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IMPLEMENTATION OF A FINANCIAL RECORDING SYSTEM WEBSITE BASED ON DAPOER LN MSME KUDUS

Zavira Raihana Salsabila[1*)], Endang Supriyati[2)], Tri Listyorini[3)]

[1,2,3] Informatics Engineering Study Program, Faculty of Engineering, Muria Kudus University
e-mail: zvrhnn@gmail.com [1)], endang.supriyati@umk.ac.id [2)], trilistyorini@umk.ac.id [3)]

ABSTRACT

This research aims to implement a website-based financial recording system at Dapoer LN MSME Kudus, with a focus on increasing efficiency and accuracy in recording income and expenses. The system is designed to support the management of data such as income, expenses, payables, receivables, and employee data in real-time, with a simple and user-friendly interface. The implementation process uses the PHP programming language and the waterfall development method, which was chosen for its systematic linear approach so that each stage can be managed in a structured manner. The system development was performed using Visual Studio Code as the Integrated Development Environment (IDE) and MySQL as the Relational Database Management System (RDBMS). Visual Studio Code was chosen for its flexibility and extension support, while MySQL was used for its stability in handling small to medium scale data. The results of the research resulted in a website-based financial recording system that is able to manage data on income, expenses, payables, receivables, and employee data with a high level of accuracy. This system is expected to support Dapoer LN MSME Kudus in monitoring financial conditions more effectively and provide a basis for making quick and precise decisions. This article covers the entire process of designing to evaluating the system, with the hope of contributing to the increased productivity and growth of Dapoer LN MSME Kudus. In addition, this system is expected to be a reference for other MSME in improving competitiveness and operational efficiency. Thus, this research is not only beneficial for Dapoer LN MSME Kudus, but also has the potential to have a broader positive impact on the small and medium business sector.

Keyword: *MSME, financial, website, waterfall*

A. INTRODUCTION

Technological advances are currently developing very rapidly, bringing a huge impact on various aspects of life. Technology allows access to information quickly, accurately, and without restrictions on time or place. This makes information technology an important requirement for many organizations and educational institutions, including in managing MSME data and presenting information efficiently and in a timely manner [1].

Information systems play an important role in collecting, processing, and storing large amounts of data in an efficient manner. Neatly organized data facilitates quick access to support decision making. Information systems provide relevant and accurate information to decision makers, so that the resulting decisions can be more precise. Information that is presented in real-time and accurately can reduce risk and increase efficiency. In addition, information systems can turn data into useful information, such as reports, graphs, or analysis, which supports a better decision-making process. By utilizing information systems, business processes can be automated so that routine tasks can be completed more quickly and efficiently. This contributes to the saving of time and resources, ultimately increasing the productivity of the organization [2].

Financial management is one of the fields of business management that focuses on the wise use of capital and the selection of appropriate capital sources to help companies achieve

predetermined goals. In the context of Micro, Small, and Medium Enterprises (MSMEs), the growth of this sector is crucial. One of the main factors in the development of MSME is bookkeeping [3].

MSMEs experience obstacles in developing due to the poor accounting system used. MSME players tend to ignore the importance of accounting and financial management, prioritizing profits without paying attention to financial records. As a result, financial administration is often neglected, even though this aspect has an important role in business continuity. Properly managed financial administration can help optimize financial management. However, MSME players often lack a detailed understanding of their financial condition, such as the amount of cash, capital, debt, receivables, and profit or loss. Most MSME still use manual records or simple applications that are less efficient [4].

To overcome this problem, the research in the thesis conducted at UMKM Dapoer LN focuses on the implementation of a website-based financial recording system. This system is intended to streamline the financial recording process to be conducted by owners. The main features available in this system include managing income, expenses, accounts payable, accounts receivable, employee data, and financial reports. With a simple and easy-to-understand interface, this website is expected to help Dapoer LN MSME owners manage finances more efficiently and support online business operations.

