

NUMBERS					
R 255	R 102	R 51	G 0	G 102	G 204
B 0	B 255	B 153	R 255	R 255	R 51
G 255	G 0	G 204	B 102	B 204	B 255
R 51	R 51	R 255	G 51	G 51	G 153
B 0	B 153	B 153			

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'RGB' = 3 SETS OF DIGITS		
00110011	01100110	01100110
11001100	01100110	11111111
10011001	11111111	00110011
00110011	11111111	00000000
11001100	11111111	11111111
10011001	11111111	11111111
00110011	11111111	01100110
11001100	11111111	11111111
10011001	11111111	11111111

GRAY = 1 SET OF DIGITS		
11001101	11001101	00000000
11001101	11011001	00010100
11111111	00101101	00001010

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0	1	0	1	0	1	1	0	Byte 1 - Red
0	1	1	1	1	1	0	1	Byte 2 - Green
0	0	0	1	1	1	1	0	Byte 3 - Blue

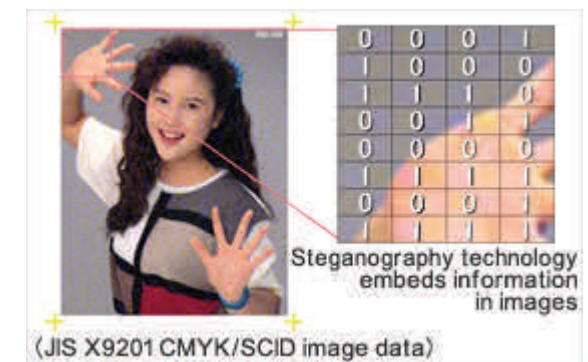
- Replaces unused or insignificant areas of data with no changes to the visual or clarity of the file.
- The Least Significant Bit (LSB) method replaces the last bit in an 8 bit byte.
- Replacing this bit in each byte will not be noticeable to the human eye or ear depending on the type of file.

### Steganography Tools

- Steghide
- Shadow-JPEG
- Digital Invisible Tool Kit

# Steganography

*Steganós (Covered) Graptos (Writing)*



**Cool Careers in Cyber Security Workshop (2012)**

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## Steganography

- Hiding data in other types of data such as images video or audio files.
- Appears to be nothing out of the usual
- Can be detected by some programs, although doing so is difficult.

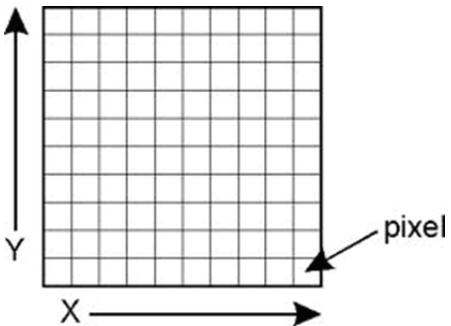
### What can you hide?

- Directions on making a bomb (hacker), a secret bank account number, or answers to a test.
- Copyright data
- Secret messages to a group

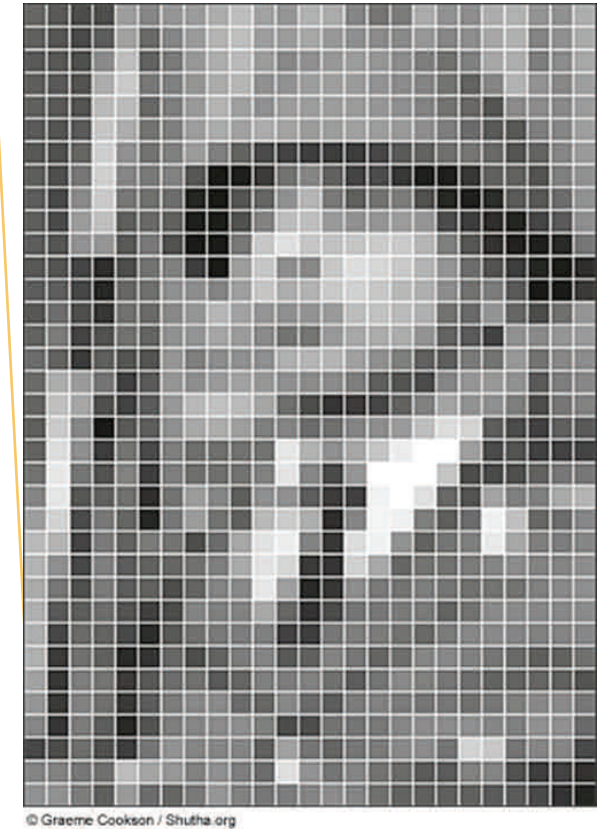
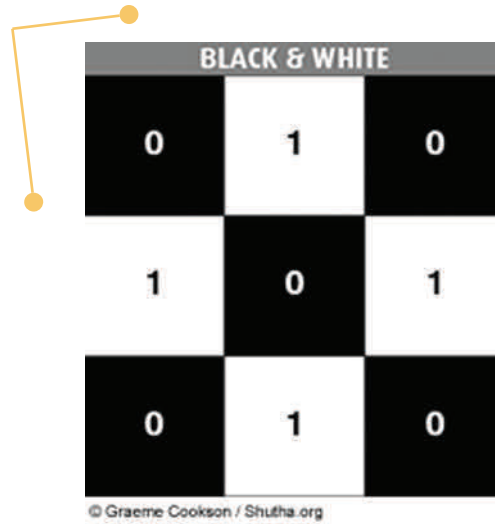
### How does it works?

Digital image:

Pixel: smallest element of a digital image.



Bitmap- digital image with two possible values for each pixel (0 or 1)



### Digital Color image

A pixel is nothing but three sets of numbers that together represent a particular color.