

INTRODUCTION

1.1 INTRODUCTION TO STEGANOGRAPHY

Steganography is a Greek word which means concealed writing. The word Stegano means covered and graphical means writing. Steganography is a method of hiding secret data by embedding it into an audio, video, image, or text file. It is one of the methods employed to protect secret or sensitive data from malicious attacks. In ancient time, the data was protected by hiding it on the back of wax, writing tables, stomach of rabbits or on the scalp of the slaves. But today's most of the people transmit the data in the form of text, images, videos and audio over the medium. Steganography is defined the study of invisible communication which is the art and science of communicating in a way which hides the existence of the communication. In order to safely transmission of confidential data, the multimedia object like audio, video, images are used as a cover of sources to hide the data. The use of steganography can be combined with encryption as an extra step for hiding or protecting data.

Image Steganographic technologies are very important part of the future for internet security and privacy on open systems such as the internet. In today's world, the communication is the basic necessity of every growing area. Everyone wants the secrecy and safety of their communicating data. We can achieve secret transmission of data by steganography and cryptography.

1.2 PROJECT DEFINITION

In this project, we propose to develop a system to hiding data by using “STEGANOGRAPHY” technique as I used many methods stands on some techniques to have at the back-end a software for hiding data based on hiding algorithms.

After studying the data hiding algorithms, we found many ways to hiding data by using the multimedia files and the main question for me was “Where hidden data hides?” as we found by our search to know where the data hides it’s important to know what is file type of the data that is shall be hidden and the cover file type so it is possible to alter graphic or sound files slightly without losing their overall viability for the viewer and listener. With audio, you can use bits of file that contain sound not audible to the human ear. With graphic images, you can remove redundant bits of color from the image and still produce a picture that looks intact to human eye and is difficult to discern from its original. It is in those bits that stego hides its data.

By the final of our Research, we developed a Graphical User Interface uses an algorithm, to embed data in an image; The purposed system is called “Image Steganography”, the aim of this project is to encrypt the data; the meaning of encrypt is to hide the data over an image using different steganographic algorithms, in this system LSB is the algorithm that we use to hiding the data.

1.3 STATEMENT OF PROBLEM

This project addresses the security problem of transmitting the data over internet network, the main idea coming when we start asking that how can we send a message secretly to the destination? The science of steganography answers this question. Using steganography, information can be hidden in carriers such as images, audio files, text files, videos and data transmissions.

In this document, we proposed some methods and algorithms of an image steganography systems to hide a digital text of a secret message.

1.4 PROJECT OBJECTIVES

In this project we primarily concentrated on the data security issues when sending the data over the network using steganography techniques.

The main objectives of our project are to product security tool based on steganography techniques to hider message carried by stego-media which should not be sensible to human beings and avoid drawing suspicion to the existence of hidden message.

1.5 PROJECT SCOPE

Our project scope is developed for hiding information in any image file to ensure the safety of exchange the data between different parties and provide better security during message transmission.

The scope of the project is implementation of steganography tools for hiding information includes any type of information file and image files and the path where the user wants to save image and extruded file. We will use LSB technique; the proposed approach is to use the suitable algorithm for embedding the data in an image file; we will show a brief of this algorithm that we used to hiding data.

1.6 STEGANOGRAPHY ARCHITECTURE

In the proposed system we concentrate on finding some algorithm to hide the data inside images using steganography technique. An algorithm is designed to hide all the data inputted within the image to protect the privacy of the data. Then, the system is developed based on the new steganography algorithm.

This proposed system provides the user with two options encrypt and decrypt the data, in encryption the secret information is hiding in with image file, and on the other side the decryption is getting the hidden information from the stego image file, and also the user can show the image size after and before the encryption.

The processes of encryption and decryption of the data file consists of:

1. Providing security for the data to be transmitted through network using steganography.
2. Proposing an approach for hiding the data within an image using a steganographic algorithm which provides better accuracy and quality of hiding.