Journal of Economics, Finance and Management Studies

ISSN (print): 2644-0490, ISSN (online): 2644-0504

Volume 08 Issue 03 March 2025

Article DOI: 10.47191/jefms/v8-i3-44, Impact Factor: 8.317

Page No: 1864-1873

Design of a Web-Based Accounting Information System for Sales and Inventory Recording Using MySQL at UMKM Abadi Asikin

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ABSTRACT: Abadi Asikin is a Micro, Small and Medium Enterprise (MSME) engaged in the production of crackers. However, until now Abadi Asikin MSME has not made records, making it difficult to find out information related to sales and inventory of goods owned. The purpose of this study is to design a website-based sales accounting and inventory recording information system using MySQL at MSME Abadi Asikin. The research design in this final assignment uses descriptive research methods with a qualitative approach. The development method used to create a system is the Software Development Life Cycle (SDLC) with a waterfall model. Based on the results of testing using the blackbox testing method through a functional testing approach carried out by media experts and material experts, the system can run according to its function. So, it can be concluded that researchers have successfully designed a website-based sales accounting and inventory recording information system using MySQL and this system is feasible to use or operate.

KEYWORDS: Accounting Information System; Income transactions; Inventory system; MySQL; MSME's Business.

I. INTRODUCTION

Technology that has continued to develop rapidly in recent decades has had a major impact on the business management paradigm, including accounting information systems.(Prabowo et al., 2020). Accounting Information System (AIS) is an information system created to help companies manage financial and accounting information.(Ariana et al., 2023). This digital revolution also influences companies in recording, processing, and analyzing their financial data.(Rusly et al., 2021; Tsai & Peng, 2017). Companies that successfully adopt and carry out transformation or change in line with technological advances will gain significant competitive advantages.(Farida & Sutopo, 2023). This is done to increase the efficiency and speed of data processing.(Dewi et al., 2023). A good system will produce accurate and precise information, and can minimize the risk of errors in recording transactions that occur repeatedly and in large numbers.(Prakasita N & Nugroho, 2018).

Accounting information systems also play a role in opening up opportunities for Micro, Small and Medium Enterprises (MSMEs) to be able to compete in an increasingly complex market.(Farida et al., 2019). The system also allows for processing daily transaction records in a more structured and accurate manner, so that it can help MSMEs in analyzing company performance, identifying current trends, and making the right decisions.(Dewi et al., 2023).

Abadi Asikin is a Micro, Small, and Medium Enterprise (MSME) engaged in the production of crackers, both sold raw and cooked. MSME Abadi Asikin was founded by Mr. Asikin who is located in Pagongan Village, Dukuhturi District, Tegal Regency, Central Java. The production of the crackers will be distributed to several agents in the Tegal, Brebes, and Pemalang areas. However, until now MSME Abadi Asikin has not recorded, so it has difficulty in finding out information related to sales and inventory of goods owned. The selling price set is also only an estimate because there is no record of the total costs incurred to produce the goods. Therefore, MSME Abadi Asikin cannot know for sure whether its business is making a profit or loss.

MSME Abadi Asikin needs a system to solve existing problems. One system that can be used is a sales and inventory accounting information system. This system will make it easier for companies to find out accurate and up-to-date information about sales and inventory of goods owned, cost of goods manufactured, and business profits or losses generated. In addition, by implementing this system into its operational activities, MSME Abadi Asikin can find out its business performance and determine the right strategy to increase business profits. Therefore, the purpose of this study is to design a website-based sales and inventory recording accounting information system using MySQL at MSME Abadi Asikin.

II. THEORETICAL FRAMEWORK

The accounting information system aims to provide accurate, relevant and reliable information to management and all parties involved in the Company.(Putri & Maghfiroh, 2022). Accounting information systems also help in making the right decisions, allowing management to view financial performance, identify trends, and plan company strategies.(Shim et al., 2020). In addition, the accounting information system acts as a recording and reporting tool and as a system that helps internal control.(Farida & Setiawan, 2024). The use of accounting information systems also allows for cross-departmental data integration, improved internal control, and increased operational efficiency. Accounting information systems are an important tool for management decision-making, helping companies adjust strategies, identify opportunities, and take appropriate actions to address market changes. The main components of an accounting information system include databases, software, hardware, and accounting procedures. Understanding the role of each component is essential in building, managing, and maximizing the potential of an effective and efficient accounting information system for a company's accounting needs.(Fatiyah et al., 2020).

