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Design Of Web-Based Cash Flow Information System for Cash Receipts and Expenditures (Case Study on Sinar Jaya Paint Workshop Company)

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Abstract

Sinar Jaya Paint Shop is a retail establishment that offers a diverse range of Duco paint products, including automotive paint, motorcycle paint, thinner, putty, jump on, and other related supplies. The shop owner must document all financial transactions, both incoming and outgoing. Sinar Jaya Paint Shop employs manual recording methods by documenting entries in a ledger, resulting in prolonged durations for both calculations and reporting. Consequently, the researcher intends to develop a web-based cash flow information system for cash receipts and disbursements at Sinar Jaya Paint Shop. The researcher employed a descriptive methodology in this investigation. This descriptive approach is categorized into three methods: the observational method, the literature review method, and the interview method. This study employs the Rational Unified Process (RUP) as its system development methodology. RUP is an iterative software development process framework established by Rational Software, a part of IBM, in 2003. RUP is a software development methodology for object-oriented models.

Keywords: *Paint Shop, Design, Cash Receipts and Disbursements, RUP*

Introduction

Financial documentation is crucial in trading enterprises; it enables traders to ascertain each organization's profit and loss, facilitating effective financial management.

Sinar Jaya Paint store offers a diverse range of Duco paint products, including automotive paint, motorcycle paint, thinner, putty, jump on, and other related supplies. The shop owner must document all monetary inflows and outflows in each transaction. The Sinar Jaya paint company continues to employ manual recording methods by documenting entries in a ledger, resulting in prolonged computations and report generation durations. This technique is deemed less efficient due to the labor-intensive manual recording process, and the current purchase receipt paper often leads to receipts being dispersed and misplaced. (Navalina, Djajanto & Kamayanti, 2021; Riwajanti, 2022; Farasary, Susilowati & Ekasari, 2023)

Sinar Jaya Paint Shop offers various duco paint goods, including automotive, motorcycle, thinner, putty, compound, and other items. The shop owner must document all financial transactions daily. Nevertheless, the recording continues to be conducted manually by inscribing it in a ledger. This manual recording approach is time-consuming in calculations and generating financial reports. Moreover, the manual technique is susceptible to recording inaccuracies, including data duplication, misplaced records, or delays in the reporting process. (Lumbanbatu, 2022; Fahmi, Zulkarnain & Kesuma, 2022; Efuntade, Efuntade & FCIB, 2023)

The challenges encountered by Sinar Jaya Paint Shop require the implementation of a more contemporary and effective cash flow management solution. A recommended approach is to develop a web-

based cash flow information system capable of automatically and precisely recording cash receipts and disbursements. This technology aims to facilitate cash flow management for shop owners, expedite the calculating process, and generate more prompt financial reporting.

This study uses a descriptive methodology to define and analyze the requirements for constructing the information system. This descriptive approach comprises three primary techniques: observation, literature review, and interview. The researcher employed the observational method to directly examine the cash flow recording process at the Sinar Jaya Paint Shop. The literature review approach was employed to get information from pertinent sources. At the same time, the interview method was utilized to acquire direct data from the business owner concerning their wants and challenges. (Devi, Dewi & Musmini, 2021; Mustika, Taliang & Amiruddin, 2022; Najla, Supriyati & Dewi, 2022)

This study employed the Rational Unified Process (RUP) system development methodology. RUP is an iterative methodology for software development tailored for object-oriented system creation. This methodology was established by Rational Software, a subsidiary of IBM, in 2003. RUP comprises four primary phases: inspiration, elaboration, building, and transition. The inception phase is utilized to delineate system requirements and project scope. During the elaboration phase, a comprehensive study and system design are conducted. The building phase encompasses system installation and testing, whereas the transition phase emphasizes system deployment inside the user environment. (Effendi, Dhaniawaty, Fitriawati & Mumtaz, 2023; Putri, Putra & Khamidah, 2022; Milah, Fergian, Maulana, Sudrajat & Wahyudi, 2024)

A key advantage of the RUP technique is its iterative approach, allowing for repeating each phase to guarantee that the resulting system effectively meets user requirements. This method facilitates ongoing enhancement throughout development, yielding a more dependable and efficient system. In this study, RUP is employed to guarantee that the developed cash flow information system effectively satisfies the Sinar Jaya Paint Shop requirements.

