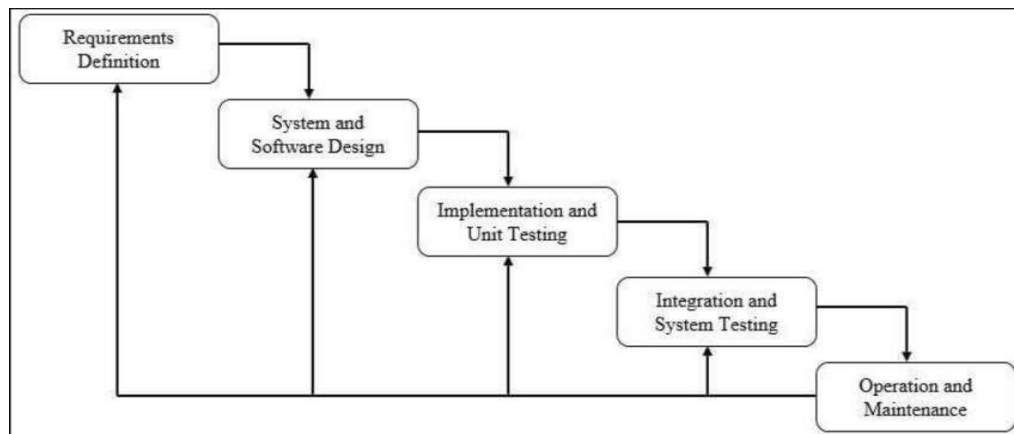


Figure 1. Steps of the Waterfall Method

Planning

Data Flow Diagram (DFD) level 1 is a development of a context diagram (DFD level 0) that provides a more detailed picture of the system. If DFD level 0 only shows the system as a whole as a single process, DFD level 1 breaks down those main processes into more specific sub-processes. In DFD level 1, it describes the admin, user, and owner processes in detail and detail, starting from login, to managing customer order data.