A sales accounting information system is a collection of procedures and technologies used to manage and store every aspect of sales transactions that occur within a company.(Widiyanti & Wibowo, 2021). This system optimizes the sales process, ensures accurate data, and provides important information for management to make the right decisions regarding sales strategies and company development. Business actors are expected to be able to understand the sales accounting information system in this ever-changing and increasingly competitive business environment to improve efficiency, timeliness, and customer satisfaction. This system not only records transactions accurately, but also provides relevant data for management to analyze the company's sales performance. Through sales tracking, this system helps identify sales trends, estimate market demand, and monitor the effectiveness of marketing strategies. Sales system documents include various forms of information related to the sales process, ranging from customer order records, sales invoices, shipping orders, to proof of payment(Prakasita N & Nugroho, 2018). These documents serve as important archives that record every step of a transaction, helping companies monitor the flow of goods, manage inventory, supervise finances, and provide legal evidence of each transaction. In addition, sales documents also play a role in facilitating the relationship between the company and the buyer, allowing the company to provide better service and increase transparency in business relationships.

The inventory accounting information system is designed to manage and record inventory transactions and provide information about the company's stock of goods in real time.(Rohman & Bhakti, 2023). Its function includes recording all transactions related to inventory, from purchasing raw materials to selling finished goods.(Giovani & Novianty, 2020). Information technology can help companies create more accurate financial reports, control stock better, and avoid stock shortages.(Prakasita N & Nugroho, 2018).

III. RESEARCH METHOD

This research was conducted at the Kerupuk Abadi Asikin UMKM located in Pagongan Village, Dukuhturi District, Tegal Regency, Central Java. The researcher took the research location at the UMKM because when conducting observations and interviews, the researcher found out that the business owner did not record sales and inventory. Based on the existing problems, the researcher tried to make an offer to help design a digital sales accounting information system and inventory recording so that it canassisting MSMEs in recording and providing a real-time overview of sales and inventory of goods owned.This research was conducted for 6 months, starting from January 2024 to June 2024. Data collection was carried out during the research period. The main data source used in this study is primary data. The primary data in this study uses data obtained by researchers during observations and interviews with informants regarding the problems faced by MSME Abadi Asikin. The design of this accounting information system uses the Software Development Life Cycle (SDLC) development method with a waterfall model. Software Development Life Cycle (SDLC) is a method used to develop a system, a logical process used by a system analyst to develop an information system that involves requirements, validation, training, and system owners.(Rokayah et al., 2021).

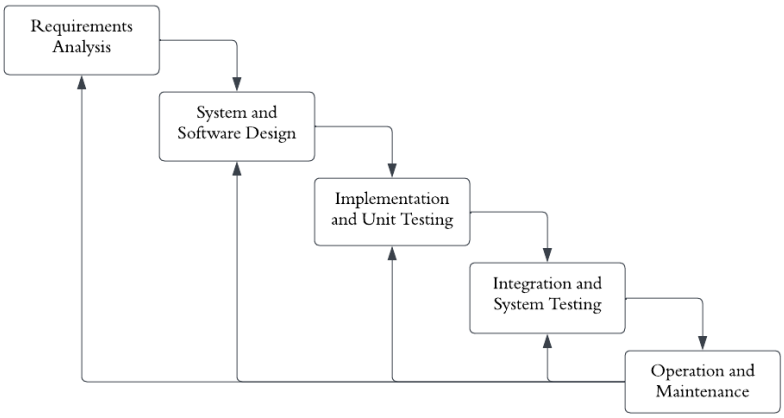

Figure 1.Model Stages*Waterfall*

IV. RESULTS AND DISCUSSIONS

The researcher will explain how to create a website-based sales and inventory recording accounting information system using the Software Development Life Cycle (SDLC) method with a waterfall model, where this model consists of 5 (five) stages, namely as follows:

1) Requirements Analysis

The first stage is that the researcher analyzes the various needs required in designing the accounting information system to be created.*Field studies conducted by researchers include interviewing the management of UMKM Abadi Asikin and observing the actual conditions at the research location. While the literature study conducted by researchers includes searching for and studying previous literature on the design of the information system to be created.*

2) System and Software Design

The second stage after conducting a needs analysis is the creation of a system design that will be created. The purpose of creating this system design is to provide a detailed description and display of the sales accounting information system and inventory recording that is created.