B. LITERATURE

1. Related Studies

Relevant research to support this article was selected from various journals and proceedings published in the last five years. The research on the development of a website-based financial recording system at Dapoer LN MSME can be outlined as follows:

One of the previous studies was conducted by Suhasto, Kirowati, and Anggraeny with the title Application of Web-Based Islamic Boarding School Financial Reporting Application. This study shows that the application of the waterfall method in developing financial report applications makes it easier for the Al-Mujaddadiyyah Islamic Education Foundation Boarding School to manage administration, transaction data, donation data, student data, employee data, and financial reports [5].

Another study by Fachruddin et al. entitled Testing the Implementation of a Web and Android-Based Mosque Financial Management System produced a financial system application for the Darussalam Mosque in Pakuan Baru Village, Jambi City. This application is designed in a computerized manner and has been tested with excellent results according to user evaluations [6].

Christian, Geges, and Zailami in their research entitled Website-Based Financial Recording System Application successfully developed a website-based financial management system by utilizing HTML, PHP, CSS, and JavaScript. The code generation process is done using Sublime Text 3 software, while MySQL is used as the database manager [3].

Rizqya's research with the title Designing an Accounting Information System for Financial Position Reports in Web-Based MSME (Case Study of Home Catering MSME) successfully produced a website-based application that can support company information needs. This application allows monitoring of the company's financial position through financial reports prepared for a certain period of time [7].

The last relevant research is the work of Faizal et al. with the title Development of Financial Management Information Systems for Micro, Small and Medium Enterprises (MSME). This research uses the Extreme Programming (XP) method in developing a system that includes features such as account data management, general journals, ledgers, and balance

sheets. The system has undergone black-box testing and demonstrated a 100% success rate in functionality [4].

These studies are an important foundation in making a website-based financial recording system that is relevant to increasing the efficiency of managing a website-based financial recording system at Dapoer LN MSME.

2. Theory Basis

a. Application

An application is a software unit developed to meet various specific activity needs. This application functions as a program that contains instructions to process data by creating a system or program that can process the data, such as Microsoft Word or Microsoft Excel [8].

b. Website

A website is a set of pages on a domain on the internet that is created for a specific purpose. Websites usually contain elements such as text, images, animation, audio, video, or a combination of all these elements. A website is a collection of interconnected pages containing related information that can be accessed through a browser application using a URL (Uniform Resource Locator). An example of a common URL is http://www.detik.com. The information on the website is stored on a hosting server and can be accessed widely. Websites can be owned by individuals or organizations, with content tailored to the purpose for which it was created.

c. Web Browser

A web browser is a software application designed to allow users to access, display, and interact with web pages hosted on remote web servers. It serves as a gateway for navigating the World Wide Web, enabling users to view multimedia content, retrieve information, and engage with various types of online documents and services [9].

d. Waterfall Method

The Waterfall method is a classic and dynamic sequential software development model. This model is visualized in the form of a multilevel diagram, which describes a particular step or process in a systematic manner [3].

e. Usecase Diagram

Usecase Diagram is a modeling tool that describes the interaction between the information system to be created with one or more actors. This diagram helps identify the functions in the system and the users who can access them. Naming in usecases should be simple and easy to understand, with two main elements namely actors and usecases [10].

f. Visual Studio Code

Visual Studio Code is a source code editor created by Microsoft for Windows, Linux, and macOS. Its features consist of debugging, Git integration, syntax highlighting, auto code completion, snippets, and code refactoring. The editor is also customizable through themes, keyboard shortcuts, and additional extensions [11].

g. XAMPP

XAMPP is a lightweight software package that integrates popular web development technologies in a single distribution. XAMPP is designed to make it easier to learn web programming, specifically PHP and MySQL. The program can be downloaded for free and used legally [8].

h. MySQL

MySQL is an RDBMS (Relational Database Management System) released under the GPL (General Public License). MySQL uses SQL (Structured Query Language) as the base of operations for manipulating data, both for selection and data entry. This database server excels at querying data compared to other systems [12].

