

# WEB-BASED ACCOUNTING INFORMATION SYSTEM FOR LAUNDRY SERVICE MANAGEMENT

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## Abstract

In the digital era, the utilization of information technology has become essential for various business sectors, including the laundry service industry. However, many laundry businesses still rely on manual record-keeping for managing transactions and finances, which can lead to recording errors, data loss, and difficulties in generating systematic financial reports. This study aims to design and develop a web-based accounting information system to help laundry businesses manage transactions and financial reports more effectively and efficiently. The development method used is the waterfall model, which includes the stages of requirements analysis, system design, program implementation, testing, and maintenance.

The results indicate that the developed system enables administrators to manage transaction data, services, and financial reports more systematically, while employees can record transactions and print receipts automatically. System testing using the black-box method shows that all key features function as expected. With this information system, laundry businesses can improve operational efficiency, minimize recording errors, and enhance transparency in financial management. It is expected that this system can serve as a solution for small and medium enterprises to adopt information technology and increase their competitiveness in the digital era.

**Keywords**— Accounting Information System, Laundry, Web, Waterfall, Financial Management

## INTRODUCTION

In the rapidly evolving digital era, the utilization of information technology across various business sectors has become essential to enhancing operational efficiency and effectiveness. One of the industries experiencing significant growth is the laundry service industry, which has gained increasing popularity among modern society due to the need for fast and convenient garment cleaning services. However, in practice, many laundry businesses still rely on manual record-keeping to manage their transactions and finances. This reliance can lead to several issues, such as recording errors, transaction data loss, and difficulties in preparing accurate and systematic financial reports (Setiawan & Nugroho, 2020).

The primary challenges commonly faced by laundry businesses in accounting management include irregular transaction recording, difficulty in tracking income and expenses, and a lack of transparency in financial management. Many business owners do not have an organized system for recording revenues and expenses, often resulting in discrepancies between financial reports and actual financial conditions. Additionally, human errors in manual record-keeping can lead to the loss of critical data, impacting business decision-making (Rahman et al., 2021).

One potential solution to address these challenges is the implementation of a web-based accounting information system. Such a system allows for more structured transaction management, more accurate automated record-keeping, and real-time financial reporting. With a web-based system, business owners can access data anytime and anywhere, facilitating faster and more accurate decision-making based on reliable data (Susanto, 2019). This approach

significantly improves business operational efficiency while minimizing the risk of financial recording errors.

Beyond enhancing operational efficiency, a web-based accounting information system can also improve transparency in financial management for laundry businesses. An integrated system ensures that every transaction is recorded in detail and well-documented. Additionally, customers can receive digital transaction receipts, fostering greater trust in the provided services. This transparency not only benefits business owners in managing finances but also helps build stronger relationships with customers (Arifin & Hidayat, 2022).

This study aims to design and develop a web-based accounting information system that can help laundry businesses manage transactions and financial reports more effectively and efficiently. By implementing such a system, laundry business owners are expected to optimize their business processes, increase productivity, and gain a stronger competitive edge in the digital era. Furthermore, this research is expected to contribute to the broader development of accounting information systems within small and medium-sized service industries.

## RESEARCH METHODS

In designing this information system, the author employs the waterfall model methodology. The waterfall model provides a sequential and structured approach to the software development lifecycle, starting from analysis, design, coding, testing, and support (maintenance).

### A. Software Requirements Analysis

The requirements gathering process is conducted intensively to specify the software needs, ensuring a clear understanding of what the user requires. This stage defines the necessary functionalities and features of the system.

### B. Design

Software design is a multi-step process that focuses on structuring the software program, including data structures, software architecture, interface representation, and coding procedures. This stage translates the software requirements from the analysis phase into a design representation that can be implemented in the subsequent development phase.

### C. Coding

The design must be translated into a functional software program. The outcome of this stage is a computer program developed according to the design specifications outlined in the previous phase.

### D. Testing

Testing focuses on the logical and functional aspects of the software to ensure that all components have been properly evaluated. This phase aims to minimize errors and verify that the system produces the expected outputs.

