# ABSTRACT

The protection of copyright on various media is absolutely necessary. The media in question can be images, audio, text, or video. Increasingly, the development of multimedia and internet technology encourages and simplifies the manufacture and distribution of digital content. At the same time, new issues arise that is the abuse of Intellectual Property Rights (IPR). Therefore, a digital watermark was introduced as one of the solutions to the problem of copyright protection of multimedia content.

Watermarking is a way of concealing or transmitting certain data / information into other digital data. In this final project, created a watermarking system in audio file using Empirical Mode Decomposition (EMD) and Beat Detection method as is Algorithm to find beat location, information about rhythmic structure of song after it decompose signal into Compound is called Intrinsic Mode Function (IMF) and residue. Then the message bit will be inserted on the residual component to reduce the impact of the signal change

In this final project is expected to output the same with the insertion results mean BER (Bit Error Rate) = 0 and will also be held measurement and survey of the results to ensure the insertion is not too affect the original audio with MOS (mean opinion score), test from noise (Signal to Noise Ratio) >20 db ,and to facilitate the display then the use of GUI (Graphical User Interface)

**Keyword :** Audio *Watermarking, Beat Detection,EMD,* Intellectual Property Rights (IPR)