# ABSTRACT

Nowadays internet usage really simplifies everything, such as digital work publication. But, there are often some problems involving copyright. There are a lot of irresponsible persons who steal, edit, or claim other's works easily. One of works  which often becomes a target of copyright infringement is image file, like picture or photo. Image watermarking using reversible data hiding technique is one of solutions in order to protect copyright on image file. The challenges in data hiding technique are maintaining the quality of watermarked image and the watermark itself, and increase the embedding capacity.

In this final task, writer will analyze and implement watermarking on image file using histogram-based reversible data hiding with *border point* and *localization.* The implementation is designed using MATLAB.

From the results of tests performed , the block partition size of host image on localization process is inversely proportional to the embedding capacity. Which is obtained the average number of Bytes that can be embedded on the host image with smallest block partition 2x2 pixels is 9492 Bytes (75942 bits), while the average number of Bytes that can be embedded on the host image with the largest block partition 64x64 pixels is 13 Bytes (106 bits). And the average number of Bytes that are embedded is inversely proportional to the value of PSNR . Which is obtained, PSNR of insertion with an average number of 9492 Bytes (75942 bits) is 56.553 dB, while PSNR of insertion with an average number of 13 Bytes (106 bits) is 85.729 dB.

Keyword : *image watermarking*, *histogram*, *reversible data hiding, border point*, *PSNR*, *BER.*