

STEGANOGRAPHY

An Art of Hiding

Computer Network

Course Project

Kushal Jangid
Dilip Puri
Raghuvar Prajapati

(Group - 4)

Steganography ?

Steganography is an art of hiding .
In steganography we hide some data
into some other data.

Cryptography ?

Cryptography is a method of scrambling of plain text into cipher text so that only those for whom it is intended can read and process it.

Why Steganography ?

The advantage of steganography over cryptography alone is that the intended secret messages does not attract attention to itself an object of scrutiny.

Why Steganography ? Contd..

While encrypted messages no matter how unbreakable arouse interest.

Cryptography is about protecting the content of a message alone, steganography is concerned with concealing the fact that the secret message is being send as well as the content of a message.

Techniques of Steganography

There are many techniques of steganography like
as

Text Steganography

Image Steganography

Audio & Video Steganography and so many....

Image steganography

This is very popular technique of steganography.

Least Significant Bits(LSB)

Edge Detection

Transform method and so many.....

Least Significant Bits(LSB)

It is a very simple method.

Lets we have

a cover image

a secret text

we hide text into cover image(in LSB part)

Our secret message

A quick brown fox jumps over
the lazy dog is the English-
language pangram.....

Our secret message (Binary form)

Text array

1	0	0	1	0	1	1	0	0	1	010
---	---	---	---	---	---	---	---	---	---	-----

1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 1 1 1 0 1 1 1 0 1

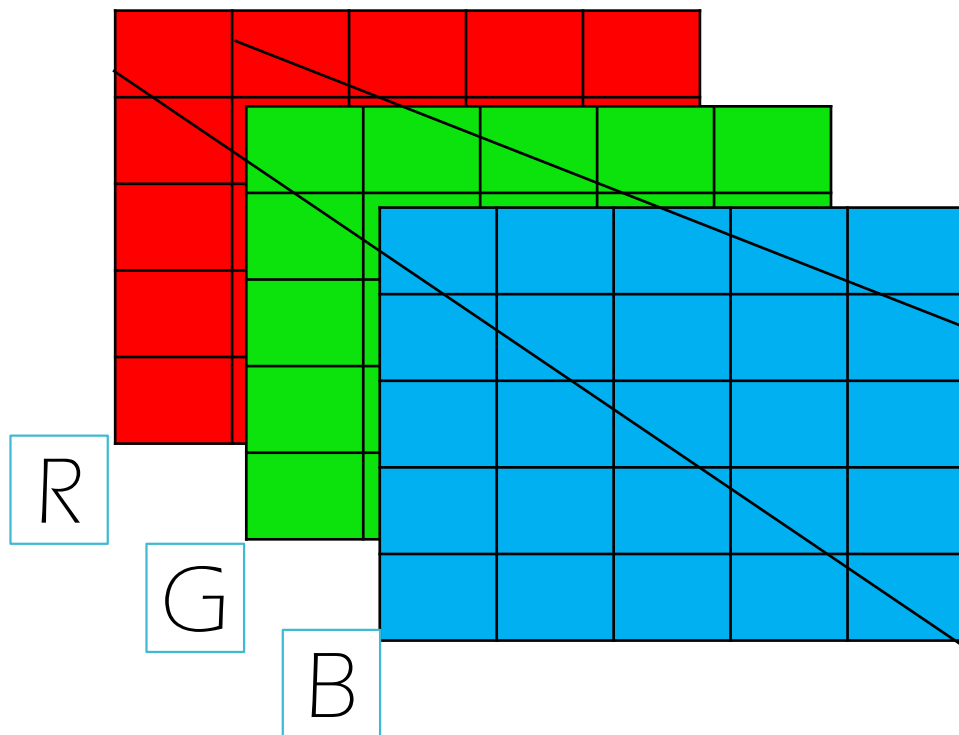
0 1 1 1 0 1 1 0 1 0 1 1 0 1 0 1 0 1 0 1 0 1 1

1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0.....

