Implementation of Web Based Accounting Information System using Rapid Application Development (RAD)

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Abstract— The purpose of the author to conduct this research is to implement an accounting information system at Mulia Shop with a website-based. In this study, the Rapid Application Development (RAD) method will be used as a system development method. There are use case diagrams that are used to describe the functions that exist in the system, flowcharts as a description of the current company and testing using black box testing to find out all functions in the system can run well. The results of this research will be an accounting information system that can assist operational activities and reports that support decision making for the owner of Toko Mulia.

Keywords— accounting information systems, accounting records, black box testing, inventory, trading business

I. INTRODUCTION

Trading business is one of the micro small and medium enterprises. The trading business itself purchases merchandise and then resells it at a price above the cost of goods sold to make a profit [1]. Every small, medium to large business must have transactions that must be recorded every day. The form of accounting records must exist and the simplest are sales and purchases. Accounting recording itself is a recording activity that has the aim of providing information about the economy to stakeholders or people who have an interest [2]. Information itself is data that is processed so that it becomes a certain form which is more useful and of course more meaningful to its users [3]. In a trading business, it is very important to keep records on inventory, because in a trading company inventory is a major component in the business. The existence of accounting records on inventory can make it easier for business owners to find out the amount of inventory that is in both the storefront and warehouse, knowing whether the inventory is running out in the warehouse is true because of sales or not, knowing which types of goods are slow moving and fast moving so that supplies don't run out. Slow moving goods are trade goods that cannot be released or sold within 90 days, so they are classified as slow-moving goods [4]. Fast moving goods are goods that are easy to sell or do not last long in the store.[5]. If a trading business can manage its inventory well, then it will be good in serving consumers and of course business continuity will be guaranteed. Recording on good inventory itself is usually done by employees every weekend or outside working hours [6]. One of the trading businesses that have not implemented accounting records is Toko Mulia in the city of Salatiga. Toko Mulia itself can be classified as one of the biggest stores in the city of Salatiga, which has 430 types of merchandise that always make transactions in cash, both when making purchases from suppliers and making sales transactions with consumers. In carrying out its operational activities, Toko Mulia also does not accept returns or returns of goods after leaving the store so that before making payment transactions, consumers along with Toko Mulia employees will check the completeness and functionality of the goods so that they can be used properly. Even though Toko Mulia has been operating for 14 years since 2008 this business can still be

said to have many risks because it does not yet have clear accounting records to be able to support existing operational activities at Toko Mulia. Starting from the inventory in Toko Mulia. Starting from the purchase of inventory when it arrives, there is no recording of the amount that comes so that the owner does not know what the current inventory is. The recording of the type and amount of inventory has only been done once in 14 years of existence. So the owner only relies on memories of existing supplies or those that are running out. Recording of the entry and exit of inventory is also not available so the owner certainly does not know whether the inventory has run out due to being sold or lost, besides that the owner also does not know about the categories of goods that are included in slow moving or fast moving so the owner orders goods that he feels are almost out even though when the type is slow-moving goods are ordered again, there will definitely be a buildup of inventory. Having knowledge about groups of fast moving or slow-moving goods will make the owner more efficient in placing orders on inventory. In the purchase of inventory there is also no special authorization between owners so that the same order often occurs.

Apart from the inventory side, Toko Mulia also has risks related to transactions because every transaction that occurs at Toko Mulia is still not available for clear records. When a sales transaction occurs, the owner does not record sales and does not make sales notes, expenses and income that occur at the cashier. also there is no clear record so that the owner does not know for sure the profit or loss received by his business, there is no separation of the owner's cash from the store's cash, of course the owner will have difficulty knowing the types of expenses that occur. To reduce the risks that exist both from the transaction and the inventory side, it would be better if Toko Mulia did a recording of the inventory, recording when going in and out, recording every transaction that occurred and recording when there was an outflow or cash in at the store. With the recording, the owner will also find it easier to make all decisions that occur at Toko Mulia. Accounting records if done manually is actually not a problem, but if it is not done consistently and not done correctly it will cause problems.