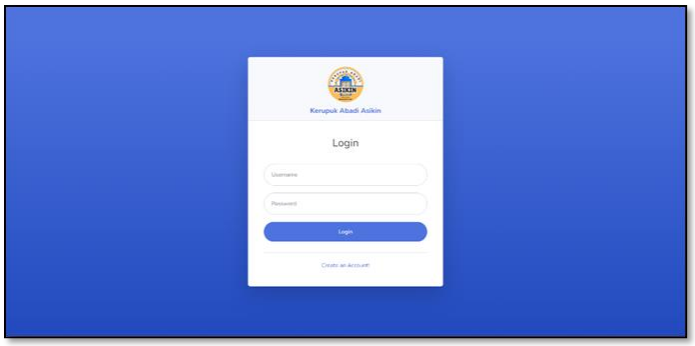

Figure 2. Page View*Login*

The login page on this system serves for user authentication, security, access control, and data protection. This page contains 2 textboxes, namely username and password which are filled manually and 2 common buttons, namely login and create an account.

Figure 3. Dashboard Page View

The dashboard page functions to display statistical summaries regarding the remaining cracker inventory or ending inventory, business profit and loss, and cracker sales graphs in one month at UMKM Abadi Asikin. This page is filled in automatically if the company's data and transactions have been inputted.

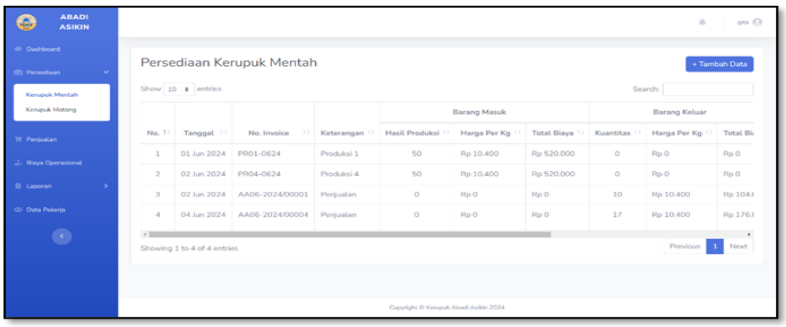

Figure 4. Raw Crackers Inventory Page View

The raw cracker inventory page functions to provide information about incoming goods, outgoing goods, and the remaining balance of raw cracker inventory. This page contains 7 (seven) elements, namely: Add Data, Save, Cancel, Edit, Delete, Show Entries, and Search.

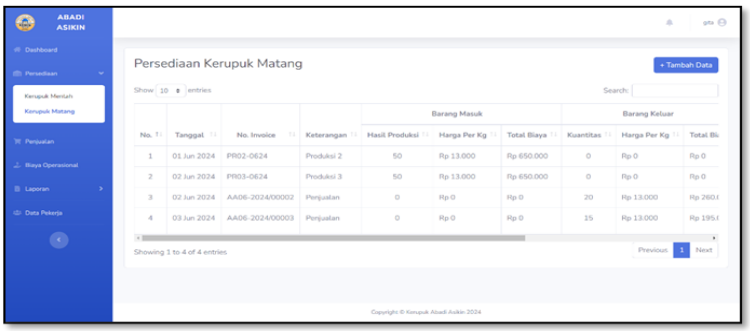

Figure 5. Display of Cooked Crackers Inventory Page

Similar to the raw cracker inventory page, the cooked cracker inventory page also functions to provide information about incoming goods, outgoing goods, and the remaining balance of cooked cracker inventory. This page contains 7 (seven) elements, namely: Add Data, Save, Cancel, Edit, Delete, Show Entries, and Search.

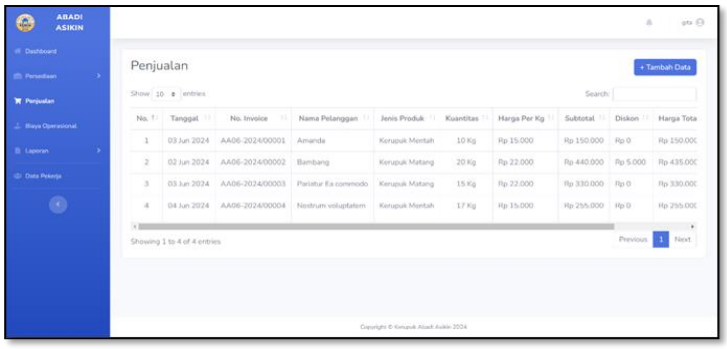

Figure 6. Sales Page View

The sales page functions to add sales transactions that occur in UMKM Abadi Asikin. This page contains 7 (seven) elements, namely: Add Data, Save, Cancel, Edit, Delete, Show Entries, and Search

