



Cash Receipt and Expenditure Information System for Pelangi Café Based on Desktop Application

Alda Togi Manik¹, Rena Nainggolan², Arthur Simanjuntak³

^{1,2,3}, *D-III Study Program in Accounting Computerization, Methodist University of
Indonesia*

aldatogi15@gmail.com

Abstract

The cash receipt and expenditure information system at Pelangi Cafe was built to assist in recording, managing, and reporting financial transactions effectively and efficiently. This system is designed to record all income transactions from product sales, as well as café operational expenses, such as the purchase of raw materials, salary payments, and operational costs. With this system, financial data can be stored in a structured manner, making it easier to make income statements, and providing real-time information to owners for faster and more accurate decision-making. This study uses the method of building a MySQL database-based system and Visual Basic.NET as an application platform. The result achieved is a system that is able to speed up the financial administration process, reduce manual recording errors, and improve operational efficiency at Pelangi Cafe.

Keywords: Information Systems, Cash Receipts, Cash Expenditures, Pelangi Café

Introduction

The advancement of information technology has significantly transformed various sectors, including financial data management and processing. The implementation of computerized information systems has become essential in improving efficiency, accuracy, and speed in business operations, particularly in recording financial transactions. However, many small and medium enterprises (SMEs) still rely on manual recording systems, which are prone to errors and inefficiencies.

Pelangi Cafe is one such business operating in the culinary sector that currently manages its financial records manually using a cash book and calculator. This traditional approach has several limitations, including a high risk of human error, unstructured data management, and difficulties in generating timely financial reports. These issues hinder the business owner's ability to make effective and informed decisions.

To address these challenges, a computerized cash receipt and disbursement information system is needed to support accurate and efficient financial data management. By implementing such a system, all financial transactions can be recorded automatically and stored in a structured database, thereby reducing the risk of errors and facilitating better decision-making for the business owner.

This study aims to design and develop a desktop-based financial information system tailored to the operational needs of Pelangi Cafe. The system is built using Microsoft Visual Studio as the development environment and MySQL as the database. The scope of the system includes recording revenue from sales transactions and categorizing expenses into raw materials, operational costs, and employee salaries. Through this approach, the system is expected to contribute to the digital transformation of financial management for small businesses. This article is significant because it addresses a common problem faced by small businesses, particularly in managing finances with manual methods that are inefficient and error-prone. The proposed system offers a practical and accessible solution through the application of a simple yet effective information system, making it feasible for small-scale enterprises with limited resources.



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Literature Review

Systems

According to (O'Brien et al., 2016) in their book *"Introduction to Information Systems"*, a system can be defined as a collection of components with clearly defined boundaries that are interconnected and work together to achieve a specific goal through a structured process of transformation. These components operate as a unified whole to receive inputs and produce outputs.

Information Systems

According to (Rochaety Eti, 2017) in her book *"Management Information Systems"*, an information system is defined as a set of components within a company that are interconnected through information flow procedures and possess interrelated capabilities. The information that flows within this system is useful, reliable, relevant, and accurate for the company's operational needs. Information systems not only function as tools for data management but also serve as a means to support decision-making within an organization. With an integrated information system, each component within the company can communicate more effectively, resulting in faster and more accurate information flow.

Chas

Cash refers to assets or resources (Bangun J. E. P et al., 2024). In finance and accounting, cash includes cash and cash equivalents, which are financial assets that can be easily converted into cash. Additionally, cash may include short-term investments that can be readily sold or quickly liquidated into cash. Various types of transactions occurring within a company constitute cash receipts and cash disbursements. To facilitate the management of these cash inflows and outflows, they must be recorded in a book known as the cash book.