In the absence of accounting records in a business, it will have an impact on its business such as the owner does not understand the amount of inventory which will have an impact when it turns out that the inventory is not there or is still in delivery and there are consumers who want to buy it means that the company cannot sell the goods. the amount of incoming and outgoing inventory will have an impact such as loss of inventory, there will be a mismatch between the number of goods sold and the money received. The unavailability of records regarding the grouping of fast-moving and slow-moving goods will also affect the accumulation of goods where slow-moving or difficult-to-sell items are even increased in number so that there will be a buildup of inventory. When there is no record of the entry and exit of cash that occurs at the store, later the owner will find it difficult to find out the state of his business whether it is making a profit or loss.

Over time, information systems are developing so rapidly that they can be used as a means to meet the needs of a company for information. The system itself is a collection of several elements which communicate with each other and collaborate to carry out input processing activities after which they are interconnected to achieve certain goals [7], while the Information System is a system that exists in an organization that can bring together several needs such as being able to support operational, processing daily transactions of an organization, has a managerial nature and contains strategies owned by an organization to meet the needs of external parties in the form of required reports [8]. So that with the information system it will be able to help reduce human

error, the availability of real time information so that the owner will be easier to make decisions. Information systems are needed by Toko Mulia because of the large number of transactions and the large number of shops around Jalan Jendral Sudirman, making the system design also have to be developed in a fast time so that it can compete with other stores. Over time, a framework emerged that made it easier for developers to develop information systems, namely the Laravel framework. Laravel Framework itself is a PHP framework developed by Taylor Otwel which has a set of tools and architecture related to many features [9]. To develop an information system using the Laravel framework, it is necessary to use the PHP language. PHP language itself is a programming language that contains a set of lines of code used to process data [10]. Based on the above background, the author will conduct a study entitled "Implementation of web-based accounting information system using Rapid Application Development (RAD)".

II. METHOD

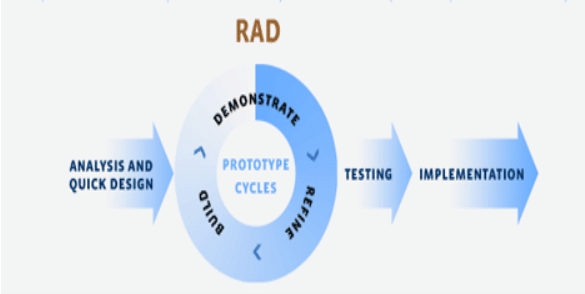

Figure 1 Rad Methodology

The Rapid Application Development method in this research consists of 5 main stages in the research, namely 1) requirements planning, 2) system design and design phase, 3) System development 4) Questionnaire collection, 5) Implementation. The first step that will be taken by the author is to thoroughly identify the problems that occur in Toko Mulia so that after conducting an investigation it can bring up reliable data and information that can be used to solve problems at Toko Mulia. The author conducted interviews with shop owners in order to find information on problems that occurred at Toko Mulia. After the problems that occur in the store are collected, then only later can the appropriate corrective steps be taken to solve the existing problems. After the analysis phase is complete, the author will enter into the second step, namely system design and design. In the design and system