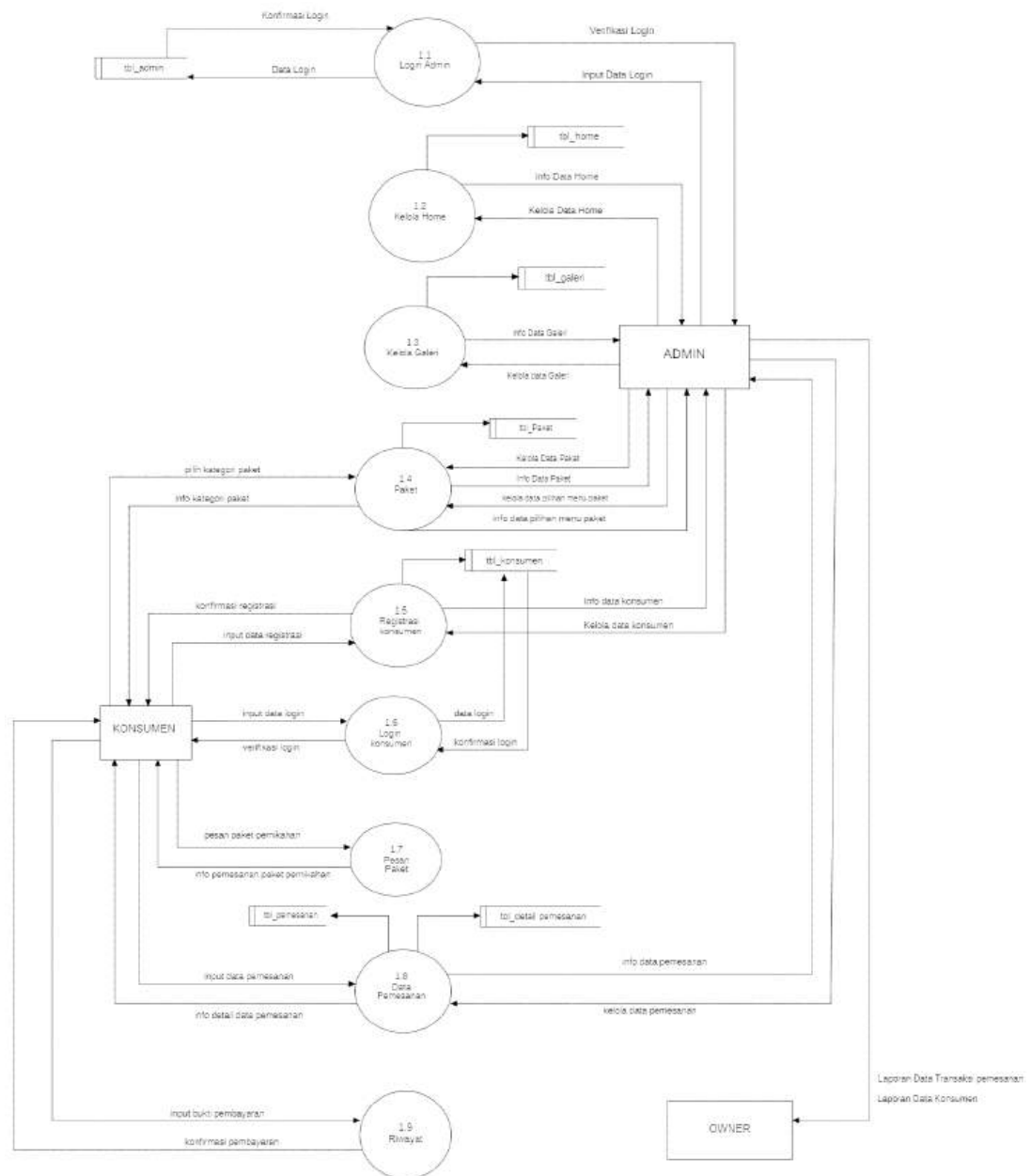


Figure 2. DFD level 1

A *context diagram* is a visual representation that shows a system as a whole and how it interacts with external entities, such as users, other systems, or organizations. These diagrams are typically used in the early stages of a system analysis to provide an overview of the system's limitations and the flow of information in and out of the system. In this context diagram, it explains the condition of a system as a whole which is depicted with level 0, which is the highest level of DFD.

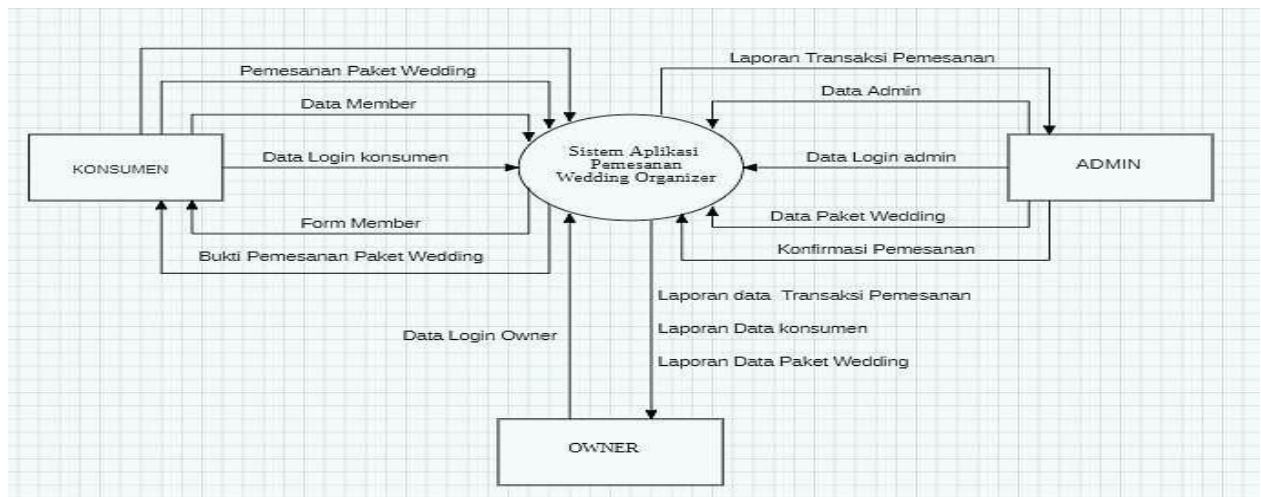


Figure 3. Level 0 Context Diagram

An *Entity Relationship Diagram (ERD)* is a diagram used to illustrate the relationships between data in an information system. ERD is often used in the design of relational databases to visually model data structures.

