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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).

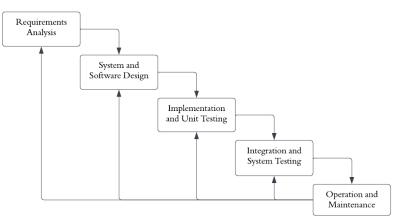


Figure 1.Model StagesWaterfall

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 ViewLogin

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.

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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.

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	3	02 Jun 2024	AA06-2024/00002	Penjualan	0	Rp 0	Rp 0	20	Rp 13.000	Rp 260.0
	4	03 Jun 2024	AA06-2024/00003	Penjualan	0	Rp 0	Rp 0	15	Rp 13.000	Rp 195.0
	Showing	1 to 4 of 4 entrie	5		Copyright: © Kerssonik				Previous	Next

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.

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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

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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.

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	3	03 Jun 2024	AA06-2024/00003	Pariatur Ea commodo	Kerupuk Matang	15 Kg	Rp 22.000	Rp 330.000	Rp 0	Rp 330.0
uta Pukarja	4	04 Jun 2024	AA06-2024/00004	Nostrum voluptatiem	Kerupuk Mentah	17 Kg	Rp 15.000	Rp 255.000	Pp 0	Rp 255.0
0							Total	Rp 1.175.000	Rp 5.000	, Rp 1.170
	Chandra	1 to 4 of 4 entri							Previous	1 Next

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.

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	3	02 Jun 2024	AA06-2024/00001	Penjuatan	0	Rp 0	Rp 0	10	Rp 10.400	Rp 104.0	
	4	04 Jun 2024	AA06-2024/00004	Penjualan	0	mp 0	Rp 0	17	Rp 10.400	Rp 176.0	
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	2	02 Jun 2024	PR03-0624	Produksi 3	50	Rp 13.000	Rp 650.000	0	Rp 0	Rp 0	
	3	02 Jun 2024	AA06-2024/00002	Penjualan	0	Rp 0	Rp 0	20	Rp 13.000	Rp 260.0	
	4	03 Jun 2024	AA05-2024/00003	Penjualan	0	Rp 0	Rp 0	15	Rp 13.000	Rp 195.0	
		1 to 4 of 4 entri							Provinus	Next	
	Showing	a to a of 4 entry									

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.

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ap Late Rugi	Potongan Penjualan	-Hp 8 000			
ep. Laba Rugi	Penjualan Bersih		Rp 2.990.000		
eta Palarda	Harga Pokok Produksi				
	Harga Pokok Kerupuk Mentah	-Pp 600.565			
8	Harga Pokok Kerupuk Matang	-Rp 1.122.520			
	Total Harga Pokok Produkci		-Re 1.723.085		
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	Biova Listrik dan Air	-Ro 250 000			
	Biaya Perawatan Mesin dan Alat	-Rp 10.000			
	Total Blava Operacional			-Po 760.000	
	Laba / (Rug) Bersih			Rp 1.006.915	
	Laba / (Nug) Bersils			Pp 1.006.915	

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.

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	Data Pekerja	+ Tarribah Data
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	No. 11 Nama 11 Alamat 11 No. Hp 11 Mulai Kerja 11 Berakhir Kerja 11	Baglan 11 Action 11
	1 Abdurrohman X. Mawar No. 256 086549325697 31 May 2024 -	Pengemasan Edit Hapus
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	Showing 1 to 2 of 2 entries	Previous 1 Next.
	Copyright & Kongula Abadi Acikin 2024	

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.

🍲 config	a,php ×
config >	· ☞ contig.php >
1	K?php
	<pre>\$env = parse_ini_file('.env');</pre>
	<pre>\$dbHost = \$env['08_HOST'];</pre>
	<pre>\$dbUser = \$env['DB_USER'];</pre>
	<pre>\$dbPass = \$env['DB_PASS'];</pre>
	<pre>\$dbName = \$env['DB_NAME'];</pre>
	<pre>\$koneksi = mysqli_connect(\$dbHost, \$dbUser, \$dbPass, \$dbName);</pre>
	if (!\$koneksi) {
	<pre>die("<script>alert('Gagal tersambung dengan database.');</script>");</pre>
	<pre>\$dir = '/' . \$env['FOLDER_DIRECT'];</pre>

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:

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

Table 1. Blackbox Functional Testing Results by Media Experts

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	In accordance
inventory of goods.	
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	

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.

