Lab 6 Report

CSL 6010 - Cyber Security
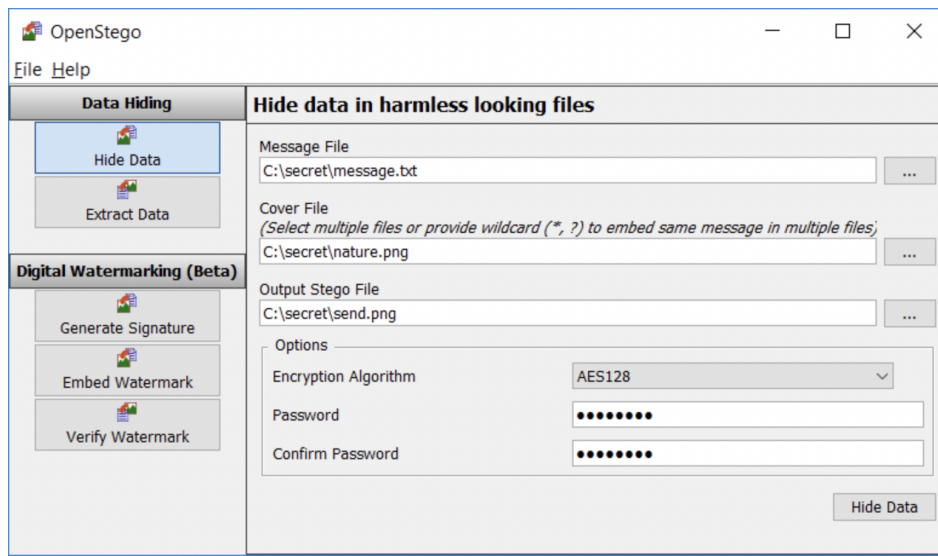
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1)

The text file is:

The image I downloaded from google is:

Entering the text file in the message file, the image I downloaded from google in the cover file and fixing the location of the encrypted image in the output stego file, and then clicking on Hide data.

The encrypted image is:

The encrypted image has .bmp extension. It cannot be pasted directly on google docs. So I'm pasting the screenshot of the encrypted image.
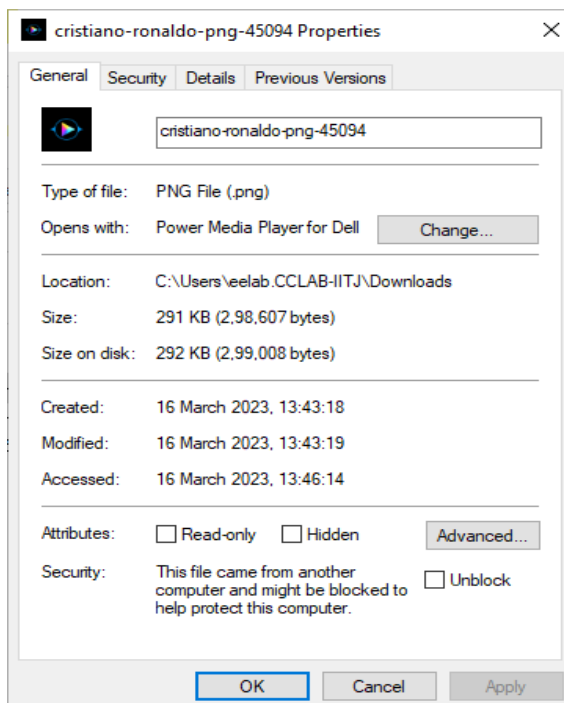
The .bmp image is : encrypted.bmp
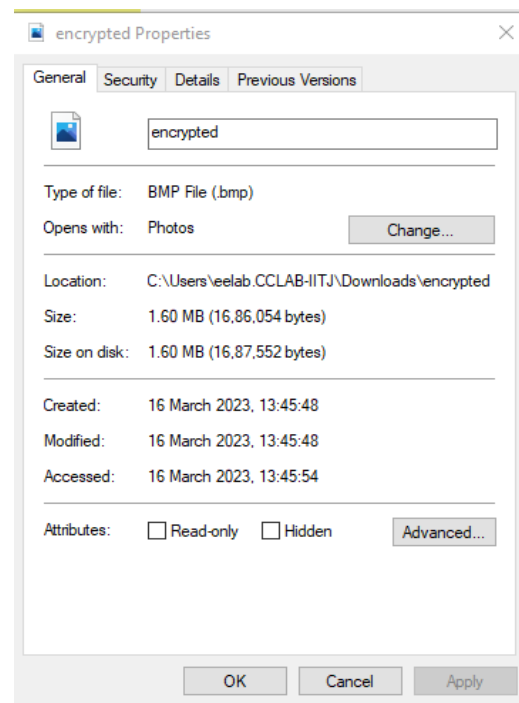