i. PHP (Hypertext Preprocessor)

PHP is a server-based programming language that can process code to produce dynamic website displays on the user side. PHP is often used in web development and can be integrated directly into HTML [11].

j. Laravel

Laravel is an open-source PHP framework built for web application development using the Model-View-Controller (MVC) architecture. Laravel has features such as module management, flexible database accessing, utilities for application deployment, and ease of maintenance.

k. Bootstrap

Bootstrap is an HTML and CSS-based framework that comes with JavaScript effects. It provides various interface elements designed to create an attractive and lightweight web interface, and has a grid system for layout organization [13].

l. JavaScript

JavaScript is a client-side programming language that runs entirely in a web browser. JavaScript allows the manipulation of DOM (Document Object Model) elements on web pages, so it can dynamically update parts of the page without requiring a page refresh or redirect [14].

m. DBMS (Database Management System)

A DBMS is software used to manage the creation, maintenance, and use of databases on a large scale. DBMSs are designed to facilitate data manipulation, such as what social media Facebook does to store its user data in MySQL. This system is an important element in supporting the operations of various organizations [12].

C. METHODOLOGY

1. Research Methodology

The data collection process for designing and developing a financial recording system website for Dapoer LN MSME was conducted through multiple stages tailored to the business's specific needs. The initial stage involved an in-depth analysis to identify the requirements of Dapoer LN, achieved through interviews with the business owners, Mbak Fitri Husna Fadhilah, S.Pd, and Mbak Luthfiana Nabella, S.Pd, as well as direct observations at the business location. A literature study was also carried out to gather additional insights regarding website-based financial recording systems. The data obtained was analyzed comprehensively to ensure the website aligns with the operational needs of Dapoer LN MSME. Furthermore, the designed website was demonstrated to the business owners to gather feedback and facilitate iterative development, ensuring its relevance and effectiveness in supporting their financial management activities.

2. System Development Methods

The approach to be used is the waterfall method, which includes requirements, design, implementation, verification, and maintenance.

a. Requirement

1) Hardware requirement
- Intel Core i5
- 8 GB Memory
- 512 GB SSD Storage

2) Software requirement
- Windows 11 Operating System
- Visual Studio Code

- XAMPP
- Avast Secure *Browser*

3) Required data
- Revenue data
- Expenses data
- Employee data
- Debt data
- Receivables data

b. Design

At the design stage, a comprehensive system design is carried out which includes making usecase diagrams as a modeling tool to describe the interactions between the actors involved and the system to be built, so as to provide a clear picture of the functions in the system and the relationship between these elements to support system development in an efficient and structured manner.

c. Implementation

The implementation stage is an important process where all designs and requirements that have been designed previously are realized in the form of programs that are in accordance with the specifications and objectives that have been set, using various tools and technologies that support optimal development. The tools used include:

- PHP language
- JavaScript language
- Laravel 11 as PHP framework
- MySQL as database

d. Verification

The verification or program testing stage is carried out to ensure that the system has met all the requirements set through various tests, including functional, security, and performance testing. If obstacles or problems are found, the website will be repaired and tested again until it meets the standards before proceeding to the maintenance stage.

e. Maintenance

The maintenance stage requires the system to perform regular maintenance, fix bugs found, and adjust to changes in system needs. These steps are taken to ensure that the website continues to function properly and meet user needs.