### E. Support (Maintenance)

The support or maintenance phase involves reviewing the development process, starting from requirement analysis to accommodate necessary modifications. However, this phase does not involve creating an entirely new software system but rather improving and adapting the existing one.

## RESULTS AND DISCUSSION

### Results

A. Software Needs Analysis 1. Needs Analysis Stage In this stage, the author conducted an analysis based on the results of observations in the field, and obtained the following results: Administrators can add, delete, and change branch account data and available services. Administrators can view incoming transaction data and view all transactions processed at the branch. Employees can add transactions, view and change transaction status, print receipts or laundry transaction invoices and can add new customers.

1. Use Case Diagram Design in Figure 1. Is a Use Case diagram of the system to be created, where there are two actors, namely employees who focus on the transaction process in the laundry and Admin who is tasked with managing administrative data starting from employee management, services and report data.

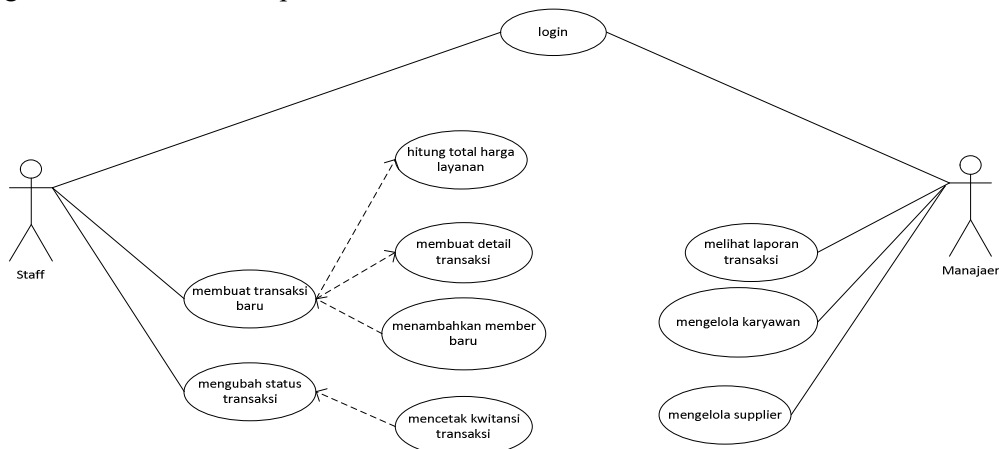


Figure 1. Use Case Diagram of the laundry information system

2. Activity Diagram Design in Figure 2. Is an example of an activity diagram in the process of creating a transaction that explains everything from employees logging into the system, inputting transaction data to printing transaction receipts.

