DEVELOPING A SOCIAL ASSISTANCE INFORMATION SYSTEM WITH A MOBILE-BASED BARCODE VALIDATION FEATURE

(Case Study: Banyuurip Village Office, Temanggung)

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ABSTRACT

Social assistance and inventory data management at the Banyuurip Village Office currently rely on manual processes involving physical record-keeping, resulting in slow data verification, a high risk of human error, and difficulty in accurately tracking aid history. This research aims to design and develop an integrated mobile- and web-based social assistance and inventory management information system to streamline and enhance the quality of administrative services. The system development followed the Waterfall methodology, encompassing the stages of needs analysis, system design, implementation, and testing. The application was built using the Flutter framework for the mobile platform, intended for use by field officers, and a web interface for administrators, supported by Firebase as a NoSQL database that enables data synchronization. A key feature is a QR code–based recipient identity validation mechanism specifically designed to minimize fraud, prevent duplicate claims, and ensure appropriate aid distribution. Based on Black-Box Testing results, all functional features of the system, including code scan verification and inventory management, were confirmed to operate as intended. The implementation of this system is expected to fully replace manual processes and improve the efficiency of administrative management within the village.

Keywords: Social Assistance, Barcode, Black Box Testing, Firebase, Flutter, Waterfall.