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COMPUTER-BASED CASH SALE ACCOUNTING INFORMATION SYSTEM DESIGN IN NSC POLYTECHNIC SURABAYA CANTEEN

Prasetyo Widyo Iswara^{1*}, Nina Triolita²

¹ Vocational Faculty, Airlangga University, Surabaya, Indonesia

² Accounting Study Program, NSC Polytechnic Surabaya, Indonesia

*Corresponding Author: interpraz08@gmail.com

Abstract: This study aims to design a computer-based sales accounting information system to be applied in the NSC Polytechnic Surabaya canteen. The research object used was the Sales Accounting Information System implemented by the NSC Polytechnic Surabaya canteen. Sales accounting information system itself uses a MySQL database. MySQL database is a free database server, it can be used for personal needs or for business purposes alone without having to buy a license, as well as program tools that are used using Microsoft Visual Basic 6.0. Based on the results of the PIECES analysis, the conclusion of the study is that the process of recording cash sale transactions in the NSC Polytechnic Surabaya canteen is more tidy and orderly, this system is feasible to be implemented in order to obtain accurate, relevant, and up to date information when needed, this computerized system is feasible because the technology used is very adequate and easy to obtain and the value of the benefits is greater than the costs incurred, this system minimizes data loss and damage because this system stores data in a database that is protected against virus or malware attacks, using paper media for evidence sales transactions and proof of payment for room rent only. If we want to print a report stored in a database, then it can be printed at any time, service to customers can only be done at the NSC Polytechnic Surabaya canteen during working hours and come directly to the NSC Polytechnic Surabaya canteen so that they can know the number of customers. The design stage of a computer-based cash sale accounting information system includes 3 designs namely input design, output design, and database design.

Keywords: design, cash sale accounting information system, computer based

1. Introduction

Accounting information system is a tool to carry out a control by itself one part with other parts involved will control each other. Sales transaction events that occur are communicated through an accounting information system to interested parties in the form of sales reports and financial reports. In order to support sales activities that occur, we need an information that presents the results of business sale that can be used to take further decisions. The information must be accurate, relevant, timely, and complete so that it can later be used by users of the information. To get this information, a good and accurate accounting information system is needed. According to Mardi (2011: 8) the purpose of accounting information systems is to fulfill every obligation in accordance with the authority given to someone, valuable material for management decision making, and supporting the smooth running of daily operations.



The definition of accounting information systems according to Romney and Steinbart (2015: 10) is that accounting information systems are systems used to collect, record, store, and process data to produce information for decision making. This system includes people, procedures, and software data instructions, information technology infrastructure as well as internal control and security measures. Meanwhile, according to Lilis Puspitawati and Sri Dewi Anggadani (2011: 58) accounting information system is a computer-based system designed to transform accounting data into information, which includes transaction processing cycles, information technology users, and information system bearers.

NSC Polytechnic Surabaya Canteen is a business that is engaged in food culinary. To meet the needs of students, campus employees, and lecturers as well as the community around the campus, the NSC Polytechnic Surabaya campus provides a canteen so that they do not need to leave campus to meet their needs. Various kinds of food and beverage menus provided by the NSC Polytechnic Surabaya canteen from snacks to heavy meals are presented at the NSC Polytechnic Surabaya canteen. Transaction activities carried out by the canteen owner are namely cash sale, cash purchases, and inventories.

Research conducted by Lianawati, et al (2010) is to analyze, identify, improve and design sales and accounts receivable accounting information systems at distributor companies. The results show that the sales and accounts receivable accounting information system can produce reports that the company needs quickly, completely, and accurately that can be used by management in the decision making process. While research by Ragil (2016) aims to find out sales accounting information systems that have been running in Ayam Geprek Mantap. The results show that the process of recording the sale of Chicken Geprek Mantap still manually needs to develop a web-based sales accounting information system using the SDLC method. Based on the description above, it can be formulated in this study is how the design of computer-based cash sale accounting information systems is appropriate to be applied at the NSC Polytechnic Surabaya Canteen.

2. Literature Review

Design

According to Dwijanatri (2015), design is an ability to plan, describe and create a design from several separate elements into a unity that is useful for solving a problem. The accounting system design approach consists of 2 approaches, namely: the Bottom-up Approach, and the Top-down Approach. The bottom up approach, which is designed starting from the way of providing information (including the design of transaction evidence, journal books, ledgers, and subsidiary books), and the last process is to determine the information (reports) needed in accordance with previous designs. Meanwhile, the top down approach starts from what information is needed by the system user, only then how to produce that information is designed. In this case the designs of ledgers and subsidiary books, journal books, and proof of transactions, including all sub-systems and supporting procedures, are the design of ways to produce certain information.

