

IMPLEMENTATION OF AES-128 ALGORITHM AS A QUESTION ENCRYPTION METHOD IN WEB-BASED ONLINE EXAM INFORMATION SYSTEMS

ABSTRACT

An online exam is an activity to provide an assessment of students in the learning process that utilizes computer devices and internet technology. In the midst of the current COVID-19 pandemic, almost all schools hold their exams online. However, it is undeniable that the online exam system still has several vulnerable points such as identity theft and data theft. Therefore, this study tries to apply a data security technique that can be used to ensure the security of data or information during the online exam. This study focuses on securing data on exam questions and answers because the data is an important part of online exams. The algorithm used for data security in this study is the AES-128 Algorithm. When the system is running, the AES-128 algorithm will run to secure data during the process of storing question and answer data into the database. Several tests have been carried out to ensure the AES-128 algorithm is able to run well, such as running time for the encryption process and testing using the brute force attack method. Based on the experimental results that have been carried out, the implementation of the AES-128 algorithm on the online exam information system is able to provide additional protection to the question and answer data so that it is expected to help maintain the confidentiality and authenticity of data related to online exam activities.

Keywords: Online Exam Information System, Encryption, Cryptography, AES.