

ANOTHER IMAGE STEGANOGRAPHY PERSPECTIVE

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Abstract

Since both steganography and cryptology are intended to conceal data from prying eyes, the two are frequently conflated. Since the beginning of time, people have debated the best way to convey a message without worrying about its delivery. The information of a company is its most valuable asset. For this reason, every business that handles sensitive information must prioritize security measures. No matter what strategy we choose, our first priority must be the level of security it provides. In most cases of steganography, the original information is not original format, and is transformed into a media content that is functionally identical like a picture, film or anything audible that is itself concealed inside of something else. The real communication is isolated from this seeming message (called cover text in common parlance) before it is delivered over the network to the receiver. In this work, we show how to encrypt and decode text. The outcome verifies that the info was successfully concealed.

1. Introduction

Sharing information, ideas, and views in the 21st century between individuals or groups inside the same nation or across countries is reliant on effective communication. Mobile/online/telephone-based participation is required. However, the current era is one of informational concealment. The amount of secrecy that can be maintained in mobile/online/telephone communication is not nearly as high as that required for really secret material. Because of this, two methods exist for concealing information:

The term "cryptography" was first used in Greek, where it meant "hidden writing." A cipher text is the result of this process, in which plain text is hidden inside another text.

Steganography is a sophisticated sort of encryption that hides data in other forms of media, such as pictures, sounds, and videos.

2. Steganography

Steganography, which literally translates as "hidden writing" in Greek, has been around since antiquity. Steganos means "hidden" or "cloaked" in Greek, while "graphial" means "relating to writing." Steganography is the process of delivering information across a network while concealing it inside another message or piece of data in such a way that only the intended recipient(s) can read it. There are several varieties of steganography, which include: The goal of text steganography is to conceal sensitive information inside a text file. Using an image format like JPEG to secretly hide information. Images are collections of pixels, each of which contains a value for the RGB color space that extends to 24 bits. The obfuscation of meaning by the use of color. The steps are simple, and there is no danger involved. Audio steganography is the practice of hiding information inside an audio file (often an MP3). Video steganography is the practice of secretly encoding information into a moving image file (often an MP4). The process of hiding information inside a network protocol (TCP, UDP, etc.) is known as protocol steganography.

3. Outline of Steganography Procedure

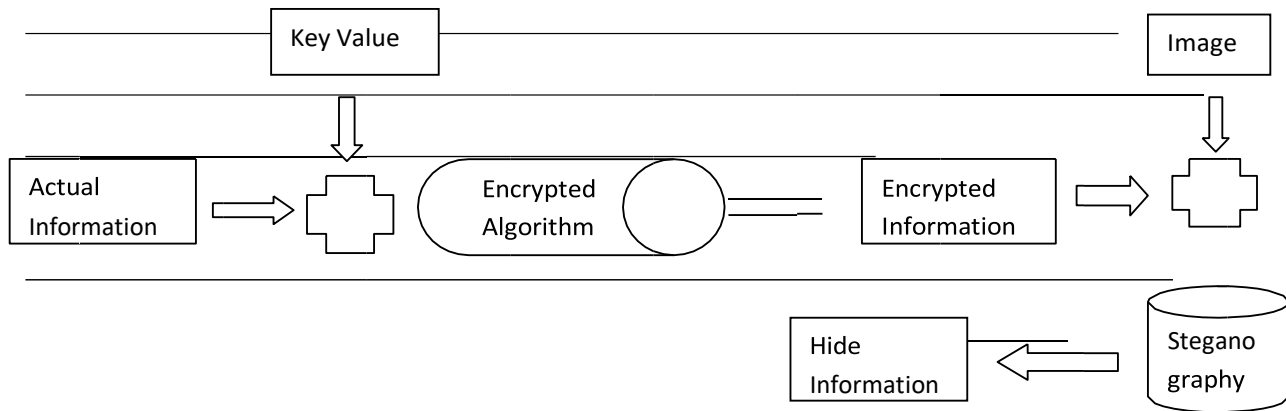


Fig:1. Flow chart of Steganography

3. Cryptography Code

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
int l,n,k=1,i=0,j=1,add[20],ascii_key[20],kl=0,dl=0,ascii_data[20];
char key[20],data[20],dkey[20],decrypt[20],encrypt[20],hide_key[20];
clrscr();
printf("\n Enter the key string: ");
gets(key);
while(key[i]!='\0')
{
ascii_key[j]=key[i];
kl++;
i++;
j++;
}
```