Our Cover Image



Cover image (pixel level)



Pixel size
24 Bits
RGB(8-8-8)

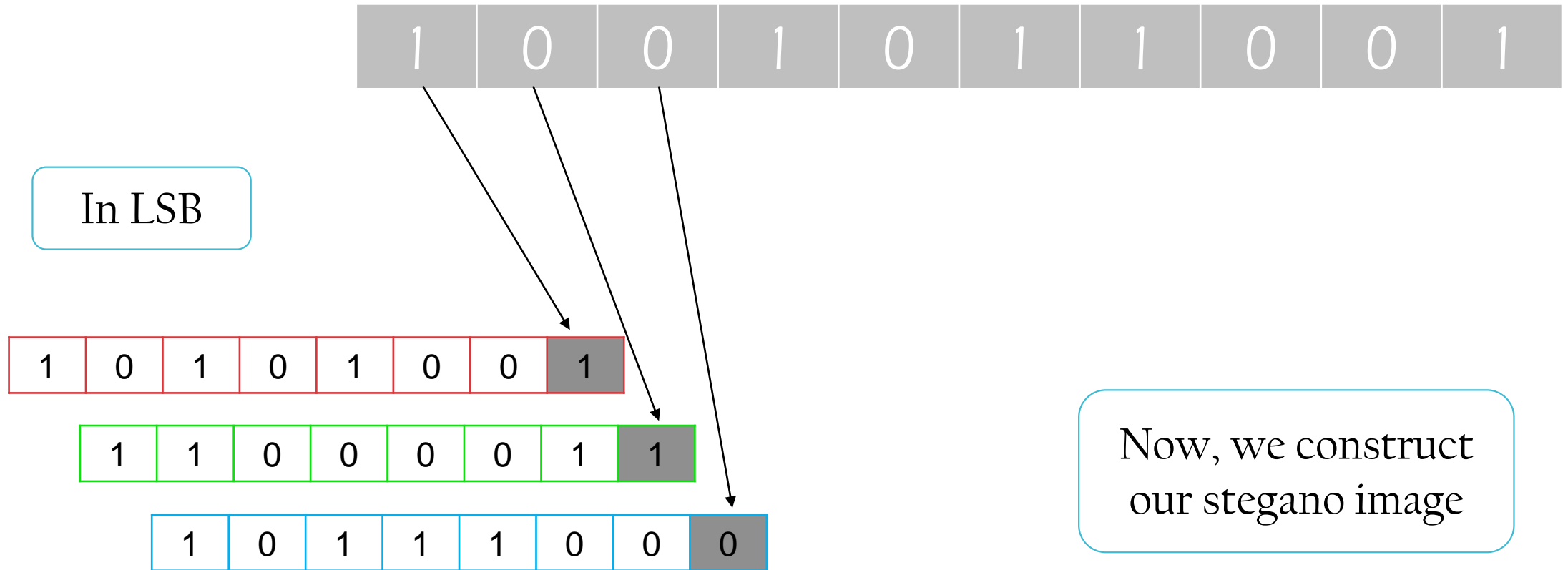
1 0 1 0 1 0 0 1

1 1 0 0 0 0 1 1

1 0 1 1 1 0 0 0

Image layer

Cover image & Secret text



Send stegano image

Now, we send our stegano image to destination

We use `socket(server-client)` for communication

Why it works?

We have an advantage that when we change in LSB part of an image human eye can not detect this minor change.
(human eye perception)

Original vs. Stegano



Some other techniques

Audio Steganography
Video Steganography

What we are using?

We implemented this in java language that provide us many methods to manipulating images by pixel.

We used some basic concepts like :

1. Bits operation
2. Shifting

Now, the time of demonstration

Lets Do It.....

Future work

We will try to implement other techniques of steganography(image & audio) into the single one and try to make this interface more presentable.

References

1. en.wikipedia.org/steganography
2. Steganoflage : A New Image
Steganography Algorithm by Abbas
Chedded
3. www.scribd.com/steganography-report

Thank you !