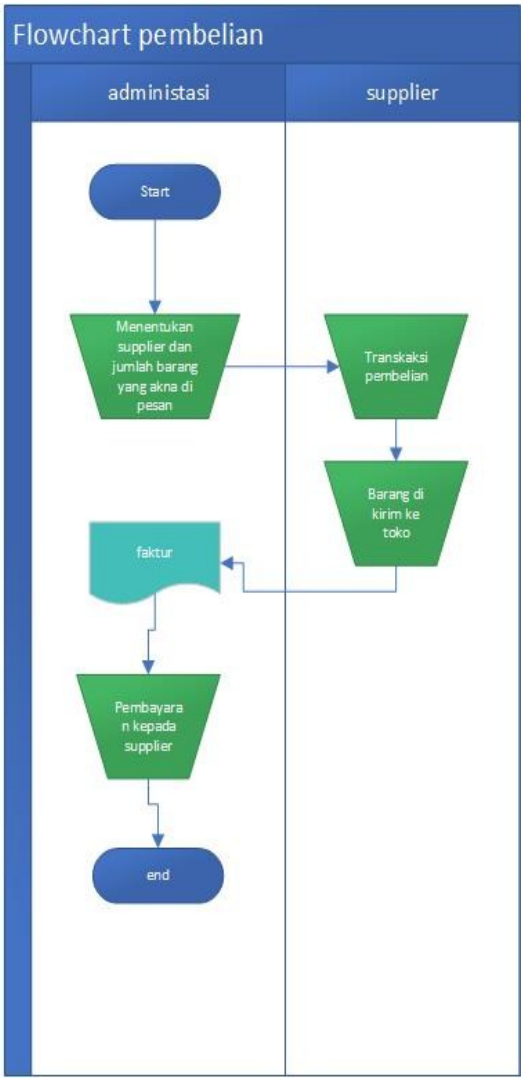

Figure 2 Flowchart Sales

design stage, the writer will create a flowchart diagram to describe the activities that occur at Toko Mulia and a use case diagram to describe the functions that exist in the system later. The flowchart diagram itself is used to make it easier to describe the activities carried out manually and processing [11] and the use case diagram is a model that is owned by an information system that will be made. [12]

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Figure 2 is an explanation of the buying cycle where the owner will determine which supplier to buy from and in what amount. Usually, owners buy supplies based on memory alone. After choosing, the owner will call the supplier to place an order for goods. When an item arrives, the number of items that arrive is not recorded based on the collection of purchase notes, then the shop owner immediately takes out the money/cash at the cashier and pays for the ordered items.

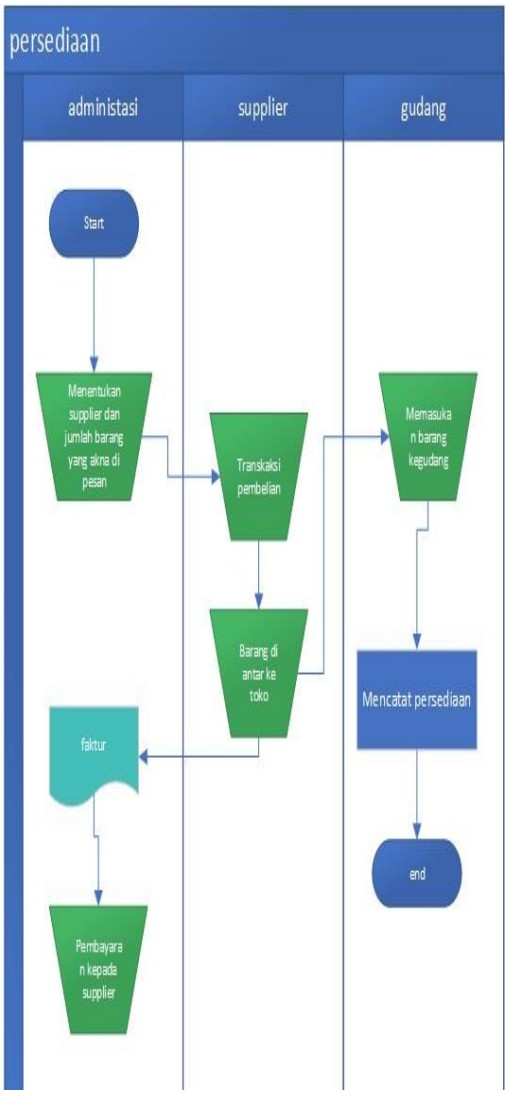

Figure 4 Flowchart Stock

Figure 3 is a flowchart of inventory starting from purchasing goods by determining which goods and suppliers to choose. After that, make an order by telephone to the supplier. After the goods arrive, the proof of the purchase receipt is stored by the owner and makes payments from the money/cash in the cashier to the supplier, then the goods are entered into the warehouse without recording the number of goods that have arrived. During the 13 years of existence, Toko Mulia only recorded inventory once so that they only understood the total inventory in the warehouse.

