

Implementation of the SHA-256 Algorithm in a Web-Based Transaction and Attendance Recording System at Kambojda Coffee Shop

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ABSTRACT

The rapid development of information technology has encouraged micro, small, and medium enterprises (MSMEs) to undergo digital transformation in order to improve the efficiency and accuracy of operational management. However, at Kedai Kopi Kambojda, transaction recording and employee attendance are still carried out manually and supported only by a simple digital system without adequate authentication security mechanisms, which increases the risk of recording errors, data loss, and leakage of user information. This study aims to design and implement a web-based transaction and employee attendance recording system by applying the SHA-256 cryptographic hash algorithm to enhance authentication security and operational efficiency. The system was developed using the Waterfall methodology, which consists of requirement analysis, system design, implementation, and testing stages. The SHA-256 algorithm is applied in the authentication process by converting passwords into hash values before they are stored and verified in the database. The results of the design and implementation indicate that the developed system is capable of providing structured transaction and attendance records, improving data management accuracy and efficiency, and eliminating the storage of passwords in plaintext form. Therefore, the proposed system contributes to strengthening authentication security while supporting more effective and secure operational management for MSMEs.