Design of the 'SI ULET' Accounting Information System for Quick Calculation of Merchandise Inventory at AtariaShop Plastic Houseware Bandung Barat

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Abstract: Accounting information systems are very important to business activities. The amount of merchandise inventory owned by the company must be monitored for its availability because it is sold for profit. It is known that AtariaShop Plastic Houseware still uses a manual system to calculate its merchandise inventory. This causes the calculation of merchandise inventory to be slow, and the resulting information is often inaccurate. The qualitative approach method was used by the researchers in this study. Assisting in the calculation of computerized merchandise inventory requires the design of an accounting information system named SI ULET. This system as a whole displays the final report in the form of merchandise stock cards. SI ULET is proven to help business activities run effectively because this system can display the mobility of in-out merchandise due to purchases and sales so that the amount of merchandise inventory in stores can be quickly identified.

Keywords: accounting information systems; merchandise inventory.

1. Introduction

In the current era of globalization, the need for information in a business activity requires that everything be done quickly and precisely. Information technology can make it easier for people to carry out business activities from small to large scale in Indonesia. The Accounting Information System is a computer-based system designed to transform accounting data into information which includes the transaction processing cycle, the use of information technology, and the development of information systems (Gunawan et al., 2020).

The accounting information system is very important in business activities, because the system used can be used as a procedure for recording information related to the accounting data of a company and the resulting information is needed by company management. One of the factors that influence the course of a business activity is inventory.

According to Entity Financial Accounting Standards Without Public Accounting (SAK ETAP) Chapter 11 in the journal (Prihatiningsih, 2018) states that inventory is a current asset available for sale in the ordinary course of business, in the sales production process or in the form of materials or equipment for use in the production process or the rendering of services.

Inventory in a trading company requires good management, one of which is through the application of an inventory accounting information system that aims to facilitate the process
of recording data. In business activities, the amount of merchandise inventory owned by the company must be monitored for its availability because it is sold for profit.

Inventory recording using an accounting information system is easier and faster than doing it manually. Therefore, an inventory accounting information system must be able to meet the criteria as a good system and can quickly record, process data, conduct calculations to produce information in the form of reports needed by the company.

The results of the research conducted by previous researchers stated that the absence of inventory records also caused ineffectiveness and hampered the company’s operational activities because the warehouse staff needed to count the items in the warehouse one by one (Giovani & Novianty, 2020). Subsequent research states that companies that do not yet have a specific information system to handle inventory of goods and documents, result in frequent delays in searching for documents, inaccurate inventory counts, and the absence of reports and documents that are properly organized to be given to management (Nasri et al., 2022).

Subsequent research states that computer-based data processing can facilitate data access and data search so that it can help speed up decision making for leaders (Suhiarwati & Susianto, 2019). Subsequent research states that companies are advised to change the manual system to computerized, in order to increase the company’s effectiveness and efficiency in processing transaction data (Wahyuningsih & Rary, 2021). Subsequent studies state that designing an inventory accounting information system makes an inventory system that is easier for users to use, generates inventory information and reports (Kuserawati et al., 2021).

Along with the development of information system technology and intense business competition, inventory accounting information systems within the company must be carried out. One of them is AtariaShop Plastic Houseware, which must have speed in calculating merchandise inventory, so that AtariaShop Plastic Houseware can obtain information regarding merchandise inventory correctly. AtariaShop Plastic Houseware is a business engaged in the trading business by providing various plastic household appliances. This trading company is located on Jl. Kavaleri No. 33, Cilame, Kecamatan Ngamprah, Kabupaten Bandung Barat, Jawa Barat 40552.

The following is data for December 2021-December 2022 from AtariaShop Plastic Houseware which can be submitted to find out alleged problems regarding merchandise inventory.

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Source: Data processed by the author in 2023.

It is known that AtariaShop Plastic Houseware still uses a manual system in calculating its merchandise inventory. However, due to the increasing types of goods and sales, the calculation of merchandise inventory was not carried out again until the time this research was conducted. As a result, AtariaShop Plastic Houseware does not have a report on merchandise inventory because the data collection is getting more complicated. This causes the calculation of merchandise inventory to be not fast and the resulting information is often inaccurate.

