



Web-Based Financial Information System at Ibu Sri's Shop

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ABSTRACT

Ibu Sri's Shop is one of the Micro, Small and Medium Enterprises (MSMEs) engaged in the trade of daily necessities. Along with the growing need for efficiency and accuracy in recording transactions, this shop requires a system that can help manage finances in a structured and computerized manner. This study aims to design and implement a Web-Based Financial Information System that can help the process of recording transactions, calculating total purchases, and financial reporting at Ibu Sri's Shop more effectively and accurately. This system was developed using the PHP programming language and MySQL database with a waterfall approach as a software development method. The main features of this system include product management, recording sales transactions, and daily financial reports that can be accessed through a simple and user-friendly web interface. The implementation results show that the system built can speed up the recording process and reduce the potential for manual errors in managing store finances. In addition, this system also makes it easier for shop owners to monitor financial performance periodically without having to do manual recording. This research is expected to provide a real contribution to the digitalization of the financial system in MSMEs, especially in improving operational efficiency and data-based decision making.

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INTRODUCTION

Indonesia faces a growing demand for fast and accurate information, making technology increasingly essential to support various activities (Yasa et al., 2024). The waterfall method is a software development model that follows a sequential or linear approach (Hidayati, et al., 2025). In this context, businesses must design information systems and prepare human resources to be adaptable to the latest technological advancements. In general, a trading company is an entity that operates by purchasing goods from other parties or businesses and reselling them to consumers. Every business strives to maximize profits to sustain and expand its operations to a higher level.

One notable application of technology is the implementation of web-based information systems, which are now widely used to support a variety of business processes, including financial management. A financial information system plays a critical role in business operations as it functions to record, manage, and present financial information quickly, accurately, and accessibly at any time (Marsofiyati, H. E., 2015). The rapid development of information technology has had far-reaching impacts across various sectors, including business and commerce. Today, the utilization of information technology is no longer limited to large corporations but has also extended to small and medium-sized enterprises (SMEs), and even to micro-enterprises such as convenience stores or traditional shops.

One significant form of information technology implementation is the web-based financial information system (Juventauricula, P., 2024). This system is designed to assist business owners in recording, managing, and monitoring their business's financial condition efficiently, accurately, and in real-time (Anjarwati et al., 2024). Toko Ibu Sri represents a micro-enterprise engaged in the trade of daily necessities. Currently, the store still relies on manual recording methods to manage its financial transactions. This approach is prone to errors, data duplication, information loss, and complicates the business owner's ability to analyze financial reports (Qonita, A et al., 2025)

As transaction volumes increase with business growth, manual recordkeeping becomes less effective and may lead to financial losses due to human error (Dewi, A. K et al., 2025). The primary challenge faced

by Toko Ibu Sri is the absence of an integrated system for recording all transactions—both income and expenses—and for generating valid and accurate financial reports. The processes of inventory monitoring, sales transaction logging, and revenue summarization are conducted separately and lack structure. This condition makes it difficult for the store owner to comprehensively understand the store's financial health and to make strategic, data-driven decisions.

In reality, many SMEs still manage their finances manually using notebooks or basic spreadsheets. This situation creates numerous issues, such as risks of misrecording, data loss, difficulties in tracking transactions, and delays in financial report preparation. As a result, business owners often lack a clear picture of their financial position, which hinders accurate and timely decision-making. Toko Ibu Sri is a tangible example of a small business grappling with these challenges. As a shop that provides essential goods for the local community, its daily transaction volume is relatively high. However, all sales, purchases, and other financial records are still maintained manually. This process is not only time-consuming but also carries a high risk of errors, record loss, and challenges in obtaining timely and accurate financial reports (Susanti, et al., 2021).

Additionally, the continued reliance on traditional methods makes it difficult for the owner, Ibu Sri, to monitor the store's performance in real time. All financial data must be calculated and analyzed manually to understand the store's revenue, profits, or losses—an approach that is far from efficient. Consequently, formulating strategies for business development, such as inventory management, pricing decisions, or investment planning, becomes more challenging. Fortunately, an online financial information system can automate the preparation of financial reports. These reports can be generated more quickly and with greater accuracy. With organized and easily interpretable financial data, Ibu Sri can better understand her store's financial status and be more prepared to compete and grow her business.

