

# SEC 150 Assignment: Steganography

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Version 1.0

## 1 Assignment Description

Steganography is the science of hiding information. Since no one, apart from the sender and intended recipient, suspects the existence of the message, this is sometimes known as “security through obscurity”. The main advantage of steganography (over other cryptographic techniques such as AES) is that the secret message does not attract attention to itself.

Such hidden messages can be encoded and hidden within public files such as images or audio. An example of steganography might be to start with an innocuous image file and adjust the color of every 100th pixel to correspond to a letter in the alphabet, a change so subtle that someone not specifically looking for it is unlikely to notice it.<sup>1</sup>

In this assignment, you will use the program `steghide`<sup>2</sup> to decode a message hidden inside of an audio file. You will then encode a secret message in an image sample. Upon completion of this assignment, you will be able to implement a technique commonly used by terrorist organizations to communicate with other cells in plain sight.

## 2 Pre-Requisites

Before starting this assignment, you will want to download and extract `steghide`. Note that this is a command-line tool, and part of this assignment requires that you read over the command-line options on your own (you can do this simply by running `steghide`).

## 3 Instructions

1. The audio file `burst1.wav` contains a secret message. First, listen to this file. Then, extract the hidden message using the passphrase of `sec150`. The extracted file should be called `secret1.txt`.

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<sup>1</sup>For more information, see <http://en.wikipedia.org/wiki/Steganography>

<sup>2</sup>Download this at <http://steghide.sourceforge.net/>. You will likely want the Windows version.

2. Next, create a file called `lastname.txt`, where last name is your last name in all lowercase. Inside the contents of the txt file, put your full name. Encode this message using the cover file `lenna.jpg`, again with the password `sec150`. View the `lenna.jpg` file and verify that it still loads in any standard image editor.

## 4 Milestone

Submit a screen capture that shows that `steghide` has been installed on your local machine.

## 5 Submission

Submit the following files as a single zip archive: `secret1.txt`, and `lenna.jpg` (after encoding it with your hidden message).