Based on the data in table 1, it is known that there are 4 types of categories of merchandise in AtariaShop Plastic Houseware for the period December 2021-December 2022, including accessories equipment, kitchen equipment, yard equipment and bathroom equipment. For a total purchase quantity of 26,426 pieces, a sales quantity of 21,676 units and an inventory quantity of 4,750 pieces.

By looking at the mobility of the purchase quantity, sales volume and then the final remainder of the merchandise inventory, it is therefore necessary to make efforts to simplify the calculation of merchandise inventory. And to support the smooth resolution of these problems, a system was created that facilitates the monitoring of merchandise inventory.

Because if it is done manually, it will require a lot of paper, a lot of time, a lot of human resources involved, high costs and slow in calculating merchandise inventory.

Based on the description above, a research and system design was carried out regarding merchandise inventory with the research title “Design of the SI ULET Accounting Information System for Quick Calculation of Merchandise Inventory at AtariaShop Plastic Houseware Bandung Barat”.

2. Literature Review

2.1. Design

According to Jogiyyanto (2005:196) in the journal (Sudrartono & Firamida, 2021) design is the stage after analysis of the cycle of drawing, planning and sketching or arrangement of several separate elements in a unified whole and functioning, including regarding the configuration of the components software and hardware components of a system.

Information system design is the development of a new system from an existing old system, where problems that occur in the old system are expected to be resolved in the new system (Azis, 2022:1).

2.2. Accounting information system

According to Marshall B. Romney (2017) in the journal (Wahyuning & Rary, 2021) an accounting information system is a system that collects, records, stores, and processes data to
produce information for decision making. All data that is processed into information can be generated quickly and precisely using a computerized system. An accounting information system is an integration of a transaction processing system or cycle and a transaction processing system has components of hardware, software, brainware, procedures, databases and communication network technology, or in other words an accounting information system is the integrity of several components that make up a processing system or cycle transactions (Erica et al., 2019:6).

2.3. Merchandise Inventory

According to Heizer, J. and Render, B., (2015) in the book (Simbolon, 2021:2) states that inventory is one of the most expensive assets of many companies, representing as much as 50% of the total invested capital. Merchandise inventory is a current asset that is used in trading company activities by purchasing it with the aim of reselling it without changing the form of the goods (Ferawati et al., 2020).

2.4. SI ULET

To assist the calculation of computerized merchandise inventory, it requires the design of an accounting information system named SI ULET. Being tenacious at work means solving problems quickly at work and being tenacious in learning means not giving up easily. So, SI ULET is a system that is not easily discouraged and fast in dealing with problems of merchandise inventory to produce the right information so that business activities run effectively.

3. Research Methods

3.1. Research Approach

In this study, researchers used a qualitative approach method. The qualitative approach method is an investigative process. Research also places more emphasis on objectivity which is realized by explaining research. The data and information used in this study were obtained from observations and interviews. This information is in the form of documents and activity records that are processed into data (Wijoyo et al., 2020).

3.2. Research Subjects and Objects

The subjects in this study were the owners of AtariaShop Plastic Houseware and the objects of research were goods data, supplier data, customer data, purchasing data and merchandise sales data along with documents related to the merchandise inventory accounting information system implemented by AtariaShop Plastic Houseware. This is a source for designing a merchandise inventory accounting information system.

3.3. Research Instruments

The research instrument used in this study was a list of interview questions directly with the owner of AtariaShop Plastic Houseware. The type of data used by researchers is primary data, because researchers come directly to the place of business that is used as the object of research by conducting observations, interviews, documentation, and literature studies. In this study, researchers designed a system using the web-based PHP programming language, MySql as a database, Adobe Dreamweaver CS6 as a text editor and Canva as a medium in making the background system for calculating merchandise inventory at AtariaShop Plastic Houseware.
4. Results and Discussion

At this stage, the researcher created a system that was designed to be able to overcome the company's problems regarding merchandise inventory with the waterfall development method. It is called a waterfall because the stages that are passed must wait for the completion of the previous stage and run sequentially (Wahid, 2020).

