

RANCANG BANGUN SISTEM INFORMASI PERSURATAN BERBASIS WEB DENGAN KEAMANAN TWO-FACTOR AUTHENTICATION DI POLITEKNIK NEGERI BENGKALIS

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ABSTRACT

The rapid development of information technology requires educational institutions to digitalize administrative processes, including correspondence management. At Politeknik Negeri Bengkalis, letter management is still handled manually or using non-integrated applications, causing delays in distribution, difficulties in tracking, risk of document loss, and unauthorized access. This research aims to design and develop a web-based correspondence information system integrated with a Two-Factor Authentication (2FA) security mechanism. The system development uses the prototype model, consisting of requirement gathering, prototype design, evaluation, implementation, and testing stages. Security is enhanced through the implementation of Time-Based One-Time Password (TOTP) using Google Authenticator as the second authentication factor. The results show that the system supports digital letter creation, verification, approval, disposition, and archiving according to the organizational structure. Functional testing using black box testing indicates that all main features operate properly as intended. Therefore, the developed system improves efficiency, security, and transparency of correspondence management within Politeknik Negeri Bengkalis.

Keywords: *Correspondence System, Web-Based System, Information Security, Two-Factor Authentication, TOTP*