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## UNO Studio's Digital Reservation and Payment Process System Uses a Prototype Approach and Midtrans Payment Integration

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**Abstract:** Digital transformation is crucial for small and medium enterprises (MSMEs) to remain competitive and more efficient in the modern era. This research focuses on the digitalization process of UNO Studio, a company that provides photography and studio rental services. Currently, UNO Studio faces operational challenges due to its manual reservation system. This manual method can lead to delays, scheduling errors, and inefficiencies. Therefore, this research aims to upgrade UNO Studio's reservation system to a web-based system fully integrated with a digital payment system. The method used is a prototype approach applied in the software reengineering process. The system was built using HTML, CSS, and JavaScript, with Supabase as the data manager and Midtrans to integrate payments automatically and in real time. Black Box Testing results show that all key system features run smoothly without errors. Furthermore, User Acceptance Testing (UAT) results indicate a user satisfaction rate of 88.70%, considered excellent. Overall, this system successfully automates the entire reservation and payment process, improving operational efficiency, service accuracy, and enhancing the quality of customer service through secure and easy-to-use digital integration.

**Keywords:** Reservation System; Digitalization; Midtrans; Prototype; Software engineering.

### 1. Introduction

Digital transformation has become a global phenomenon that changes the way organizations operate across various sectors. This transformation is not limited to the use of technology alone, but also includes changes in business models, organizational culture, and competitive strategies. Its impact is highly significant for micro, small, and medium enterprises (MSMEs) in developing countries, as digitalization helps them overcome structural limitations and enhance competitiveness in increasingly competitive markets [1]. In this context, numerous studies indicate that the adoption of digitalization in MSMEs has a direct impact on increasing productivity and innovation capabilities [2]. Therefore, digital transformation is no longer an option, but a strategic necessity for the sustainability of modern businesses.

The process of adopting digitalization has also been proven to yield positive results for organizational performance. MSMEs that successfully implement digital technologies experience improvements in efficiency, customer service convenience, and opportunities for new innovations [3]. This became particularly evident during the COVID-19 pandemic, when many business actors were required to adapt by digitalizing business processes and online services in order to survive [4]. Digitalization not only provides support during crisis conditions, but also strengthens long-term business resilience by accelerating operational transformation [5]. In supporting the digitalization process, Software Reengineering is considered one of the most effective approaches to updating legacy systems to meet modern technological demands. Software reengineering is carried out by analyzing existing systems, improving their internal structure, and adapting them to new requirements without rebuilding them from scratch [6]. This approach enables organizations to preserve the value of legacy systems that remain relevant, while gradually improving system efficiency and quality [7].

Furthermore, the implementation of Business Process Management (BPM) and software reengineering supports digital transformation by aligning business processes, human resources, and technological infrastructure [8]. This process can enhance organizational effectiveness by creating information systems that are more adaptive to changes in the business environment. Strong information technology support is also a key factor in developing efficient and integrated digital systems [9].

Other studies emphasize that the role of software in supporting digital transformation is crucial, particularly in data-driven decision-making processes and service automation [10]. In the context of MSMEs, such digital systems help reduce administrative burdens and accelerate interactions between service providers and customers [11]. Thus, Software Reengineering functions not only as a means of system improvement, but also as a fundamental foundation for supporting long-term digitalization strategies. Digital transformation also presents challenges for organizations that are not yet ready in terms of infrastructure and human resources. In many cases, manual processes still dominate operational activities, resulting in service delays and potential data errors [12]. Therefore, organizations need to update their systems to be more efficient and aligned with increasingly dynamic customer needs. Studies show that the implementation of digital technologies can enhance organizational efficiency while maintaining operational stability [13].

The development of web-based information systems has become one of the primary solutions for improving business efficiency. Such systems are capable of accelerating communication processes, improving coordination, and increasing user satisfaction [14]. In implementing digital information systems, a well-designed software architecture is required to ensure that the reengineering process runs optimally and does not lead to data inconsistencies [15]. These systems have been proven to help MSMEs expand market reach while maintaining consistency in customer service [16]. The impact of digital transformation on MSMEs in Indonesia has become increasingly significant. Digitalization not only improves productivity and efficiency, but also provides greater opportunities for innovation [17]. Many MSMEs have begun adopting web-based systems and simple applications to optimize business processes, particularly in reservation services, payments, and customer interactions. This indicates that digital readiness is a key factor in maintaining competitiveness in the modern era.

One important aspect of modern information system development is the integration of digital payment systems. Online payment services provide convenience for customers to conduct transactions quickly, securely, and efficiently without having to visit the service provider's location. In the context of reservation system development, the implementation of payment gateways such as Midtrans is highly relevant, as it offers automated and real-time payment features that are directly integrated with the system. Midtrans supports various payment methods, including bank transfers, credit cards, e-wallets, and retail outlets, thereby increasing flexibility and user convenience. In addition, the system is equipped with security features such as transaction encryption and fraud detection, which ensure user data protection and prevent misuse. Thus, the integration of Midtrans services into the UNO Studio reservation system not only accelerates the payment process, but also enhances service professionalism and customer trust in the implemented digital-based system [18].