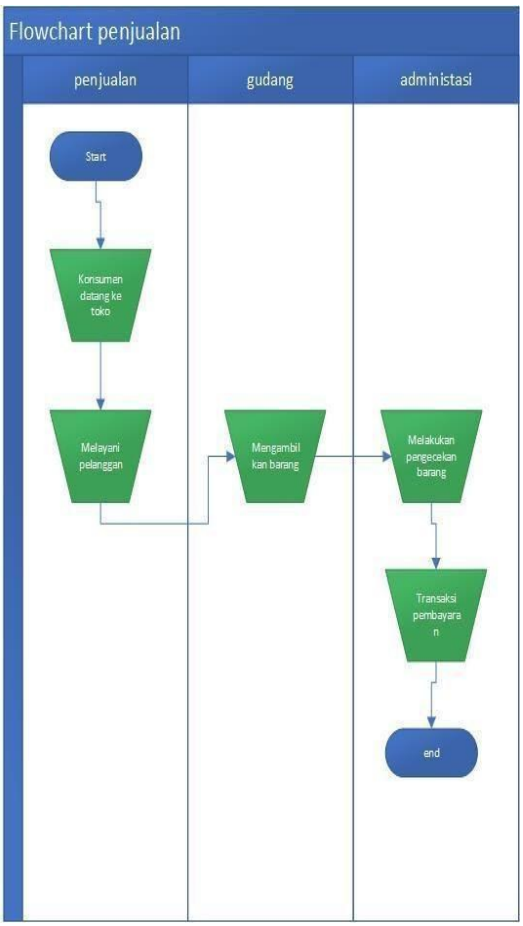

Figure 3 Flowchart Sales

Figure 5 is a flowchart of sales where consumers come to visit the store to look for the items they need. Employees serve consumers by asking what goods consumers want. After that the employee took the goods in the warehouse. After finishing selecting consumer goods go to the cashier who is guarded by the shop owner for payment transactions. When payment occurs, cash/money is directly deposited by the shop owner at the cashier without separating money from the store or

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personal money. Before making payment for goods, first check whether the goods are

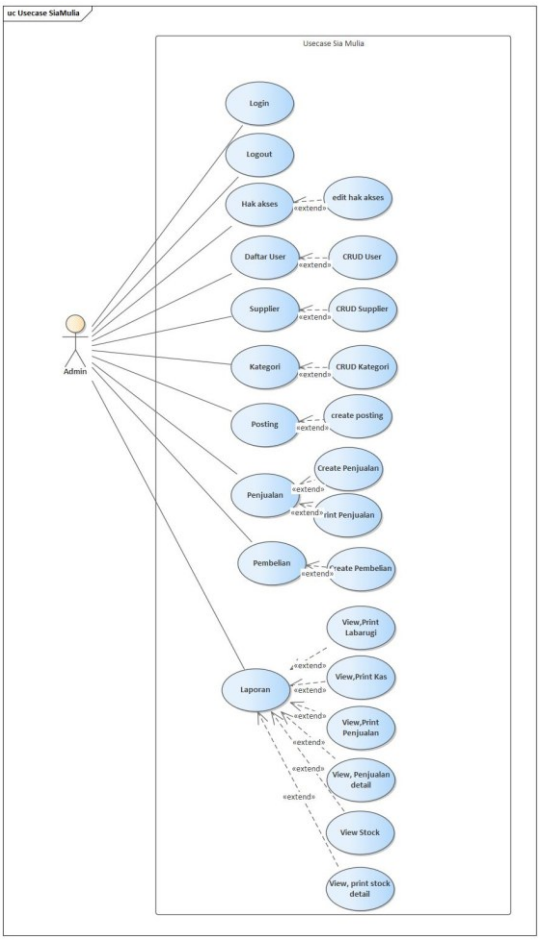

Figure 5 Use case Diagram

appropriate, check the completeness of the goods and whether the goods are functioning properly because Toko Mulia does not accept returns after leaving the store, and the transaction has not been recorded and there is no evidence. the transaction has not been recorded and there is no evidence.

In Figure 4 later the system will consist of 1 main actor and other users will only access the system according to the access rights granted by the admin. The features in the "SIA MULIA" system include: 1) login, 2) logout, 3) user list, 4) access rights, 5) suppliers, 6) categories, 7) posting, 8) purchases, 9) sales, 10) reports containing sales reports, detailed sales, cash reports, income statements, stock reports, stock update reports.

