Lab 5: Steganography

Introduction to Steganography:

Steganography is the practice of concealing information within other data, typically by embedding messages within seemingly innocuous files. Unlike encryption, which renders a message unreadable until decrypted, steganography seeks to hide the very existence of the message. In this process, sensitive information is concealed within a carrier file, which serves as a covert container (Discussed in detail in Lecture 5).

Lab Objectives:

Your task in this lab is to explore steganography by downloading four open-source steganography tools (links on Brightspace), using them to hide data within carrier files, and documenting the differences using hash algorithms. Here is a step-by-step outline of the tasks:

1. **Tool Selection:** Download any four open-source steganography tools that support various file formats, both audio and image There is a link below on Brightspace, I suggest you use OpenPuff as one of the tools. You may choose any other three (or more) Stego tools to explore.
2. **Data Embedding:** Use each of these tools to embed data within carrier files (audio and image).
3. **Hash Comparison:** Document the differences between the original carrier file and the steganography-embedded files using hash algorithms. This step helps in identifying if there are alterations made during the steganography process.
4. **Binary/Hex Comparison:** Tools like "Beyond Compare" from ScooterSoftware will highlight the bits that have changed from the process of Steganograpy.
5. **Screenshots and Explanations:** Capture screenshots at different stages of the steganography process and provide clear explanations of each step involved.

Fully referenced findings in this lab can be used toward CA-3

Answer these questions:

1. **How would you Investigate Hidden Information?**
2. **Compare and Contrast Steganography and Encryption:**
3. **List Data Breaches Involving Steganography:**
4. **List 4 Authoritative Figures in Steganography (Not Me!!!):**

Documentation:

Please ensure you save your documentation, screenshots, and explanations in a Microsoft Word document, which you will later upload for this week's lab assignment.