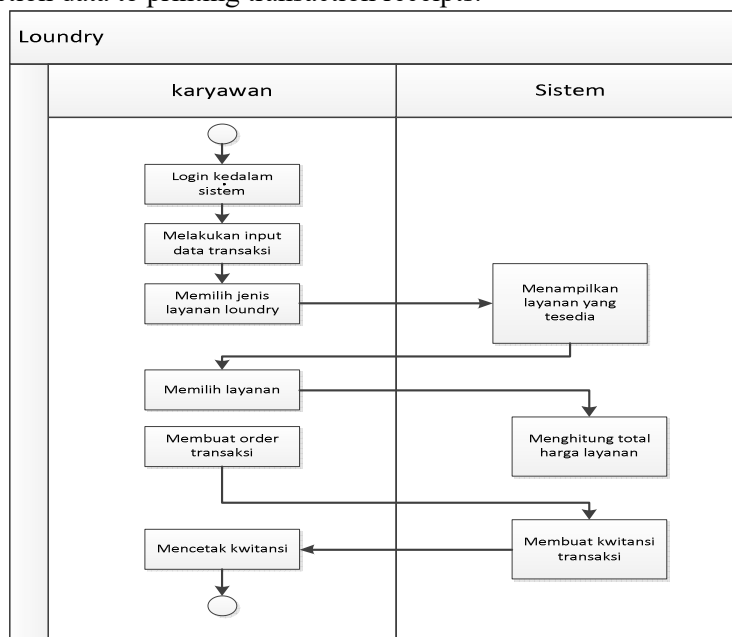


Figure 2. Activity Diagram Creating a new Transaction

B. Design

Program File Specifications For example, the following transaction table

Table 1. Transaction File Specification Table

Field Name	Data Type	Description	Information
ID_Transaksi	INT (Primary Key)	Unique number for each transaction	Auto Increment
ID_Pelanggan	INT (Foreign Key)	Connecting with customer data	Reference to customer table
ID_Karyawan	INT (Foreign Key)	Connecting with employee data	Reference to employee table
Tanggal_Transaksi	DATE	Date the transaction was made	Format YYYY-MM-DD
Total Harga	DECIMAL(10,2)	Total transaction cost	In currency units
Status_Transaksi	VARCHAR(50)	Transaction status (completed, processing, canceled)	Optional: enum and string

C. User Interface Display Below is an example of a login page before entering the system, a service settings page where the admin can set the services available at the laundry and a new transaction page which is used to input all transaction data that occurs at the laundry.