Chas Receipts

According to (Mulyadi, 2016), the concept of a cash receipt system includes cash received from cash sales and cash collections from receivables, which are the two primary sources of cash receipts, and the cash receipt accounting system is specifically designed for this purpose. Meanwhile, (Arum A. P. & Nugroho M. A, 2017) define cash receipts as financial contributions made by a business or organization as a result of transactions. Based on these perspectives, it can be concluded that cash receipts play a vital role in maintaining the financial stability of a business or organization. Cash receipts originating from both cash sales and receivables must be recorded accurately within a system to prevent errors in recording and cash flow management. With a well-designed cash receipt accounting system, companies can more easily monitor and control incoming revenues, which can serve as a basis for more effective financial decision-making.

Chas Disbursements

According to (Mulyadi, 2016), the cash disbursement accounting system can be implemented in two different ways: the cash disbursement system through checks and the cash disbursement system through petty cash. In the study by (Sianturi F. D. et al., 2022), cash disbursement is described as a mechanism known as cash withdrawal, which manages the flow of funds for payments and transactions carried out using either cash or credit. It can be concluded that the cash disbursement accounting system has several methods that can be applied according to the needs and policies of the company. Cash disbursements through checks are generally used for transactions involving large amounts that require official proof of payment, while the petty cash system is more suitable for daily operational expenses in limited amounts. Meanwhile, the cash withdrawal mechanism covers various payment transactions, whether conducted directly using cash or through a credit system.

Data Flow Diagram (DFD)

Data Flow Diagram (DFD) is a network that illustrates an automated/computerized system, a manual system, or a combination of both, represented as a collection of interconnected system components arranged according to established rules (Sebayang et al., 2018).

Xampp

XAMPP is an application related to the needs for building networks. However, XAMPP primarily refers to its main components, such as the "X" which stands for OpenSSL, along with PhpMyAdmin (Purba Nelly Agustina et al., 2024).

MySQL

MySQL is an open-source SQL database management system that is currently one of the most popular. The MySQL database system supports several features such as multithreading, multiuser capabilities, and functions as a relational database management system (RDBMS).

Crystal Report

According to (Saleh, 2017), Crystal Report is a software specifically designed as a reporting tool that can be integrated with Visual Basic. It offers many features that can be optimized, such as data grouping for reports, mathematical processing, formulas, and functions tailored to reporting needs. Crystal Report has become the primary choice for report generation, especially among developers of Visual Basic desktop applications.

Flowchart

Flowchart is a systematic representation of the processes and operational logic involved in information processing, or a graphical depiction of the steps and sequence of procedures within a program. Flowcharts are primarily used as communication and documentation tools. They serve as evidence to explain system algorithms and provide a logical overview of the system to be developed by programmers. This enables flowcharts to address potential problems that may arise during system development. Essentially, flowcharts use symbols to represent various processes, while connecting lines indicate the relationships between these processes (Rosaly et al., 2020).

SYSTEM ANALYSIS AND DESIGN

Current System Analysis

Based on direct observations conducted at Pelangi Café, it was found that the processes of recording, calculating, cash receipts, and disbursements are still carried out manually. The current cash receipt system is limited to transactions resulting from the sale of food and beverages to customers.

1. Cash Receipt Procedure

The cash receipt procedure begins when a customer arrives at the café and views the menu.

The customer places an order, which is recorded by the server on a paper receipt. This receipt is then submitted to the kitchen for processing. Once the order is ready, the food or beverage is delivered to the customer. After finishing their meal, the customer proceeds to the cashier to make the payment.

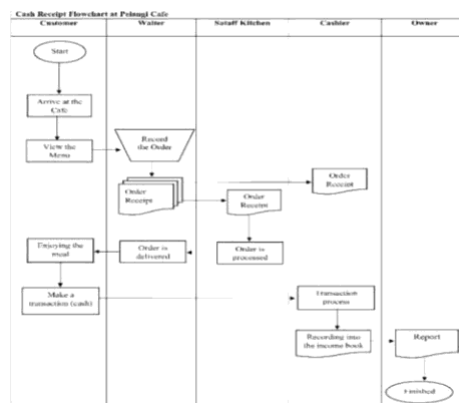


Figure 1. Flowchart of the Current Cash Receipt System

2. Transfer of Financial Data from Transaction Receipts

The cashier records the financial data from the transaction receipt by manually writing down the date and the name of the ordered items. The total payment is calculated manually using a calculator.