3. System Design

a. Use Case Diagram

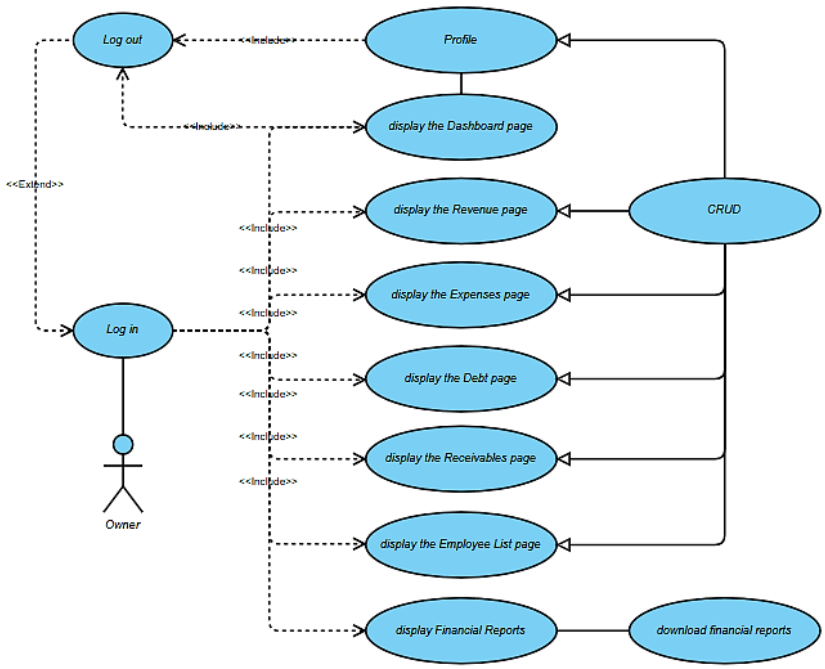

Figure 1. Use Case Diagram of Financial Recording System

D. RESULT AND DISCUSSION

1. Analysis of the Result of the Implementation of a Financial Recording System Website Based on Dapoer LN MSME Kudus

a. Profile Page

The Profile page allows users to manage their personal information. On this page, users can edit their profile data, delete their accounts, and log out of the system with ease. This page ensures that user account management is straightforward and user-friendly.

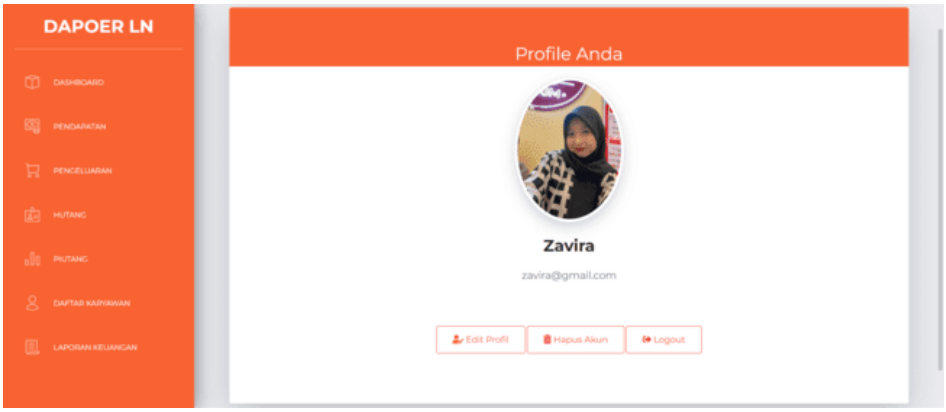

Figure 2. Profile page on the financial recording system website displaying features for editing profiles, deleting accounts, and logging out.

b. Dashboard Page

The Dashboard page provides an automatic summary of income and expense data, categorized into daily, monthly, annual, and total values. It also features visual graphs to

present income and expense trends, offering users a clear overview of their financial performance.