This study presents a web-based cash flow information system with key features such as automatic recording of cash receipts and disbursements, real-time financial reporting, and enhanced transaction data management. This system is developed with a user-friendly interface, facilitating ease of use for store owners. This method is anticipated to diminish the likelihood of recording errors, enhance operational efficiency, and facilitate more exact decision-making grounded in accurate data. (Retrialisca, Wulandari & Chotijah, 2022; Mutrofin, Widodo & Kurniawan, 2023; Joshua, Mapaly & Palilingan, 2023)

The system development process commences with a needs assessment to ascertain the necessary features. Subsequently, the system is designed, encompassing the user interface and database architecture. During the implementation phase, the system is constructed utilizing suitable web technologies, including HTML, CSS, and JavaScript for the user interface, alongside PHP and MySQL for the backend and data management. Upon completion of system development, testing is conducted to verify that all features operate correctly and that the system performs optimally. (Wahyudin, Wahyudi & Komarudin, 2023; Putri, Mialasmaya, Kumalasari & Prawiranegara, 2024)

This study's conclusions are anticipated to offer an efficient solution for the Sinar Jaya Paint Shop in cash flow management. A web-based information system enables store operators to record transactions more effectively and generate quicker, more precise financial reports. This technology can also reduce the danger of recording errors and data loss, enhancing openness and accountability in financial management.

This study seeks to enhance the efficiency and effectiveness of financial management at Toko Cat Sinar Jaya. The web-based cash flow information system developed using the RUP methodology is anticipated to be an innovative and practical solution to address the challenges encountered by other small and medium-sized enterprises. Through information technology, Toko Cat Sinar Jaya can enhance its competitiveness in the digital age and facilitate sustainable corporate growth.

Research Method

The researcher employed a descriptive methodology in this study to gather and examine the requisite information sources. The descriptive method was selected for its ability to offer an extensive overview of the cash flow recording process at the Sinar Jaya Paint Shop and to identify the necessity for developing a suitable web-based information system. This descriptive methodology encompasses three primary approaches: the observational method, the literature review method, and the interview method.

The observational method involved closely monitoring the records of cash revenues and expenditures at the Sinar Jaya Paint Shop. The researcher documented the recording process, beginning with manual entries in books and culminating with protracted cash calculations. This observation seeks to identify the primary challenges encountered by shop owners in cash flow

management, including the risks of data loss, duplicate entries, and computational inaccuracies.

The literature review method was also employed to gather information from diverse sources pertinent to the research topic. The researcher examined literature about web-based information systems, cash flow management, and software development methodologies, particularly the Rational Unified Process (RUP). The studied literature comprised books, journals, papers, and more sources that substantiate the design of an effective and efficient information system. This literature review establishes a robust theoretical framework in system development and aids researchers in comprehending optimal practices in cash flow management.

The interview method was employed with the proprietor of Sinar Jaya Paint Shop as the primary responder. Researchers conduct interviews to explore unique demands and restrictions in financial management and to gather input on the preferred features for the information system to be developed. Furthermore, interviews assist researchers in comprehending the business owner's anticipations regarding the new system, including usability and anticipated advantages.

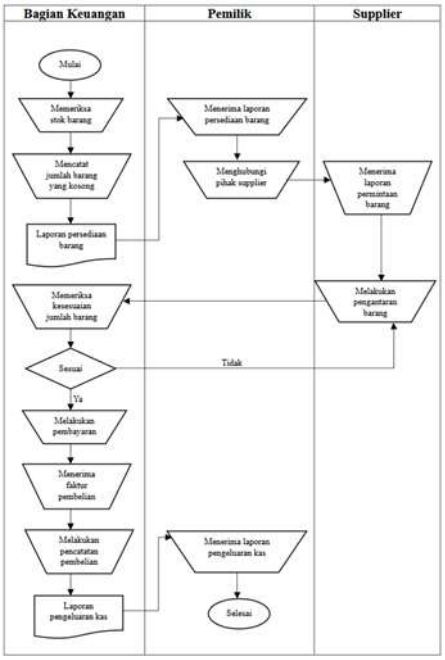
These three strategies synergistically enhance the data's accuracy, relevance, and alignment with the research objectives. Employing a descriptive methodology, researchers can ascertain user requirements, devise a suitable system, and deliver an efficient solution in the form of a web-based cash flow information system for implementation at Sinar Jaya Paint Shop.

Results and Discussion

The results of this study and its discussion concentrate on deploying a web-based information system to document cash flow at Toko Cat Sinar Jaya. This system is intended to supplant the previous manual approach to documenting cash receipts and expenditures. This system was successfully constructed utilizing the RUP (Rational Unified Process) methodology, encompassing iterative stages of needs analysis, design, implementation, and testing.

