CHAPTER 1
INTRODUCTION

1.1 Background

Information today is like basic needs for humans. Information spread out by technology increase from day to day and let people can use it easily. But not all of that information is public, some of them are private. Some private information must be sent with careful so it will not be received by wrong person. Because of that, users need solution to increase the security of the information that can be hidden from antoher person.

Steganography is what user needed. Steganography is a method to hide information like text inside an image, so user needs an image as cover and the text. The information that user wants to hide will be embedded to the Least Significant Bit (LSB) of Red, Green, Blue (RGB) binary values of the image or cover. The result of this method is image that has text inside the RGB values. There is no difference between cover image (original image) and stegano image (result image) when people see it with their eyes.

Unfortunately, Steganography is not perfect. There must be weakness with the result of this method. To find the weakness, this project will be examine the program with several tests. The first test has purpose to analyze the image quality of the result image. The parameter that used to calculate the image quality of the result image is Peak Signal to Noise Ratio (PSNR). It compares the result image with the cover image and generate it to decibels (dB). With this parameter people can analyze and see the difference that people can't see with their eyes. The next test has purpose to find out if the stored data can be decrypted with another key.

1.2 Problem Formulation

This project will focus on Spread Spectrum method. The Spread Spectrum method will be examined with several tests. The result of this tests expected to solve some questions below:

1. Are there any weakness using Spread Spectrum Steganography ?
2. Does the character length affect the image quality ?
3. Is the stored data can be decrypted with another key ?

1.3 Scope

Based on the Background then the limitations of this project are :

1. Implementation Spread Spectrum method to GUI.
2. Analyze Spread Spectrum method based on the quality.
3. Studying about Spread Spectrum method and identify the weakness of using it.

1.4 Objective

The purpose of this project to solve the problem has decribed above by creating a program to embed message into the image. The program will be used Spread Spectrum method. Besides creating a program, this project will be analyze the Spread Spectrum method. The program will be examine with several tests. The first test is the program will be examine with several messages with different length to find out whether the message length affect the image quality or not. The parameter will be used to calculate the image quality is Peak Signal to Noise Ratio (PSNR). It will be used to compare the result image with original image and generate it to decibels (dB). The second test is the program will be examine with

several keys to find out is the stored data can be decrypted with another key or not.