UNO Studio, as a provider of photography services and studio rentals in Malang City, faces similar challenges. The reservation process, which is still conducted manually, results in service delays, scheduling errors, and difficulties in managing reservation data. Customers are required to visit the location directly to make reservations, which is inefficient and inconsistent with the demands of the digital era. Therefore, this research aims to apply a Software Reengineering approach to upgrade the UNO Studio reservation system into a web-based system, with the objective of improving efficiency, scheduling accuracy, and service quality [19].

Through the implementation of web-based software reengineering, the UNO Studio reservation system is expected to provide convenience for customers in making online reservations, as well as assist Customer Service staff in managing data and schedules in a centralized manner [20]. This study also seeks to contribute to the development of reengineering-based information systems that can be applied to other creative service sectors, as part of the digital transformation strategy for MSMEs in Indonesia [21].

Although many studies have discussed digital reservation systems and payment gateway integration for SMEs, most focus on system implementation without providing measurable operational baselines or documenting how user feedback drives iterative development. This study addresses these gaps by establishing baseline conditions of the manual reservation process at UNO Studio, applying an iterative prototyping approach informed by user feedback, and evaluating system effectiveness using defined operational indicators and structured User Acceptance Testing. The research contributes an evidence-based case of reservation system digitalization in the creative service sector. System success is measured through reductions in reservation processing time, elimination of scheduling conflicts, automation of payment verification, and achievement of a User Acceptance Testing (UAT) score of at least 80%.

## 2. Literature Review

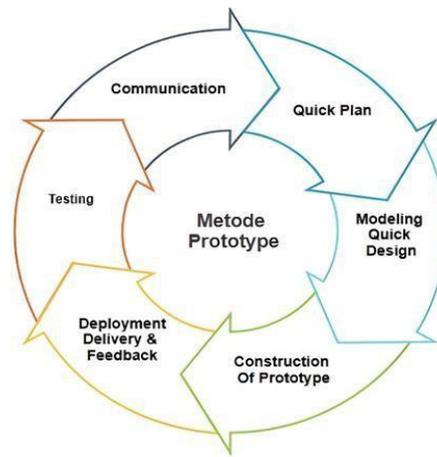
Previous studies have widely discussed the role of digital transformation in improving the operational performance of micro, small, and medium enterprises, particularly through the use of web-based information systems. Research shows that digital reservation systems can reduce administrative workload, improve data accuracy, and enhance customer satisfaction in service-oriented businesses such as photography studios and creative industries. Other studies have also highlighted the suitability of the prototype development approach for systems with evolving user requirements due to its emphasis on early user involvement and continuous refinement. However, many of these studies describe the prototype method in a general manner without clearly documenting iteration stages or how user feedback influences system revisions.

In addition, payment gateway integration—especially using Midtrans—has been shown to simplify digital payment processes and improve transaction reliability for SMEs. Nevertheless, existing research tends to focus on technical integration and security features provided by the payment service, rather than examining system-side operational impacts or measurable outcomes. Therefore, there is limited research that combines iterative prototyping, web-based reservation systems, and integrated digital payments with clear operational baselines and evaluation results. This study addresses this gap by developing and evaluating an integrated reservation and payment system for a photography studio, supported by documented iterations, defined success indicators, and user acceptance evaluation.

## 3. Methods

This study employs the Prototype method integrated within a Software Engineering process to develop a web-based reservation and payment information system for UNO Studio. This approach aims to improve system effectiveness through continuous iteration, where users are directly involved at each development stage. The prototype method is highly suitable for business process digitalization in the rapidly evolving digital transformation era.

In the context of small and medium enterprises (SMEs), digitalizing reservation systems plays a crucial role in improving service efficiency, responsiveness, and competitiveness, particularly in creative industries such as photography services. Therefore, the Prototype method was selected to ensure adaptive system development, allowing immediate testing and refinement based on real user needs. The stages of the Prototype method applied in this research include Communication, Quick Planning and Design, Prototype Construction, and Deployment, Delivery, and Feedback, as illustrated in Figure 1.



**Figure 1.** Prototype Method Research Flow

### **A. Communication**

This stage aims to identify user requirements, analyze problems in the existing system, and determine the most appropriate solutions for the new system. Requirement analysis was conducted through direct observation and interviews with relevant stakeholders to understand user needs and identify issues in the ongoing reservation process [19]. In the UNO Studio case study, observations revealed that reservations were previously handled manually, from booking to schedule confirmation, which posed risks such as recording errors, schedule conflicts, and inefficient service delivery. Based on these findings, the new system was designed to support fully online reservation and payment processes. Requirement elicitation was conducted through direct observation and semi-structured interviews involving six respondents, consisting of one representative from the studio management and five studio customers. Observations were carried out during operational hours over a two-week period to identify workflow inefficiencies and common reservation issues. The collected data were analyzed to derive functional and non-functional requirements, which formed the basis for prototype development.[18].

