

Research Article

# Development of a Web-Based Sales Recording and Inventory Management Application for Optimizing Cutton and Co's Operations

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## ABSTRACT

Digital transformation has had a big effect on the retail and fashion industries by using information technology, especially web-based information systems. Cutton and Co, a local brand that makes clothes, bags, and wallets, still has problems with inventory management and sales recording because they do it all by hand using spreadsheets. This could lead to errors in data entry, delays in updating data, and problems with making reports. Lack of data integration between divisions and limited access to information also hinders the company's operational efficiency. The goal of this research is to design and build an integrated web-based information system that will help with real-time, accurate, and automatic stock management and transactions. The developed system is expected to enhance interdepartmental collaboration, accelerate business processes, and offer flexible data access. This system also supports production planning and sales performance analysis. The implementation of this system is expected to enhance operational efficiency and effectiveness, minimize recording errors, and facilitate accelerated, data-driven decision-making.

**Keywords:** Accounting Information System; Web-Based; Sales; Inventory; Cutton and Co

## 1. INTRODUCTION

Digital transformation in various industries, such as retail and fashion, has been driven by advancements in information technology. Web-based information systems accelerate decision-making processes and enhance operational efficiency. In the current era of computers and the internet, information systems not only function as administrative aids but also serve as a crucial strategic component to enhance the competitiveness of the Company (Laudon & Laudon, 2022).

With its main products being clothing, bags, and wallets, Cutton and Co is one of the local brands operating in the fashion industry. The process of inventory management and sales recording is becoming increasingly difficult as the number of transactions and product variations rise. Recording sales transactions and inventory is still done manually using spreadsheets. As a result, there is a possibility of input errors, delayed data updates, and difficulties in preparing routine reports. This condition can disrupt operational efficiency and reduce the accuracy of the data needed for decision-making (Jogiyanto, 2019).

The manual recording system has several drawbacks, including issues with ease of access and data integration between departments. The integrated web-based information system has the capability to make business processes faster, improve coordination between divisions, and provide real-time access to data. As a result, the development of a web-based application that can automatically and integratively manage sales and inventory is very important (O'Brien & Marakas, 2020).

This system makes stock management and sales transaction recording for Cutton and Co easier. Additionally, the web-based system allows users to access data anytime and anywhere via the internet (Kadir, 2014). Furthermore, this system can generate reports on inventory and sales in real-time, which is useful for production planning and performance analysis (Kadir, 2014).

An integrated information system is a technical requirement and a long-term business strategy to face the era of digitalization. Therefore, it is expected that the development of this web-based information system will enable Cutton and Co to optimize its business operations, enhance service speed, and strengthen its competitiveness in the increasingly competitive fashion industry.

## 2. RESEARCH METHOD

### Research Approach

For this research, the Waterfall system development model is used as a Research and Development (R&D) approach because each stage from needs analysis to system implementation is carried out systematically and sequentially. This allows for measuring the results of application development and meeting user needs.

### Research Procedure

The research has six procedural stages as follows:

#### 1. System needs analysis

This stage aims to identify the functional and non-functional requirements of the system.

The activities conducted include:

- Interviewing Cutton and Co to understand their sales process and stock management.
- Observing the manual recording system currently in use.
- Analyzing the issues that occur, such as reporting delays and discrepancies between physical stock and data.
- Compiling a document containing user requirements (User Requirement Document).

The result of this stage is the user requirement and system specification document.

#### 2. System Design

This stage includes the creation of the system design that will be developed, covering:

- System Architecture Design: using a web-based client-server architecture.
- Database Design: using MySQL thru phpMyAdmin to manage sales transaction and inventory data.
- UI/UX Design: created using Start Bootstrap Template to ensure the system's appearance is responsive, modern, and user-friendly.
- Creation of DFD (Data Flow Diagram) and ERD (Entity Relationship Diagram) to illustrate data flow and relationships between entities.

The result of this stage is the system design blueprint and the initial interface prototype.

