Indian Institute of Technology Jodhpur

Name-Aman Srivastava
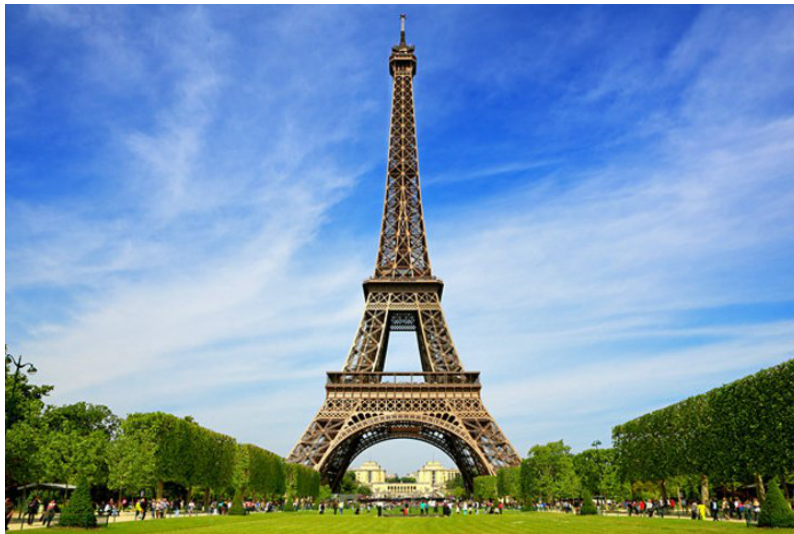**Roll No.-B20CS100**   Date-16th Mar 2023

TASK 1, TASK 2 and TASK 3:

In this tasks, we have to encrypt a txt file into a png file using OpenStego with the functionality of data hiding.

I have taken a random png image in which a txt file will be encrypted whose file size is 445KB.

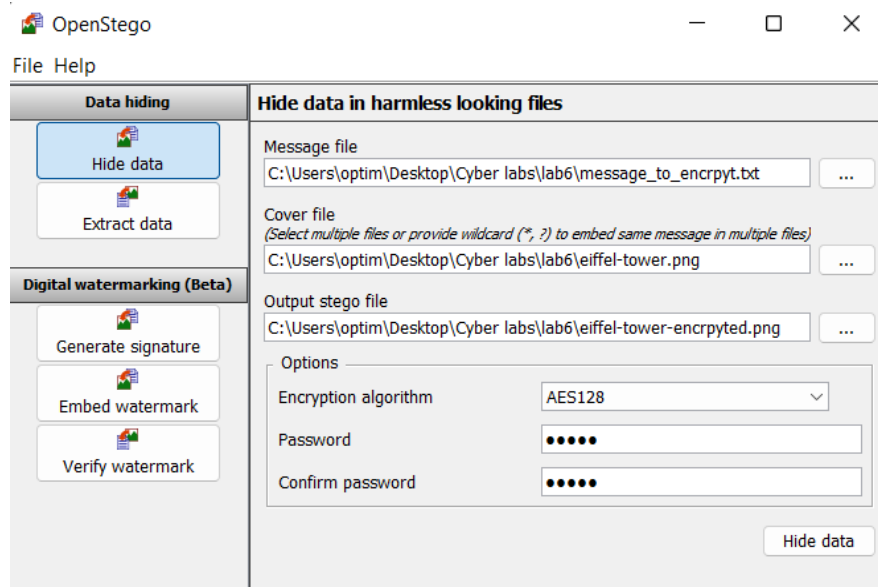**eiffel-tower.png**

File size:

Type of file:	PNG File (.png)
Opens with:	Photos
Location:	C:\Users\optim\Desktop\Cyber labs\lab6
Size:	445 KB (4,55,989 bytes)
Size on disk:	448 KB (4,58,752 bytes)

Content of message_to_encrypt.txt

This is a secret message:
"The treasure is buried under the big oak tree in the park."

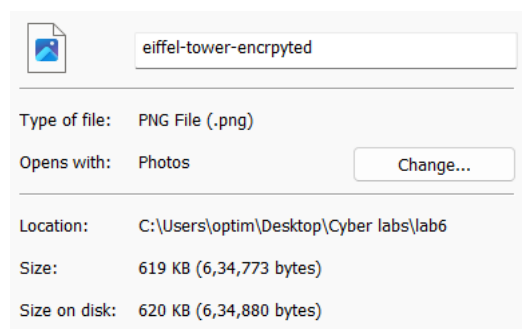Hiding the txt file in a png file using OpenStego:

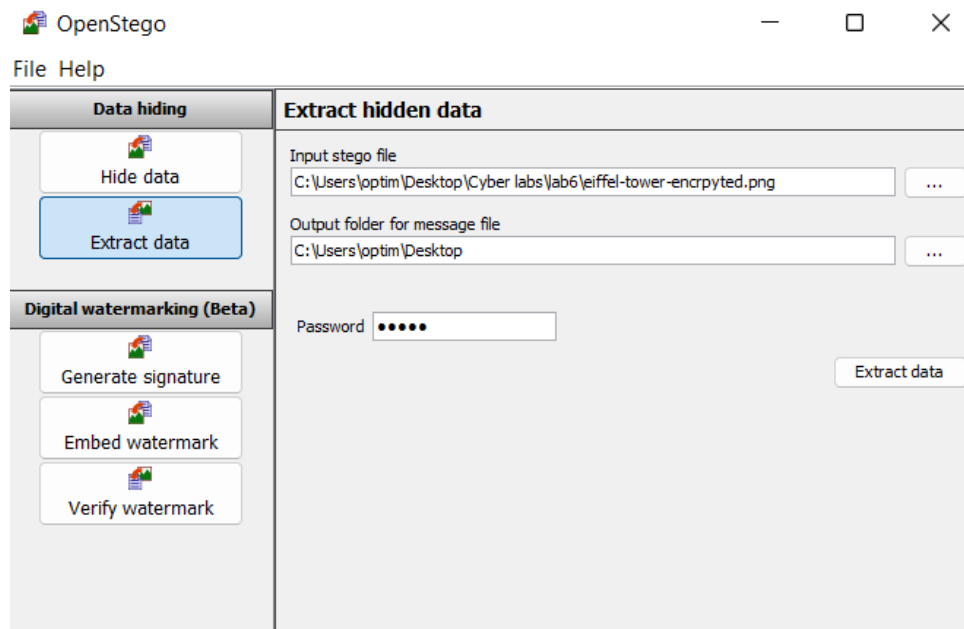**Output Stego file:**
eiffel-tower-encrpyted.png

File size:

The size of the encrypted file increased to 620KB from 445 KB.

Now decrypting the png file to extract txt file using OpenStego:

Content of the decrypted file:

This is a secret message:
"The treasure is buried under the big oak tree in the park."
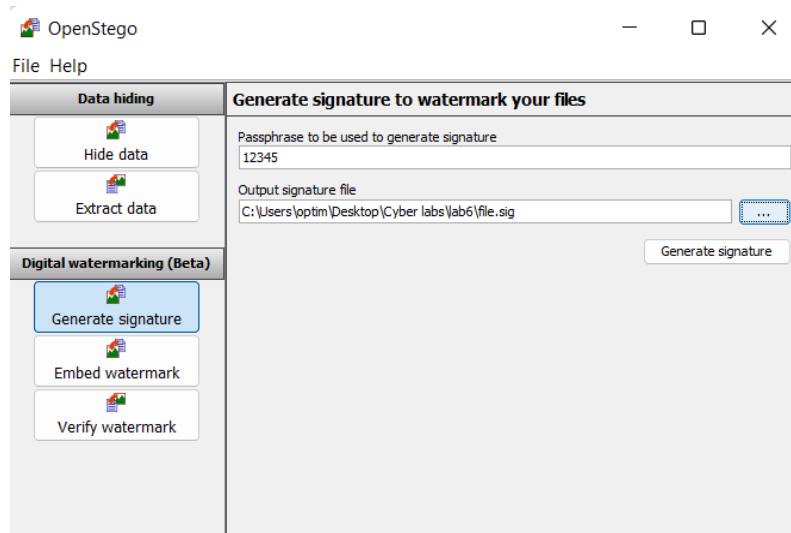
CONCLUSION:
We can see the image size increases after embedding the image with the text file and also the content is the same for the file to encrypt and the decrypted file.

TASK 4:

In this task we have to use the second functionality of OpenStego that is Digital watermarking.
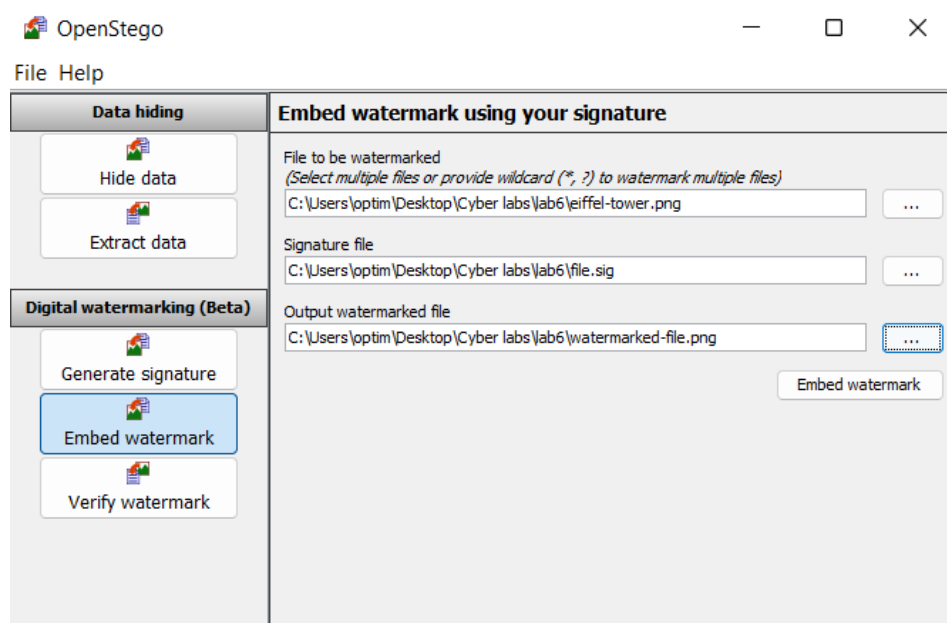
Generate Signature:

Firstly, generating a signature file using OpenStego

A signature file file.sig is generated by the above process.

Embed Watermark:

Now generating watermarked file using the signature file. I have used eiffel-tower.png file to be watermarked.
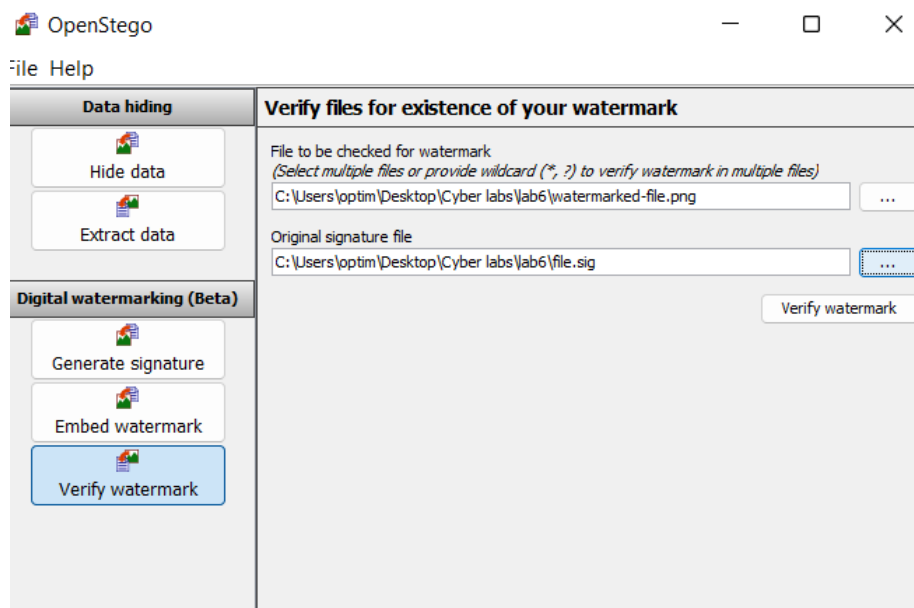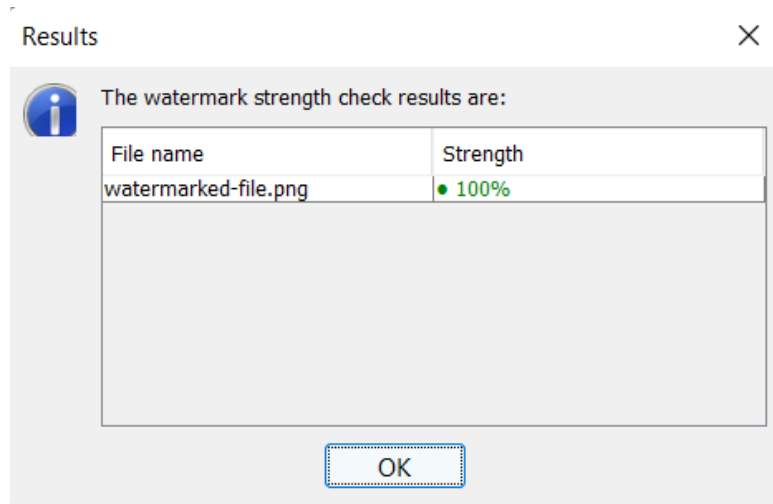
watermarked-file.png

Verify watermark:

Now verifying the watermarked file

Below is the result and strength for verifying watermarked file.

Results	✕

The watermark strength check results are:

File name	Strength
watermarked-file.png	● 100%

[OK]

RESULT AND CONCLUSION:

I have successfully executed the 3 steps that are generate signature, embed watermark, and verify watermark.

The watermarked strength of the output file is 100%.