METHOD

This study employed a web-based information system design approach using the waterfall methodology, which consists of requirement analysis, system design, implementation, and evaluation stages (Al Azfar, N. A et al., 2024). The waterfall method was chosen due to its systematic and structured nature, making it suitable for developing the financial system required by the store. Data were collected through business process observation, interviews with the store owner, and a literature review (Palis, et al., 2024). The requirements analysis phase produced a set of functional system specifications, including features such as sales transaction recording, receipt printing, and the generation of daily and monthly financial reports. The system design was represented through flowcharts, data flow diagrams (DFD), and entity-relationship diagrams (ERD) for the database schema. The system was developed using the PHP programming language and MySQL as the database management system (Sibarani, F. H., 2024). System testing was conducted using the black-box testing method to ensure that the system operated in accordance with its intended functionality. The evaluation phase was carried out with end-users to assess the usability and operational suitability of the system for daily store activities.

This research was conducted at Toko Ibu Sri, located in Huta II Silau Manik. The location was chosen because Toko Ibu Sri represents a real-world example of a micro, small, and medium enterprise (MSME) that still employs manual financial recordkeeping. Therefore, it serves as a suitable case for evaluating the implementation of a web-based financial information system aimed at improving transaction efficiency and accuracy. The research was carried out from April to June 2025, covering all phases of the project: requirements gathering, system design, application development, testing, and the preparation of the final report.

Research Design

The following is a research design containing a block diagram that explains the research workflow:

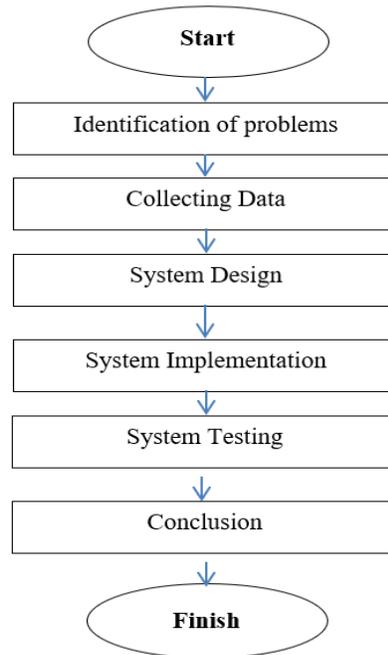


Figure 1. Research Workflow

Data Collection Techniques

In this study, data were collected using the following techniques to ensure the accuracy of system requirements and support the right application development process:

1. Observation. The researcher conducted direct observation of operational activities and transaction recording processes at Toko Ibu Sri. This observation was conducted to understand the store's workflow, the types of transactions that occur every day, and the problems that arise from manual financial recording.
2. Interview. A structured interview was conducted with the owner of Toko Ibu Sri to gather information about user needs, obstacles in financial management, and the features expected from the financial information system to be developed. This interview helps compile system specifications based on real needs in the field.
3. Literature Study. This technique is used to support the theoretical basis and methods of system development. The researcher reviewed references from journals, books, and scientific articles related to financial information systems, the waterfall method, and best practices in developing web-based applications for MSMEs.

Data Processing Techniques

Data processing techniques in this study are carried out systematically to produce a financial information system that meets user needs. The data processing process includes the following stages:

1. Data Reduction. Data obtained from observations, interviews, and documentation are selected and simplified to eliminate irrelevant information. The focus is directed at data related to system needs, transaction recording processes, and obstacles faced in manual store financial management.
2. Data Presentation. The reduced data is then arranged in the form of tables, flowcharts, and narrative descriptions to facilitate understanding and analysis. This presentation includes transaction flows, product data structures, sales records, and expected financial reports.
3. Data Analysis. The analysis is carried out to identify the functional and non-functional needs of the system based on the data that has been presented. The results of the analysis become the basis for the information system design process, both in terms of user interface, database, and application logic.

4. Data Implementation into the System. The analyzed data is then processed into system input forms such as product entities, transaction details, and report structures. This process is carried out during development using the PHP programming language and MySQL database, according to the design results at the design stage.
5. Validity and Consistency Test. After the system is developed, test data is entered to evaluate whether the system can process and display information according to reality. This test aims to ensure that the data processing process in the system is accurate and consistent.

RESULTS AND DISCUSSION

Results

This section explains the results of the implementation of a web-based financial information system that has been designed and built for Toko Ibu Sri, as well as a comprehensive discussion. The results are presented in the form of a system interface display and a table of main functionality, equipped with interpretations related to the efficiency, accuracy, and ease of use of the system.

