

ABSTRACT

Communication has become the most important aspect in today's life. To fulfill the needs of communicating with each other, people use the internet. Because there are millions of people using the internet, it also caused the hacking problem. This is a crime where people forcefully try to hack other people's account and files so they can see the contents without the permission of the user. Concern by the problem, people start to improve the security of internet. Steganography is one of many ways to improve the security. Communication and security are the main priority of steganography. This concept is enabling us to send files to people we want without alarming the hacker.

The simplest method in steganography is Least Significant Bit (LSB), with this method the information bits are inserted to the end of carrier bits in every pixel. Eventually this method is simple and not difficult, in the end the hacker still can hack the message or files. Because of the lack of security in the method, with this undergraduate thesis there will be simulation and analysis to insert messages into image of sundanese using the System steganography 4 method (SSB-4). Completely different from the previous research, this time the message will be hidden in form of texts and inserted into the certain parts of image.

By inserting message with SSB-4 method, testing the impact of message's length with three data sources from word, google and hand writing, we will get the biggest Mean Square Error (MSE) from word data source with the message's length 100% from maximum capacity. The value of Peak Signal to Noise Ratio (PSNR) is good enough, which is above 20 dB. The average value of Mean Opinion Score (MOS) when the length message is 10% from maximum capacity is 4,64 and when the length message is 25%, the average value is 4,33 which means the MOS value is good. When inserting 50% and 100%, the MOS results are 3,89 and 3,5 signifying that the MOS is good enough. The biggest computation time is generated from 100% insertion from word data with insert time 0,1489 seconds and extract time 0,1072 seconds. Doing insertion with segmentation process get the better value of Bit Error Rate (BER) and Character Error Rate (CER) than the insertion without segmentation, the value of BER is 0.0021 and value of CER is 0.1173

Keywords: *steganography, SSB-4, Segmentation, Sundanese Script*