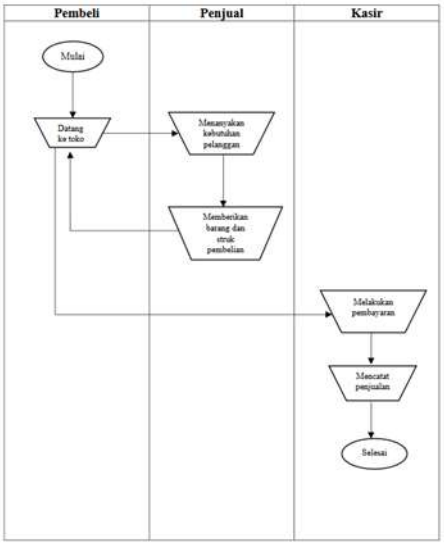
1. Flowchart of Ongoing Cash Disbursements

Table 1. Flowchart of Ongoing Cash Disbursements



2. Flowchart of Ongoing Cash Receipts

Table 2. Flowchart of Cash Receipts



3. Use Case Diagram

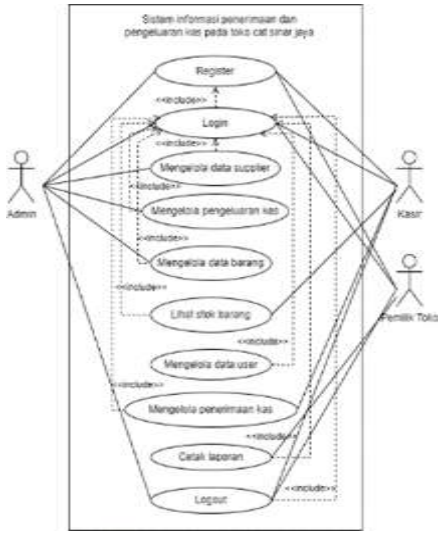


Figure 1. Use Case of Cash Receipts and Disbursements

4. Register Page Design

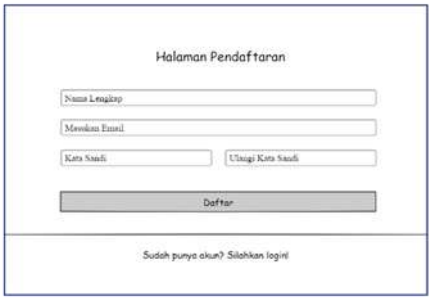


Figure 2. Register Page Design

5. Login Page Design

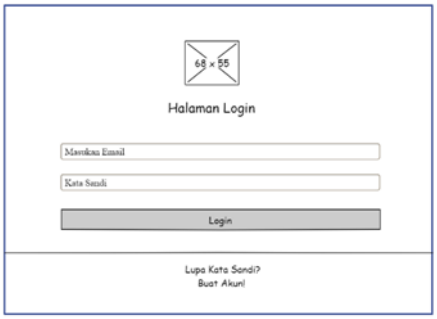


Figure 3. Login Page Design

6. Cash Disbursement Page Design

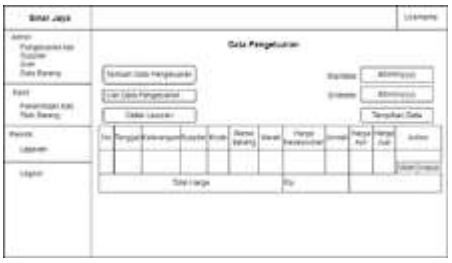


Figure 4. Cash Disbursement Page Design

7. Cash Receipt Page Design

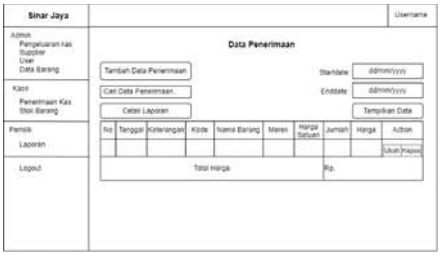


Figure 5. Cash Receipt Page Design

8. Report Print Page Design



Figure 6. Report Print Design

9. Register Page Display



Figure 7. Register Form Display

10. Login Page Display

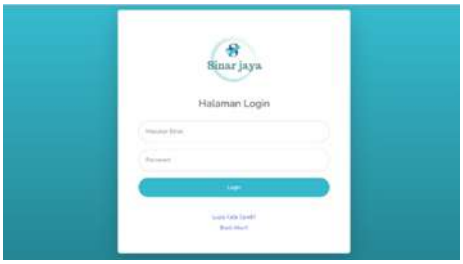


Figure 8. Login Form Display

11. Cash Disbursement Page Display



Figure 9. Cash Disbursement Page Display

12. Cash Receipt Page Display



Figure 10. Cash Disbursement Page Display Cash Receipt

13. Print Report Page View

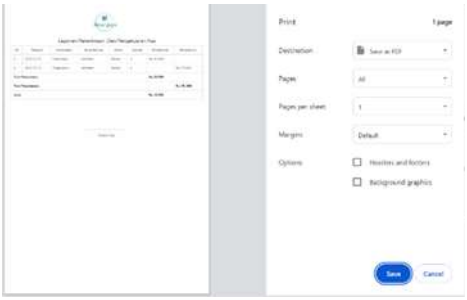


Figure 11. Print Report View

The web-based cash receipt system deployed at Toko Cat Sinar Jaya has a substantial beneficial effect. This technique enhances the speed and precision of cash receipt calculations. The cash reception recording functionality enables cashiers to document transactions in real time and categorize data according to specified intervals, such as daily, weekly, monthly, and annually. Furthermore, the cash receipt report functionality enables store owners to track income with comprehensive and well-organized details efficiently. The observational data indicate that the duration required to document and summarize cash receipts is significantly diminished compared to the manual approach.

The proposed web-based cash disbursement system offers significant advantages for retail financial management. This solution lets administrators document expenses in real time by inputting organized transaction data. The temporal search and data aggregation functionalities enable administrators to oversee expenditures more efficiently. The cash flow report produced by this system offers a transparent overview of the shop's financial status, including a comparison of cash inflows and outflows over a specified period. This report enables shop owners to make informed business decisions grounded in precise financial facts.

The discussions with the proprietor of Toko Cat Sinar Jaya reveal that this web-based information system offers numerous practical advantages. The business owner asserted that this approach mitigates the risk of data loss associated with manual recording, including the misplacement of notebooks or purchase receipts. Furthermore, a computerized approach can significantly reduce the likelihood of recording errors, including duplicate entries or erroneous data input. The system's data backup capability guarantees the security of the store's financial data in the event of hardware failure.

The system testing findings indicate that all implemented functionalities operate effectively according to user requirements. Testing was conducted across multiple situations, including recording new transactions, data updates, data deletions, and report generation. Consequently, the system generates precise output that aligns with user expectations. Furthermore, the system interface is engineered to be intuitive, enabling anyone without technical experience to run the system effortlessly. User feedback on the system interface and performance was favorable, particularly for navigational simplicity and data retrieval speed.