#### 3. System Implementation

At this stage, the system design is translated into an application using:

- Programming Language: PHP
  - Database Server: MySQL (phpMyAdmin)
  - Front-End Framework: Start Bootstrap
  - Web Server: Apache (via XAMPP) The main modules developed include:
    - Login and user management module
    - Sales recording module
    - Inventory management module
    - Sales and stock report module
- the result of this stage is a web-based application that functions according to the design.

#### 4. System Testing

This stage aims to ensure that the system operates according to user needs and is free from errors (bugs). Testing is conducted using the User Acceptance Test (UAT) approach: assessing user satisfaction regarding ease of use and result accuracy. This stage will produce a testing report and improvement recommendations.

#### 5. Implementation and Field Evaluation

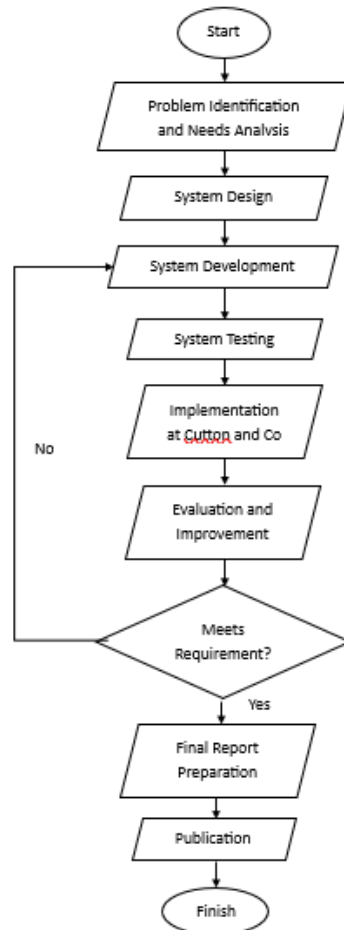
The system is directly tested at Cutton and Co. Users are given a brief training to operate the application. After the system has been used for a certain period, an evaluation is conducted on:

- The efficiency of transaction recording time
- The accuracy of stock data
- The ease of generating sales reports
- This evaluation is carried out thru interviews and questionnaires with administrative staff and store managers.
- The result of this stage is a report on the implementation and performance evaluation of the system.

## 6. Reporting and Publication

The research results are compiled into a final report and SINTA-accredited publication that includes a description of the development process, test results, system documentation, and recommendations for further development.

## Research Flow Diagram



**Figure 1.** The name of figure here

This diagram shows that each stage is carried out sequentially but still allows for feedback loops if deficiencies are found in the testing or implementation stages.

Expected Results The results of this research include:

- A web-based application that can be used to manage inventory and record sales at Cutton and Co.
- Real-time sales and stock reporting, aiding decision-making
- Business processes that were previously done manually can be automated, improving operational efficiency.
- System instructions and user guidelines for the company's internal users.

## 3. RESULTS AND DISCUSSION

### 3.1 Phase 1 Research Results: System Needs Analysis

During the system requirements analysis phase, a series of activities are carried out to determine the functional and non-functional requirements of the system to be developed by Cutton and Co. This phase is the foundation for designing the system to meet user needs. According to an interview with Cutton and Co, the process of managing stock and sales transactions is still done manually. There is a possibility of errors when recording data and difficulties in finding it if using a simple book or notebook. It takes a long time to report sales and stock because it has to be done manually. Observations show that there are often discrepancies between the recorded stock levels and the physical condition in the field. This is because there is no integrated system to track purchases, sales, and stock. Delays in recording transactions are also one of

the main causes of data discrepancies.

Based on the problem analysis, the system requirements are as follows:

#### 1. Functional Requirements

The developed system must be able to:

- Manage stock data (add, view, and store product data).
- Record purchase transactions.
- Record sales transactions.
- Display transaction data in a structured table format.
- Automatically generate sales reports.
- Provide a login authentication feature for system security.
- Display information about transactions and stock in real-time.