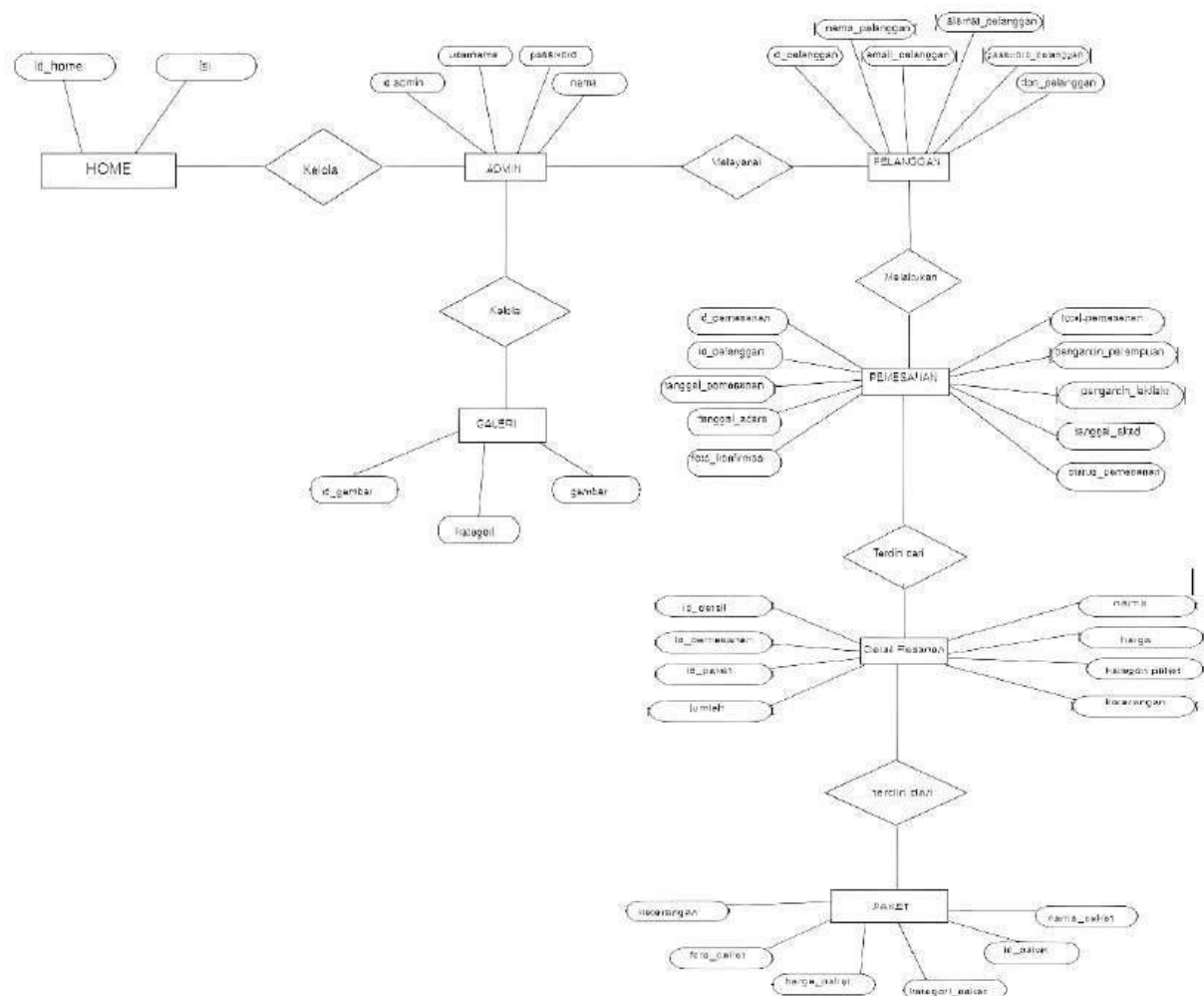


Figure 4. Entity Relationship Diagram

Database (Inter-Table Relation) is a system used to organize, store, and manage data in the form of interconnected tables. These tables are designed in such a way that each row represents a unique *record* or data, while each column represents an attribute or field of that data. The relationships between the tables are as follows:

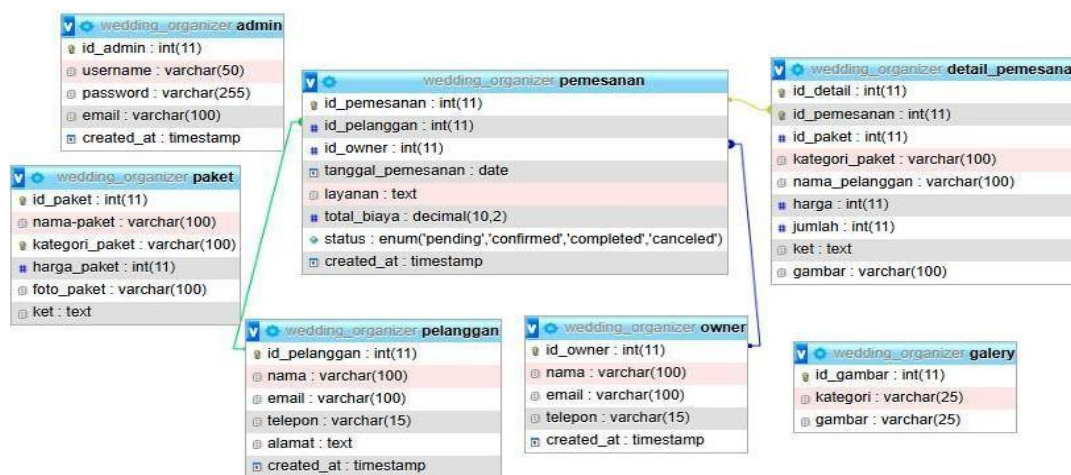


Figure 5. Relationship Between Tables

Results and Discussion

After the design stage is completed, the design is converted into program code to display the system created. Based on analysis and design, the results of this study show that the WO application system can provide complete information about wedding packages, can update the latest wedding package list, the booking transaction process is carried out in real time and automatic incoming order data information (Kristin & Lisanti, 2014); (Albers et al., 2021). So, the Wedding Organizer booking information system was created with the following work process (Hasti et al., 2018); (Syafiih et al., 2023):

- The admin performs the login process by entering the email and *password* that has been determined to be able to log in to the system and get login info.
- Admins can input and edit building data by entering all the fields that have been determined.
- Admin can input and edit vendor data by entering all the fields that have been determined.
- Admin can input and edit package data by entering all the fields that have been determined.
- The client carries out the registration process by entering his name, email, *password* and phone number to be able to enter the system.
- The client will get *login* info, then can log in to the system.
- Clients can order *wedding organizer* packages and get payment information
- Client chooses the date of the event and makes the payment.
- The client will get payment info that has not been validated/has been validated by the admin.
- Admin validates client payments if they have complied with the provisions.
- Admin will get booking info if booking has been validated.
- Admin can print reports if needed.

The wedding organizer *booking application* has been completed using the waterfall development method which consists of problem analysis, system design, application design,

coding, testing and system maintenance. In the analysis stage, it explains about the software requirements before the application is built (Umar & Lano, 2024); (Dongmo, 2024); (Schneider et al., 2018). The system design stage describes the steps of designing the application to be built. At the design stage, diagrams such as *Context Diagrams* (Hidayat et al., 2020); (Hendriyana & Sutisna, 2021); (Monat & Gannon, 2018),

Data Flow Diagrams, and *Entity Relations diagrams*, *Databases* (Relationships Between Tables) are used. Then at the testing stage, explain about testing the application that has been built.

Results of the display on Bella Wedding & Event Planner

1. Register Page View

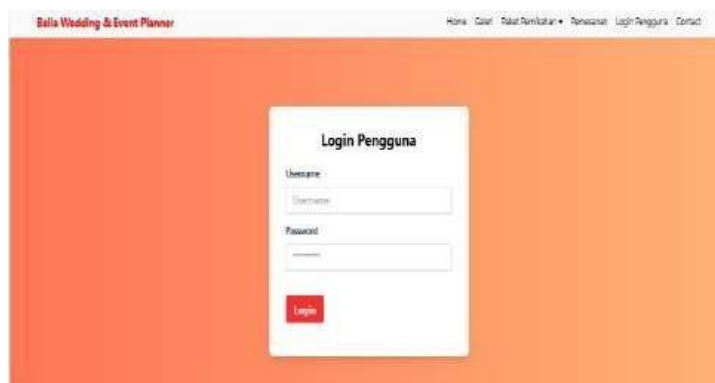


Figure 6. Customer/user login view

In Figure 6, you can see a login page for users that is designed to serve both vendors and *customers*. This page provides an opportunity for potential users to create a new account in the system.

2. Home Page Display



Figure 7. Customer Home Display

In Figure 7, the main page is drawn after successfully logging in as a user in the system. This page is a *landing page* that gives customers direct access to explore various wedding package catalog options from several vendors.

3. Customer Gallery Page View



Figure 8. Customer Gallery View

In figure 8, Displaying a gallery page that can be accessed by users to see photos or videos that have been provided by the vendor and can be used as a reference in ordering wedding packages.

4. Wedding Package Page View

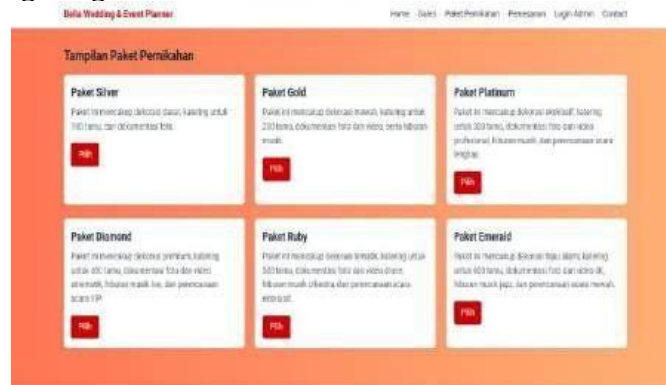


Figure 9. Wedding Package Display

In figure 9, Displaying the detailed information page of a wedding package product. This page is designed to provide users with comprehensive information about the chosen plan. The information presented includes the name of the vendor that provides the package, the types of wedding packages available, and the details and features included in the package.