3. Cash Disbursement Procedure

The cash disbursement procedure for purchasing raw materials starts with identifying needs by the kitchen department. Once the needs are determined, the purchasing staff prepares a list of required raw materials. The cashier, upon approval from the owner, disburses the necessary funds based on the

estimated amount. The transaction is then recorded in the cash disbursement system, including the date, amount of money, and type of raw materials purchased.

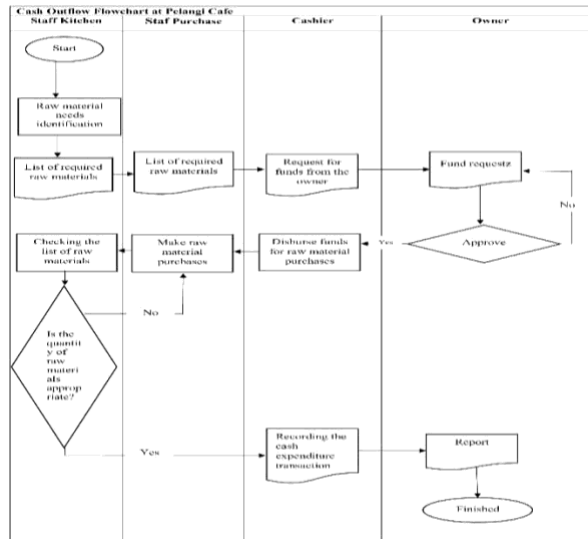


Figure 2. Flowchart of the Current Cash Disbursement System

Proposed System Analysis

In carrying out the design process of the cash receipt and disbursement information system at Pelangi Cafe, the initial step undertaken by the author is to describe the design process using a Context Diagram, also known as Level 0 Diagram, to design the application that will be developed for Pelangi Cafe. This Context Diagram or Level 0 Diagram can be seen in the following figure:

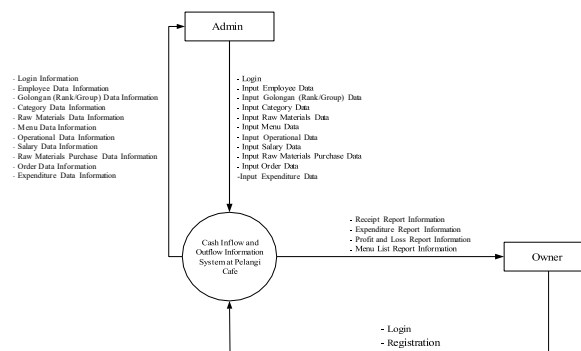


Figure 3. Context Diagram of the Cash Receipt and Disbursement Information System at Pelangi Café

After outlining the design process of the cash receipt and disbursement information system at Pelangi Cafe using the Context Diagram or Level 0 Diagram, the next step is to provide a more detailed explanation by employing a Level 1 Diagram for the application design to be developed at Pelangi Cafe.

Results And Discussion

Registration Page Interface

The registration page is used to add new user accounts to the system. Access to this page is restricted solely to the café owner to ensure the security and integrity of user data. Through the registration interface, the owner can input information such as user id, username, password, and access level. By implementing this access limitation, the system ensures that only authorized personnel are permitted to register new user accounts.



Figure 5. Registration Page Display

Login Page Interface

The Login Page serves as the initial component that users must navigate before gaining access to the system's features. Once the application is launched and the main menu appears, users are required to log in by entering a valid user id, username, and password. Only registered users are granted access to the system and permitted to input data.



Figure 6. Login Page Display

Employee Page Display

The employee page is used to record the data of all employees working at Pelangi Cafe. The information entered through this page includes employee ID, name, address, phone number, gender, and job title. This page serves as a vital employee database that will later be connected to the payroll module.



Figure 7. Employee Page Display

Raw Material Master Page Display

The raw material page is used to record and manage data related to the raw materials required for the operations of Pelangi Cafe. The information entered includes the material ID, material name, unit, and unit price. This raw material master page functions as a database that is integrated with raw material purchasing transactions.

