THE IMPLEMENTATION OF THE SHA-512 ALGORITHM FOR EXAM QUESTION FILE SECURITY (CASE STUDY AT SD NEGERI GODEAN 1)

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ABSTRACT

State Elementary School of Godean 1 regularly conducts Final Semester Examinations (UAS) each academic term in a written, closed-book format to assess students' academic proficiency. However, advancements in technology have increased the risk of exam question files being leaked prior to the examination, undermining the integrity of the assessment process. To address this issue, a security system is required to ensure the confidentiality and authenticity of exam files. This study implements a cryptographic security system utilizing the SHA-512 algorithm to protect exam question documents in Word (.doc/.docx) or PDF format. The research uses actual exam files from State Elementary School of Godean 1 as test data. The resulting application applies SHA-512 cryptographic hashing to verify the originality and integrity of the exam files, ensuring that documents transmitted over public telecommunication channels cannot be altered or manipulated by unauthorized individuals. This method serves as a preventive measure against forgery, data tampering, misinformation, and misuse, thereby reinforcing trust in the digital handling of sensitive academic materials.

Keywords: Decryption, Encryption, Cryptography, SHA-512, Exam Questions.