```
    }  
    n=j-1;  
    printf("\n");  
    for(i=1;i<=n;i++)  
        printf("%4d",ascii_key[i]);  
    printf("\n Enter the data string: ");  
    gets(data);  
    i=0;  
    j=1;  
    while(data[i]!='\0')  
    {  
        ascii_data[j]=data[i];  
        dl++;  
        i++;  
        j++;  
    }  
    n=j-1;  
    printf("\n");  
    for(i=1;i<=n;i++)  
        printf("%4d",ascii_data[i]);  
    printf("\n Encryption Procedure ..... ");  
    j=1;  
    n=dl;  
    for(i=1;i<=n;i++)  
    {  
        add[i]=ascii_data[j]+ascii_key[k];  
        j++;  
        if(k<kl)
```

```
        k++;  
    else  
        k=1;  
    }  
    printf("\n Display the encrypted data: ");  
    for(i=1;i<=n;i++)  
    {  
        encrypt[i]=add[i];  
        printf("\n %c  %d",encrypt[i],add[i]);  
    }  
    encrypt[i]='\0';  
    printf("\n Hidden of key value: ");  
    for(i=1;i<=kl;i++)  
    {  
        ascii_key[i]=ascii_key[i]+i;  
        hide_key[i]=ascii_key[i];  
        printf("\n%c %d",hide_key[i],ascii_key[i]);  
    }  
    hide_key[i]='\0';  
    printf("\n Decryption Procedure.....\n Decrypted key value: ");  
    i=1;l=0;  
    while(hide_key[i]!='\0')  
    {  
        dkey[i]=hide_key[i]-i;  
        printf("%c",dkey[i]);  
        l++;  
        i++;  
    }
```

```
dkey[i]='\0';  
printf("\n Decrypted data value: ");  
i=1;j=1;  
while(encrypt[i]!='\0')  
{  
    if(j<=1)  
    {  
        decrypt[i]=encrypt[i]-dkey[j];  
        j++;  
    }  
    else  
    {  
        j=1;  
        decrypt[i]=encrypt[i]-dkey[j];  
        j++;  
    }  
    printf("%c",decrypt[i]);  
    i++;  
}  
decrypt[i]='\0';  
getch();  
}
```

4. Output

A)

```
Enter the key string: computer
99 111 109 112 117 116 101 114
Enter the data string: souma
115 111 117 109 97
Encryption Procedure:.....
Display the encrypted data:
| 214
| 222
| 226
| 221
| 214
Hidden of key value:
d 109
q 113
p 112
t 116
z 122
z 122
l 108
z 122
Decryption Procedure.....
Decrypted key value: computer
Decrypted data value: souma_
```

B)

```
Enter the key string: Hello
72 101 108 108 111
Enter the data string: soumapal
115 111 117 109 97 112 97 108
Encryption Procedure:.....
Display the encrypted data:
| 187
| 212
| 225
| 217
| 208
| 184
| 198
| 216
Hidden of key value:
l 73
g 103
o 111
p 112
t 116
Decryption Procedure.....
Decrypted key value: Hello
Decrypted data value: soumapal_
```

Conclusions:

Covert or concealed writing is called steganography [1]. Steganography is used to conceal information from an outside source. The Greek words steganós (covered) and graftos (writing) form the root of the term steganography. The practice of steganography has its roots in the realms of biology and physiology. Slang for "secret writing" appeared in Usage after the year 1500. 'Steganographia,' a work written by Trithemius, appeared. Past, present, and future may be broken down into a brief review of the field [2]. Most modern steganographic techniques rely on multimedia artifacts such as music, video, etc. as cover media due to the prevalence of digital picture transmission through email and other online communication [3]. Cryptography widespread occurrence time and setting of the Middle Ages. The use of coded writing by the Catholic Church in its many fights over the years, both internally and at the hands of the dominant governments of the day. Steganography was often used in tandem with encryption to further obfuscate sensitive data [4,5].

References

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3. Peter Honeyman, Niels Provos, Seeking and Hiding: A Primer on Steganography (2003).
4. Steganography and Steganographic Analysis, by Robert Krenn...and number five, Francesco Queirolo. Image Steganography