



DEVELOPING A POINT-OF-SALE (POS) SYSTEM FOR RETAIL STORE
OPTIMIZATION

UNDERGRADUATE THESIS
Submitted as one of the requirements to obtain
Sarjana Komputer (S.Kom)

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FACULTY OF COMPUTER SCIENCE
INFORMATION SYSTEM STUDY PROGRAM
CIKARANG
JULY 2025

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DEVELOPING A POINT-OF-SALE (POS) SYSTEM FOR RETAIL STORE OPTIMIZATION

ByMuhammad Rizky Pangestu

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ABSTRACT

The Point of Sale (POS) system serves as a practical technological solution aimed at streamlining transaction processes, particularly within the retail and service industries. This study focuses on the design and development of a computerized POS system specifically tailored for use by cashiers as the primary end-users. The objective is to enhance the speed, accuracy, and efficiency of daily sales operations, while also reducing the potential for human error during data entry.

The system was developed with an emphasis on simplicity and ease of use, ensuring that individuals with minimal technical background—such as frontline cashiers—can operate it effectively without extensive training. Key features include barcode scanning, automated receipt printing, sales recording, and real-time transaction summaries. Furthermore, the system includes basic user authentication to secure access and prevent unauthorized usage.

To guide the development process, the project adopted the waterfall model, beginning with requirements analysis, followed by system design, coding, testing, and final implementation. During the testing phase, simulations were conducted involving users acting as cashiers to evaluate system usability, stability, and responsiveness under normal working conditions.

The results indicate that the implemented POS system performed reliably across various test scenarios. It significantly improved transaction times and data accuracy when compared to manual processing. Moreover, users reported high levels of satisfaction with the interface and overall experience. It is anticipated that this POS system can serve as a cost-effective and scalable solution for small and medium-sized enterprises (SMEs).

seeking to modernize their sales infrastructure without the need for complex or expensive platforms.

Keywords: Point of Sale, cashier system, sales management, barcode scanning, transaction processing, user interface.

DEDICATION

I would like to dedicate this thesis to my Lecturer, Mother, and Andhini. Whose support, dedication, and academic guidance have played a crucial role in shaping the direction and completion of this project. Your mentorship and encouragement have left a lasting impact on my learning journey.

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This thesis would not have been possible without the collective support and encouragement of everyone involved.

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