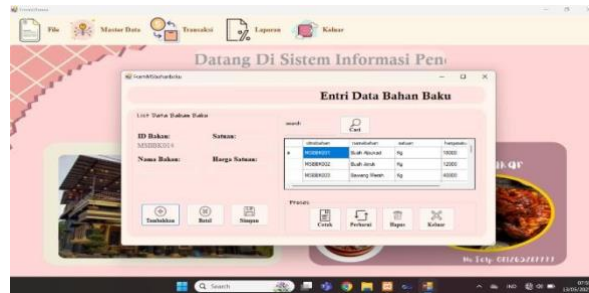


Figure 8. Display of the Raw Material Master Page

Display of the Customer Page

The Customer Page is used to record data of customers who place orders at Pelangi Cafe. The recorded data includes customer ID, customer name, phone number, and gender. This page facilitates the identification process of customers during transactions and supports a more organized and well-documented menu ordering record.

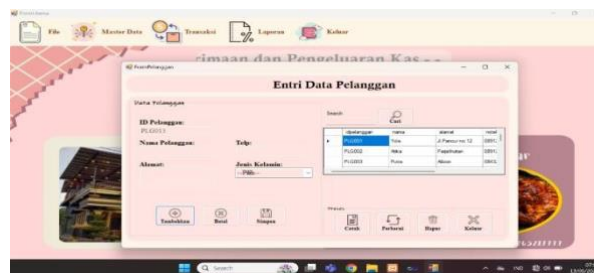


Figure 9. Display of the Customer Page

Classification Page Display

The Classification Page is used to record the employee rank levels at Pelangi Cafe. Each classification may differ in terms of responsibilities and base salary. Through this page, the administrator can input the classification id, classification name, and the corresponding base salary as informed by the cafe owner. This data will subsequently serve as a reference for the automatic payroll calculation process within the system.



Figure 10. Classification Page Display

Category Page Interface

The Category Page is used to group the types of menus available at Pelangi Cafe based on specific categories, such as food, beverages, or snacks. The recorded data includes the category ID and category name.

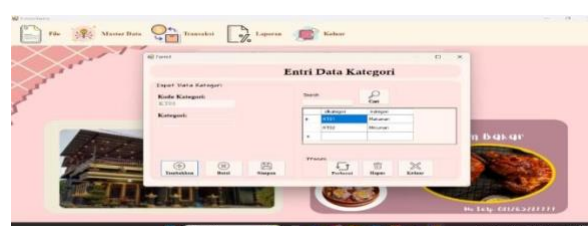


Figure 11. Category Page Interface

Menu Page Interface

The Menu Page is used to record the complete list of menu items available at Pelangi Cafe. The recorded information includes the menu ID, menu name, menu category, and unit price. This page is integrated with the ordering page, facilitating transaction processes and enabling systematic and efficient menu data management.



Figure 12. Menu Page Interface

Ordering Page Interface

The Ordering Page is used to record menu order transactions made by customers at Pelangi Cafe. Through this page, users can input data such as order ID, date, customer name, and a list of ordered menu items along with their quantities and total price. This page is directly linked to the customer and menu data.



Figure 13. Ordering Page Interface

Raw Material Purchase Page Interface

The Raw Material Purchase Page is used to record each raw material purchase transaction conducted by Pelangi Cafe. The recorded data includes the transaction ID, purchase date, raw material name, quantity purchased, and total purchase cost. This page is directly linked to the raw material data.

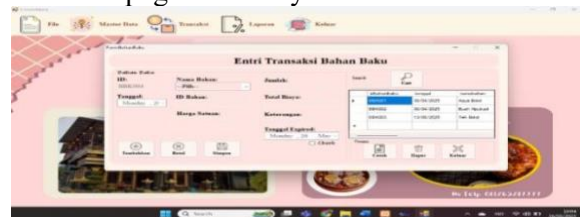


Figure 14. Raw Material Purchase Page Interface

Operational Page Interface

The Operational Page is used to record expenses related to the daily operational needs of Pelangi Cafe, such as electricity, water, and other operational costs. The recorded data includes the operational ID, type of expense, date, and amount of cost. This page assists in categorizing expenses outside of raw material purchases and salaries, thereby enabling more detailed and accurate financial reporting.