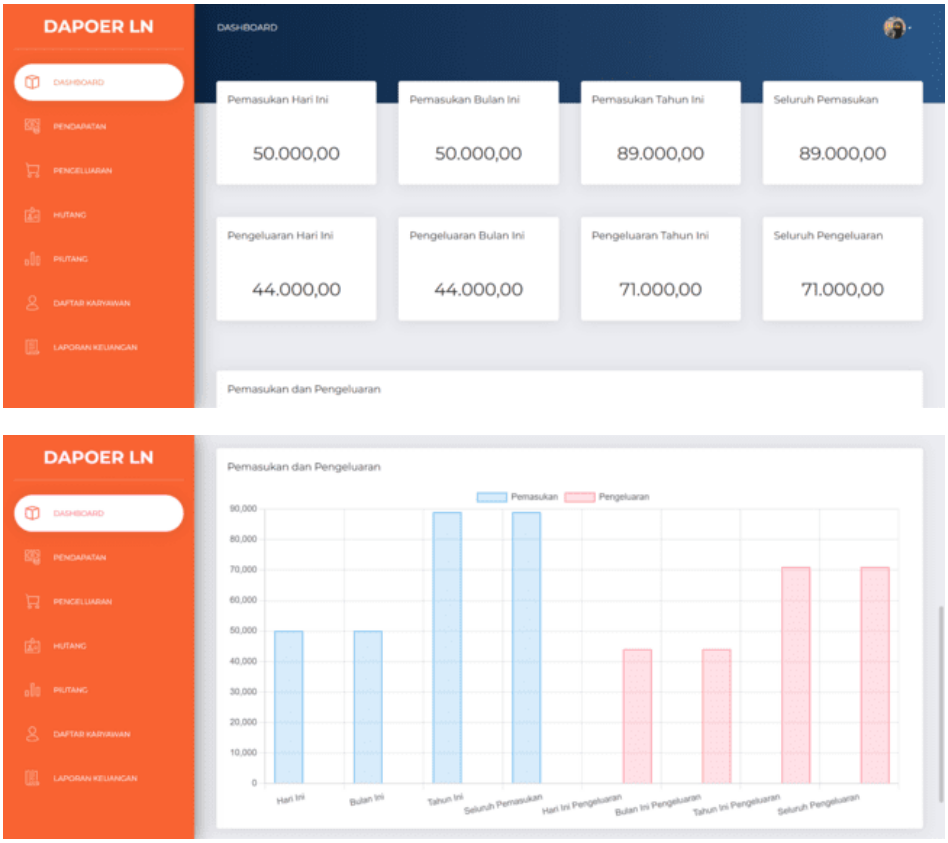

Figure 3. Dashboard page on the financial recording system website showing a summary of income and expenses alongside graphical visualizations.

c. Revenue Page

The Revenue page is designed for managing income data. Users can view, add, edit, and delete income entries as required. This page ensures efficient tracking of revenue for the business.

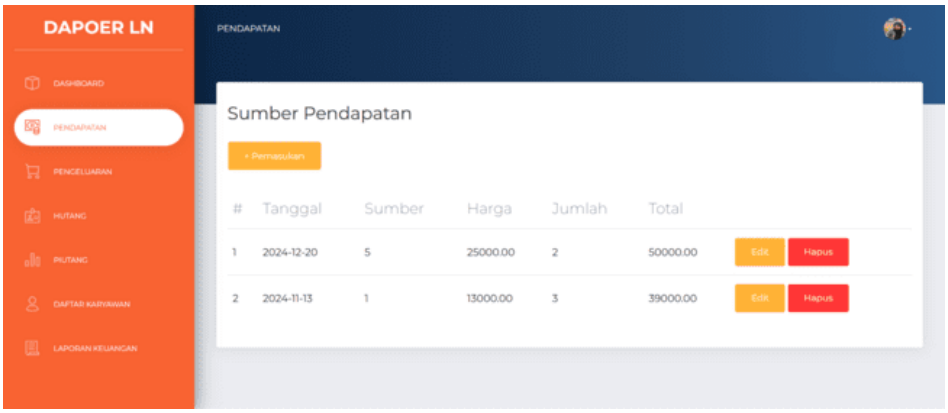

Figure 4. Revenue page on the financial recording system website illustrating the list of income entries and options for managing them.

d. Expenses Page

The Expenses page provides functionalities for managing expense data. Users can add, edit, or delete expenses while maintaining a clear record of all outgoing transactions.