### **B. Quick Planning, Modeling, and Quick Design**

This stage involves rapid planning, system modeling, and design to efficiently meet user requirements by transforming existing business processes into a web-based digital system. The design process includes the development of Use Case Diagrams, Activity Diagrams, Entity Relationship Diagrams (ERD), and database structures to support organizational productivity through process-based digitalization [19]. In the UNO Studio case, the system was designed with two primary user roles, namely admin and customer, where admins are responsible for managing services, schedules, and reservation confirmations, while customers can register accounts and make online reservations. The system utilizes Supabase with core entities such as Profiles, Services, and Reservations, which are interconnected through `auth.users.id` to ensure real-time data consistency, integrating service management and record-keeping into a single platform and enhancing the user experience in line with online photo studio reservation systems [20].

### **C. Prototype Construction**

This stage focuses on transforming the system design into a functional web application that can be directly used and tested by users by implementing all previously defined analyses and models using HTML, CSS, and JavaScript, integrated with Supabase as the primary PostgreSQL-based database to provide centralized data management and token-based authentication for secure access and data verification [10]. The system is equipped with an automated payment module using the Midtrans payment gateway, which supports multiple payment methods and updates transaction statuses in real time through callback URL mechanisms, ensuring transaction accuracy and reliability. Security controls implemented in the system include secure storage of Midtrans server keys using environment variables, verification of payment callbacks using signature validation, role-based access control for

admin and customer users, and transaction logging for audit purposes to ensure transaction integrity and prevent unauthorized system access. [18]. The prototype was developed through three iterative versions based on user feedback. Administrator input led to automated payment confirmation and improved transaction monitoring, while customer feedback resulted in a clearer payment flow through the addition of an invoice summary page. [15]. Through this approach, customers are able to complete reservations and payments fully online, while administrators access a centralized dashboard to manage services, verify orders, and monitor transactions efficiently. After all features reached stability, the system was deployed via web hosting to enable online access without requiring additional installation, thereby improving accessibility and system readiness for real-world use [21].

## **D. Deployment, Delivery, and Feedback**

### **1) Deployment**

During the deployment stage, the approved prototype was converted into executable source code as the foundation of the web-based UNO Studio Reservation and Payment Information System [19]. The system was developed using HTML, CSS, and JavaScript, integrated with Supabase for data management, and connected to Midtrans to support automated digital payments through API integration using secure client and server keys with the Snap Payment transaction method [18]. After customers complete a reservation, the system generates a transaction token to redirect users to the Midtrans payment interface, and once the payment process is completed, the system receives a response from the Midtrans server to update the reservation status and store payment records in the database. System testing was conducted using Black Box Testing to justify that all system functionalities, including login, reservation, payment, and transaction reporting processes, operate correctly according to the specified requirements.

### **2) Delivery and Feedback**

After successful implementation, the prototype was delivered to UNO Studio for direct testing in a real operational environment. Both admins and customers evaluated the system based on interface design, reservation and payment processing speed, and transaction status updates. The evaluation results indicate that the system significantly improves reservation efficiency and accelerates payment processing without data errors [19]. The use of Midtrans provides a secure and convenient transaction experience for customers while simplifying payment verification for admins. Overall, the system effectively supports the complete digitalization of UNO Studio services, covering the entire workflow from reservation to financial transactions [18].

## **E. System Testing Stages**

System testing was conducted to ensure that all functionalities of the UNO Studio reservation system operate in accordance with user requirements and are easy to use by applying the Black Box Testing method, which evaluates system features from the user's perspective without examining the internal code structure. All essential functionalities, including user registration, login, service reservation, payment processing via Midtrans, reservation status checking, and administrative verification, were tested to confirm that system outputs matched the expected results and to identify potential operational errors while ensuring system stability under various usage conditions [19]. In addition to functional testing, User Acceptance Testing (UAT) was carried out to evaluate user satisfaction and acceptance of the developed system, with data collected through a Google Form questionnaire using a Likert scale distributed to users involved in the reservation process. The evaluation focused on system functionality, system performance, user experience and interface design, and efficiency and productivity, and the questionnaire data were grouped by variable categories and weighted according to Likert scale values—Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA) to calculate total scores for each question. The results of this analysis were then used as the basis to determine whether the system met user needs and was ready for operational implementation at UNO Studio [22].

The mean value was calculated using the following formula:

$$Mean = \frac{Total\ Scores}{Total\ Respondents}$$

Subsequently, the percentage score was calculated using the following formula:

$$Percentage = \frac{Mean}{Maximum\ Possible\ Score} \times 100\%$$

The calculated percentage values were then interpreted using predefined evaluation criteria to determine the level of user acceptance. This analysis provides a quantitative measurement of system feasibility and user satisfaction, serving as an indicator of whether the developed system is suitable for full-scale implementation in UNO Studio's operational environment.

