

## ABSTRACT

An evolution of information technology too rapidly causes information at the moment most valuable. Because of must be protected to the information with anything procedure. One of general procedure to protect is cryptography. Cryptography is branch of mathematical study which exploit process computation for scrambling data which objective for prevent side which not to allow or know for the data.

In this final project using symmetric algorithm AES, in which symmetric algorithm sender and receiver have to agreeing same key before communicate safely. Security level is depend on key. If we want communicate safely the key must be a secret.

This final project is to implement symmetric AES to encrypt and decrypt half digital image that by user considered have important information, so time process for encryption and decryption will be faster. Image will be cropping first before cryptography processing to the cropped image. Cipher will be placed again to the plain so image become complete. Decryption process is inverse of encryption process.

For brute force attack, image that have size bigger than 20x20 pixel is more secure then 20x20 pixel. Processing time for image 20x20 pixel is faster than bigger and one layer image is faster than three layer image. Result of this system implementation is how this system can encrypt the image with time process as faster as possible and high level security. To implement encryption for half digital image using AES algorithm.

Keyword: AES, encryption, decryption, image, cropping.