#### 2. Non-Functional Requirements

The system must also meet the following non-functional requirements:

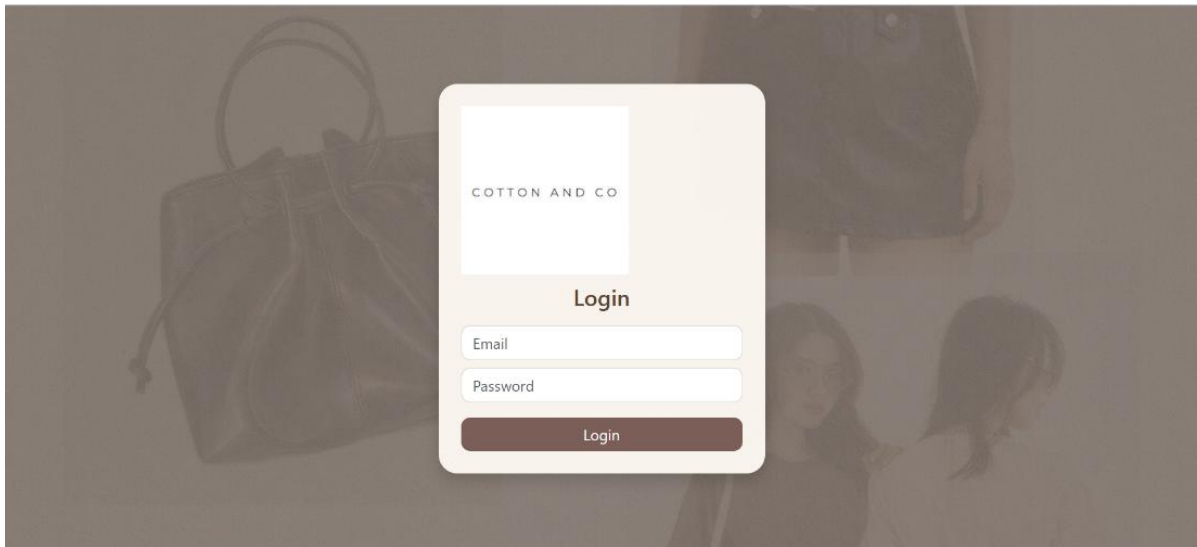
- Usability: Users can use the system without requiring special training.
- Performance: The system can display data quickly.
- Security: The system has a login feature that restricts who can access it.
- Reliability: The system can store and manage data well without losing any.
- Interface: The look and feel of the system are attractive and easy to use, with a theme that aligns with the Cutton and Co brand.

Based on the results of the analysis, a User Requirement Document was prepared, containing the complete system specifications. This document is then used as a reference in the subsequent stages of system design and development.

### 3.2 Phase 2 Research Results: System Design

In this research, the main modules developed include:

#### 1. Login module

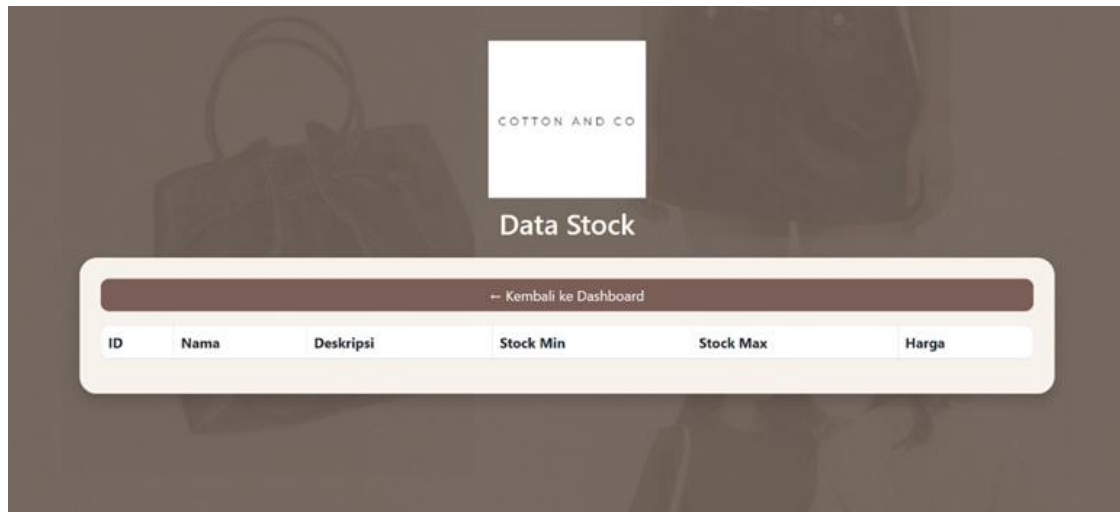


**Figure 2.** Login module

The login module is an important part of the system because it checks the user's identity before letting them use the main features of the application. This makes sure that only authorized users can use the system. This module in the Cutton and Co app uses a simple email and password authentication system, which means that users need to enter valid information to get to the dashboard. The user starts the login process by going to the login page, entering their email and password, and the system checking the information against stored data. If the information is correct, the system makes a login session and takes the user to the dashboard. If the information is wrong, an error message will appear and the user will be asked to try again. This module is made with PHP and uses session features to keep track of whether a user is logged in as long as the session is active. To make the system more secure, it only lets certain users see certain pages based on their active sessions, automatically sends unauthorized users back to the login page, and makes sure that only logged-in users can use core features. Also, the login module's user interface was made with the Bootstrap framework and earth tone

colors that match the Cutton and Co brand. This makes for a comfortable, easy-to-use, and visually appealing experience.

## 2. Stock Module



**Figure 3.** Stock module

The stock module is an important part of the system that manages Cutton and Co's inventory data. This includes storing, displaying and controlling item information, so that product availability can be easily monitored. This module has a few main functions: it stores master data about goods, shows complete stock information, sets minimum and maximum stock levels as a way to control inventory, serves as a guide for buying and selling, and helps make inventory reports. The stock data is stored in a table called stock that has the fields item id as a unique code, item name, description, stockmin, stockmax, and item price. The item id field connects the stock table to the transaction table. The work process for this module starts when a user fills out a form with data. The data is then stored in a database and displayed as a table. It is also used as a reference for transactions and to keep an eye on stock levels to see if they are close to the minimum or maximum level. This module was made with PHP and MySQL, using SQL commands like INSERT to save data and SELECT to show data. It also uses the JOIN technique to link the stock table with the transaction table to make the information more complete. This module was built using the Bootstrap framework and an earth tone design concept so that it looks neat, informative, and easy to use. With the stock module, users can manage product data from one place, quickly and accurately check stock levels, avoid running out of stock or having too much stock, and help make decisions about how to buy goods.