#### **4. Results And Discussion**

This chapter discusses the results of implementing the web-based Reservation and Payment Service Information System for UNO Studio. The system was developed using the Prototype method. The development process included user requirements analysis, system design, user interface development, integration of the Supabase database and the Midtrans payment service, as well as functional system testing. Each development stage produced outputs that were used as the basis for evaluating how well the system meets user needs and research objectives.

##### **A. Communication**

The analysis results indicate that UNO Studio requires a system that facilitates online reservation processes through a centralized and automated workflow. The system is designed not only to provide photography service reservations but also to support secure and real-time online payments. Therefore, the system was developed as a web-based application supported by Supabase as the database platform and Midtrans as the payment gateway. Supabase was selected because it supports real-time authentication and data management, while Midtrans is used to handle digital transactions automatically and securely. Through the integration of the reservation and payment systems, customers can complete the entire booking process online without visiting the studio, while administrators can monitor reservation data and financial transactions directly through the available dashboard.

##### **B. Quick Plan, Modelling & Quick Design**

At this stage, the system is designed with two primary user roles, namely admin and customer. Admins are responsible for managing service data, schedules, transactions, and reports, while customers can register accounts, create reservations, and complete payments online. The database structure utilizes Supabase and consists of three main entities—Profiles, Services, and Reservations—where Profiles manage user roles, Services store available offerings, and Reservations record booking and payment status updated automatically through Midtrans API integration. This design defines user workflows and data relationships while digitally representing UNO Studio's business processes within a centralized web-based system.

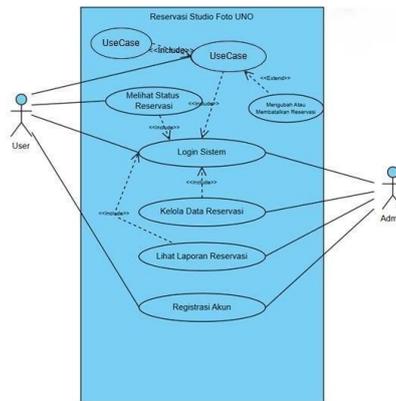
##### **C. Prototype Development**

This stage involves transforming the approved design into a web-based system that is ready to be tested by users through the implementation of HTML, CSS, and JavaScript, integrated with Supabase for managing user, service, and reservation data, and Midtrans as the digital payment service provider. When customers make a reservation, the system displays the payment page and redirects users to Midtrans to complete the transaction, after which Midtrans sends an automatic callback notification to update the transaction status in the UNO Studio system without requiring manual admin intervention. The user interface is designed to be simple and user-friendly for both customers and administrators, allowing customers to view payment status and reservation history directly, while

admins access a dashboard to monitor reservation data, transaction status, and financial reports. With full integration between the reservation system, centralized database, and digital payment service, the developed prototype is functionally complete and ready to be tested and evaluated by users.

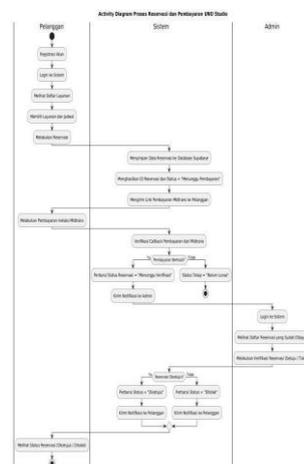
**D. Deployment, Delivery & Feedback**

The UNO Studio reservation system allows customers to register accounts, log in, create reservations, view booking status, and complete payments online. All processes requiring authentication are handled through the login mechanism, ensuring that user activities are secure and centralized. Admins have the ability to manage reservation data, validate bookings, and view studio operational reports containing information on order volume, schedules, and transaction status, as shown in Figure 2.



**Figure 2.** UNO Studio Reservation Use Case Diagram

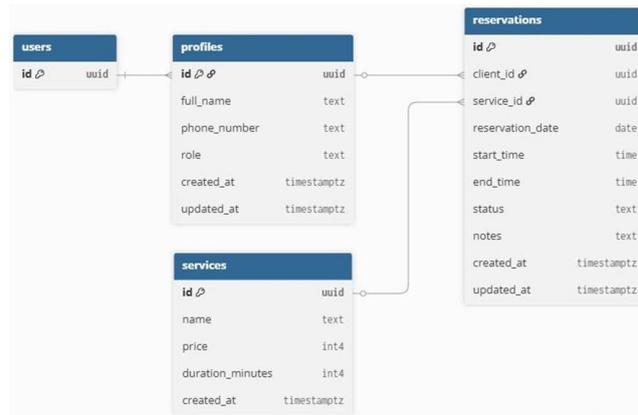
In the payment process, the system directs customers to complete transactions through Midtrans after creating a reservation. Payment information is automatically sent to Midtrans, and the system receives real-time transaction status updates. Admins can then verify payments and monitor all transactions through the dashboard. This integration ensures that reservation and payment processes are fast, secure, and convenient for both customers and admins.