Figure 15. Operational Page Interface

Salary Page Interface

The Expenditure Page is used to record all cash outflows occurring at Pelangi Cafe. The recorded expenditures originate from three main sources: raw material purchases, employee salary payments, and other operational costs. This page is designed to categorize each type of expenditure according to its source.



Figure 16. Salary Page Interface

Receipt Report Page Interface

The Receipt Report Page is a feature used to display report data based on specific time criteria. Users can choose to view reports by date, period (date range), monthly, or yearly intervals.



Figure 17. Receipt Report Page Interface

Expenditure Report Page Interface

The Expenditure Report Page is a feature designed to display report data based on specific time criteria. Users can choose to view reports by date, period (date range), monthly, or yearly intervals.



Figure 18. Expenditure Report Page Interface

Profit and Loss Report Page Interface

The Profit and Loss Report Page is a key feature in the system used to calculate and display financial information regarding Pelangi Café's financial status, specifically the difference between total receipts and total expenditures over a certain period, such as monthly and yearly intervals.



Figure 19. Profit and Loss Report Page Interface

Receipt Report Display

The Receipt Report represents the final output displaying data of all menu order transactions by customers within a specified time period. This report includes essential information such as order id, customer name, order date, ordered menu items, quantity, price, and total payment. The report is generated automatically once the user selects the time criteria.


 PELANGI CAFE Jl. Airport, Pinangsori, Kec. Pinangsori, Kab. tapung, Sumatera Utara 22654, Telp. 081265287777							
Laporan Penerimaan							
No	ID Penerimaan	Tanggal	ID Pelanggan	Nama Menu	Total Item	Total	ID User
1	PM0001	01-04-2023	PLG001	Ayam Bakar	7	Rp. 98.000	22
2	PM0002	02-04-2023	PLG002	Ayam Bakar	8	Rp. 112.000	22
3	PM0003	02-04-2023	PLG002	Cepucian Cuci	8	Rp. 112.000	22
4	PM0004	03-04-2023	PLG003	Nasi Goreng Ka	9	Rp. 126.000	22
5	PM0005	03-04-2023	PLG003	Sanger Dingin	8	Rp. 128.000	22
6	PM0006	04-04-2023	PLG002	Nasi Goreng Dia	10	Rp. 120.000	22
7	PM0007	04-04-2023	PLG002	Lemon Tea	10	Rp. 120.000	22
8	PM0008	05-04-2023	PLG006	Nasi Goreng Ka	8	Rp. 112.000	22
9	PM0009	05-04-2023	PLG006	Sanger Dingin	8	Rp. 128.000	22
10	PM0010	06-04-2023	PLG007	Martab	5	Rp. 80.000	22
11	PM0011	06-04-2023	PLG007	Sanger Dingin	5	Rp. 80.000	22
Total Penerimaan						Rp. 1.196.000	
Wednesday, 14 May 2023							
Pemilik:				Admin			
Lenni Suryani Sitompul				Aida Togi Manik			

Figure 20. Receipt Report Display

Expenditure Report Display


The Expenditure Report represents the final output presenting information on all expenses incurred by the business within a specified time period. The expenditures recorded in this report originate from several sources, including raw material purchases, operational costs, and employee salary payments.