The steps taken are:

4.1. System Requirements Analysis

At this stage the aim is to search based on the needs of the software system. By analyzing what should be input into this information system (Mirani et al., 2022).

a. Functional requirements are types of needs that contain an overview of activities that can be performed by the system.
   1) The system can log in user
   2) The system can input supplier data, customer data, category data, unit data, goods data, purchasing data and sales data.

b. Non-Functional Requirements are types of requirements that contain a future description of the workflow of the system.
   1) The system must be accessible to warehouse admins and shop owners
   2) The system must be able to display merchandise inventory reports
   3) The system must be able to print merchandise stock cards
   4) The system must be accessible quickly.

4.2. System Design

At this stage, the researcher makes an overview of the system model which consists of:

a. Use Case Diagram
   In this system, the warehouse admin and shop owner log in to the system to access the system. After logging in, the warehouse admin can process supplier data input, customer data input, category data input, unit data input, goods data input and the system can display master data reports. Then input purchasing data, input sales data. After that, the system can display purchasing data reports, sales data reports, merchandise inventory reports, stock opname and the system can print merchandise stock cards. After the system has finished running, the warehouse admin and shop owner can log out of the system.

b. Data Flow Diagram (DFD)
   In this system, the warehouse admin processes user data input to log in to the system. Warehouse admin also performs the process of inputting some data such as supplier data, customer data, category data, unit data, goods data, purchasing data and sales data. Then, the system displays a master data report as output for the warehouse admin. After that, the results of the input process carried out by the warehouse admin, namely the system informing reports in the form of supplier data reports, customer data reports, category data reports, unit data reports, merchandise inventory reports, purchasing data reports, sales data reports, stock opname and merchandise stock cards. To access the report, the shop owner inputs user data so he can log in to the system.

In this system, there are 4 stages to access the system. The first step is logging in. At this stage, the warehouse admin and shop owner process user data input to log in to the system. Then the second stage, namely input master data in the form of supplier data, customer data, category data, unit data and goods data. The third stage, namely the
system generates master data reports in the form of supplier data reports, customer data reports, category reports and unit reports, while goods data is stored to complete the calculation data input stage. The fourth stage, namely the input of calculation data from purchasing data and sales data which is inventory in out. After that, the system generates reports in the form of purchasing data reports, sales data reports, merchandise inventory reports, stock opname and merchandise stock cards. And these reports can be accessed by shop owners after carrying out the process of inputting user data so they can log in to the system.

![Diagram](image-url)

**Figure 1. Use Case Diagram**

![Diagram](image-url)

**Figure 2. Context Diagram**
In this system, the system starts from logging in by entering a username and password. If the username and password entered are incorrect, then remain on the log in page and try again. Meanwhile, if the username and password entered are correct, a menu will appear. Then, click the data input menu or report menu. If you select the data input menu, a data input form appears which can include supplier data, customer data, category data, unit data, goods data, purchasing data and sales data. Meanwhile, if you select the report menu, the system can display master data reports, purchasing data reports and sales data reports. The system can also display merchandise inventory reports in which it can display stock opname and merchandise stock cards. Merchandise stock cards are the final printable overall output. The results of input data and reports are connected to the database. After that, all results of checking data reports and printing results of merchandise stock cards are submitted to the shop owner. Finished.
4.3. System Implementation

At the implementation stage of this system, the researcher applies the details that have been carried out during the system requirements analysis and system design stages up to completing the system design with user approval.

a. System Input Stage
   1) Log In System

Figure 4. System Flowchart

Figure 5. Display of log in system
At the system log in stage, the warehouse admin or shop owner enters the username and password in the text fields provided, then clicks the log in button.

