DOI: 10.70491/rs2f

DIGITALIZATION OF THE TRANSACTION MANAGEMENT AND FINANCIAL REPORTING SYSTEM AT D'JAKARTA BARBERSHOP

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Abstract

Barbershop D'Jakarta is a hair care business that requires integrated transaction and financial management to ensure efficient business operations. This study aims to design and develop a web-based financial and operational management information system using the Laravel 11 framework with a MySQL database. The system was developed using the Waterfall method and is divided into two user roles: Owner and Admin. Key features include a home screen (START), authentication, an adaptive dashboard, account and employee management, products/services, customers, two-step transactions with JPEG payment proof upload, expenses, monthly targets, statistics along with employee rankings, and automatically numbered PDF financial reports. The interface is built with custom, responsive CSS and supports both light and dark modes. Black-box testing results show that all features function as required with a 100% success rate. This system has proven to replace manual record-keeping, improve data accuracy, and make it easier for owners to monitor business performance in real time.

Keywords*: Barbershop, Management Information System, Transactions, Financial Reporting, Laravel 11, MySQL, Waterfall Method, Statistics Dashboard.*

1. INTRODUCTION

Advances in information technology have had a significant impact on various business sectors, including micro, small, and medium-sized enterprises (MSMEs) in the service industry. The use of information technology serves not only as a means of data storage but also as a tool that can help business owners improve operational efficiency, data management accuracy, and the quality of decision-making. One of the most widely used forms of information technology today is a web-based information system capable of integrating various business processes into a single, centralized platform[1][2][3].

Barbershops are a type of service business that continues to grow in line with the public's increasing demand for hair care and grooming services. In their day-to-day operations, barbershops not only handle customer transactions but also manage products and services, track operational expenses, manage customer data, and prepare financial reports. Therefore, a system is needed that can support all of these activities effectively and efficiently.

Barbershop D'Jakarta is a hair care business located in Jakarta that offers a variety of haircuts, hair treatments, and related products. Based on observations and interviews with the business partners, transaction recording and financial management are still done manually using notebooks and simple spreadsheets. This method causes various problems, such as the risk of data loss, errors in recording transactions, difficulties in compiling financial reports, and limitations in monitoring business progress in real time[4].

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Figure 1. User Observation and Interviews

In addition, the lack of a structured system for managing customer data makes it difficult for barbershops to track customer visit histories. Operational expenses such as the purchase of supplies and payments for electricity, water, internet, and other necessities are also not documented in a way that's integrated with revenue data. This situation makes the business performance evaluation process less than optimal, as business owners must manually calculate and reconcile the data.

According to [1] management information systems can help organizations collect, process, store, and present the information needed to support faster and more accurate decision-making. The implementation of an integrated information system can improve the effectiveness of data management and reduce the risk of errors that often occur in manual processes.

Given these challenges, there is a need for a web-based information system capable of integrating transaction processing, customer management, product and service management, expense tracking, business target monitoring, financial statistics presentation, and automated report generation. Therefore, for this capstone project, an application titled "Web-Based Digitalization of the Transaction Management and Financial Reporting System at D'Jakarta Barbershop" was developed using the Laravel 11 framework and a MySQL database.

The system developed is expected to help Barbershop D'Jakarta improve operational efficiency, streamline transaction recording processes, generate accurate financial reports, and support business decision-making based on real-time data.

2. METHODOLOGY

This study employs an applied research methodology aimed at developing a solution to the problems faced by Barbershop D'Jakarta through the development of a website-based information system. Applied research was chosen because the primary focus of this study is to design, build, and implement a system that can be directly used to support the business's operational and financial management activities.

In practice, the research was conducted through the processes of data collection, needs analysis, system design, implementation, testing, and system evaluation. The research resulted in a Digital Transaction Management and Financial Reporting System application that can assist in the integrated management of transactions, expenses, customers, business statistics, and financial reports.

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and implement a system that can be directly used to support the business's operational activities and financial management.

The data collection methods used in this study are observation, interviews, and literature review. The researcher conducted direct observations of the business processes at Barbershop D'Jakarta, focusing on customer transaction recording, customer data management, expense tracking, financial reporting, and the data storage system in use. Observations were conducted to understand the current workflow and identify existing problems[4].

In addition to observations, the researcher also conducted interviews with the owner and operations manager of Barbershop D'Jakarta. The interviews aimed to gather more in-depth information regarding the challenges faced in the current system, the features desired in the new system, the access rights required for each role, the report formats needed, as well as the business's targets and success indicators. The interviews were conducted in a semi-structured manner using a pre-prepared interview guide.

A literature review was also conducted by studying the official documentation for Laravel 11.x, PHP 8.x, and MySQL 8.x, as well as literature related to financial management information systems, previous research on barbershop information systems, and journals on the Waterfall method and black-box testing[5][6].

