ABSTRACT

The rapid growth of information and tech0ogy development ease human in spreading or exchanging information and data. The easy-to-spread digital media via internet has both positive and negative side especially for the original owner of the digital media. The negative side of the easy-to-spread digital media happens when there's no copyright to protect the spread media, then the ownership of that digital media will be so easy to be claimed by others. Watermarking is a technique of hiding data or digital information on digital media, but it is unknown presence by human senses (imperceptible). Audio watermarking is one implementation of watermarking techniques to protect the copyright of multimedia audio file. Basically the information in the form of digital legitimate stamp inserted into the audio file to keep its authenticity

In this final project, a design with Discrete Wavelet Transform (DWT) method, which is a method to transform wavelet that represent signal in time and frequency domain. The insertion will use M-Ary method that is convert binary number to ordinary number then converted back to binary number but based on PN code and the extracting will use genetic algorithm. Genetic algorithm is used to determine the quality evaluation parameters that will be modified so the watermark data could have good imperceptibility and robustness..

The end result of this thesis is to protect the data entered in order to remain safely without any damage after being attacked. The parameters used to test the audio quality is Rpi=7, nblock=10, a1=0.02, n=1, thr=0.000005 and key=583 with MOS=4.

***Keywords**: Watermarking, Audio Watermarking, Discrete Wavelet Transform (DWT), M-Ary, Genetic Algorithm*