According to Narko (2002: 11), there are 3 types of accounting system design, namely designing an accounting system as a whole, or only designing a part, or repairing only a part of the system. The steps in the overall design are:

1. Analysis Stage

At this stage the system designer will essentially 'capture' or 'map' the existing system as it is. At this stage activities are usually carried out as follows:

- a. Surveying the current system
- b. Analyzing the strengths or weaknesses of the old system
- c. Identifying system requirements



- d. Making a system analysis report
2. Design Stage
In this stage, on the basis of all data generated at the analysis stage, the design is then carried out. The system design phase starts from the design of reports (information), ledgers, and subsidiary books, journal books, transactions proof, and various supporting systems and procedures.
3. Implementation Stage
This stage is the operation phase of the system where the system designer is involved in the operation. The involvement of the system designer is primarily in terms of providing guidance or training to system users and changing the system if deemed necessary. In principle, this stage includes:
 - a. Making accounting system manuals and procedures
 - b. Guiding the application of systems in client companies
 - c. Compiling system implementation reports
4. Full Accounting System Implementation Stage
This stage occurs when the implementation stage is complete. In this stage the company employees are expected to be able to carry out the system and procedures in full without the need for consultation with the system designer.

Sales Accounting Information System

Definition of System

According to Romney and Steinbart (2014: 3) the definition of system is a series of two or more components that interrelate and interact to achieve goals. Most systems consist of subsystems that support larger systems. While system according to Dull, Gelinan and Wheeler (2012: 11) is a collection of interdependent elements that are shared to achieve specific goals.

Definition of Information System

According to Lianawati, Ellen, Ratih, and Yulia (2010) information system is collecting, inputting, and processing data, controlling, and producing information based on manual or computer-based processes to achieve organizational goals and objectives. Dull, Gelinan, and Wheeler (2012: 12) state that information system is man-made system that consists of a set of integrated computer-based components and manual components created to collect, store and manage data and provide information for users.

Definition of Accounting Information Systems

According to Romney and Steinbart (2014: 3) accounting information system is a system that collects, records, stores, and processes data to produce information for decision makers.

System Characteristics

According to Riky (2016) a system has certain characteristics as follows:

1. Boundary
The depiction of an element inside in the system and outside the system.
2. Environment
Everything outside the system, the environment that provides assumptions, constraints, and inputs to a system.
3. Input
Resources (data, raw materials, equipment, and energy) from the environment that are consumed and manipulated by a system.
4. Output
Resources or products (information, reports, finished computer screen display documents) provided for the system environment by activities in a system.
5. Component



Activities or processes in a system that transforms inputs into intermediate forms (outputs).

This component can be a subsystem of a system.

6. Interface

The place where components or systems and their environment meet or interact.

7. Storage

Areas controlled and used for temporary and permanent storage of information, energy, raw materials, and so on. Storage is a buffer between different components of the same data.

3. Method

This study used primary data and secondary data. The primary data used in this study were interviews and observation. Interview technique is a data collection technique by conducting questions and answers, both directly and indirectly with data sources (respondents) (Didin, 2015: 122). Observation is a data collection technique by making direct observations on the object of research (Didin, 2015: 119).

Secondary data used in this study was collected by searching for data by considering reliable sources on the internet and scientific papers published in libraries which certainly leads to predetermined research objectives (Riky, 2016).

Data analysis is the process of systematically searching and compiling data obtained from interviews, field notes, and documentation by organizing data into categories, describing them into units, synthesizing, compiling into patterns, choosing which ones are important to learn and making conclusions so that they are easily understood by oneself and others (Didin, 2015: 145). The data analysis technique of this research is qualitative method.

The location of the research was in the NSC Polytechnic Surabaya canteen. The subjects of this research were the owners of the NSC Polytechnic Surabaya canteen, while the object of this study is the Sales Accounting Information System implemented by the NSC Polytechnic Surabaya canteen.

Sales is a very influential activity in trading businesses such as canteen at NSC Polytechnic Surabaya campus. Many canteens wish to increase sales through providing technological innovations in providing services. Technology is developed as a means of obtaining sales information in order to make a decision using sales accounting information systems. With a sales accounting information system, it will help canteen managers at the NSC Polytechnic Surabaya campus such as speed in handling sales, reducing the risk of errors that occur in sales, saving administrative management, and easy control.