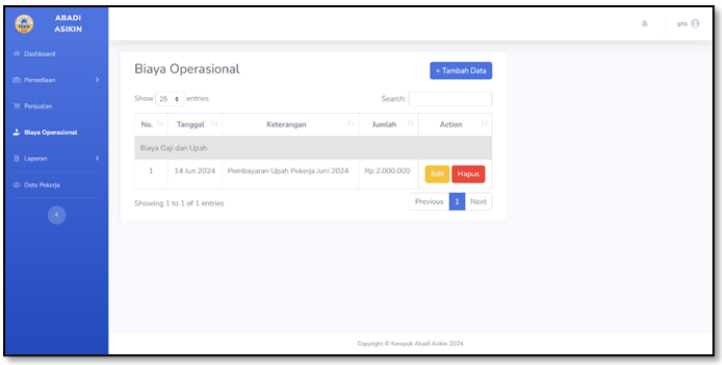

Figure 7. Operational Cost Page View

The operational cost page functions to add operational costs that occur in UMKM Abadi Asikin. These costs include worker wages, electricity and water costs, equipment repair costs, and others. This page contains 7 (seven) elements, namely: Add Data, Save, Cancel, Edit, Delete, Show Entries, and Search.

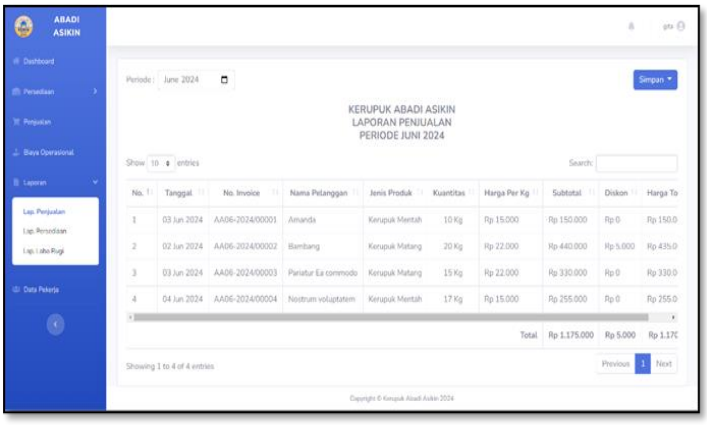

Figure 8. Sales Report Page View

The sales report page functions to display a summary of sales that occurred at UMKM Abadi Asikin in a certain period. This page is filled in automatically when filling in sales transactions on the sales page. This page contains 4 (four) elements, namely: Period, Save, Show Entries, and Search.

Figure 9. Inventory Report Page View

The inventory report page functions to display a summary of the inventory in the company. This page is filled in automatically when the inventory data is filled in on the inventory page, both raw cracker inventory and cooked cracker inventory. This page contains 4 (four) elements, namely: Period, Save, Show Entries, and Search.

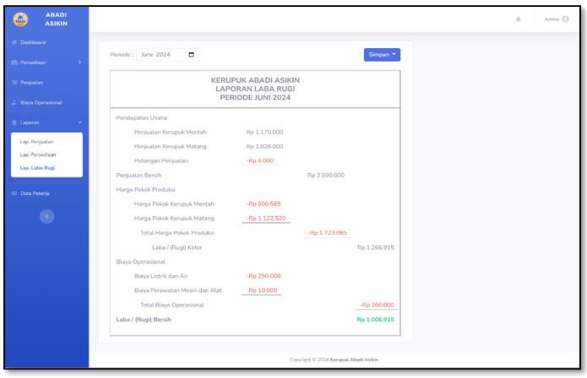

Figure 10. Profit and Loss Report Page View

The profit and loss report page functions to display how much profit or loss is generated during a certain period. The calculation in this profit and loss report is made by adjusting the conditions in UMKM Abadi Asikin, where net sales are reduced by the cost of producing crackers to produce gross profit and loss, then reduced by all operating costs incurred during a certain period so that the net profit and loss of the business can be known. This profit and loss report is the final result created in the system. This page contains 2 (two) elements, namely: Period, and Save.