After the design and system design stages are completed, enter into stage three, namely the creation of the system which begins with the creation of a database, writing coding and after completion, black box testing will be carried out. Black box testing itself is a testing method of software based on the functional side which in this test will not see the source code [13]. After entering the fourth stage, namely the stage of collecting questionnaires. The questionnaire itself is a means of obtaining written information by asking several questions [14]. In this questionnaire stage, the system will be tested on three respondents. The respondents in question are the owner, the wife of the owner and the children of the owner, after carrying out the trial the respondents will be asked to fill out a questionnaire that has been provided by the author. After the fourth stage is complete, later the author will enter the final stage, namely the implementation stage where later the author will introduce in full the accounting information system "SIA MULIA" and provide training to users in Toko Mulia and if the owner is willing then "SIA MULIA" can be used to support operational activities and of course can obtain useful information for Toko Mulia. In this study, it will collect 2 types of data, namely primary data by conducting interviews with shop owners and secondary data such as purchase notes, sales notes. Understanding primary data itself is information obtained from primary sources and can be through interviews [15] while secondary data is reading, studying and understanding sources before conducting research [16].

III. RESULTS AND DISCUSSION

A. RESULT

From the results of the first stage, namely requirements planning, the authors found the problems that occurred in Toko Mulia and solutions to overcome the problems as listed in Table 1.

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Table 1 Weakness and Solution

No	Weakness	Solution
1	There is no clear record of inventory so the owner does not know whether the inventory is sold out or lost	The system designed includes inventory in the warehouse, recording in and out of inventory and reports on stock of goods.
2	There is no recording or proof of transactions from sales that have occurred.	The system will have a sales module that will record and issue proof of transactions in the form of notes.
3	The owner only remembers remembering that the supplies are running low and then ordering again.	The system will later be designed to be able to provide notifications when the stock is below 10.
4	There is a need for recording when cash flows in and out because the owner's finances with the store's finances become	The system will later be designed to be able to input journals for cash in and out when there is a private, pay salaries.
5	The owner's difficulty in assessing the company's condition in detail regarding the total profit and loss.	The system will later be designed to be able to provide information on inventory, stock card reports, cash reports, profit and loss reports and sales reports.

After analyzing the weaknesses and needs of the system, here are the results of making the "SIA MULIA" system.

a. Login Page

Figure 6 is the login page in the "SIA MULIA" system where each user must login first before being able to access the existing features.

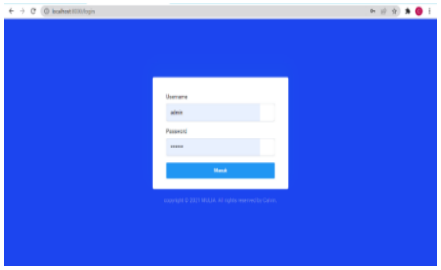

Figure 6 Login Page

b. User Page

Figure 7 is the page from the user where later the admin can insert, update, delete users.

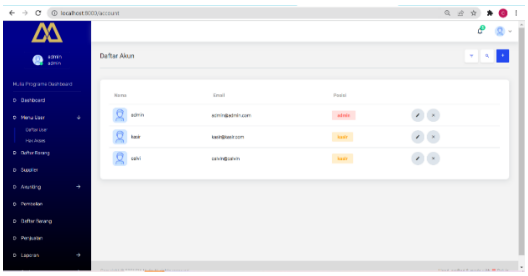

Figure 7 User Page

c. Access Page

Figure 8 is a page of permissions that can be edited by admins to grant certain access to each account.

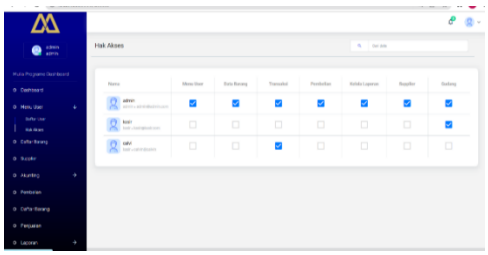

Figure 8 Access Page

d. Stock List Page

Figure 9 is the page of the item list where the user will insert, edit and delete the new item list. When the owner wants to make a repeat purchase, there is no need to add a list of items but enter the purchase menu.

