1 .5 Homework Assignment

Group:
Morten Feldt
Jörg Oertel

1 .5 .2 Question to be investigated

[Steganography](#) is the idea of hiding a message in something. For example, to hide a message in an image, you can do the following:

- The message M, is converted to a sequence of bits (often from String, to bytes, to bits).
- The image is manipulated in such a manner that the least significant bit of the blue values is substituted with a bit from the message.

Exercise task:

It is an ASCII message, and the bits of the message are stored starting in pixel (0,0), next in (1,0) etc. It is stored as little-endian, i.e. the least significant bits come first. The message is terminated with a null byte.

What is the message?

We didn't encrypt the message)-:

Search queries:

Timestamp	Search query
12:14	convert bytes to steganography decoder
11:12	decode steganography image
11:12	convert bytes to steganography decoder
11:11	convert bytes to steganography message
11:09	convert bytes to steganography
11:08	convert bytes to ascii
11:07	convert bytes to string
11:06	decrypt steganography from bytes
10:53	convert binary to bytes
10:47	image with a secret binary message
10:41	convert image into binary
10:38	convert image into bytes online
10:20	binary converter to number
10:16	steganography sample image
10:08	what is steganography

Search pages:

ASCII Table - ASCII codes,hex,decimal,binary,html
Base64 Image Encoder
binary converter to number - Google Search
Binary to Decimal Converter
Binary to Text Converter | Binary Translator
binascii — Convert between binary and ASCII — Python 3.9.1 documentation
Bits to Bytes Converter - Binary Value Conversion
BPCS-steganography - Wikipedia
BPCS-steganography - Wikipedia
convert binary to bytes - Google Search
convert bytes to ascii - Google Search
Convert Bytes to ASCII - Online ASCII Tools
convert bytes to steganography - Google Search
convert bytes to steganography decoder - Google Search
convert bytes to steganography decoder - Google Search
convert bytes to steganography message - Google Search
convert bytes to string - Google Search
Convert Bytes to UTF8 - Online UTF8 Tools
convert image into binary - Google Search
convert image into bytes online - Google Search
Convert image to binary using Python - GeeksforGeeks
Decimal to Binary Converter
decode steganography image - Google Search
decrypt steganography from bytes - Google Search
download
Image to Base64 Converter - Encode Images to Base64 - Online - Browserling Web Developer Tools
Image to Binary Converter - Pixels - Online Decoder Tool
image withe a secret binary message - Google Search
java - How to convert image byte array into a bitmap after altering with the byte array - Stack Overflow
little-endian - Google Search
RGB color space - Wikipedia
SI110: Steganography
skole.bin
skole.png
Steganographic Decoder
Steganographic Encoder
Steganography - Hiding data in plain sight - CodeProject
Steganography - How many bytes of information can you hide in a 1024×768 photo? - Cryptography Stack Exchange
Steganography - Wikipedia
steganography decoder without password
Steganography Online
steganography sample image - Google Search

[Steganography Tutorial: Least Significant Bit (LSB) | BoiteAKlou's Infosec Blog](#)
[Text to Binary Converter](#)
[The Least Significant Bit Technique - Google Search](#)
[what is steganography - Google Search](#)
[WinHex: Hex Editor & Disk Editor, Computer Forensics & Data Recovery Software](#)

3 biggest problems:

1. Multiply option regarding Steganography (cyber-security etc…)
2. Find a right editor we thought could help us find a solution towards decrypt the message.
3. We ended up having the image convert to pixel, but we didn't find a solution to distract the blue pixels to get the hidden message.

Diary every 30 min:

Feb 10 10:00 =
- Try to find out what Steganography means and is.
- Find an example of a picture.

Feb 10 10:33
- Try to convert a picture into binary.
- We used the cph-picture from the exercise to convert

Feb 10 10:57
- Trying to find a way to convert from binary to bytes
- We have found a way to convert an image to binary

Feb 10 11:20
- Starting from scratch
- Try to find out what little-endian is.

Brief summary:

We first tried to find out what Steganography is. Then we convert the image into different formats. First into bites and then from bites to bytes, from bytes to ASCII, little-endian.
We used a lot of time trying to find an online solution like a converter to decrypt the image.

We found an interesting webpage, where they explained how pixels are used to hide a message by rewriting(changing) the last two least significant bytes. Those two bytes on each line of red, green and blue are read as bytes converter than to ASCII revealing the message.

After trying a lot of different approaches we decided not to go further, because in this assignment we felt that our progress was more important than the solution.

A possible solution could be to write/find a program that could decrypt the secret message from the image.