5. Contact Us Page View



Figure 10. Contact Us Page View

In figure 10, the User is also given the convenience of contacting the vendor directly through the contact form provided on this page. Which can also be used for consultation about wedding

packages and about ordering directly with service providers or vendors.

6. Booking Data Page View

Figure 11. Booking Data Page View

In Figure 11, it shows a booking page designed to facilitate the transaction process between the buyer and *the wedding organizer*. On this page, customers will fill out the booking form and personal data, the type of wedding package that will be used by the consumer, including a comprehensive description of the facilities and services included in the package. In addition, buyers are also provided with information regarding the order price, allowing them to clearly know the total cost that will be incurred.

7. Manage Booking Data View (Admin)

No	Nama Pelanggan	Paket Pilihan	Foto	Data Pelanggan	Aksi
1	John Doe	Paket Gold		Nama: Telpun 081234567890 Email: johndoe@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Jakarta	Cancel Delete
2	Jane Smith	Paket Gold		Nama: Telpun 081234567890 Email: janesmith@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Bandung	Cancel Delete
3	Michael Johnson	Paket Platinum		Nama: Telpun 081234567890 Email: michaeljohnson@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Surabaya	Cancel Delete
4	Emily Davis	Paket Diamond		Nama: Telpun 081234567890 Email: emilydavis@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Bali	Cancel Delete
5	David Wilson	Paket Ruby		Nama: Telpun 081234567890 Email: davidwilson@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Yogyakarta	Cancel Delete
6	Sarah Brown	Paket Emerald		Nama: Telpun 081234567890 Email: sarahbrown@gmail.com Tanggal Acara: 10-08-2024 Lokasi Acara: Medan	Cancel Delete

Figure 12. Manage Booking Data View (Admin)

Figure 12 illustrates the transaction dashboard page which includes the history of transactions made by customers on the web. This page provides a comprehensive overview of all transactions that occurred, including details about the product or service purchased, the date and time of the transaction, and the status of the payment.

8. Manage Gallery Page View (Admin)



Figure 13. Admin Gallery Manager View

In figure 13, it displays the Manage Gallery page reserved specifically for vendors and admins. This page allows vendors and admins to easily insert photos or videos of new products into the system. This feature provides the ability for vendors to efficiently manage and update their product catalogs. With a simple yet informative display.

9. Manage Packages View (Admin)



Figure 14. Admin Package Management View

In Figure 14, it displays the processing page of the product data package intended for vendors in *the wedding organizer*. This page provides a comprehensive overview of all products that have been approved by the admin and uploaded by the *vendor*. With a structured and informative display, vendors can easily see all the products that have been approved and are available for sale to customers.

10. Booking data report view.

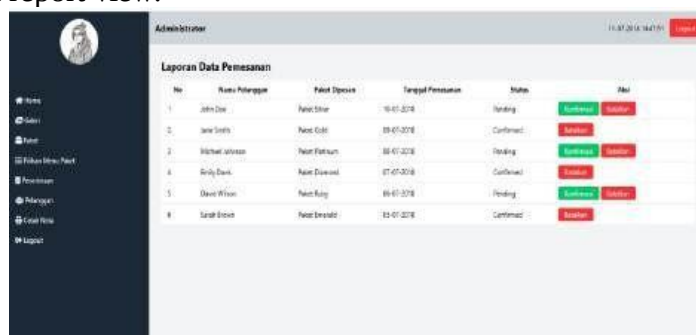


Figure 15. Booking data report view

In Figure 15, displays the customer order data report page that is addressed by the admin to the Owner or vendor in order to process orders and confirm payments and check consumer data.

Conclusion

Based on the research and design of an application-based wedding package booking information system on Bella Wedding & Event Planner, it can be concluded that this system makes it easier for consumers to make online bookings without the need to come in person. Consumers can see the products, wedding packages, and prices available. This application makes it easier for service providers to promote their services and speed up the process of managing order data through automatic notifications. The service provider can also confirm the order through the available chat menu, ensuring the suitability of the order details.

Conflicts of Interest

No conflict of interest

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