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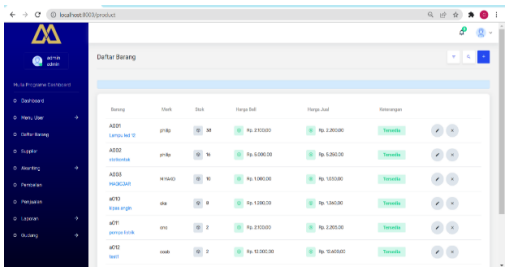

Figure 9 Stock List Page

e. Sales Page

Figure 10 is the page from the sale later when Toko Mulia has a customer coming and making a sales transaction, it can be recorded in the system and can issue a transaction receipt.

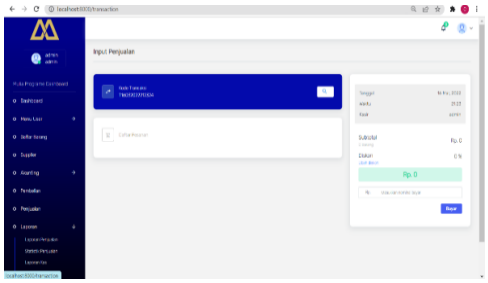

Figure 10 Sales Page

f. Supplier Page

Figure 11 is the Supplier page where later the admin can insert, edit, and delete suppliers who supply to Toko Mulia.

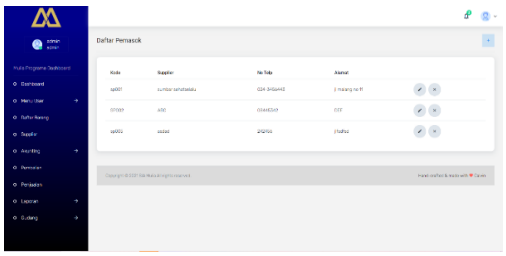

Figure 11 Supplier Page

g. Category Page

Figure 12 is a page from the category where later the Admin will be able to insert, edit, and delete accounts which can later be used when doing journals manually.

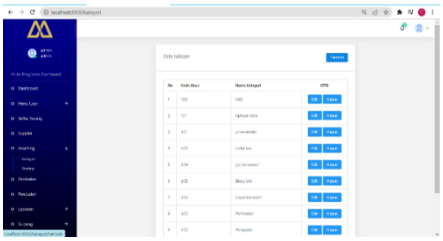

Figure 12 Category Page

h. Posting Page

Figure 13 is a post page where the admin will later use the posting page to be able to do manual journaling on transactions that cannot be automatically inputted.

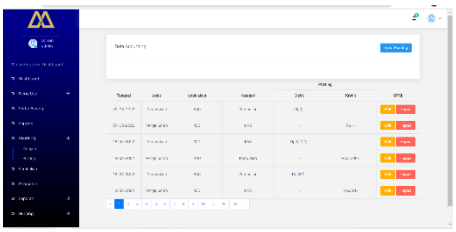

Figure 13 Posting Page

i. Purchase Page

Figure 14 is the purchase page where the Admin will input the purchase when the ordered item has arrived at the store.

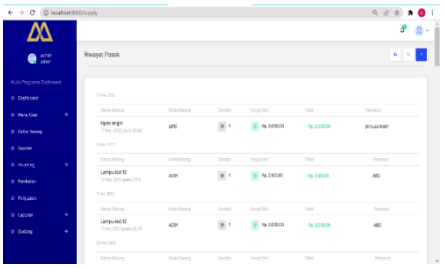

Figure 14 Purchase Page

j. Report Page

Figure 15 is a report page where the "SIA MULIA" system is equipped with 6 reports that support owners in making decisions. The reports include profit and loss reports, cash reports, sales reports, detailed sales reports, stock card reports and stock update reports.

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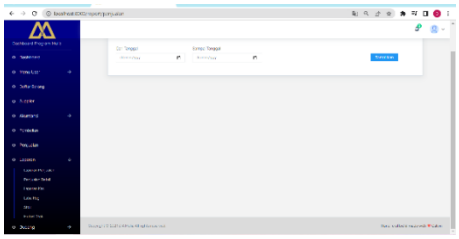

Figure 15 Report Page

B. DISCUSSION

After the "SIA MULIA" information system has been completed, the authors carry out black box testing to find out whether all the functionalities in the "SIA MULIA" system have been able to function properly. The test results can be seen in table 2.