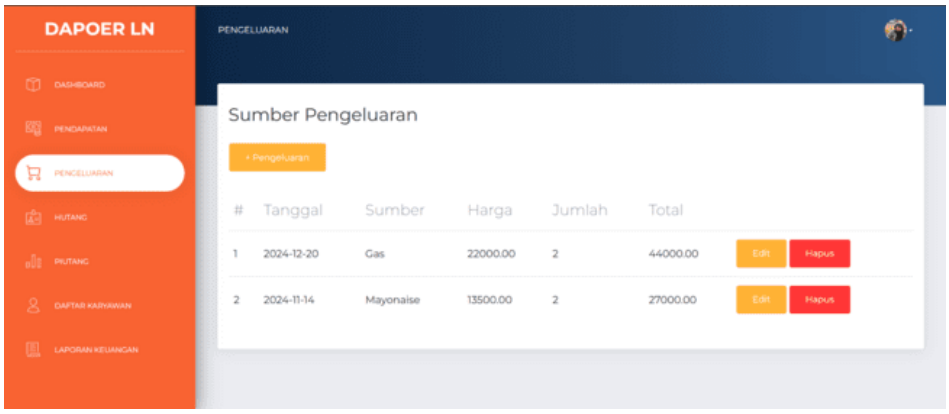

Figure 5. Expenses page on the financial recording system website showing the list of expenses and management features.

e. Debt Page

The Debt page is tailored to manage user debt records, helping to track payment obligations. Users can view, edit, or delete debt entries after payments are completed.

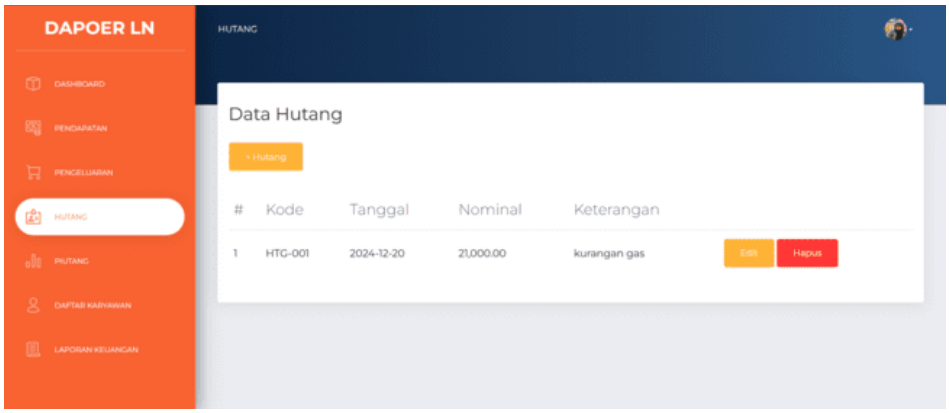

Figure 6. Debt page on the financial recording system website showcasing a list of debts and options for updating or deleting paid debts.

f. Receivables Page

The Receivables page allows users to manage accounts receivable data effectively. Users can view, edit, or delete receivable entries once payments are received.

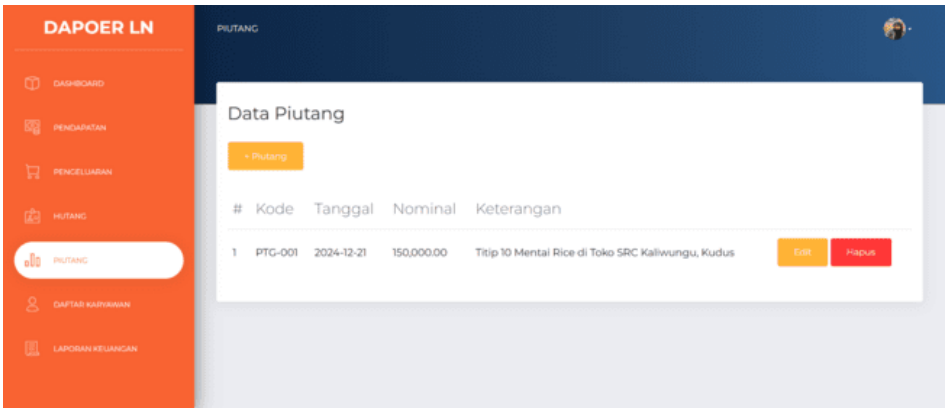

Figure 7. Receivables page on the financial recording system website displaying accounts receivable data and management options.