The literature review undertaken in this research established a robust theoretical foundation for system development. Research on cash flow management and web-based software development informed the design of features pertinent to the Sinar Jaya Paint Store's requirements. The object-oriented methodology employed in system development guarantees that this system can be enhanced to meet future requirements.

This study demonstrates that deploying a web-based cash flow information system offers an effective and efficient method for financial management at Toko Cat Sinar Jaya. This technology enhances the

efficiency of recording and reporting while augmenting financial data's precision and reliability. Consequently, this approach may serve as a model applicable to organizations of comparable scale encountering challenges with manual financial recording. This study also presents prospects for further advancement, including integration with digital payment systems and analytical capabilities to facilitate strategic decision-making for business owners.

Conclusion

This study effectively developed and executed a web-based cash flow information system to enhance financial management at Toko Cat Sinar Jaya. This system was developed to address issues associated with manual recording, including recording inaccuracies, misplaced papers, and prolonged reporting times. This system enables the real-time and automatic recording of cash receipts and disbursements, enhancing efficiency and accuracy.

This study identified user needs by applying descriptive methodologies, including observation, literature review, and interviews. The acquired data was a foundation for developing system functionalities, including documenting cash inflows and outflows, generating financial reports, and categorizing data by specific timeframes. The Rational Unified Process (RUP) methodology guaranteed that the developed system adhered to software quality standards, from needs analysis to system testing.

The implemented system offers substantial advantages for the proprietor and personnel of Toko Cat Sinar Jaya. The offered capabilities,

including daily, weekly, monthly, and annual cash flow reports, enable the store owner to assess financial conditions efficiently and swiftly. With its automatic backup feature and organized data management, this system effectively mitigates the danger of recording errors and data loss.

The test findings indicate that the system functions effectively according to user requirements. This technology accelerates the recording and reporting process while offering a straightforward and user-friendly experience. The affirmative feedback from the proprietor and personnel of Toko Cat Sinar Jaya suggests that this technique enhances the store's overall operating efficiency.

This study demonstrates that web-based information technology may effectively address financial management issues in small and medium firms (SMEs). The established system is pertinent to Toko Cat Sinar Jaya and adaptable for other enterprises with analogous requirements. The software development methodology employed in this study may serve as a reference for creating analogous systems in the future.

This study also presents prospects for further advancement, like integrating with digital payment systems, incorporating financial analysis functions, or developing mobile applications to enhance user mobility. Consequently, this system is expected to evolve further and enhance its contribution to improved financial management within the SME sector.

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