**Figure 3.** Activity Diagram of Admin, Customer, and System

Figure 3 illustrates the complete interaction flow between the Customer, System, and Admin in the reservation and payment process at UNO Studio, starting from customer registration and login, followed by viewing available services, selecting photography packages based on atmosphere, choosing schedules, and submitting reservation forms. The system then processes the reservation data, stores it in the Supabase database, and generates a unique reservation ID as the transaction identifier, which is returned to the customer for verification before proceeding to payment. After confirmation, customers complete the payment through Midtrans, and the system receives an

automatic callback to verify and update the transaction status. If the payment is successful, the reservation status is changed to “Pending Verification” and the admin is notified to review the order. The admin logs in to evaluate paid reservations and either approves them updating the status to “Approved” and notifying the customer or rejects them by changing the status to “Rejected” along with the provided reason. This activity flow ensures that each stage of the reservation and payment process is structured, efficient, and fully integrated, reducing recording errors, accelerating service delivery, and highlighting the system’s role as an automated connector between customers and administrators supported by secure transaction control through Midtrans payment gateway integration.



**Figure 4.** Entity Relationship Diagram (ERD)

The ERD illustrates the relationships among the main entities in the Supabase database: Profiles, Services, and Reservations. These entities are connected through the **user\_id** as the primary key, enabling real-time authentication and data exchange. Visual documentation such as these diagrams is crucial for simplifying system implementation and testing, preventing technical errors, and ensuring alignment with user requirements. This Deployment, Delivery & Feedback stage serves to deliver the completed prototype to UNO Studio and verify that the defined requirements function correctly when implemented on the website.



**Figure 5.** UNO Studio Website Landing Page

The landing page, as shown in Figure 5, presents a main visual featuring a model photograph representing the studio’s photography services. This section is designed to convey a professional and appealing impression. The descriptive text briefly explains the UNO Studio profile, including service quality, photographer experience, and various photography services such as product photos, graduation photos, family photos, and more. Navigation menus are placed at the top for easy access to services, galleries, testimonials, contact information, and reservation features.

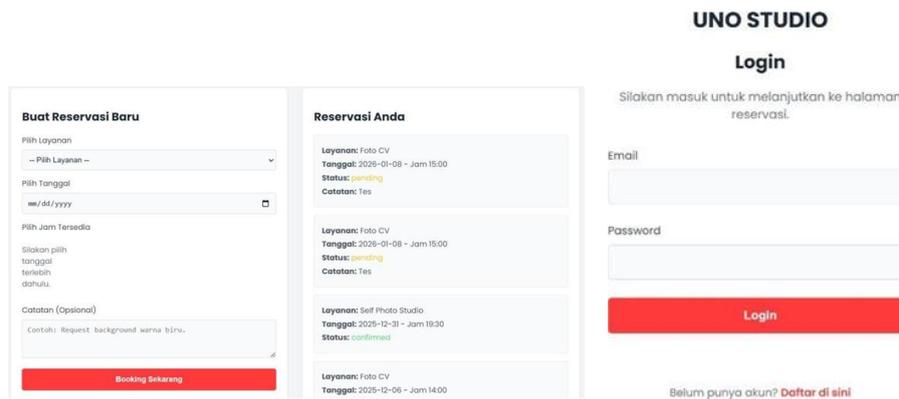


Figure 6. Login & Reservation Page Interface

As shown in Figure 6, the login page functions as the main entry point where users must authenticate to access system features by entering their registered email and password, which are verified using Supabase’s built-in authentication mechanism. After successful authentication, the system identifies the user role, either admin or customer, and redirects the user to the appropriate dashboard, while authentication tokens are used to ensure secure access and protect user data. In Figure 7, customers can place service orders by selecting the desired services, choosing session dates and times, and adding optional notes through a simple and intuitive reservation interface. After the reservation form is submitted, the system stores the data in the Supabase database and sets the reservation status to “Pending Admin Confirmation,” ensuring that all bookings are properly recorded and ready for further verification by the administrator.

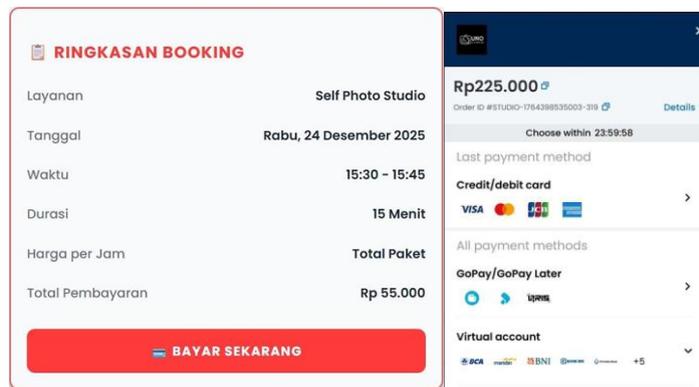


Figure 7. Payment Invoice Summary

After submitting a reservation, Figure 8 displays the order summary and total payment amount. When customers click “Pay Now,” the system redirects them to the Midtrans payment interface. As shown in Figure 9, customers can select various payment methods supported by Midtrans, including bank transfer, credit cards, QRIS, and e-wallets such as GoPay, ShopeePay, and OVO. After the transaction is processed, Midtrans sends payment information to the UNO Studio system, automatically updating payment status on both admin dashboards and customer accounts. This eliminates the need for manual payment proof uploads, making the process faster, safer, and more efficient.