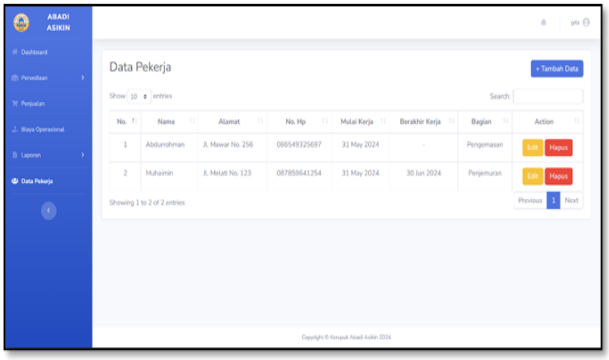

Figure 11. Worker Data Page View

The worker data page functions to display worker information in the company. This page contains 7 (seven) elements, namely: Add Data, Save, Cancel, Edit, Delete, Show Entries, and Search.

3) **Implementation and Unit Testing**

The third stage is implementation and unit testing. The implementation referred to here is the process where the plan that has been made in the previous system design stage is implemented in the form of program code so that it can be run by a PC. While the unit testing referred to is the process where each component of the system is tested separately to ensure that the components can run according to their functions. The researcher used the MySQL database, PHP programming language, Laragon as a local development environment, and Visual Studio Code as a code editor. The steps taken at the implementation and unit testing stage are:

1. Prepare the system development environment by downloading and installing Laragon software and Visual Studio Code.
2. Project configuration, in this step consists of 3 (three) stages, namely:
   a. Getting Started with Laragon
   b. Creating a new project in Laragon
   c. Create a new MySQL database with the name 'kerupuk_abadi_asikin'
3. Create a connection to the MySQL database by opening VS Code and opening the project folder that has been created. Then, create a new file named 'confiq.php' by entering the program code and saving it.

Figure 12. Example of Writing Program Code

4. Create the main index page by creating a new file named 'index.php', then entering the program code and saving it.
5. Create a menu page by creating a 'view' folder then creating a file with the name of the menu to be created, for example 'menu1.php'.
6. Create CRUD (Create, Read, Update, Delete) operations by creating separate PHP files for each operation, then saving them.
7. Perform unit testing of the website that has been created by opening Laragon then clicking 'Start All', then open the browser type the URL 'http://localhost/kerupukabadiasikin' to see the results. Next, try the CRUD operation to make sure that everything is working properly.

4) **Integration and System Testing**

The fourth stage is system integration and testing which aims to test the capability and effectiveness of the system that has been created. This testing stage uses the method*black box*testing through a functional testing approach. The blackbox testing method through the functional testing approach is a test carried out to evaluate the ability of the system that has been created in providing output / results based on the data that has been entered without looking at the structure of the program code used. If the results issued are in accordance with the initial objectives, then the system is considered to be running well. This test was carried out by Mrs. Dewi Kartika, SE, M.Ak., Ak. as a media expert who works as a Lecturer in Accounting Information Systems Practicum and Mr. Imam Hasan, S.Pd., M.Pd. as a material expert who works as a Lecturer in Introduction to Accounting Practicum. The following are the results of testing using the blackbox functional testing method:

Table 1. Blackbox Functional Testing Results by Media Experts

Test Components	Expected results	Results Obtained	Information
"Login" Page	The system will display the "Login" page and the functions on that page will work properly.	The system can display the "Login" page and the functions on that page can run properly.	In accordance
"Dashboard" Menu	The system will display the "Dashboard" page and the functions on that page will work properly.	The system can display the "Dashboard" page and the functions on that page can run properly.	In accordance
"Raw Crackers Stock" Menu	The system will display the "Raw Crackers Inventory" page and the functions on that page will run properly.	The system can display the "Raw Crackers Inventory" page and the functions on the page can run properly.	In accordance
"Cooked Crackers Stock" Menu	The system will display the "Made Crackers Stock" page and the functions on that page will work properly.	The system can display the "Made Crackers Stock" page and the functions on the page can run properly.	In accordance
"Sales" Menu	The system will display the "Sales" page and the functions on that page will work properly.	The system can display the "Sales" page and the functions on that page can run properly.	In accordance
"Operating Costs" Menu	The system will display the "Operational Costs" page and the functions on that page will work properly.	The system can display the "Operational Costs" page and the functions on that page can run properly.	In accordance
"Sales Report" Menu	The system will display the "Sales Report" page and the functions on that page will work properly.	The system can display the "Sales Report" page and the functions on that page can run properly.	In accordance
"Inventory Report" Menu	The system will display the "Inventory Report" page and the functions on that page will work properly.	The system can display the "Inventory Report" page and the functions on that page can run properly.	In accordance
"Profit and Loss Report" Menu	The system will display the "Profit and Loss Report" page and the functions on that page will work properly.	The system can display the "Profit and Loss Report" page and the functions on that page can run properly.	In accordance

Source: Research Testing, 2024.