The encrypted image is present in the encrypted folder above.

Now comparing the original image and encrypted image:

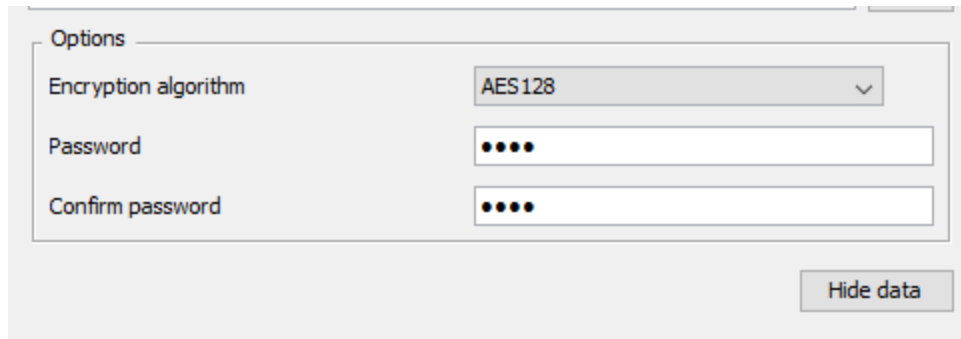Original image: Encrypted Image:

We can clearly observe that the size of the original image (291 KB) is far less than the size of the encrypted image (1.60 MB).
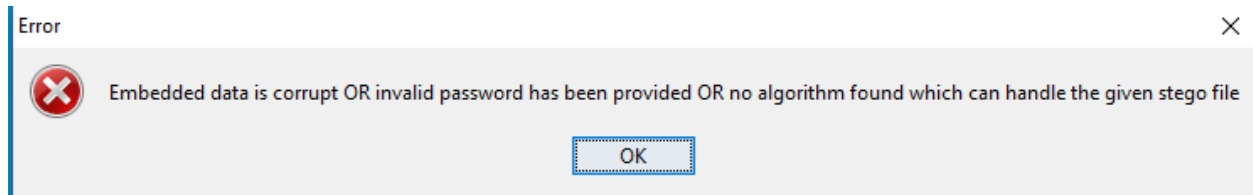
2)

While encrypting the image, we see the following interface. We just need to create a password of our choice.
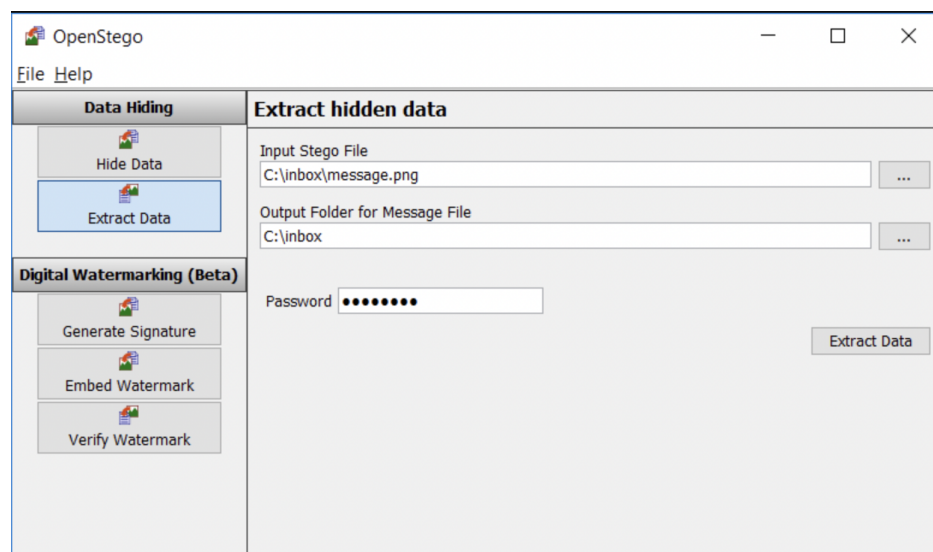