Table 2 Black box Testing

No	Module	Result
1	Login Module	Work well
2	User Module	Work well
3	Access Module	Work well
4	Item Module	Work well
5	Sales Module	Work well
6	Supplier Module	Work well
7	Category Module	Work well
8	Post Module	Work well
9	Purchase Module	Work well
10	Report Module	Work well

After the system has been tested by the author, the author conducts trials with system users later, the intended users are the owner, the owner's wife and the children of the Mulia Store owner. After the "SIA MULIA" system was tested, the authors asked to fill out a questionnaire regarding the user experience of the "SIA MULIA" system and it can be concluded that the "SIA MULIA" system is good and is considered to be able to help support operational activities. The results of the questionnaire can be seen in table 3.

Table 3 Questionnaire Results

No	Question	STS	TS	N	S	SS
1	Do you think the dashboard menu can display graphs of revenue and customers well?				1	2
2	In your opinion, does the Supplier module work well? Includes adding, editing and deleting data				1	2
3	Do you think the purchase module can work well? Includes adding purchases.					3
4	In your opinion, does the sales module work well? Includes adding transactions.					3
5	Do you think that the transaction/receipt printing function in the sales module can work?					3
6	In your opinion, is the posting module able to add journals properly?				1	2
7	Do you think the stock card report can appear properly?				3	
8	Do you think that the income statement can appear properly?				2	1

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No	Question	STS	TS	N	S	SS
9	Do you think that the cash report can appear and function properly?					3
10	Do you think that the inventory/stock report can appear properly?				1	2
11	Do you think the user module can run properly? Includes adding, editing and removing users.				2	1
12	Do you think the existing system is easy to use?					3
13	Do you think the system has an attractive appearance?					3
14	In your opinion, is the system sufficient to support operational activities with Toko Mulia?					3

IV. CONCLUSION

Based on the results of research that has been carried out by the author at Toko Mulia Salatiga, it can be concluded that the design of the "SIA Mulia" information system using the Rapid Application Development method has been able to assist operational activities at Toko Mulia. Here are the conclusions from the results of the analysis of weaknesses and suggested solution:

1. With the "SIA MULIA" accounting information system, it can help the owner to record inventory, so that the owner better understands that the inventory in the warehouse is really out of stock because it was sold or lost.
2. With the accounting information system "SIA MULIA" makes it easier for owners to record and provide notes of every sales transaction that has occurred.
3. The use of the "SIA MULIA" information system makes it easier for owners to re-purchase products that are almost out of stock because when there is an inventory below 10, there will be a warning filled in the top right.
4. With the "SIA MULIA" accounting information system, it is easy to clarify the entry and exit of existing cash because the finances of the owner and shop are not separated, so with this system when there is cash in and out there are always records such as sales, purchases. For transactions such as paying for electricity, employee salaries and private owners, you can manually post journals.
5. The "SIA MULIA" accounting information system is equipped with various kinds of reports such as sales reports, cash reports, income statements, stock card reports and stock update reports that are useful for making it easier for owners to find out store conditions and make decisions easier.

The author has several suggestions to the owner such as:

1. It is expected that the owner can implement or use the “SIA MULIA” accounting information system. Using "SIA MULIA" can certainly help the operational activities of Toko Mulia every day. The use of

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the "SIA MULIA" system can make it easier to carry out transactions which include sales, purchases and managing inventory.

2. The author suggests to the owner of Toko Mulia to be able to do manual calculations regarding the cost of goods sold and then do a manual journal as a calculation of COGS on profit and loss, and always do manual journals on transactions that cannot be done automatically so that cash reports are more in line with the factual situation.

REFERENCES

[1] G. Tjiayahdi, "Penerapan Pengendalian Internal Pada Badan Usaha Dagang Untuk Meningkatkan Efektivitas Pada Divisi Pembelian Di Cv Utama Mart," *J. Ilm. Mhs. Univ. Surabaya Vol.3 No.1*, vol. 3, no. 1, pp. 1–22, 2014.