Sales transactions in the canteen of the NSC Polytechnic Surabaya campus are still recorded manually making it difficult for canteen owners to obtain accurate information about the results of their sales. Sales accounting information system uses a MySQL database. MySQL database is a free database server that can be used for personal purposes or for business purposes alone without having to buy a license. The programming language used is using the Microsoft Visual Basic 6.0 programming language.

4. Result and Discussion

Company Data Description

NSC Polytechnic Surabaya canteen is located at NSC Surabaya Polytechnic campus. The location is in st. Basuki Rahmat 85 Surabaya. The canteen is an individual business that rents space in the NSC Polytechnic Surabaya campus which is engaged in the business of food and beverages. The canteen sells a variety of delicious and economical food and beverage menus that are affordable by student and community around campus. The food menu includes: *nasi*



campur, fried noodles, *nasi lodeh*, etc. While the drink menu includes: nutri sari drink, milo drink, ABC coffee drink, etc..

Analysis Stage

At this stage the process of designing an accounting information system is:

a. Surveying the current system.

The accounting information system at the NSC Polytechnic Surabaya canteen has not existed because the canteen manager still uses a manual system to record sales transactions that occur.

b. Analyzing the strengths or weaknesses of the old system.

The old system has many weaknesses, these weaknesses include:

1. It takes a long time to make rent payments to the canteen management.
2. Data on sales and purchases that occur in the Surabaya NSC Polytechnic canteen are not very organized.
3. It needs more storage space to store transactions that occur.
4. They cannot know how much profit is obtained.
5. They still use manual records and canteen manager's memories to calculate the purchases and sales that occur.

c. Identifying system requirements

To determine the need for a cash sale accounting information system in the NSC Polytechnic Surabaya Canteen, firstly identification must be done. The following are the identifications regarding the need for a cash sale accounting information system:

1. Functions related to cash sale accounting information system in the NSC Polytechnic Surabaya Canteen.

The cash sale accounting information system in the NSC Polytechnic Surabaya Canteen is related to cash receipts for food and beverage sales, cash disbursements for purchases of food and beverage raw materials, purchases of food and beverage merchandise, and payment of room rent. So that the functions involved in this system consist of 2 parts namely the canteen manager and BAUK as the canteen administrator.

2. Records and Documents in the cash sale accounting information system in NSC Polytechnic Surabaya Canteen.

a. The accounting records used.

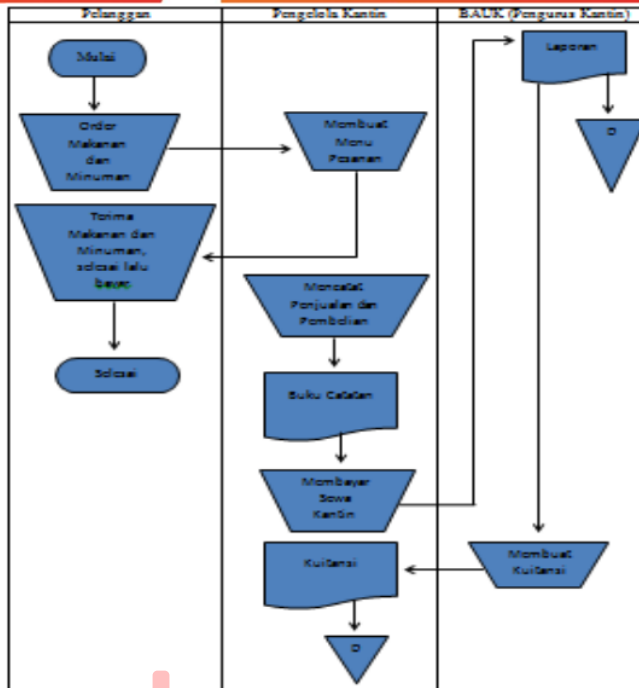
Records related to the cash sale accounting information system in the NSC Polytechnic Surabaya Canteen needed are sales archive books, purchase archive books, cash-in archive books, cash-out archive books, bank books, inventory cards, cash daily reports and bank daily reports.

b. Related documents.

The documents used are sales receipts or other names of sales receipts and receipts for room rent payments.