## 3. Sales recording module

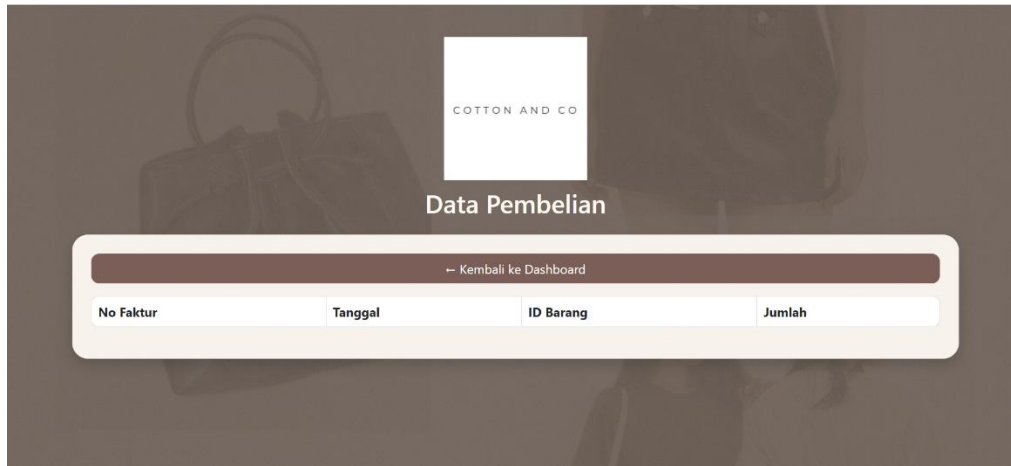


**Figure 4.** Sales recording module

The sales data module is a crucial part of the system, recording, storing, and displaying all sales transactions at Cutton and Co. It helps users monitor sales activity and serves as the basis for generating reports. This module has several key functions: storing sales transaction data, displaying a structured transaction list, providing information on sold items, and supporting automated reporting. The sales data is stored in a table called "transaksipenjualan" (sales transaction), which

has a field called "nofakturjual" (sale invoice), which acts as a unique transaction code, a sale date, an item ID linked to the stock table, and a quantity of items sold. This allows the system to obtain information about the items, such as their name and price, through the relationships between the tables. The workflow for this module begins with the user entering data through a sales form. The data is then stored in a database and displayed as a table on the sales page. It can also be used for analysis and reporting. This module was created using PHP and MySQL, with the SQL SELECT command to retrieve data and the JOIN technique to combine sales and stock data to create more complete information. The module's appearance was made using the Bootstrap framework and an earth tone color scheme to match the rest of the system. It is also presented in a neat, easy-to-read table with navigation features. With this module, users can see how many items have been sold, see the history of transactions, make reports more easily, and make fewer mistakes when recording compared to a manual system.

#### 4. Purchase module



**Figure 5.** Purchase module

The purchase data module is a crucial part of the system that records, tracks, and manages all purchase transactions at Cotton & Co. to ensure stock availability and support integrated inventory management. This module's main functions are to track every purchase, store data in a database, display a systematic list of purchases, and automatically add to the stock based on what comes in. The purchase data is stored in the transactions table, which has the fields "nofakturbeli" (a unique transaction code), "datubayar", "idbarang" (connected to the stock table), and "jumlahbeli" (purchase amount). This way, the system can view the details of the purchased items through the relationships between the tables. The workflow for this module starts when a user fills out a purchase form. The data is then stored in a database, displayed as a table on the purchase page, and used to keep track of items in stock. This module was developed using PHP and MySQL with SQL INSERT commands to store data and SELECT to display data. It also utilizes the JOIN technique to combine purchase data with the stock table to generate more complete information. This module was made with the Bootstrap framework and an earth tone design concept to fit in with the rest of the system. It is presented in a neat, simple table that is easy to use. This module allows users to record incoming items in an organized way, see their purchase history, keep track of stock levels, and make fewer mistakes than with manual methods.

#### 5. Stock, Sales, and Purchase Form Module



**Figure 6.** Stock Form

The screenshot shows a web interface for 'COTTON AND CO' with the title 'Form Pembelian'. At the top, there is a link that says '← Kembali ke Dashboard'. Below this are four input fields: 'No Faktur', 'mm/dd/yyyy' (with a calendar icon), 'ID Barang', and 'Jumlah'. At the bottom of the form is a button labeled 'Simpan Data'.

**Figure 7.** Purchase Form

The screenshot shows a web interface for 'COTTON AND CO' with the title 'Form Penjualan'. At the top, there is a link that says '← Kembali ke Dashboard'. Below this are four input fields: 'No Faktur', 'mm/dd/yyyy' (with a calendar icon), 'ID Barang', and 'Jumlah'. At the bottom of the form is a button labeled 'Simpan Data'.