The Waterfall Method is a software development method carried out in a phased and systematic manner, in which each phase is performed sequentially, starting from requirements analysis through to system maintenance. Each stage must be completed before proceeding to the next, ensuring that the system development process is more structured and easier to understand. The Waterfall method was chosen for the development of the Barbershop D'Jakarta financial management system because it has clear stages that align with a phased and sequential system development process, from requirements analysis through maintenance[7].

The stages of the Waterfall model applied in this study are as follows. During the requirements analysis stage, functional and non-functional system requirements were gathered and analyzed through interviews with the shop owner and the administrator of Barbershop D'Jakarta. The results of the requirements analysis included feature specifications covering product/service management (CRUD), a two-stage transaction system (input and settlement), a dedicated owner expense module, a real-time statistics dashboard, and a PDF report printing feature[7].

The system design phase included system architecture design, database design, and user interface (UI/UX) design. The database design utilized an Entity-Relationship Diagram (ERD) to design table structures, including tables for users, customers, employees, products/services and their categories, transactions, transaction items, expenses, targets, and report numbers. The interface design focused on creating a user-friendly, responsive website layout with clear navigation. Each feature was placed in a separate menu to avoid interfering with the main features[8].

The implementation phase involves writing the program code. The backend uses PHP with the Laravel 11 framework to facilitate development and ensure security. The frontend uses HTML, custom CSS, and JavaScript to create a responsive and interactive interface without relying on heavy CSS frameworks. The database uses MySQL 8.0 to store all data. The DOMPDF library is used to generate PDF reports[5][6][9].

System testing is conducted using the Blackbox Testing method to ensure that every feature functions according to the expected specifications. Testing includes testing the CRUD functionality for products/services, testing the transaction flow from start to finish, testing role-based access controls in the Owner module, testing the accuracy of statistical calculations, and testing PDF report generation. After the system is implemented, maintenance is performed to fix bugs or add features in accordance with evolving needs.

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Data collected from observations and interviews were analyzed qualitatively using Miles and Huberman's interactive analysis model, which consists of three stages: data reduction, data presentation, and drawing conclusions. Data reduction was performed by summarizing and selecting key points relevant to the research from the results of observations and interviews. Data presentation was carried out by presenting the data in the form of tables and structured narratives to facilitate understanding. Conclusions were drawn from the analyzed data to identify the system's functional and non-functional requirements[4].

3. RESULT AND DISCUSSION

The result of this research is a web-based transaction management and financial reporting system developed for Barbershop D'Jakarta using the Laravel 11 framework, MySQL database, and HTML, CSS, and JavaScript. The system is designed to support business operations by integrating transaction management, customer data, products and services, operational expenses, business targets, statistics, and financial reporting into a single platform.

The system applies a Role-Based Access Control (RBAC) mechanism with two user roles: Owner and Admin. The Owner has full access to all features, while the Admin is limited to operational activities such as customer management and transaction processing. This access control enhances both system security and usability[10].

The application consists of several main modules, including user authentication, dashboard, customer management, products and services, transactions, expenses, monthly targets, business statistics, and PDF financial reports. The authentication module ensures secure login through hashed passwords, while the dashboard provides real-time business information such as revenue, expenses, profits, target achievement, best-selling products, customer activity, and employee performance.

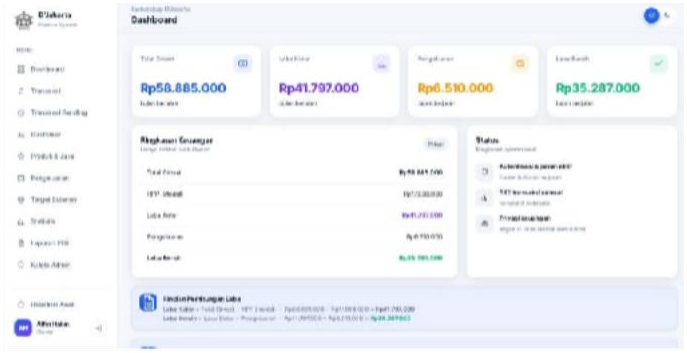

Figure 2. Owner Dashboard Interface

Shows the Owner Dashboard, which presents key business information in real time, including total revenue, operational expenses, net profit, monthly target achievement, best-selling products, customer activity, and employee performance. This dashboard enables business owners to monitor business performance efficiently through a centralized interface.

Customer management enables transaction histories to be stored and retrieved using WhatsApp numbers, improving service efficiency and customer analysis. The products and services module allows the Owner to manage available services, selling prices, and cost of goods sold. The transaction module supports customer registration, service selection, automatic payment calculation, and transaction completion. The overall transaction workflow is illustrated in Figure 3.