System Implementation Results

After going through the stages of needs analysis, design, and implementation, the system was successfully built with several main features, namely: User login, - Dashboard, Master Data: Categories and Goods, Transactions: Sales transactions and Sales Reports and Store Settings. Here are some of the system interface display results:

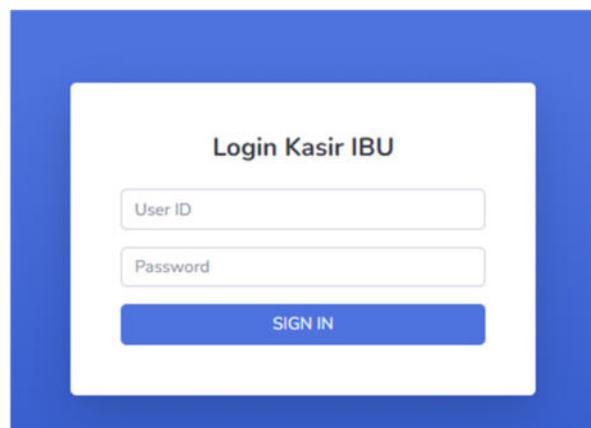


Figure 2. Login Page

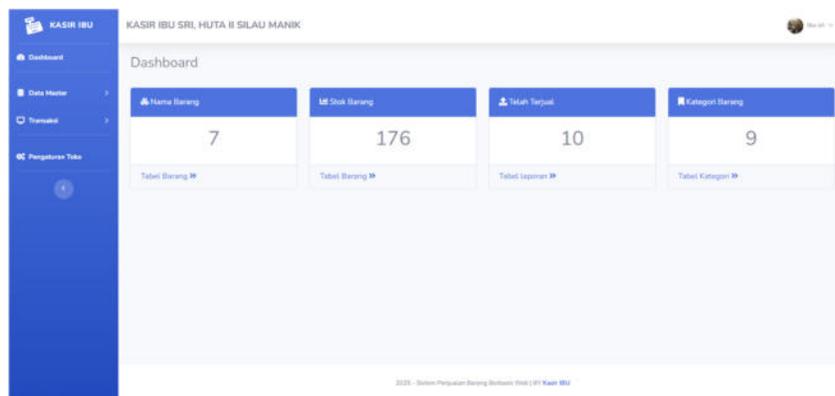


Figure 3. Dashboard

Master Data (Remarks: In the master data there are Items and Categories.)

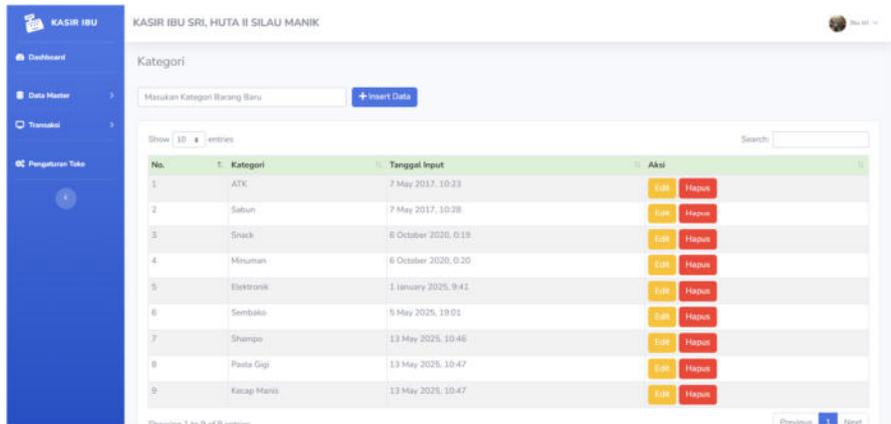


Figure 4. Categories

We can fill it in first and when it is done the data will be displayed.