**Figure 8.** Sales Form

The form module is a part of the system that allows users to enter data into the system in a structured manner. This module was created to facilitate tracking of Cutton and Co. transactions and goods. In the developed system, the form modules include the Stock Form, Purchase Form, and Sales Form, all of which are interconnected for data management. The Stock Form Module is used to add new items to the system, which are then stored in the stock table as the main data. The data entered includes the item ID, name, description, minimum stock, maximum stock, and price. This data is the basis for all transactions occurring in the system. Furthermore, the Purchase Form Module is used to record purchase transactions for goods or incoming goods. The information required to be entered includes the purchase order number, purchase date, item ID, and purchase quantity. This data is stored in the purchase transaction table and is used as a reference to determine the number of items entered into stock.

Meanwhile, the Sales Form Module is used to track sales transactions or items leaving the store. The data entered includes the sales invoice number, sale date, item ID, and quantity of items sold. This data is stored in the sales transaction table and is used as the basis for generating sales reports. Technically, all three forms use the POST method to send data to the server. The data is then processed using the PHP programming language and stored in a MySQL database using the SQL INSERT command. Once the data is successfully saved, the system redirects the user to the relevant page to display the updated data. Interface-wise, the form module is built using the Bootstrap framework and an earth-toned design, making it visually appealing, simple, and user-friendly. This is intended to make data entry easier for users. This form module makes data entry more organized, faster, and easier. It also helps reduce errors common in manual systems and makes it easier for Cutton and Co. to manage their data.

## 6. Report Module



ID Barang	Nama Barang	Tanggal Jual	Jumlah	Total Harga

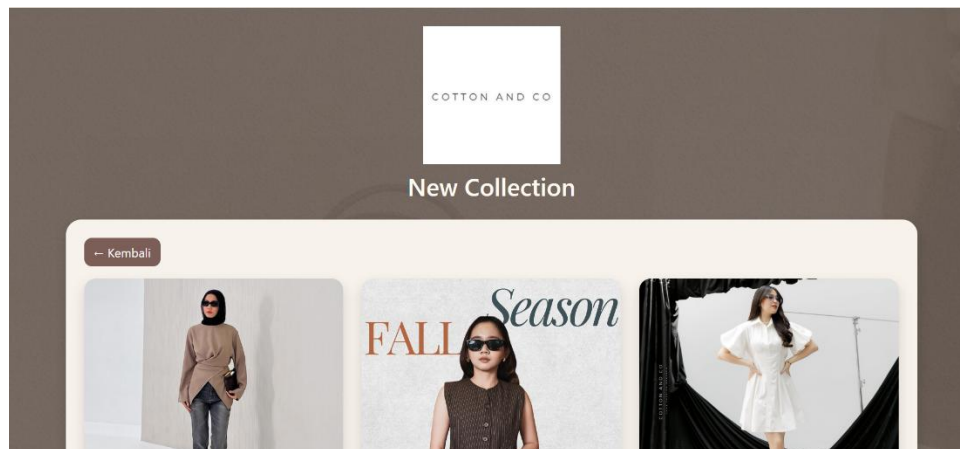
Total Penjualan: Rp 0

**Figure 9.** Report Module

The report module is part of the system that displays the results of processing sales transaction data in a clear, structured, and useful manner. This module is one of the most important parts because Cutton and Co. uses it as a basis for decision-making. The report module displays data derived from combining the stock and sales transaction tables. The system can display more comprehensive information, such as item ID, item name, sale date, number of items sold, and the total price, which is the result of multiplying the item price by the number of items sold. The report module begins working by retrieving data from the database using an SQL command that joins the two tables. After that, the system automatically calculates the total price for each transaction. The system also calculates total sales by adding up the total prices of each transaction.

The processed data is then displayed in a neat table format using the Bootstrap framework. This makes it easier for users to read and understand the information presented. At the bottom of the table, the total sales are displayed as a summary of all transactions that have occurred. In terms of interface, the report module is designed with an earth-tone concept that matches the overall system, providing an attractive and professional appearance. There are also navigation features, such as a back button, to make it easier for users to navigate between pages. With the reporting module, users can easily see how well their sales are doing, track their most popular items, and get information about their total revenue over a specific period. This module also helps reduce errors that often occur when writing things by hand.