2) Select Menu

![Select Menu Image]

**Figure 6.** Display of menu

At the menu selection stage, if you want to carry out the data input process, then click on the supplier, customer, category, unit or goods menu. If you want to display output in the form of a report, then click the report menu. And if you want exit the system, then click log out.

3) Supplier Data Input

![Supplier Data Input Image]

**Figure 7.** Display of supplier data input

At the supplier data input stage, in this input form, enter the supplier's name and description in the text field provided. The supplier code appears automatically sequentially according to the data that has been entered in the database. When finished, click the save button to save the supplier data.

4) Customer Data Input

![Customer Data Input Image]

**Figure 8.** Display of customer data input

Customer data input stage, in this input form enter the customer name, phone number, address and description in the text fields provided. For the customer code,
it appears automatically sequentially according to the data that has been entered in the database. When finished, click the save button to save the customer data.

5) Category Data Input

![Figure 9. Display of category data input](image)

At the category data input stage, then in this input form enter the category name in the text field that has been provided and for the category code to appear automatically sequentially according to the data that has been entered in the database. When finished, click the save button to save the category data.

6) Unit Data Input

![Figure 10. Display of unit data input](image)

At the unit data input stage, then in this input form enter the unit name in the text field that has been provided and the unit code appears automatically sequentially according to the data that has been entered in the database. When finished, click the save button to save the unit data.

7) Goods Data Input

![Figure 11. Display of goods data input](image)

At the goods data input stage, then in this input form enter the item code, item name in the text field that has been provided. Then, select the category by clicking select that has been provided. After that, enter quantity in the text field and click select the item unit. And enter a description in the text field that has been provided. When finished, click the save button to save the item data.
8) Purchasing Data Input

![Image of purchasing data input](image1)

**Figure 12. Display of purchasing data input**

At the purchasing data input stage, first click the items menu, then click the link in the merchandise inventory report status table. Then this input form appears, then click select supplier, enter ref number, po number, date, quantity, price in the text fields provided. Invoice number appears automatically sequentially according to the data that has been entered in the database. Meanwhile, the item code and item name appear automatically according to the item selected when clicking the link in the status table for the merchandise inventory report. When finished, click the save button to save the purchasing data.

9) Sales Data Input

![Image of sales data input](image2)

**Figure 13. Display of sales data input**

At the sales data input stage, first click the items menu, then click the out link in the merchandise inventory report status table. Then this input form appears, then click select customer, enter the date, amount, price in the text field that has been provided. Invoice numbers appear sequentially according to the data that has been entered in the database. Meanwhile, the item code and item name appear automatically according to the item selected when clicking the link out in the status table for the merchandise inventory report. When finished, click the save button to save sales data.

b. System Output Stage

1) Displaying Supplier Data Reports

![Image of supplier data report](image3)

**Figure 14. Display of supplier data output**
At the stage of displaying supplier data output, the system displays a table containing code data, supplier name, description and status. This data can be searched by entering keywords in the text field provided and then clicking the search button. In the status table there is an edit link to update data and a delete link to delete data.

2) Displaying Customer Data Reports

Figures 15. Display of customer data output

At the stage of displaying customer data output, the system displays a table containing code data, customer name, phone number, address, description and status. This data can be searched by entering keywords in the text field provided and then clicking the search button. In the status table there is an edit link to update data and a delete link to delete data.

3) Displaying Category Data Reports

Figure 16. Display of category data output

At the stage of displaying category data output, the system displays a table containing code, category name and status data. This data can be searched by entering keywords in the text field provided and then clicking the search button. In the status table there is an edit link to update data and a delete link to delete data.

4) Displaying Unit Data Reports

Figure 17. Display of unit data output

At the stage of displaying unit data output, the system displays a table containing code, unit name and status data. This data can be searched by entering keywords in the text field provided and then clicking the search button. In the status table there is an edit link to update data and a delete link to delete data.
5) Displaying Purchasing Data Reports

![Image](image1.png)

**Figure 18.** Display of purchasing data output

At the stage of displaying the output of purchasing data, the system displays a table containing data on purchase number, date, supplier, item name, qty, price and status. This data can be displayed periodically by selecting a date and can be searched by entering keywords in the text field provided, then clicking the search button. In the status table there is an edit link to update the data.