Table 2. Results of Blackbox Functional Testing by Material Experts

Test Components	Information
Compliance of the information system content with the concept of sales and inventory of goods.	In accordance
Completeness of components in the information system.	In accordance
Clarity of information generated from the sales and inventory information system.	In accordance
Clarity of the output produced.	In accordance
The effectiveness of the information system being run.	In accordance
The information system that is run is easy to understand.	In accordance

Source: Research Testing, 2024

5) Operation and Maintenance

The final stage is operation and maintenance, where at this stage the system will be operated at UMKM Abadi Asikin.

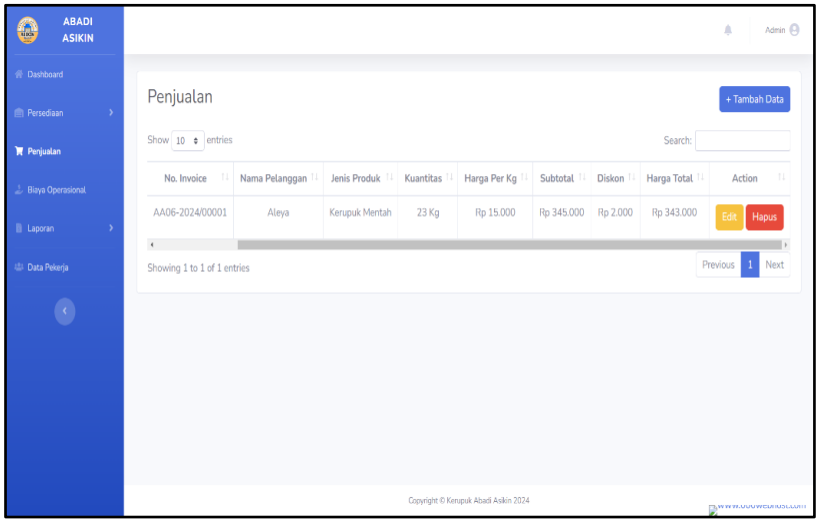

Figure 13. Sales Page View before Improvement

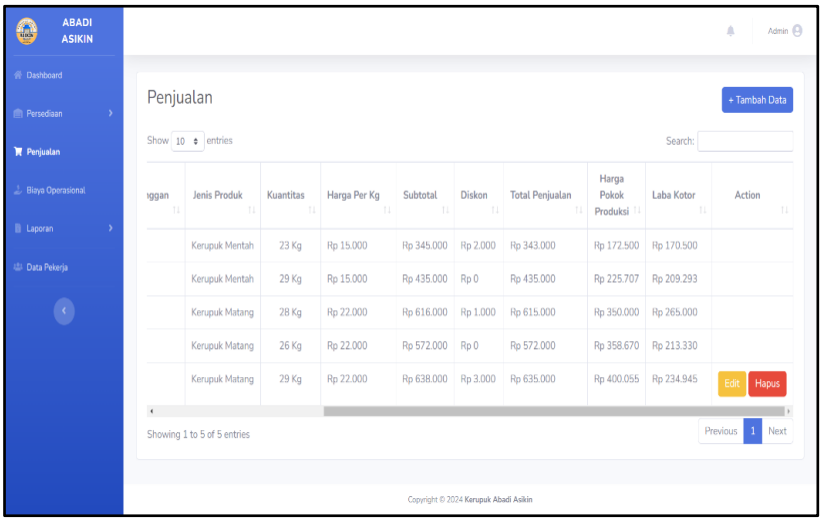

Figure 14. Sales Page View after Repair

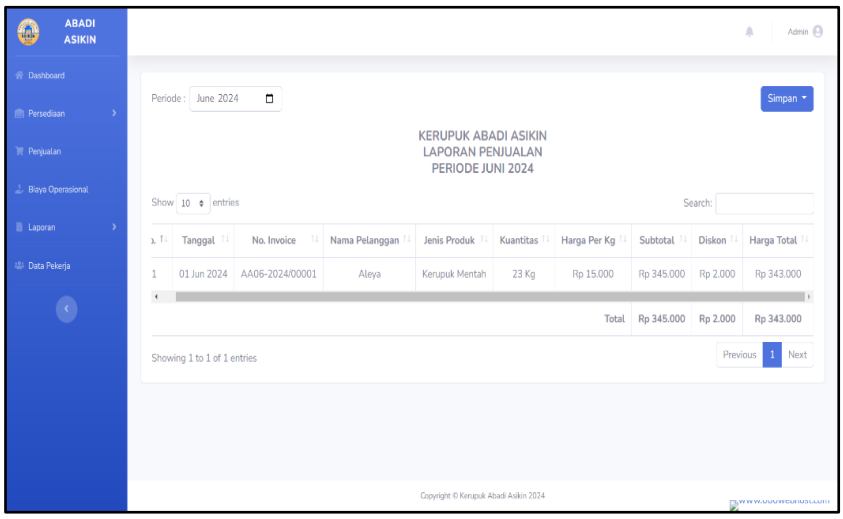

Figure 15. Sales Report Page View before Repair

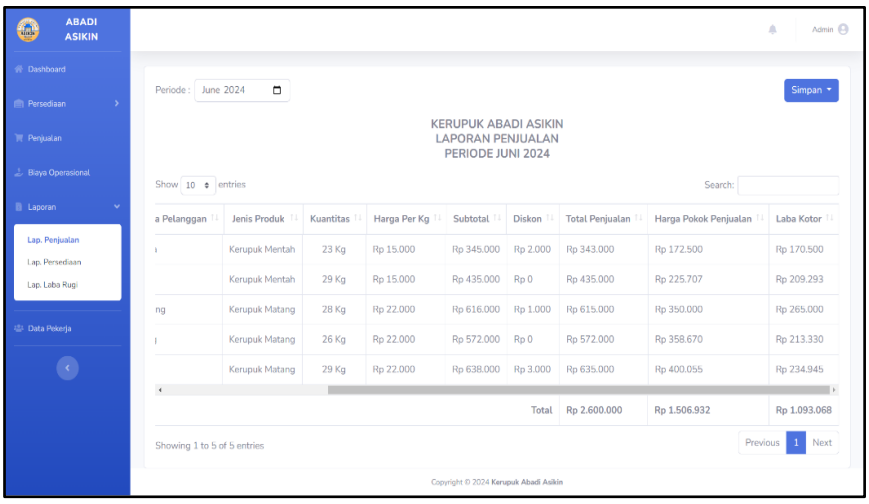

Figure 16. Sales Report Page View after Repair

This sales accounting and inventory recording information system can help Abadi Asikin UMKM to find out the company's performance, where it can also be used as a basis for determining sales strategies to increase business profits. By implementing this system into its operational activities, Abadi Asikin UMKM can find out accurate and actual information about sales that have occurred, inventory of goods available for sale, production costs and operating costs incurred, business profits or losses obtained, and employee data. There are 3 outputs produced by this accounting information system, namely sales reports, inventory reports, and profit and loss reports. However, the weakness of this system is that it can only input one type of product in each transaction and can only edit or delete the last sales and inventory transaction data.

CONCLUSIONS

The conclusion of this study shows that the researcher has succeeded in designing a website-based sales and inventory recording accounting information system with MySQL for MSME Abadi Asikin. This system includes features for inputting sales, incoming and outgoing goods, operational costs, and printing sales, inventory, and profit and loss reports. The results of testing using the blackbox testing method with a functional testing approach by media experts and material experts prove that this system is feasible to use.

As a suggestion, UMKM Abadi Asikin is advised to implement this information system so that transaction recording is more accurate and real-time, and ensure that users receive adequate training to reduce the risk of errors in data input. In addition, further research can develop this system by adding additional features to be more optimal in supporting sales accounting and inventory recording needs.

ACKNOWLEDGEMENT

Thank you to all the lecturers at Politeknik Harapan Bersama, Tegal, Jawa Tengah, Indonesia. Thanks to their knowledge and guidance, this simple accounting system can be realized and provide convenience to UMKM Abadi Asikin in developing its business until now.

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