## 7. New Collection Module

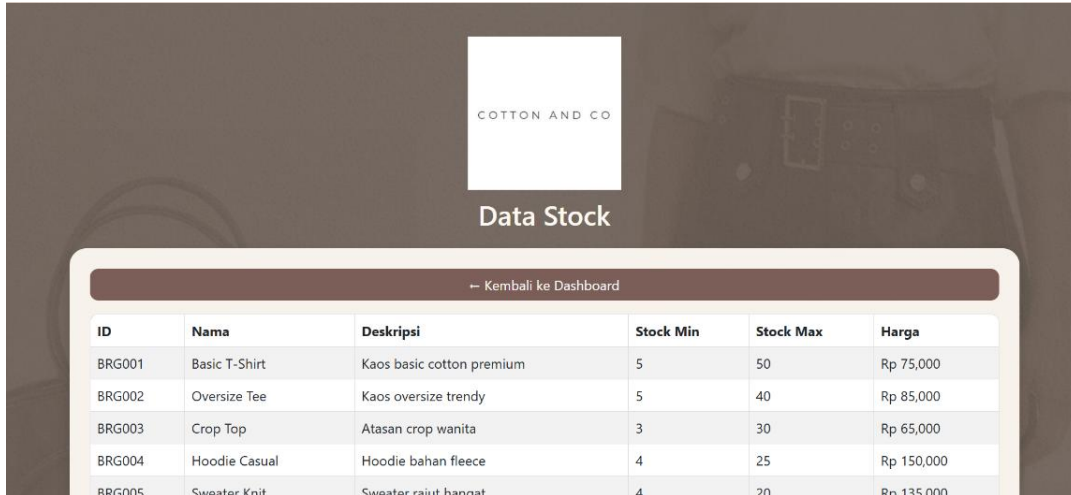


**Figure 10.** New Collection Module

### 3.3 Phase 3 Research Results: System Implementation

The system implementation phase is the phase in which the developed system begins to be applied and used directly in operational activities at Cutton & Co., not only through technical testing but also in real-world conditions to support daily business processes. At this point, the system is integrated into the stock management and transaction activities that were previously done manually. This means that users can now use the stock module to record item data, the purchase and sales module to record transactions, and the report module to track sales results. In its use, this system allows for the addition of

new goods data, the recording of purchase transactions upon arrival, the direct recording of sales, the real-time monitoring of stock, and the automatic creation of sales reports without the need for manual calculations. The implementation results show that the system can speed up data entry, reduce errors, especially when it comes to counting stock and total sales, and make data more organized and easier to find for monitoring and evaluation. From a user perspective, the system is considered easy to use due to its simple and intuitive interface, supported by an earth-tone interface design that is comfortable for long-term use. There are still some things that could be improved, however. For example, adding automatic stock update features, making the system more secure, and adding more complex reporting features are all things that could be done.



COTTON AND CO

### Data Stock

[← Kembali ke Dashboard](#)

ID	Nama	Deskripsi	Stock Min	Stock Max	Harga
BRG001	Basic T-Shirt	Kaos basic cotton premium	5	50	Rp 75,000
BRG002	Oversize Tee	Kaos oversize trendy	5	40	Rp 85,000
BRG003	Crop Top	Atasan crop wanita	3	30	Rp 65,000
BRG004	Hoodie Casual	Hoodie bahan fleece	4	25	Rp 150,000
BRG005	Sweater Knit	Sweater rajut hanaat	4	20	Rp 135,000

**Figure 11.** Stock Module Implementation



COTTON AND CO

### Data Penjualan

[← Kembali ke Dashboard](#)