3. Procedure and Flowchart of Accounting Sales Information System at NSC Polytechnic Surabaya.

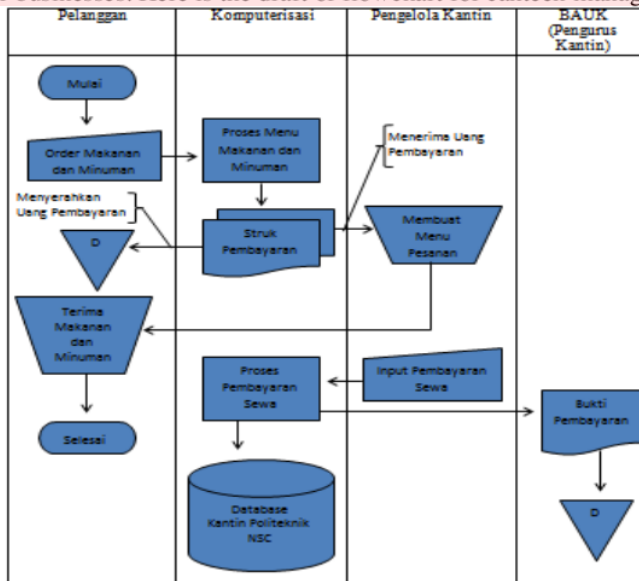
Based on interviews with the manager of the NSC Polytechnic Surabaya canteen, it was found that the campus canteen did not have accounting records in the event of a cash sale transaction so that the results of operations cannot be calculated precisely for the profits. The NSC Polytechnic Surabaya Canteen still manually records using a notebook, recording how much the result of today's sales is and recording the purchase of raw materials for tomorrow's sales and recording the purchase of merchandise sold tomorrow. The following is the cash sale procedure that takes place in the NSC Polytechnic Surabaya campus canteen:



Source: Data processed by researcher

Figure 1. Cash sale Flowchart in NSC Polytechnic Surabaya Canteen

Based on the interview and flowchart above, the researcher designs a cash sale accounting information system in NSC Polytechnic Surabaya canteen so that it helps canteen manager in developing their businesses. Here is the draft of flowchart for canteen manager:



Source: Data processed by researcher

Figure 2. Cash sale Flowchart Design in Canteen



d. Making a system analysis report

Performance analysis on computer-based cash sale accounting information systems in NSC Polytechnic Surabaya canteen is an assessment of the ability of accounting information systems in increasing cash sale in NSC Polytechnic Surabaya canteen as well as completing cash sale transactions. The process of recording cash sale transactions in NSC Polytechnic Surabaya canteen is more organized and orderly.

Information analysis on cash sale accounting information systems in NSC Polytechnic Surabaya canteen is an assessment of the report quality relating to cash sale. Quality information is information that is precise, accurate, fast, and complete in accordance with the needs in making decisions. Operationally, this system is feasible to be implemented in order to get accurate, relevant and up-to-date information when needed.

Economic analysis on a computer-based cash sale accounting information system in NSC Polytechnic Surabaya canteen is an assessment of the amount of costs required in a computer-based cash sale accounting information system. This computerized system is feasible because the technology used is very adequate and easy to obtain and the value of the benefits is greater than the costs incurred.

Control analysis on a computer-based cash sale accounting information system in NSC Polytechnic Surabaya canteen is an assessment of security standards and control systems. This system stores data in a database, so that when needed it is called as required. This system minimizes data loss and damage because this system stores data in a database that is protected against virus or malware attacks.

Efficiency analysis on computer-based cash sale accounting information systems in NSC Polytechnic Surabaya canteen is an assessment of how to produce good output according to the needs of the NSC Polytechnic Surabaya canteen with the efficient use of human resources, cost savings, and timeliness. Using paper media of sales transaction proof and payment proof for room rent only. If we want to print a report that is stored in a database it can be printed at any time.

Customer service analysis in the cash sale accounting information system in NSC Polytechnic Surabaya canteen is an assessment of the service assessed by the time and ease of customers in making transactions and knowing canteen products. Service to customers can only be done in NSC Polytechnic Surabaya canteen during working hours and come directly to NSC Polytechnic Surabaya canteen so they can find out the number of customers present.

System requirement analysis in computer-based cash sale accounting information system in the NSC Polytechnic Surabaya canteen functionally is a system designed to carry out internal control, this system can perform product data entry and display information about goods sold, this system does data collection on customers who purchase, and this system presents transaction data and reports on sales and room rental payments needed by the canteen manager.

System requirement analysis in computer-based cash sale accounting information system in the NSC Polytechnic Surabaya canteen non-functionally is the operational needs that are used in the form of hardware and software, access to the database equipped with a password and limited admin, transactions can be done repeatedly, loading data information sales, purchases, disbursements of cash in and cash out.