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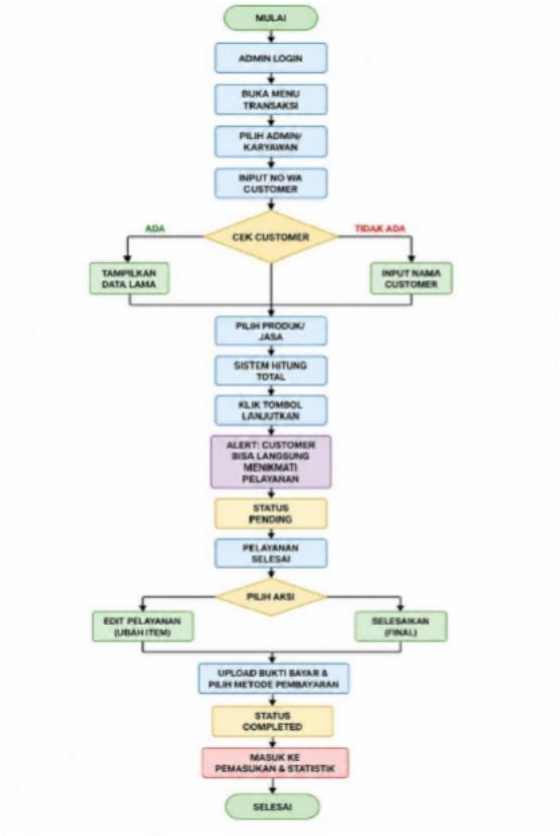

Figure 3. Transaction Process Flow

Figure 3 illustrates the transaction workflow implemented in the proposed system. The process begins with administrator authentication, followed by customer verification using a WhatsApp number. If the customer already exists, the system retrieves the existing customer data; otherwise, a new customer record is created. The administrator then selects the desired product or service, after which the system automatically calculates the total payment. Once the service is completed, the administrator uploads proof of payment and selects the payment method. The transaction status is subsequently updated to Completed, and the data are automatically recorded in the financial reports and business statistics modules.

The system also supports expense management by categorizing operational costs, making profit calculation more accurate. In addition, the monthly target feature enables business owners to monitor revenue and profit achievements automatically. A statistics dashboard provides real-time business insights, including sales performance, customer frequency, employee rankings, and target achievement. The system further generates financial reports in PDF format using the DomPDF library, allowing reports to be created by month or custom date range[9].

To evaluate system functionality, Black Box Testing was conducted on all major features, including authentication, customer management, products and services, transactions, expenses, monthly targets, statistics, and PDF report generation. The testing results indicate that all system functions operated successfully according to user requirements, demonstrating that the developed application meets the defined functional requirements[6].

System testing was conducted using the black box testing approach. The following table presents a summary of the testing scenarios and results:

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Table 1. System Test Results

No	Test Scenario	Expected Result	Status
1	Login with valid account	Successfully logged into dashboard	Success
2	Login with inactive account	Login failed, error message displayed	Success
3	Login with Owner role	Access to all features granted	Success
4	Login with Admin role	Access limited to transactions and customers	Success
5	Owner adds product/service	Product data saved; only active products appear in transactions	Success
6	Admin creates new transaction	Transaction saved, total automatically calculated	✓ Success
7	Admin continues transaction	Status changes to pending, alert displayed	Success
8	Admin finalizes transaction	Proof upload required, status becomes completed	Success
9	Owner sets monthly target	Target saved, one target per month enforced	Success
10	Owner views statistics	Revenue, profit, targets, and alerts displayed	Success
11	Owner prints PDF report	PDF downloaded according to selected period	Success

Based on the test results, all of the system's main functions operate in accordance with the specified requirements. The system is capable of performing authentication, data management, transaction recording, financial calculations, and automatic report generation without any functional errors being detected during the testing process. The test success rate reached 100%, indicating that the system has met all the functional requirements designed during the analysis phase.

4. RESULT

The implementation of this information system provides several benefits for Barbershop D'Jakarta's operations. Before the system was developed, transaction recording, expense management, and report generation were done manually, which took a relatively long time and carried the risk of recording errors. After the system was implemented, all transaction data is stored centrally in a database, allowing information to be retrieved more quickly and accurately.

The integration of transactions, expenses, customers, and financial reports also simplifies the decision-making process for the business owner. The statistics dashboard allows the owner

to monitor the business's performance in real time without the need for manual data reconciliation. Additionally, the monthly target feature helps the business owner evaluate revenue and net profit achievements based on specific periods.

From a security perspective, the implementation of Role-Based Access Control (RBAC) restricts user access according to their authority, ensuring that sensitive data such as expenses, targets, and reports can only be accessed by the business owner. As a result, the developed system not only improves operational efficiency but also enhances security and enables better data management[10].

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