No Faktur	Tanggal	ID Barang	Jumlah
FJ001	2026-01-10	BRG001	8
FJ002	2026-01-11	BRG002	6
FJ003	2026-01-12	BRG003	5
FJ004	2026-01-13	BRG004	3
FJ005	2026-01-14	BRG005	2

**Figure 12.** Sales Module Implementation



COTTON AND CO

### Data Pembelian

[← Kembali ke Dashboard](#)

No Faktur	Tanggal	ID Barang	Jumlah
FB001	2026-01-05	BRG001	20
FB002	2026-01-06	BRG002	15
FB003	2026-01-07	BRG003	10
FB004	2026-01-08	BRG004	8
FB005	2026-01-09	BRG005	6

Figure 13. Purchase Module Implementation

ID Barang	Nama Barang	Tanggal Jual	Jumlah	Total Harga
BRG001	Basic T-Shirt	2026-01-10	8	Rp 600,000
BRG002	Oversize Tee	2026-01-11	6	Rp 510,000
BRG003	Crop Top	2026-01-12	5	Rp 325,000
BRG004	Hoodie Casual	2026-01-13	3	Rp 450,000
BRG005	Sweater Knit	2026-01-14	2	Rp 270,000
BRG006	Denim Jacket	2026-01-15	2	Rp 400,000
BRG007	Flannel Shirt	2026-01-16	6	Rp 720,000
BRG008	Long Sleeve Tee	2026-01-17	7	Rp 630,000
BRG009	Midi Skirt	2026-01-18	4	Rp 440,000
BRG010	Pleated Skirt	2026-01-19	3	Rp 345,000
BRG017	Tote Bag	2026-01-26	10	Rp 600,000
BRG018	Sling Bag	2026-01-27	6	Rp 510,000
BRG019	Backpack Mini	2026-01-28	3	Rp 360,000
BRG020	Scarf Fashion	2026-01-29	8	Rp 400,000

Total Penjualan: Rp 9,955,000

Figure 13. Report Module Implementation

## 4. CONCLUSION

Based on the results of the design, development, and implementation of a web-based information system at Cutton and Co, it can be concluded that the system built can improve the efficiency and effectiveness of managing stock data, purchasing transactions, and sales compared to the previous manual method. Each module, starting from login, stock, purchasing, to sales, has been well integrated, making it easier for users to manage data centrally, accurately and in real-time. This system has also been shown to speed up the recording process, reduce input errors, and make it easier to write reports and keep an eye on things. The system was also designed with a simple, user-friendly interface that makes it easy for users to use in their daily operational activities. This information system not only meets technical needs, but it also helps Cutton and Co make data-driven decisions and stay competitive in the digital age. Even so, more development is needed to improve the features, security, and complexity of the reports so that the system can work better in the future.

## RECOMMENDATIONS

This study's findings suggest a number of recommendations. It is suggested that Cutton and Co keep improving and expanding the web-based information system they have in place by adding more advanced features like automated stock updates, better data security measures, and more detailed reporting and analytics to help them make strategic decisions. Regular maintenance of the system and training for users are also important to make sure that it is used to its full potential and can be changed to meet future business needs. It is recommended that related organizations, particularly small and medium-sized enterprises (SMEs), implement integrated information systems to enhance operational efficiency, data accuracy, and competitiveness in the digital age. Using similar systems can help cut down on mistakes made by hand and help people make decisions in real time. Future researchers are advised to advance this study by incorporating emerging technologies such as mobile applications, cloud computing, or artificial intelligence to augment system capabilities. Future research may also investigate user experience assessment, system scalability, and performance enhancement to deliver more thorough and inventive solutions within the domain of information systems.

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## AUTHOR'S CONTRIBUTIONS

The author solely conducted all aspects of this research, including the identification of the research problem, system design, development, implementation, data collection, analysis, and interpretation of results. The author also prepared, reviewed,

and finalized the manuscript independently.

## CONFLICT OF INTEREST

The author declares that there is no conflict of interest regarding the publication of this paper.

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