System Design Stage

At the design stage of a computer-based cash sale accounting information system includes 3 designs namely input design, output design, and database design. The following is the input design used in a computer-based cash sale accounting information system:



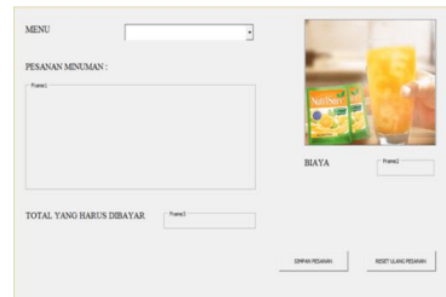
Source: Data processed by researcher
 Figure 3. Input Layout Design (Main Menu)



Source: Data processed by researcher
 Figure 4. Input Layout Design (Order Menu)



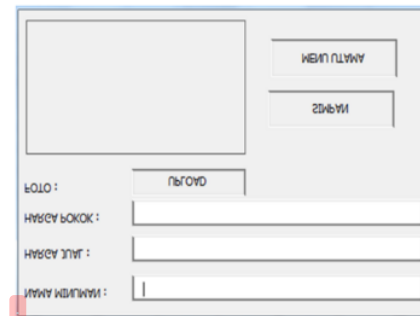
Source: Data processed by researcher
 Figure 5. Input Layout Design (Food Menu)



Source: Data processed by researcher
 Figure 6. Input Layout Design (Beverage Menu)



Source: Data processed by researcher
 Figure 7. Design Layout Input (Cash Sale Transaction)



Source: Data processed by researcher
 Figure 8. Design Layout Input (Additional Beverage Data)



Source: Data processed by researcher
 Figure 9. Input Layout Design (Login User Detail)



Source: Data processed by researcher
 Figure 10. Input Layout Design (Login Admin Detail)

Source: Data processed by researcher
Figure 11. Input Layout Design
(Additional Food and Beverage Data)

Source: Data processed by researcher
Figure 12. Input Layout Design
(Room Rent Payment)

Kantin Politeknik NSC Surabaya Jl. Basuki Rahmat 85 Surabaya	
Tgl : 22/09/2019	
Waktu : 10:10 AM	
Menu Pesanan :	
1. Nasi Campur	Rp 10.000
2. Sate Usus	Rp 3.000
3. Minuman Nutrisari	Rp 2.000
Total Biaya Yang Harus Dibayar	Rp 15.000
Pelanggan : Mahasiswa	

Source: Data processed by researcher
Figure 13. Output Layout Design (Sale Note)

Nomer Kwitansi	: 08/ 01/ 09/ NSC/ 2019
Telah Terima dari	: Bu XXXX (Pengelola Kantin)
Uang Sejumlah	: Dua Juta Lima Ratus Ribu Rupiah
Untuk Pembayaran	: Sewa Ruangan Bulan Desember Tahun 2018
Rp	2.500.000

Source: Data processed by researcher
Figure 14. Output Layout Design (Receipt of Room
Rent Payment)

Database design is the process of designing a database as a place to input data which will then be processed so that it can produce the information needed by the canteen manager.

System Implementation Stage

Implementation of the system used includes the selection and training of personnel, site selection, system installation, and system testing. The selection and training of personnel is carried out by researcher towards canteen manager. Site selection was done in the computer laboratory room at the NSC Polytechnic Surabaya campus. The system installation still uses an installation originating from the NSC Polytechnic Surabaya campus. System testing is directly practiced in the NSC Polytechnic Surabaya canteen.

5. Conclusions

Based on research conducted in the NSC Polytechnic Surabaya canteen, the following conclusions can be drawn:

1. Based on the results of PIECES analysis (Performance, Information, Economy, Control, Efficiency, and Service), the process of recording cash sale transactions in the NSC Polytechnic Surabaya canteen is more organized and orderly, this system has been feasible to be implemented in order to obtain accurate, relevant, and up-to-date information when needed, this computerized system is feasible because the technology used is very adequate and easy to obtain and the value of profit is greater than the costs incurred, this system minimizes data loss and damage because this system stores data in a protected database



security from virus or malware attacks, using paper media for proof of sales transactions and proof of payment for room rent only. If we want to print a report stored in a database, then it can be printed at any time, service to customers can only be done at the NSC Polytechnic Surabaya canteen during working hours and come directly to the NSC Polytechnic Surabaya canteen so that we can know the number of customers present.

2. At the design stage of a computer-based cash sale accounting information system includes 3 designs namely input design, output design, and database design.

The suggestions given include:

- a. Converting a computer-based cash sales accounting information system to a digital cash sales accounting information system.
- b. There should be division of tasks and work between the administration and food and beverage makers in order to produce maximum results.

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