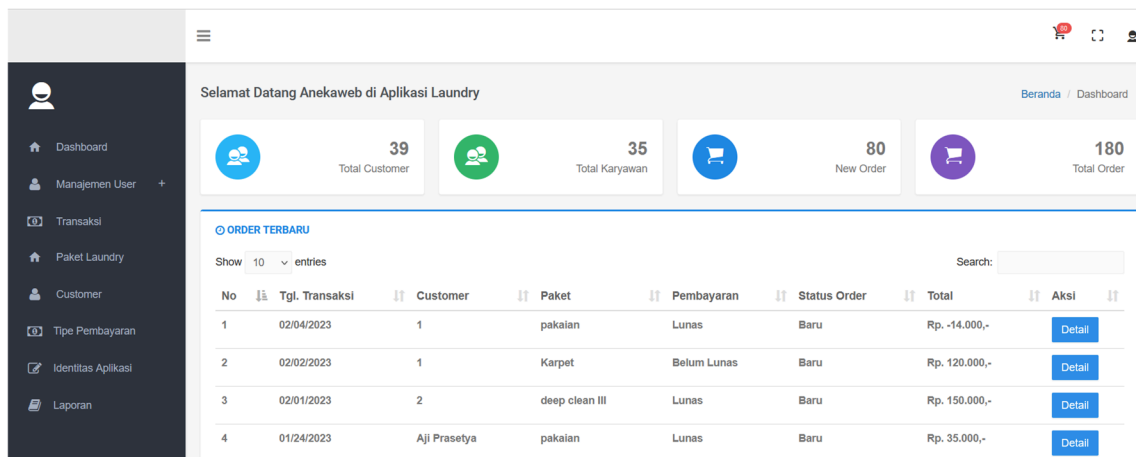


Figure 3. Dashboard page

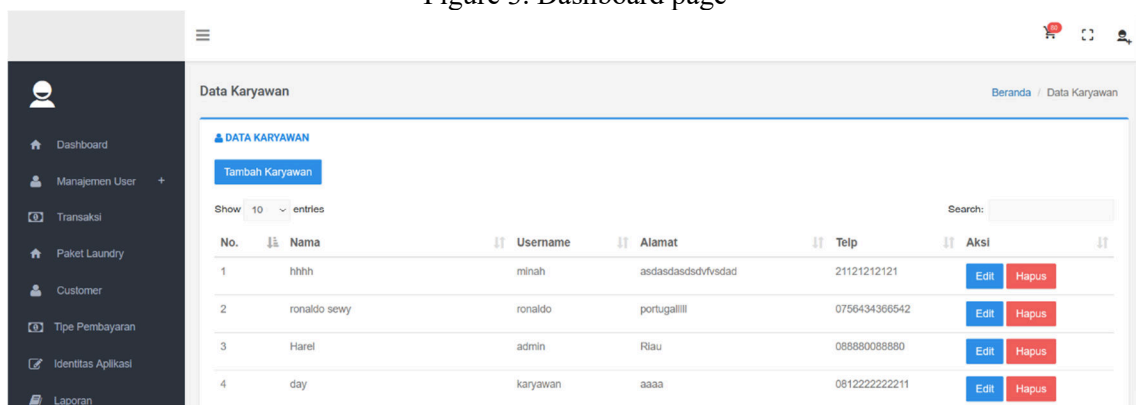


Figure 4. Employee Data Page

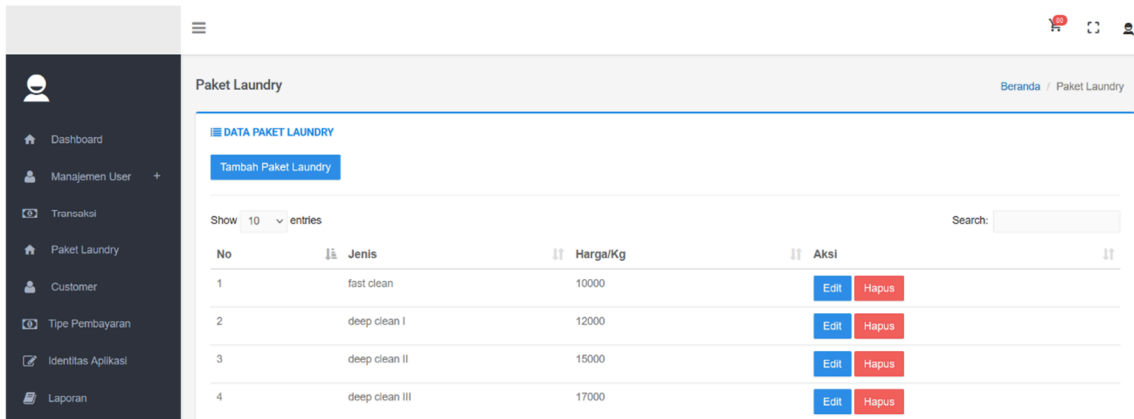


Figure 5. Laundry Package Page

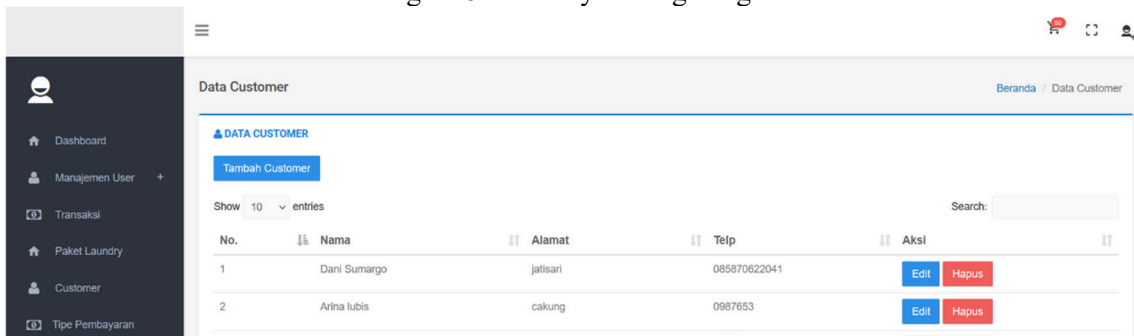


Figure 6. Add Customer Data Page

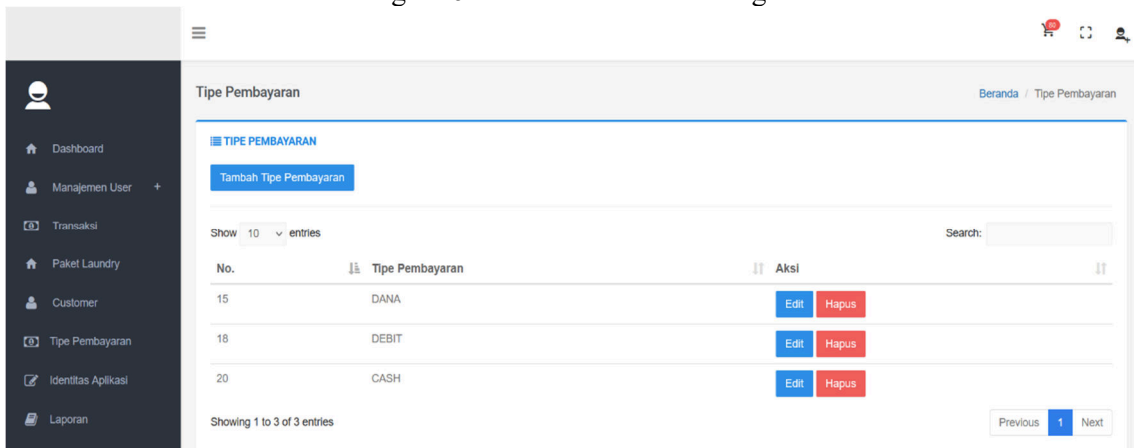


Figure 7. Payment Type Page

LAPORAN PEMASUKAN HARIAN LAUNDRY

No	Tgl. Transaksi	Customer	Paket	Berat	Harga	Status Order	Total
ORD-000180	02/04/2023-20:40:52	1	pakaian	-2 kg	Rp. 7000	Baru	Rp. -14000
ORD-000171	12/27/2022-22:11:52	hello	pakaian	2 kg	Rp. 7000	Baru	Rp. 14000
ORD-000170	12/25/2022-21:42:00	1	deep clean III	32 kg	Rp. 30000	Baru	Rp. 960000
ORD-000169	12/25/2022-02:07:56	1	0	4 kg	Rp. 0	Baru	Rp. 0
ORD-000168	12/21/2022-13:30:11	hello	pakaian	20 kg	Rp. 7000	Diambil	Rp. 140000
ORD-000167	12/20/2022-21:05:25	1	Karpet	4 kg	Rp. 10000	Diambil	Rp. 40000
ORD-000166	12/19/2022-17:37:07	hello	Karpet	2 kg	Rp. 10000	Diambil	Rp. 20000
ORD-000165	12/17/2022-07:32:18	ana	Karpet	3 kg	Rp. 10000	Selesai	Rp. 30000
ORD-000164	12/15/2022-08:36:48	samsudin	0	3 kg	Rp. 0	Diambil	Rp. 0
ORD-000163	12/11/2022-15:44:08	1	pakaian	2 kg	Rp. 7000	Selesai	Rp. 14000
ORD-000162	12/06/2022-14:16:55	1	Karpet	-4 kg	Rp. 10000	Selesai	Rp. -40000

Figure 8. Daily Laundry Income Report

D. Testing

Table 2. Blackbox Testing Results

No	Tested Features	Test Scenario	Input	Output Expectations	Test Results
1	Login Page	Tests whether the user can log in with the correct credentials.	Username, Password	User successfully logged into dashboard	ok
2	Dashboard Page	Testing whether the dashboard display appears after login	-	The dashboard view appears with the appropriate information.	ok
3	Employee Data Page	Test whether admin can add, edit and delete employee data	Name, Position, Contact	Employee data is saved/updated/deleted according to input	ok
4	Laundry Package Page	Testing whether admin can manage laundry packages	Package Name, Price	Laundry packages saved/updated/deleted	ok