g. Employee List Page

The Employee List page provides detailed information about employees, including their names, positions, addresses, ages, and contact numbers. Users can search, add, edit, or delete employee data as needed.

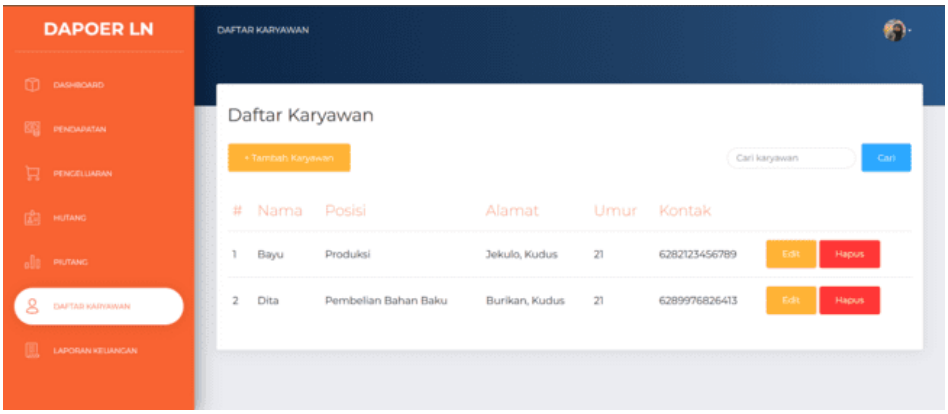

Figure 8. Employee List page on the financial recording system website illustrating the employee directory with management features.

h. Financial Reports Page

The Financial Reports page presents complete reports of income and expenses. Users can generate and download these reports in Excel format, enabling seamless integration with other financial tools.

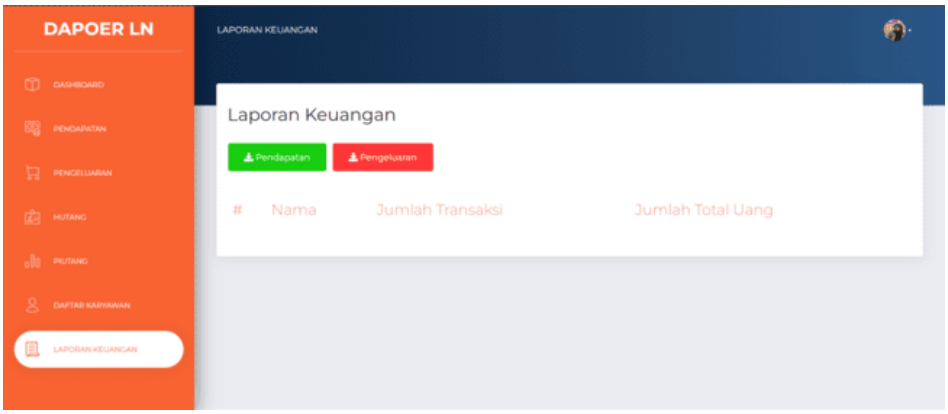

Figure 9. Financial Reports page on the financial recording system website showing options to view and download financial reports.