[2] D. Saputra, "Analisis Penerapan Akuntansi Pada Usaha Toko Kain Pakaian Di Di Pasar Bawah-Pekanbaru," *J. Chem. Inf. Model.*, vol. 4, no. 2, pp. 96–115, 2018.

[3] M. K. Rini Asmara, S.Kom, "Sistem Informasi Pengolahan Data Penanggulanganbencana Pada Kantor Badan Penanggulangan Bencanadaerah (Bpbd)Kabupaten Padang Pariaman," *J. J-Click Vol 3 No 2 Desember 2016*, vol. 152, no. 3, p. 90, 2016, [Online]. Available: file:///Users/andreataquez/Downloads/guia-plan-de-mejora-institucional.pdf%0Ahttp://salud.tabasco.gob.mx/content/revista%0Ahttp://www.revistaalad.com/pdfs/Guias_ALAD_11_Nov_2013.pdf%0Ahttp://dx.doi.org/10.15446/revfacmed.v66n3.60060.%0Ahttp://www.cenetec.

[4] H. Siahaan, "Implementasi Metode Clustering Partitional Menentukan Item Slow Moving dan Fast Moving Pada Persediaan Barang (Studi Kasus PT. SAT)," *Jurikom)*, vol. 6, no. 2, pp. 171–177, 2019, [Online]. Available: http://ejurnal.stmik-budidarma.ac.id/index.php/jurikom%7CPage%7C171.

[5] Anita Dian Pramuwati and Ari Kurniawan, "Rancang Bangun Aplikasi Manajemen Gudang Di Toko Faza Abadi Berbasis Web," *J. Manaj. Inform.*, 2017.

[6] S. I. Pakaya, "PENERAPAN PENCATATAN AKUNTANSI PERSEDIAAN BARANG."

[7] Fitri Ayu and Nia Permatasari, "perancangan sistem informasi pengolahan data PKL pada divisi humas PT pegadaian," *J. Infra tech*, vol. 2, no. 2, pp. 12–26, 2018, [Online]. Available: http://journal.amikmahaputra.ac.id/index.php/JIT/article/download/33/25.

[8] J. Hutahean, *Konsep Sistem Informasi*. 2015.

[9] I. G. Handika and A. Purbasari, "Pemanfaatan Framework Laravel Dalam Pembangunan Aplikasi E-Travel Berbasis Website," *Konf. Nas. Sist. Inf. STMIK Atma Luhur Pangkalpinang*, pp. 1329–1334, 2018.

[10] I. Rahmat, "Manajemen Sumber Daya Manusia Islam: Sejarah, Nilai Dan Benturan," *J. Ilm. Syi'ar*, vol. 18, no. 1, p. 23, 2018, doi: 10.29300/syr.v18i1.1568.

[11] Ilham Budiman, "Analisis Pengendalian Mutu Dibidang Industri Makanan," vol. 35, no. 2, pp. 1–14, 2021.

[12] A. Hendini, "Pemodelan Uml Sistem Informasi Monitoring Penjualan Dan Stok Barang," *J. Khatulistiwa Inform.*, vol. 2, no. 9, pp. 107–116, 2016, doi: 10.1017/CBO9781107415324.004.

[13] W. N. Cholifah, Y. Yulianingsih, and S. M. Sagita, "Pengujian Black Box Testing pada Aplikasi Action & Strategy Berbasis Android dengan Teknologi Phonegap," *STRING (Satuan Tulisan Ris. dan Inov. Teknol.*, vol. 3, no. 2, p. 206, 2018, doi: 10.30998/string.v3i2.3048.

[14] D. Damayani, "Sihapes (Sistem Informasi Hasil Penilaian Siswa) Bagi Sekolah Menengah Pertama Di SMP Negeri 7 Semarang," *Edu Komputika J.*, vol. 1, no. 2, pp. 52–62, 2014.

[15] V. Herviani, "Tinjauan Atas Proses Penyusunan Laporan Keuangan Pada Young Enterpreneur Academy Indonesia Bandung," vol. VIII, no. 2, 2016.

ISSN 2442-7888 (online) DOI 10.24167/sisforma.v11i2.4579