5	Add Customer Data Page	Testing whether employees can add new customers	Name, Contact, Address	Customer data is stored in the system	ok
6	Payment Type Page	Testing whether the system displays and saves payment methods	Payment Types	Payment methods are saved/selectable during transaction	ok
7	Laundry Daily Income Report	Test whether the system can display daily income reports	Date Range	Income reports are displayed according to transaction data	ok

**CONCLUSION**

This study aims to develop a web-based accounting information system that can assist laundry businesses in managing transactions and financial reports more efficiently and accurately. Based on the results of requirements analysis, system design, implementation, and testing, it can be concluded that the developed system provides a solution to common issues

faced by laundry businesses, such as irregular transaction recording, difficulty in tracking income and expenses, and a lack of transparency in financial management.

The system is designed using the waterfall software development model, which involves the stages of requirements analysis, system design, implementation, testing, and maintenance. The implementation results show that the system enables administrators to manage branch data, services, employees, and transactions in a more structured manner. Meanwhile, employees can easily record transactions, update service statuses, and print receipts, all of which contribute to improving operational efficiency

Based on testing using the Black-box Testing method, the system has been proven to perform various key functions effectively, including user login, employee and customer data management, transaction recording, and daily revenue reporting. With this system, business owners can access real-time information, reduce the risk of recording errors, and enhance transparency in financial management.

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