Image Steganography

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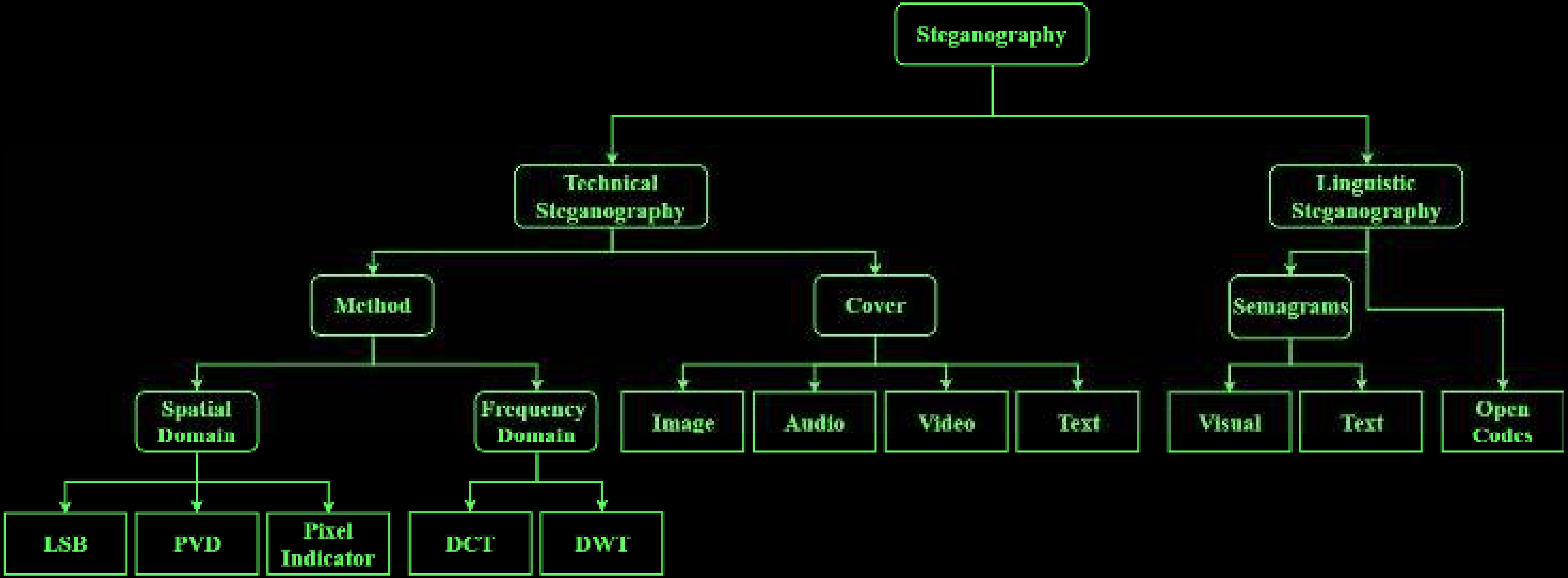
Introduction

What is Steganography?

- practice of concealing a file, message, image, or video within another file, message, image, or video
- replaces unneeded or unused bits in regular computer files with bits of different and invisible information
- steganography protects from pirating copyrighted materials as well as aiding in unauthorized viewing

