

CHAPTER I

INTRODUCTION

1.1 Background

Image is one of the multimedia component which has an important function as visual information. Generally, digital image representation needs a quite large memory to save it. The bigger size of the image, the required memory also larger.

In the other side, Image has a duplication of data. There are two kinds of duplication data in digital image. First, pixel with same intensity, so it will require more memory to save it. Second, the redundancy data, Image contains a lot of same region of data. So the same region data doesn't need to be re-encoded.

Image compression have an important function in the multimedia world. One of the function of image compression is data transmission process. Compressed image needs a fewer time than uncompressed image to transmitting data.

There are two types of image compression. There are *Lossless* type compression and *Lossy* type compression. The *Lossy* type compression is a compression that deleting few kinds of data during compression process, so the quality of compressed image is lower than the original image. And the *Lossless* type compression is a compression that keep the original data during the compression process, so the quality of the compressed image is the same as original image.

This application using *Lossless* type compression algorithm that called Huffman Coding.

1.2 Scope

This project was created with Java Programming Language, using Binary Tree as the data structure and Huffman Coding as main algorithm.

1.3 Objective

This application was made to prove that huffman coding could reduce the size of image, because huffman coding was a text compression algorithm, so the image file didn't use bigger memory on the computer and made data transmission much faster.