2. Analysis of the Test Results of the Implementation of a Financial Recording System Website Based on Dapoer LN MSME Kudus

Table 1. Black Box testing on the financial recording system

NO	Tested Menu	Test Description	Test Step	Excepted Result	Test Result
1.	*Login*	Ensures users can log in to the system.	Enter email and password then click Login.	sers can log in to the system if the email and password entered are correct.	Success
2.	Profile Edit	Ensures that users can change their personal information.	Update personal information with the latest details, including name, email, profile picture, old password, new password, and confirm the new password.	Personal information will be updated according to the new data that has been uploaded.	Success
3.	Delete Account	Ensure the user can delete the user account.	Click Delete Account located to the left of the Edit Profile button.	The user account can be permanently deleted.	Success
4.	Revenue Data CRUD	Ensure users can view, add, update, and delete income data.	Click Revenue on the menu on the left side to view existing revenue data, as well as to add new revenue, update or edit existing data, and delete unnecessary	Users can view, add, update or edit, and delete existing revenue data.	Success

			revenue data as needed.		
5.	Expenses Data CRUD	Ensure users can view, add, update, and delete expense data.	Click Expenses on the menu on the left side to view existing expense data, as well as to add new expenses, update or edit existing data, and delete unnecessary expense data as needed.	Users can view, add, update or edit, and delete existing expense data.	Success
6.	Debt Data CRUD	Ensure users can view, add, update, and delete accounts payable data.	Click Debt on the menu on the left to view current payables data, as well as to add new payables, update or modify existing data, and remove paid-off payables data.	Users can view, add, update or edit, and delete existing debt data.	Success
7.	Receivable Data CRUD	Ensure users can view, add, update, and delete accounts receivable data.	Click Receivables on the left-side menu to view current receivables data, as well as to add new expenses, update or modify existing data, and remove settled receivables data.	Users can view, add, update or edit, and delete existing accounts receivable data.	Success
8.	Employee List CRUD	Ensure users can view, add, update, and delete the employee list.	Click Employee List on the left-side menu to view current employee information, as well as to add new employees, update or modify existing information, and remove data of employees who have changed positions or resigned.	Users can view, add, update or edit, and delete existing employee data.	Success
9.	Download Income and	Ensure users can download the	Click the Income or Expenses button on	Users can download the	Success

	Expenditure Report	Income and Expenditure report as an Excel file.	the Financial Statements page, depending on your needs.	Income and Expenditure report as an Excel file.	
10.	*Logout*	Ensure users can exit the system.	Click Logout located to the right of the Delete Account button.	Users can exit the system.	Success

E. CONCLUSIONS

According to the findings of the research on the implementation of a website-based financial recording system at Dapoer LN MSME Kudus, which aims to facilitate online financial management, several conclusions can be formulated as follows:

1. The implementation of the website-based financial recording system at Dapoer LN MSME Kudus has proven effective in identifying system requirements and meeting the necessary specifications to support online financial recording.
2. The system is designed to manage financial data efficiently and systematically, incorporating various features such as profile management, income and expense tracking, payables and receivables management, employee directory, and comprehensive financial reports.
3. The results of Alpha testing demonstrate that all features function as intended, providing an interactive platform for managing financial records and expenses while positively impacting the accuracy of income and expense calculations.
4. The evaluation reveals that the system successfully addresses the operational needs of Dapoer LN MSME business owners, enhancing their ability to manage financial data effectively.
5. By increasing efficiency and accuracy, this system supports data-driven decision-making, offering a strategic advantage for Dapoer LN MSME Kudus. It plays a crucial role in meeting the challenges of modernization, boosting competitiveness, and ensuring the sustainability of the business in an increasingly dynamic market environment.

F. SUGGESTIONS

Based on the results of research on a Implementation of a Financial Recording System Website Based on Dapoer LN MSME Kudus, here are some suggestions for future website development:

1. Future research should include a more in-depth analysis of user needs so that the system can be adapted to various types of MSME.
2. Future research needs to consider implementing additional automation features, such as reminders for payables and receivables, to increase the benefits of the system for users.
3. Data security should be improved by adopting technologies such as encryption and two-factor authentication.
4. Periodic evaluation of the system's effectiveness should be conducted over a longer period to measure its direct impact on the financial management of Dapoer LN MSME Kudus.

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