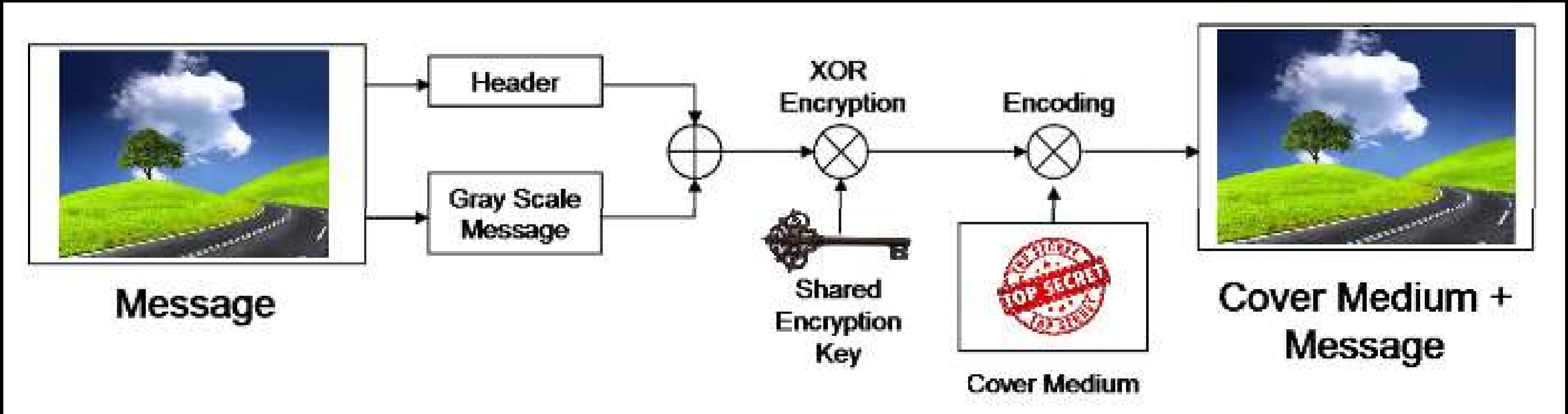
Types of Steganography



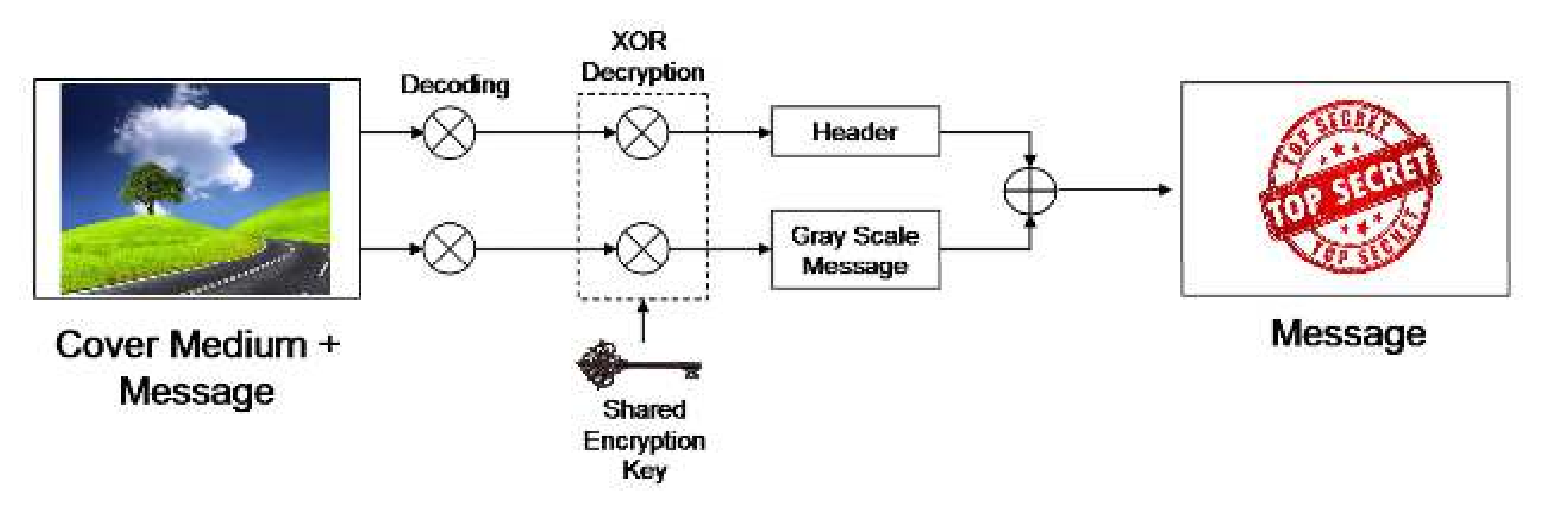
Objective

- Provide safe and encrypted means of transmission
- Study and research on various steganography techniques
- Formulate more efficient algorithm than the native ones