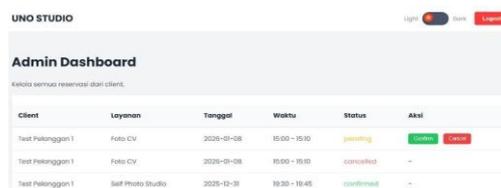


Figure 8. Admin Reservation Management Page

Figure 10 shows the admin report page used to view and print customer reservation data. The displayed information includes customer names, reservation dates, and service types retrieved directly from Supabase and Midtrans. This report supports financial evaluation and transaction tracking, significantly reducing manual data entry and improving administrative efficiency. The transaction history feature presents complete records of customer payments, including successful, pending, and failed transactions, with detailed information such as transaction ID, customer name, purchased service, transaction time, payment method, and total amount, thereby simplifying daily financial monitoring and enabling the identification of customer purchasing patterns for future service improvements. As illustrated in Figure 12, the Midtrans Dashboard supports real-time transaction monitoring through visual summaries in the form of graphs and tables, allowing admins to review revenue within specific periods, identify commonly used payment methods, and receive automatic notifications regarding transaction status updates. The availability of filtering features further facilitates detailed reporting, making financial audits and performance evaluations more efficient and accurate. Overall, this prototype development stage successfully produced a ready-to-use information system that fully integrates reservation and payment processes into a single digital platform accessible to both customers and administrators.

## E. Testing

**Table 1.** Test Case Scenario

Test Scenario	Precondition	Test Steps	Expected Result	Actual Result	Status
Login to the system	Admin already has a registered account	Enter email and password, then click <b>Login</b>	System displays the admin dashboard page	Admin dashboard is displayed with active reservation data	Pass
Manage service data	Admin is logged in	Click <b>Services</b> menu → Add new service data	Service data is saved and appears in the list	Service data successfully saved to Supabase database	Pass
View and manage schedules	Admin is logged in	Click <b>Schedule</b> menu	System displays customer reservation list	Schedule displayed according to customer data	Pass
Verify reservations	Admin selects a reservation	Click <b>Approve</b> or <b>Reject</b> button	Reservation status changes according to action	Status updated correctly in the system	Pass
Monitor customer payments	Admin opens <b>Transactions</b> menu	Click a payment record	Payment status automatically updated via Midtrans callback	Status shown as "Paid" after successful payment	Pass
Logout from system	Admin is active on dashboard	Click <b>Logout</b> button	System exits and returns to main page	Logout completed successfully without error	Pass

This section presents the testing results of the web-based UNO Studio reservation and payment information system developed using the Prototype method. Testing ensures that the system operates according to user requirements and meets defined functional specifications. UAT was also conducted to evaluate user satisfaction. Black Box Testing focuses on validating system functions without examining internal code structures. Testing involved two user types: Admin (Customer Service) and Customer, ensuring that all core features function as expected. Admin-side testing verified system management functions, including login, service configuration, reservation scheduling, and payment verification. Results show all tested scenarios passed successfully, as summarized in Table 1.

### 3) Customer Testing

Testing on the customer side aims to ensure that the entire reservation process runs properly, starting from account registration, login, service selection, reservation form submission, payment processing

via Midtrans, and order confirmation, as shown in Table 2. The test results indicate that the system successfully handles all user scenarios without logical or interface errors.

**Table 2.** Black Box Testing Results for Customers

Test Scenario	Precondition	Test Steps	Expected Result	Actual Result	Status
New account registration	User does not have an account	Fill out registration form and click Register	New account is saved and can be used to log in	Data saved in Supabase and verification successful	Pass
Login to the system	User already registered	Enter email and password, then click Login	System displays customer main page	Login successful and redirected to main page	Pass
Make a service reservation	User is logged in	Fill reservation form (name, service, date, time) and click Order	Reservation data saved and appears on admin dashboard	Reservation successfully saved to database	Pass
Make a payment	User already has reservation data	Click Pay Now and select Midtrans payment method	System displays payment page and updates status automatically	Payment successful, status changed to "Paid"	Pass
View reservation list	User is logged in	Click Schedule List menu	System displays reservation list and status	Data displayed according to latest database status	Pass
Logout from system	User active on main page	Click Logout button	System exits and returns to initial page	Logout successful	Pass

**F. User Acceptance Testing (UAT)**

UAT involved 16 respondents consisting of the studio owner, customer service staff, and customers who directly interacted with the system during the reservation and payment process. The participants were selected based on their direct involvement in system usage to ensure that the evaluation reflected real operational conditions. The evaluation instrument consisted of 25 Likert-scale questions grouped into four evaluation aspects: system functionality, system performance, user experience and interface, and efficiency and productivity. The questionnaire was structured based on commonly used UAT evaluation dimensions and applied consistently across all variables. In line with the applied and case-based nature of this study, the UAT results provide practical validation of system acceptance within the operational context of UNO Studio.