	ABADI ASIKIN									٠	Admin 🕓
		Penjualan									
		Show 10 + entries							Search:	+ Tamba	n Data
🏋 Penjuali											
🕹 Biaya Oj		No. Invoice	Nama Pelanggan 💷	Jenis Produk	Kuantitas 💷	Harga Per Kg 💷	Subtotal 1	Diskon 🗆	Harga Total 💷	Action	
E Laporan		AA06-2024/00001	Aleya	Kerupuk Mentah	23 Kg	Rp 15.000	Rp 345.000	Rp 2.000	Rp 343.000	Edit H	apus
4월 Data Pe		Showing 1 to 1 of 1 en	tries						Р	revious 1	Next
					Copyright © Ker	upuk Abadi Asikin 2024				www.000v	vennoscionii

Figure 13. Sales Page View before Improvement

shboard										
sediaan >	Penju	alan								+ Tambah Data
njualan	Show 10 e entries Search:									
yə Operasional	iggan	Jenis Produk	Kuantitas	Harga Per Kg	Subtotal	Diskon	Total Penjualan	Harga Pokok Produksi	Laba Kotor	Action
ioran 🕨		Kerupuk Mentah	23 Kg	Rp 15.000	Rp 345.000	Rp 2.000	Rp 343.000	Rp 172.500	Rp 170.500	
ta Pekerja		Kerupuk Mentah	29 Kg	Rp 15.000	Rp 435.000	Rp 0	Rp 435.000	Rp 225.707	Rp 209.293	
•		Kerupuk Matang	28 Kg	Rp 22.000	Rp 616.000	Rp 1.000	Rp 615.000	Rp 350.000	Rp 265.000	
		Kerupuk Matang	26 Kg	Rp 22.000	Rp 572.000	Rp 0	Rp 572.000	Rp 358.670	Rp 213.330	
		Kerupuk Matang	29 Kg	Rp 22.000	Rp 638.000	Rp 3.000	Rp 635.000	Rp 400.055	Rp 234.945	Edit Hapus
	۹.									
	Showing :	1 to 5 of 5 entries							F	Previous 1 Next

Figure 14. Sales Page View after Repair

ABADI ASIKIN	Admin 🖯
	Periode : June 2024
	KERUPUK ABADI ASIKIN LAPORAN PENJUALAN PERIODE JUNI 2024
	Show 10 + entries Search:
	x ¹¹ Tanggal ¹¹ No. Invoice ¹¹ Nama Pelanggan ¹¹ Jenis Produk ¹¹ Kuantitas ¹¹ Harga Per Kg ¹¹ Subtotal ¹¹ Diskon ¹¹ Harga Total ¹¹
	1 01 Jun 2024 AA06-202400001 Aleya Kerupuk Mentah 23 Kg Rp 15.000 Rp 345.000 Rp 343.000
	• Total Rp 345.000 Rp 2.000 Rp 343.000
	Showing 1 to 1 of 1 entries Previous 1 Next
	Copyright © Kenipuk Abadi Ashlin 2024

Figure 15. Sales Report Page View before Repair

ABADI ASIKIN									Admin		
									_		
	Periode : June	2024							Simpan -		
	KERUPUK ABADI ASIKIN LAPORAN PENUALAN PERIODE JUNI 2024										
	Show 10 ¢	Show 10 e entries Search:									
Laporan	a Pelanggan 💷	Jenis Produk	Kuantitas 💷	Harga Per Kg 💷	Subtotal 💷	Diskon 💷	Total Penjualan 💷	Harga Pokok Penjualan 💷	Laba Kotor		
Lap. Penjualan Lap. Persediaan	1	Kerupuk Mentah	23 Kg	Rp 15.000	Rp 345.000	Rp 2.000	Rp 343.000	Rp 172.500	Rp 170.500		
Lap. Persediaan Lap. Laba Rugi		Kerupuk Mentah	29 Kg	Rp 15.000	Rp 435.000	Rp 0	Rp 435.000	Rp 225.707	Rp 209.293		
	ng	Kerupuk Matang	28 Kg	Rp 22.000	Rp 616.000	Rp 1.000	Rp 615.000	Rp 350.000	Rp 265.000		
	1	Kerupuk Matang	26 Kg	Rp 22.000	Rp 572.000	Rp 0	Rp 572.000	Rp 358.670	Rp 213.330		
		Kerupuk Matang	29 Kg	Rp 22.000	Rp 638.000	Rp 3.000	Rp 635.000	Rp 400.055	Rp 234.945		
	¢					Total	Rp 2.600.000	Rp 1.506.932	Rp 1.093.068		
	Showing 1 to 5 o	Showing 1 to 5 of 5 entries Previous 1 Next									
					right © 2024 Keru						

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.

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