 PELANGI CAFE Jl. Airport, Pinangsori, Kec. Pinangsori, Kab. tapung, Sumatera Utara 22654, Telp. 081265287777							
LAPORAN PENGELUARAN							
No	ID Pengeluaran	Tanggal	Kategori	ID Asal	Biaya	Keterangan	ID User
1	PG001	30-04-2023	Bahan Baku	BBK002	Rp. 36.000	Beli Buah Alpukat 2	22
2	PG002	30-04-2023	Beban Gaji	GAJ001	Rp. 750.000	Beban Gaji Bulan Ag	22
3	PG003	30-04-2023	Beban Operas	OPS001	Rp. 200.000	Beban Listrik	22
Total Pengeluaran					Rp. 986.000		
Wednesday, 14 May 2023							
Pemilik:				Pemilik:			
Lenni Suryani Sitompul				Aida Togi Manik			

Figure 21. Expenditure Report Display

Menu List Report Display

The Menu List Report is used to display all available menu items in the cafe, including both food and beverages. This report includes information such as menu ID, menu name, category, and price.


 PELANGI CAFE <small>Jl. Airport, Pinangsori, Kec. Pinangsori, Kab. tapiring, sumatera Utara 22654, Telp. 081265287777</small>				
Daftar Menu				
No	ID Menu	Nama Menu	Kategori	Harga
1	MEN001	Nasi Goreng Bias	Makanan	Rp 12.000
2	MEN002	Nasi Goreng Spes	Makanan	Rp 14.000
3	MEN003	Nasi Goreng Kan	Makanan	Rp 14.000
4	MEN004	Ayam Bakar	Makanan	Rp 14.000
5	MEN005	Ifume	Makanan	Rp 12.000
6	MEN006	Mietaw	Makanan	Rp 12.000
7	MEN007	Lemon Tea	Minuman	Rp 12.000
8	MEN008	Sanger Dingin	Minuman	Rp 16.000
9	MEN009	Sanger Panas	Minuman	Rp 15.000
10	MEN010	Capucino Cincau	Minuman	Rp 14.000
11	MEN011	Jus Alpukat	Minuman	Rp 12.000
12	MEN012	Jus Mangga	Minuman	Rp 12.000
13	MEN013	Tempe Goreng	Makanan	Rp 12.000
14	MEN014	Sosis Goreng	Minuman	Rp 12.000
15	MEN015	Kentang Goreng	Makanan	Rp 12.000
16	MEN016	Nugel	Makanan	Rp 12.000
17	MEN017	Piscek	Makanan	Rp 15.000

Wednesday, 14 May 2023
 Pemilik: Lenni Suryani Sitompul
 Admin: Alda Togi Manik

Figure 22. Menu List Report Display

Profit and Loss Report Display

The Profit and Loss Report is the final output used to present the calculated difference between total receipts and total expenditures within a specified period, aimed at determining Pelangi Cafe's financial condition whether it is experiencing profit (gain) or loss. Users can select monthly and yearly filters to view financial data for the desired period. The system automatically calculates total income derived from menu order transactions and total expenses consisting of raw material costs, operational expenses, and salary expenses. The difference between income and expenses is displayed as the final result in the form of a profit or loss figure.

 PELANGI CAFE <small>Jl. Airport, Pinangsori, Kec. Pinangsori, Kab. tapiring, sumatera Utara 22654, Telp. 081265287777</small>		
LAPORAN LABA RUGI PERIODE 4 2023		
Penerimaan	Rp	1.966.000
Pengeluaran	Rp	986.000
Labu Bersih	Rp	980.000

Friday, 16 May 2023
 Pemilik: Lenni Suryani Sitompul
 Admin: Alda Togi Manik

Figure 23. Profit and Loss Report Display

Conclusion

Based on the discussion of the cash receipt and expenditure information system at Pelangi Cafe, several conclusions can be drawn as follows:

1. The developed information system is capable of managing data in an integrated manner, including employee data, customers, food and beverage menus, categories, orders, raw materials, operations, salaries, and expenditures.
2. The menu ordering process is more structured and well-documented, including automatic recording of



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customers and transactions.

3. The reporting system can display data based on time filters such as date, period, month, and year, facilitating easier monitoring and evaluation of business performance.
4. The monthly and annual profit and loss report features provide accurate information regarding the financial condition, thereby assisting the owner in making informed business decisions.

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