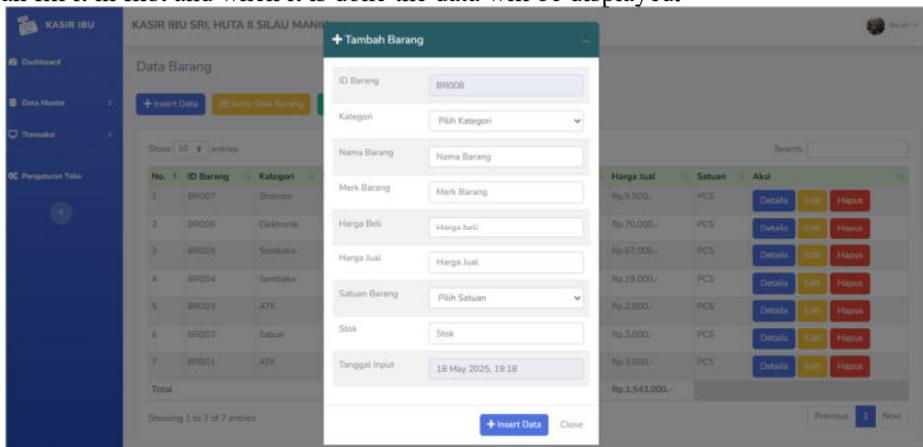


Figure 5. Goods

This item contains category, item name, brand, stock, purchase price, price, sale, unit.

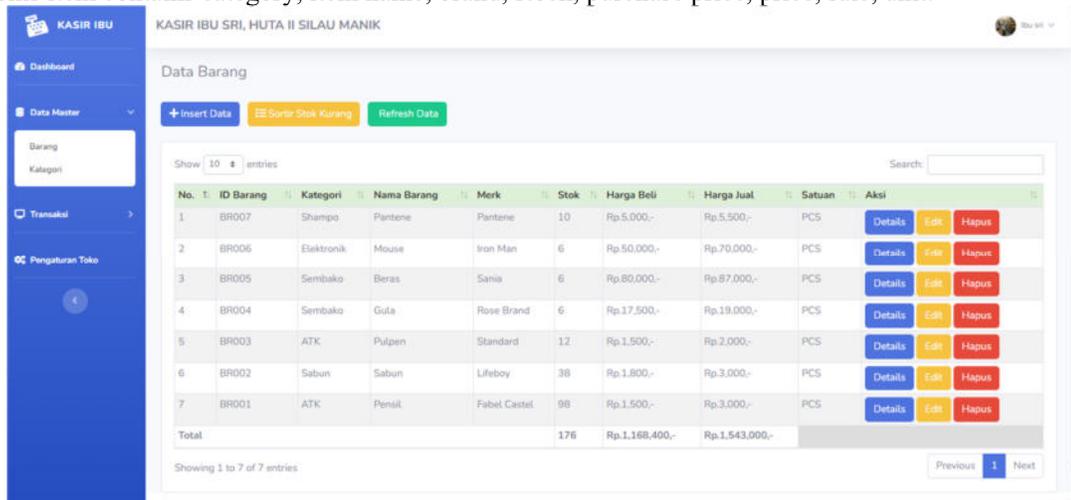


Figure 6. Goods

Transactions (This page contains Sales Transactions and Sales Reports.)

Figure 7. Selling transaction

No	ID Barang	Nama Barang	Jumlah	Modal	Total	Kasir	Tanggal Input
1	BR007	Pantene	1	Rp.5.000,-	Rp.5.500,-	Ibu sri	13 May 2025, 10:49
2	BR005	Beras	1	Rp.80.000,-	Rp.87.000,-	Ibu sri	13 May 2025, 10:45
3	BR004	Gula	1	Rp.17.500,-	Rp.19.000,-	Ibu sri	13 May 2025, 10:45
4	BR007	Pantene	1	Rp.5.000,-	Rp.5.500,-	Ibu sri	13 May 2025, 10:49
5	BR005	Beras	1	Rp.80.000,-	Rp.87.000,-	Ibu sri	13 May 2025, 10:45

Figure 8. Sales Report

Figure 9. Store Settings

CONCLUSION

Based on the results of the research and system implementation that has been carried out, it can be concluded that the developed web-based financial information system has succeeded in meeting the basic needs of Toko Ibu Sri in terms of recording sales transactions, product management, and presenting financial reports automatically. With this system, the financial administration process becomes faster, more accurate, and more efficient compared to the manual method previously used. This system helps shop owners in making data-based decisions, because all transaction histories are neatly stored and can be accessed again at any time. Information such as total income per day or month can now be known directly without a manual recap process. The simple, web-based system interface makes it easy to access and understand, even for users who have limitations in the field of information technology. The use of a login system also provides a layer of security, ensuring that financial data cannot be accessed by unauthorized parties.

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