**1. System Functionality Evaluation**

- The system’s ability to store reservation data accurately without errors.
- The ease of updating reservation data and customer account information.
- The completeness of service and schedule information provided by the system according to user needs.
- The proper functioning of service and schedule search features.
- The system’s accuracy in processing user inputs, including registration, login, and reservation forms.
- The system’s ability to automatically generate accurate reservation confirmation data.

**2. System Performance Evaluation**

- The availability of the system to be accessed whenever needed without interruptions.
- The speed of system response during login, reservation, and payment processes.
- The reliability of the system in storing user data without data loss.

- The completeness of system features in meeting the needs of both customers and administrators.

### 3. User Experience & Interface Evaluation

- The stability of the system without errors or disruptions during use.
- The clarity and readability of information displayed in the system.
- The appropriateness of color schemes, fonts, and visual elements.
- The organization and accessibility of menus and navigation buttons.
- The ease of understanding the system interface, even for new users.
- The level of comfort when using the system for reservation activities.
- The ease and responsiveness of system navigation.
- The professionalism of the system design in reflecting UNO Studio's identity.
- The system's accessibility and proper functionality across multiple devices (PC, tablet, and smartphone).

### 4. Efficiency & Productivity Evaluation

- The system's effectiveness in reducing the time required for the reservation process.
- The improvement of work efficiency through automation features such as Midtrans payment integration.
- The reduction of manual workload for both customers and administrators.
- The reduction of errors in scheduling and transaction recording.
- The system's support for communication and collaboration between customers and administrators.
- The system's ability to support faster decision-making through clear data presentation.

The calculation method used in Tables 4 to 7 refers to the formulas and procedures described in Chapter 3 (Method). For each questionnaire item, the total score was calculated by multiplying the number of responses in each category by its corresponding weight and then summing the results. The mean value was obtained by dividing the total score by the number of respondents, as defined in the formula presented in Chapter 3. Furthermore, the percentage score for each variable was calculated based on the maximum possible score, following the percentage formula explained in the methodology chapter.

**Table 3.** System Functionality Evaluation (Variable A — 6 Items)

Code	SS×5	S×4	CS×3	KS×2	TS×1	Jumlah
A1	10×5 = 50	5×4 = 20	1×3 = 3	0×2 = 0	0×1 = 0	<b>73</b>
A2	8×5 = 40	8×4 = 32	0×3 = 0	0×2 = 0	0×1 = 0	<b>72</b>
A3	11×5 = 55	5×4 = 20	0×3 = 0	0×2 = 0	0×1 = 0	<b>75</b>
A4	10×5 = 50	6×4 = 24	0×3 = 0	0×2 = 0	0×1 = 0	<b>74</b>
A5	9×5 = 45	7×4 = 28	0×3 = 0	0×2 = 0	0×1 = 0	<b>73</b>
A6	9×5 = 45	6×4 = 24	1×3 = 3	0×2 = 0	0×1 = 0	<b>72</b>
<b>Total Variabel A</b>						<b>439</b>

**Table 4.** System Performance Evaluation (Variable B — 4 Items)

Code	SS×5	S×4	CS×3	KS×2	TS×1	Jumlah
B1	9×5 = 45	6×4 = 24	1×3 = 3	0×2 = 0	0×1 = 0	<b>72</b>
B2	8×5 = 40	7×4 = 28	1×3 = 3	0×2 = 0	0×1 = 0	<b>71</b>
B3	8×5 = 40	8×4 = 32	0×3 = 0	0×2 = 0	0×1 = 0	<b>72</b>
B4	8×5 = 40	7×4 = 28	1×3 = 3	0×2 = 0	0×1 = 0	<b>71</b>
<b>Total Variabel B</b>						<b>286</b>

**Table 5.** User Experience & Interface Evaluation (Variable C — 9 Items)

Code	SS×5	S×4	CS×3	KS×2	TS×1	Jumlah
C1	9×5 = 45	6×4 = 24	1×3 = 3	0×2 = 0	0×1 = 0	<b>72</b>
C2	9×5 = 45	7×4 = 28	0×3 = 0	0×2 = 0	0×1 = 0	<b>73</b>
C3	8×5 = 40	6×4 = 24	2×3 = 6	0×2 = 0	0×1 = 0	<b>70</b>
C4	9×5 = 45	6×4 = 24	1×3 = 3	0×2 = 0	0×1 = 0	<b>72</b>
C5	8×5 = 40	7×4 = 28	1×3 = 3	0×2 = 0	0×1 = 0	<b>71</b>
C6	7×5 = 35	8×4 = 32	1×3 = 3	0×2 = 0	0×1 = 0	<b>70</b>
C7	8×5 = 40	8×4 = 32	0×3 = 0	0×2 = 0	0×1 = 0	<b>72</b>
C8	8×5 = 40	7×4 = 28	1×3 = 3	0×2 = 0	0×1 = 0	<b>71</b>
C9	9×5 = 45	7×4 = 28	0×3 = 0	0×2 = 0	0×1 = 0	<b>73</b>
<b>Total Variabel C</b>						<b>614</b>

