Abstract

Nowadays, the use of image files are very often in social media, but the problem appears on the size of the image file to be uploaded to social media users ,therefore we need a method of image compression that can make the size of the image file smaller. Good image compression method is able to maintain the quality of the image and the image file size has particularly small.

In this final assignment, fractal image compression method are being used, in which the image will be divided into smaller block or can be called range block and blocks with size four times larger than the range block, or the so-called domain block, on every domain blocks search for self-similarity at the block range. Due to the self-similarity process takes a long time quardtrees partitioning method is used, with quardtrees initial image is divided into 4x4 blocks, and for each sub-block is divided into 4x4 blocks until the value of the bitstream also have the same range of values or color characteristic. In order to accelerate the process of partitioning the quardtree, then used a graph-based segmentation methods, where the image is divided into blocks based on the content, thus partitioning process quardtrees be divided based on the contents of the image.

Performance will be measured based on the value of the compression ratio, PSNR, and time compression, the image used in the form of a face image, scenery, fractals, and buildings. Based on trial results, obtained an average value of 34.35 dB PSNR, compression ratio of 31.19%, and the compression time of 37.82 seconds.

Keywords: *Image compression, Fractal compression, Graph-based segmentation*