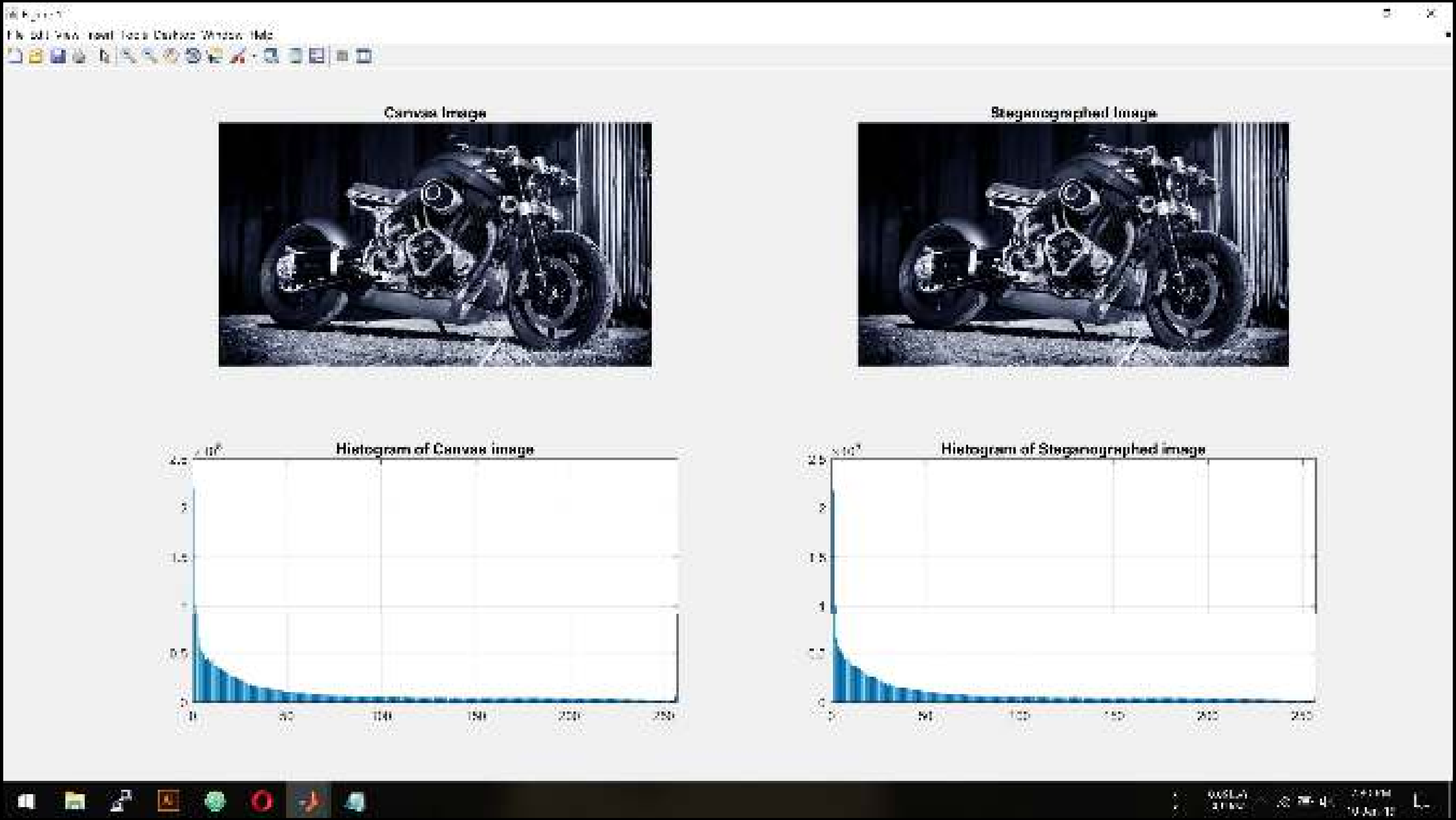
Encoding Process



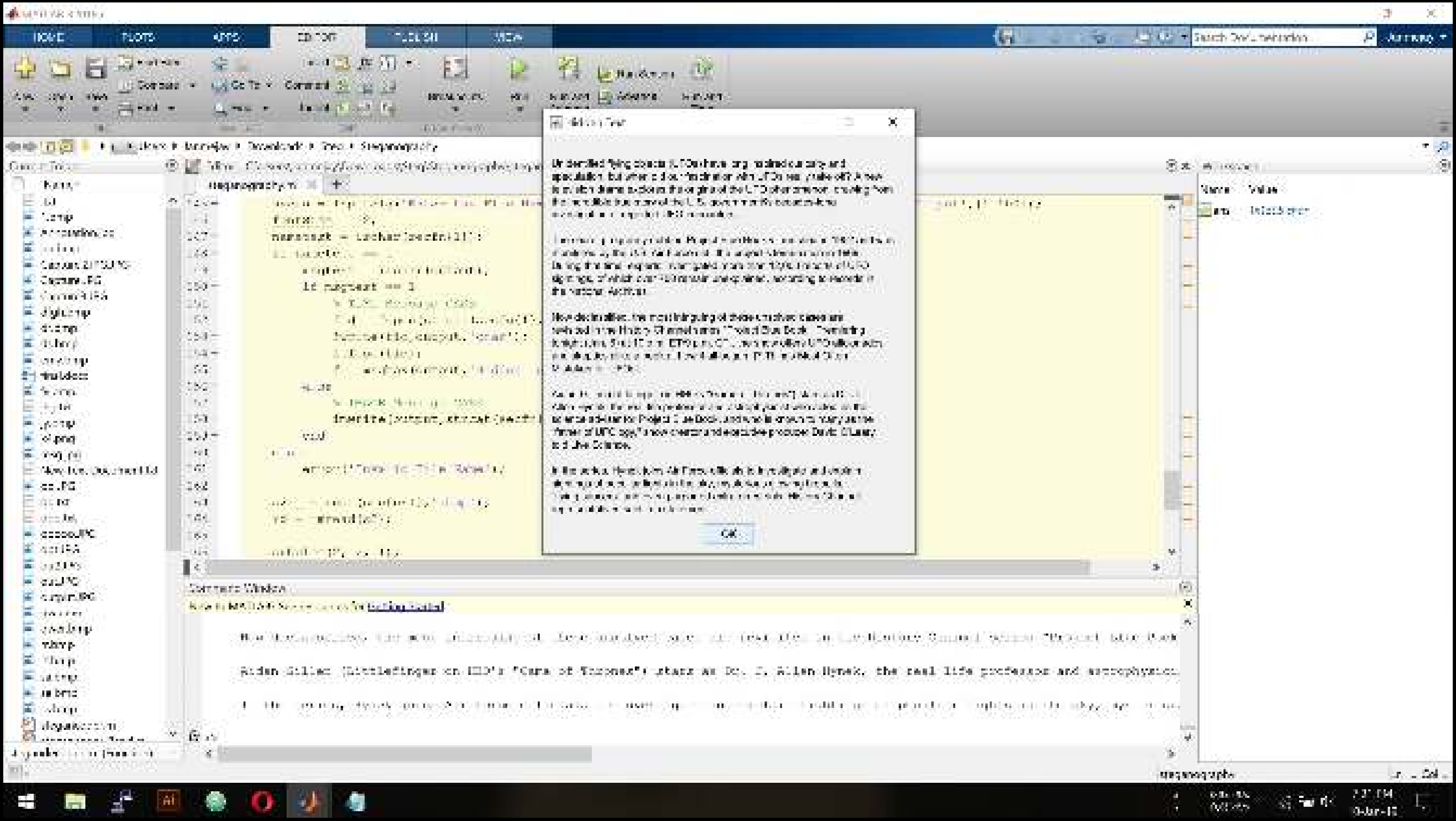
Decoding Process



Output


File Edit View Insert Tools Desktop Window Help
Canvas Image
Steganographed Image
Histogram of Canvas image
2.5
2
1.5
1
0.5
0
0
50
100
150
200
250
Histogram of Steganographed image
2.5
2
1.5
1
0.5
0
0
50
100
150
200
250

Output



Unidentified flying objects (UFOs) have long inspired curiosity and speculation. [illegible]

[illegible]

Now declassified, the most intriguing of these unsolved cases are [illegible] in the History Channel series "Project Blue Book." [illegible]

[illegible]

[illegible]

