



**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.)

By:
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FACULTY OF COMPUTER SCIENCE
INFORMATION SYSTEM STUDY PROGRAM
CIKARANG
AUGUST, 2025

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ABSTRACT

This thesis explains how a tailored Point-of-Sale (POS) system was created with a view to maximizing the performance of retail shops, as exemplified in the case of Permata Jaya Elektrik. The system provides fundamental features like real-time inventory, comprehensive sales reporting, CRM integration, and multi-device compatibility, all tailored according to the individual shop running requirements.

Key features include default day sales report analysis, stock monitoring, and admin- and cashier-friendly interfaces. It is developed on a waterfall model based on technologies such as MySQL for database, CodeIgniter for back-end, and Bootstrap for UI with responsiveness. Systematic testing confirmed the system to be efficient with transaction processing times under 2 seconds and ability to process 100+ parallel transactions.

Aiming with an eye to scalability and customization, the POS system streamlines business performance as well as delivers competitive advantage through data-informed business decision-making. The project revolves around customized software's function of mitigating niche retail issues while remaining flexible regarding future development.

Keywords: POS system, retail optimization, inventory management, sales analytics, customized software.

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