6) Displaying Sales Data Reports

![Image](image2.png)

**Figure 19.** Display of sales data output

At the stage of displaying sales data output, the system displays a table containing sales data, date, customer, item name, qty, price and status. This data can be displayed periodically by selecting a date and can be searched by entering keywords in the text field provided, then clicking the search button. In the status table there is an edit link to update the data.
7) Displaying Merchandise Inventory Reports

![Image of Merchandise Inventory Report](image1.png)

**Figure 20.** Display of merchandise inventory reports

At the stage of displaying the output of the merchandise inventory report, the system displays a table containing code data, item name, category, stock and status. This data can be searched by entering keywords in the text field provided, then clicking the search button. In the status table there is a link in to direct to the purchasing data input form, link out to direct to the sales data input form, stock link to direct to the item data edit form, delete link to delete data. Then, the item code in the table can be clicked to direct to the stock opname view. Also, the stock card button can be clicked to navigate to the merchandise stock card view.

8) Displaying Stock Opname

![Image of Stock Opname](image2.png)

**Figure 21.** Display of stock opname

At the stage of displaying stock opname output, the system displays a header table with the name of the item and a table containing item data, category, initial (initial stock), ending (final stock), description. Next, to see details of inventory mobility, select a date then click the search button. Then, purchase details appear as income and sales details appear as expenses. After that, the result of reducing the purchase quantity and sales quantity must be the same as the contents of the final table in the header table.

4.4. System Testing

At the testing stage of this system, an experiment is carried out by running the system to determine whether the implemented system can run properly or not.
4.5. System Maintenance

In this last stage, the system design can be used, but with supervision in correcting the errors found in the previous stage. It is intended that the workflow of the system can run well. This system as a whole displays the final report in the form of merchandise stock cards.

![Figure 22. Display of merchandise stock cards.](image)

**Description:**
- **Item Code:** The code given to each trade item name.
- **Item Name:** The name of the item sold at the store.
- **Category:** The name of the category used to classify the types of trade goods.
- **Stock:** Quantity of ending merchandise inventory available.
- **Check:** Table to record the quantity of merchandise inventory when doing stock opname in an annual or monthly period. The trick is to physically count the stock, then check the quantity in the stock table, whether it is the same or not. This aims to avoid the difference between the physical quantity and the existing data on the system.

To print merchandise stock cards, press CTRL + P on the web view, then click the print button, as follows:

![Figure 23. Display of printing merchandise stock cards.](image)

If the SI ULET system is used, it will save paper, save time, does not require a lot of human resources involved, is more cost efficient and quick in calculating merchandise inventory.
5. Conclusion and Suggestion

5.1. Conclusion
a. To solve the problem of calculating merchandise inventory that occurs, an accounting information system is used using the web-based PHP programming language, MySQL as a database, Adobe Dreamweaver CS6 as a text editor and Canva as a medium in making the system background.

b. The system used is named SI ULET. A system that is not easily discouraged and fast in dealing with merchandise inventory problems to produce the right information so that business activities run effectively.

c. With the SI ULET system, it is proven for quick calculation of merchandise inventory and can display the final report in the form of merchandise stock cards needed by shop owners in carrying out stock opname activities so that business activities run effectively.

5.2. Suggestion
a. In order to make it easier to control merchandise inventory so that shop owners have no difficulty in purchasing goods, this system can be used. Because this system can display the mobility of incoming and outgoing merchandise due to purchases and sales, the amount of merchandise inventory at the store can be quickly identified.

b. This system is designed to be as simple as possible, so that all people who are appointed as users can work with consistency, discipline in coding goods so that the data input process is easy to do.

c. It is certain that every item that enters must be given an item code, so that the data that comes out of the output can be read by all users or shop owners.

d. For future researchers, it is advisable to adjust the system that is made to what is needed and develop existing systems by adding menus that can help so that business activities run effectively.

References
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