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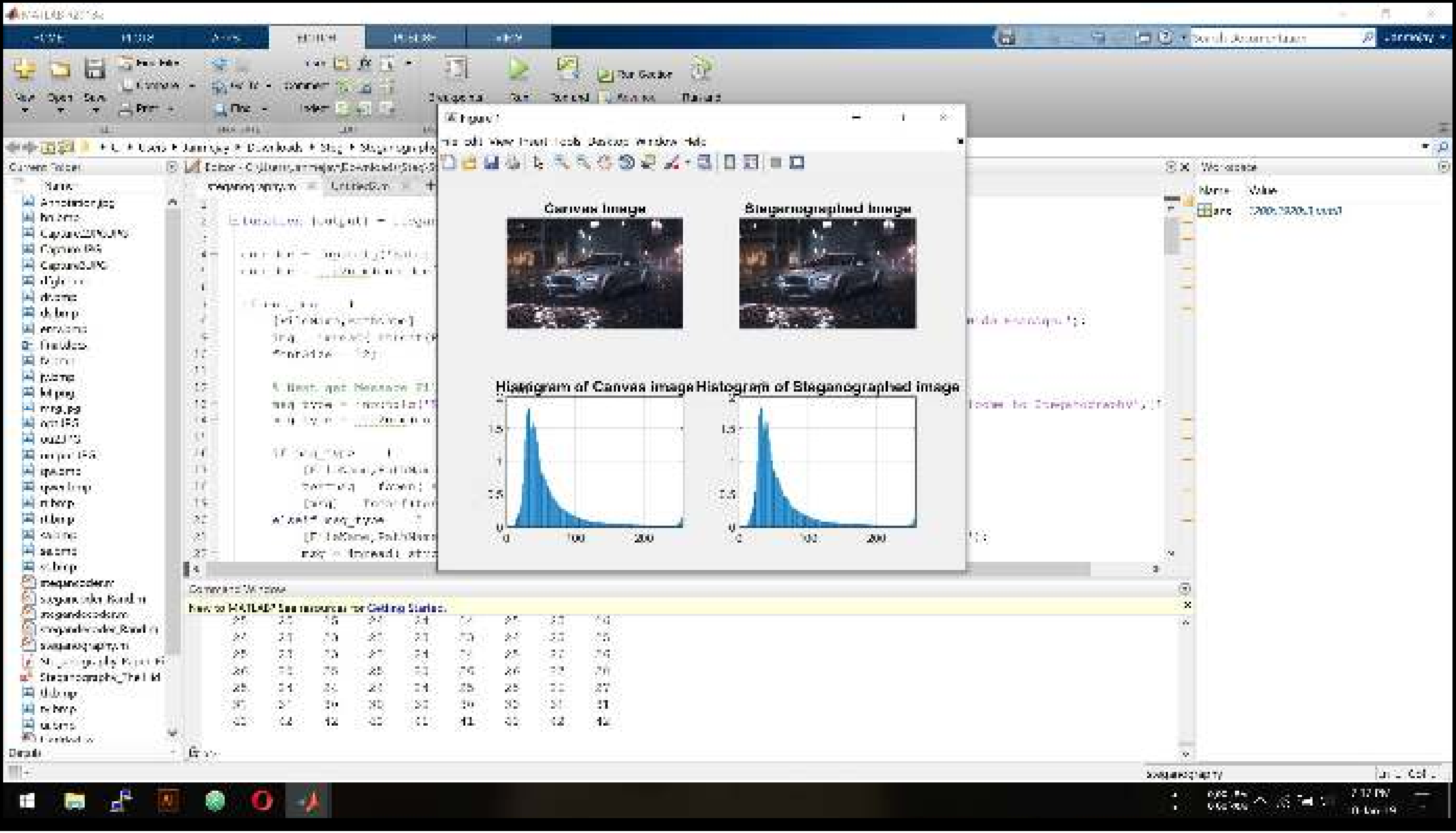
Now declassified, the most intriguing of these unsolved cases are [illegible] in the History Channel series "Project Blue Book
Aidan Gillen (Littlefinger on HBO's "Game of Thrones") stars as Dr. J. Allen Hynek, the real life professor and astrophysici
[illegible]
```

Output



New to MATLAB? See resources for Getting Started.

Output

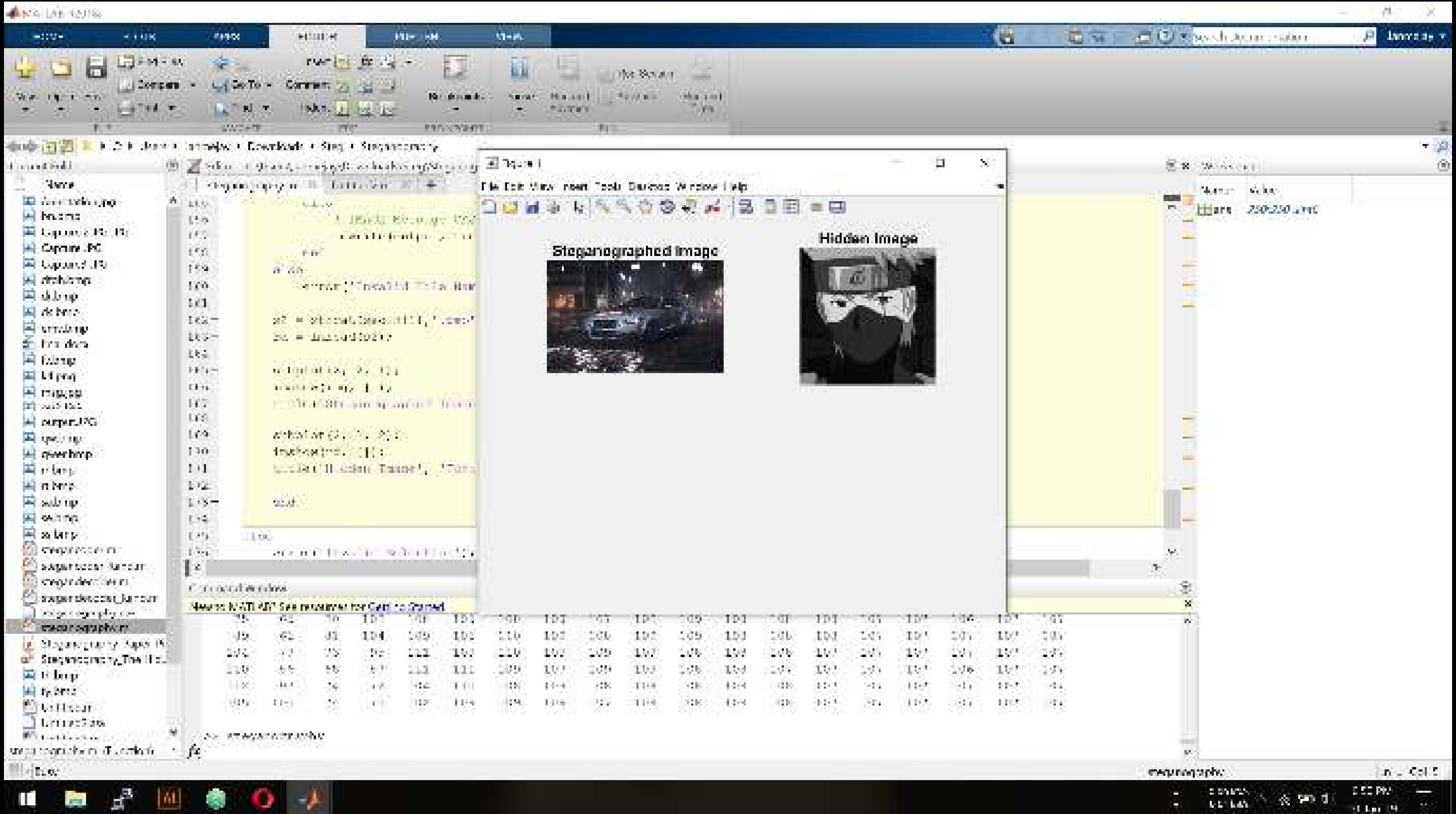


Figure 1
File Edit View Insert Tools Desktop Window Help
Steganographed Image
Hidden Image

Shortcomings of the project

- Transforms the image to grayscale
- Not applicable to black & white images
- Gives output in bitmap format
- Canvas Image must be sufficiently larger than secret image

Future Scope

- Dynamic Video Steganography

A video is a collection of still images called frames and audio. Video steganography for hiding secret data using Local Binary Pattern (LBP) in the desired. Segmentation is performed using k-means clustering. As each frame has huge number of pixels and a pixel furthermore has color components, the k-means clustering serves the purpose also concerning the speed.