DATA SECURITY APPLICATION FOR HEAVY EQUIPMENT OPERATORS USING RSA CRYPTOGRAPHIC ALGORITHM

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ABSTRACT

PT. Tempopress International Delivery (TID), a subsidiary of PT. Indonesia Weda Bay Industrial Park (IWIP), operates in the field of mining waste transportation and is located in Ternate, North Maluku. While the company has implemented advanced technologies in several divisions, the security of personal data for heavy equipment operators and employees remains vulnerable, posing a risk of unauthorized access or data breaches. This study proposes the development of a data security application using the RSA (Rivest–Shamir–Adleman) cryptographic algorithm to protect sensitive operator information. RSA is an asymmetric encryption technique that utilizes two public keys, held by the user and the admin—for decryption, and one private key—held by the admin, for encryption. The encryption and decryption processes rely on ASCII tables, where plaintext is transformed into ciphertext and vice versa. The system is developed as a web-based application using HTML and PHP for the user interface, with MySQL as the backend database to store operator data securely. By implementing this encryption system, the application aims to safeguard personal operator data at TID and prevent privacy breaches, thereby enhancing the overall data security infrastructure of the company.
Keywords: Mining, Company, Security, Database.