After this, if we try to open the encrypted image without filling in the password, we see the following error:

3)

a) In this part, we just need to do the exact same thing that we did in Q1.

b)

Entering the encrypted image generated earlier in the Input stego file and the location of the text file to be generated in the output folder for message file space.
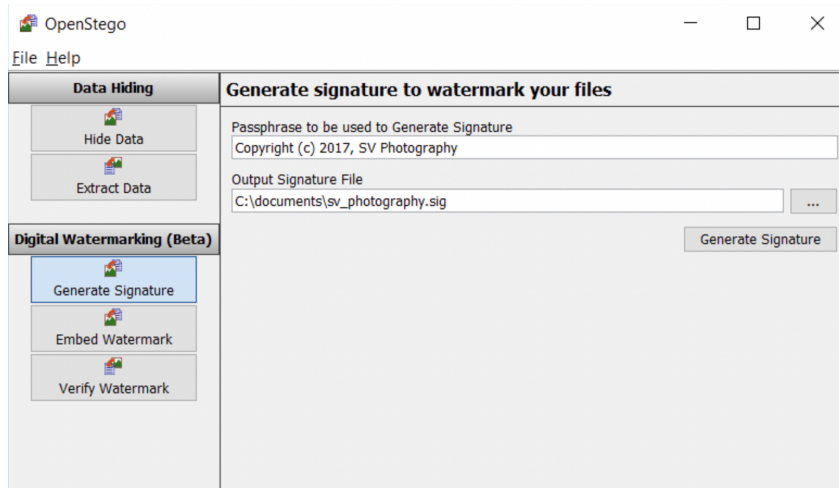

We get the exact same text file that we used while encryption.

4)

a) For generating a signature, enter the passphrase of your choice in the passphrase section and the location where you want the signature file to be stored in the output signature file section.

I got the following signature file:

signature.sig

b) To embed the watermark enter the encrypted/original file in the file to be watermarked section, the signature file generated in a) part in the signature file section and enter the location where you want to store the watermarked file in the output watermarked file section.
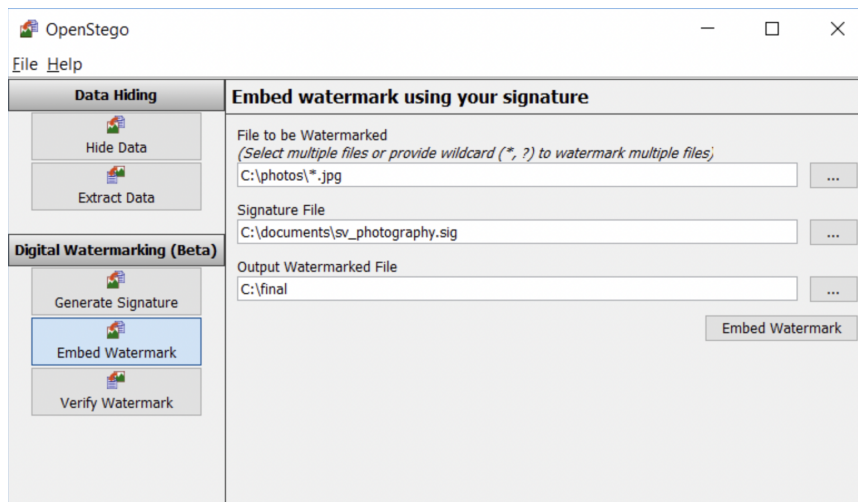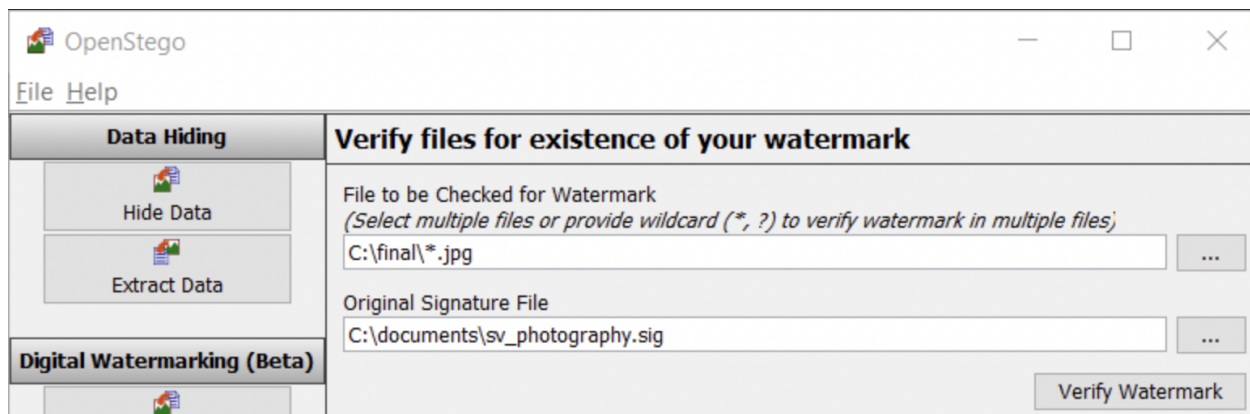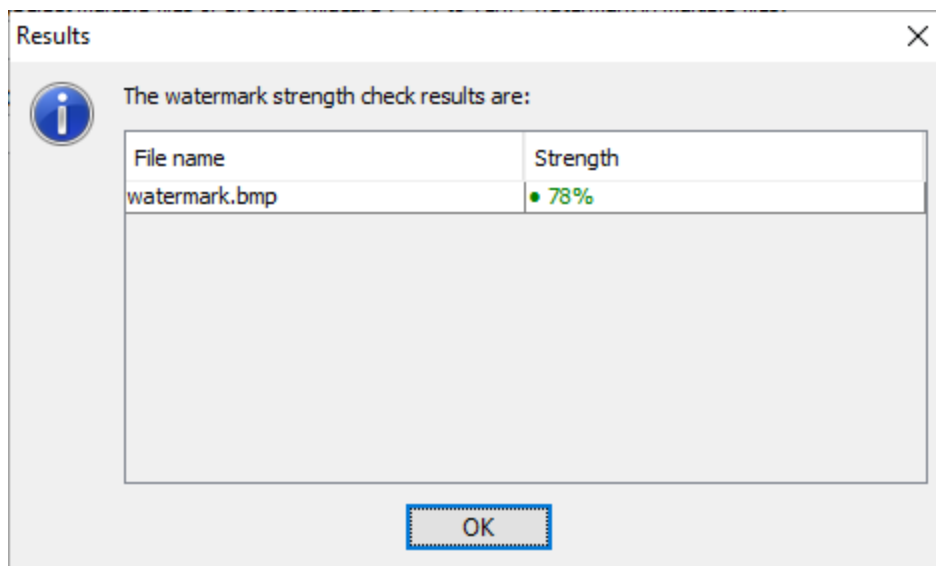
The watermarked file also has .bmp extension.

watermarked.bmp

c) To verify the watermark, enter the above generated watermarked file in the file to be checked for the watermark section and signature file in the original signature file section.

Click on verify watermark section.

I got 78% strength.

The strength depends on various factors, such as the embedding algorithm used for watermarking, image size and quality, image format, watermark size and content, etc.