**Table 6.** Efficiency & Productivity Evaluation (Variable D — 6 Items)

Code	SS × 5	S × 4	CS × 3	KS × 2	TS × 1	Total
<b>D1</b>	11 × 5 = 55	4 × 4 = 16	1 × 3 = 3	0 × 2 = 0	0 × 1 = 0	74
<b>D2</b>	10 × 5 = 50	4 × 4 = 16	2 × 3 = 6	0 × 2 = 0	0 × 1 = 0	72
<b>D3</b>	9 × 5 = 45	6 × 4 = 24	1 × 3 = 3	0 × 2 = 0	0 × 1 = 0	72
<b>D4</b>	9 × 5 = 45	7 × 4 = 28	0 × 3 = 0	0 × 2 = 0	0 × 1 = 0	73
<b>D5</b>	9 × 5 = 45	6 × 4 = 24	1 × 3 = 3	0 × 2 = 0	0 × 1 = 0	72
<b>D6</b>	10 × 5 = 50	4 × 4 = 16	2 × 3 = 6	0 × 2 = 0	0 × 1 = 0	72
<b>Total Variable D</b>						<b>435</b>

**Table 7.** Score Interpretation

Percentage	Category
0–20%	Very Poor
21–40%	Poor
41–60%	Fair
61–80%	Good
81–100%	Very Good

**Table 8.** Final Recapitulation Results

Evaluation Aspect	Percentage Score (%)	Category
System Functionality	91.46%	Very Good
System Performance	89.38%	Very Good
User Experience & Interface	85.28%	Very Good
Efficiency & Productivity	90.63%	Very Good
<b>Total</b>	<b>88.70%</b>	<b>Very Good</b>

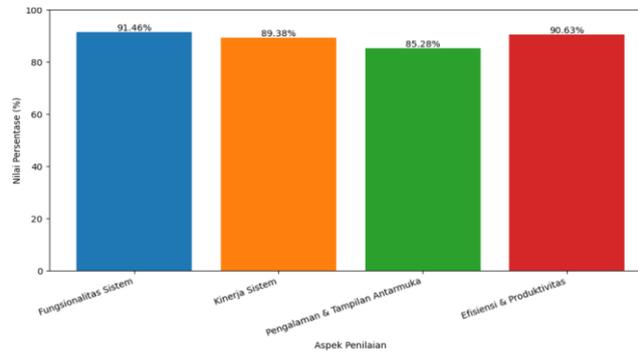
Based on calculations and interpretation criteria, the overall user satisfaction score reached **88.70%**, placing the system in the “**Very Good**” category.

**G. Analysis of Testing Results**

Black Box Testing results indicate that all major features—registration, login, service reservation, data management, and Midtrans payment processing—functioned correctly without functional errors. The system reliably processed user inputs and produced expected outputs. Overall, the system is stable, user-friendly, and effectively supports both admin and customer needs, confirming readiness for further deployment.

**H. Analysis of UAT Results**

UAT results show a high acceptance rate of **88.70%**, categorizing the system as **Very Good** and **Highly Feasible**. System Functionality (91.46%) and Efficiency & Productivity (90.63%) achieved the highest scores, indicating accurate core functionality and reduced manual workload.



**Figure 9.** Value Aspect

All evaluated aspects scored above 85%, including System Performance (89.38%) and User Experience & Interface (85.28%). These results demonstrate that the system not only performs reliably but also delivers a positive user experience. Overall, the UAT results strongly support the system's readiness for implementation and its potential to add significant value to company operations and user satisfaction.

#### 4. Conclusion

Post-implementation evaluation indicates that the reservation process no longer requires manual data recording or payment confirmation, significantly reducing administrative workload. Scheduling conflicts were eliminated through centralized data management, while payment verification became instantaneous through Midtrans integration. Although long-term quantitative measurements are ongoing, the initial deployment results demonstrate clear operational improvements compared to the previous manual process, supported by successful black box testing and a UAT score of 88.70%. Overall, the implementation of this system has proven to enhance service efficiency and accuracy, accelerate the reservation and payment processes, and improve customer service quality through secure and user-friendly digital integration. For future development, it is recommended that the system be enhanced with automatic notification features, more detailed financial reporting, and the development of a mobile application version to improve accessibility. Thus, this system not only serves as a digital solution for UNO Studio's service management but also represents an effective implementation of digital transformation in the creative services sector in the modern era.

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