LAB REPORT 4

ECE 455

ODU Honor pledge

"I pledge to support the Honor System of Old Dominion University.

I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community it is my responsibility to turn in all suspected violation of the Honor Code. I will report to a hearing if summoned."

Your name: Bradley McKee

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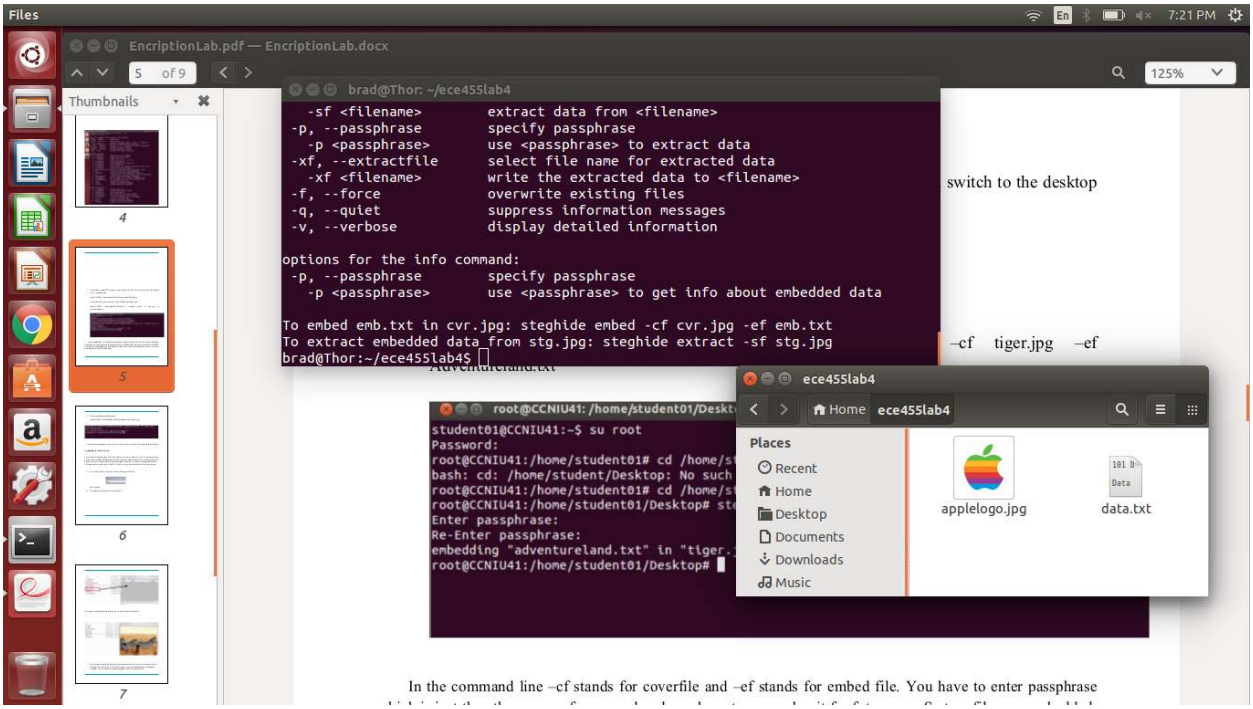
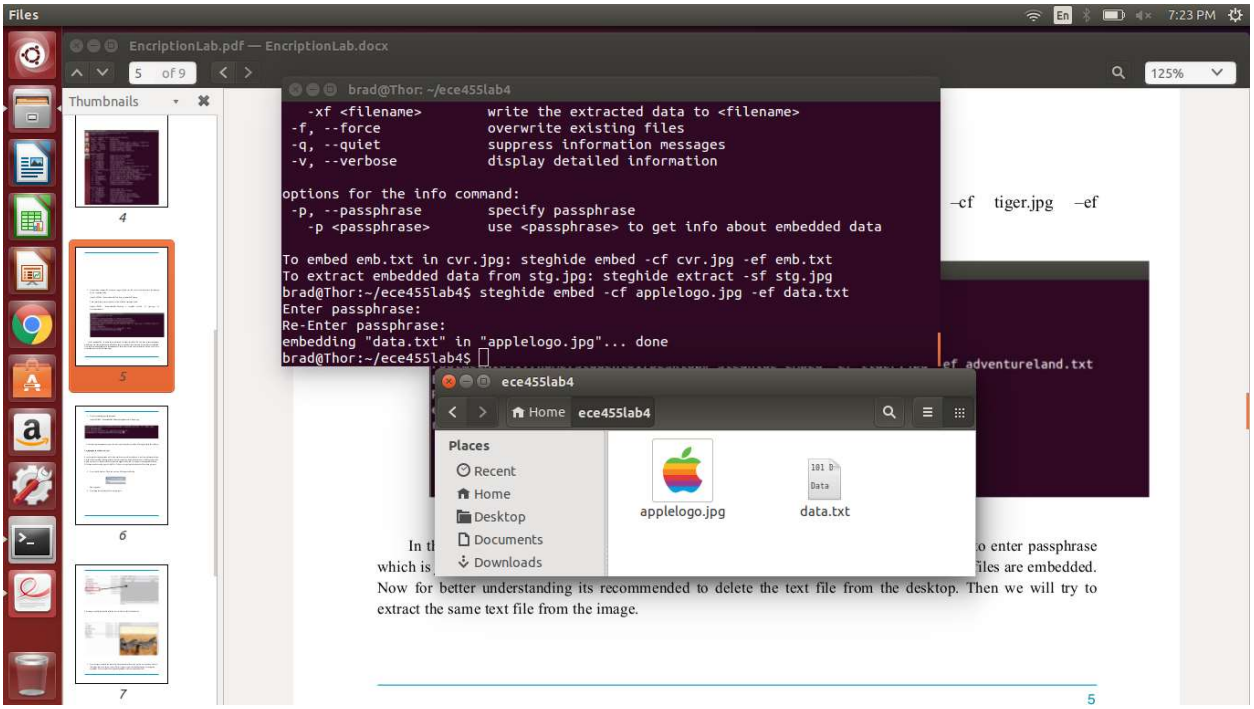
Sign here: BLM (initials represent signature)

In this lab we are supposed to be learning about different types of encryptions. This lab specifically shows you how to hide an image with some text or a wav file using a program called s tools. Encryption is mainly used to secure a line of communication of some data without anyone in-between know what is going on in case the message is intercepted. The lab demonstrates three different types of encryption algorithm: International Data Encryption Algorithm (IDEA), Digital Encryption Standard (DES) and Triple Data Encryption Standard (which is DES block ciphering three times). These are just three of many different encrypting algorithms that can be used. I know from personal experience, I coded an Advanced Encryption Standard (AES) 256-bit encryption with a round key used for each step of encrypting almost making it difficult to decrypt without a lot of time or hints on what the process used was. This lab we are learning how to merge pictures as well as audio and text files together to hide sensitive data. The experiment done will be done on linux as well as a windows machine.

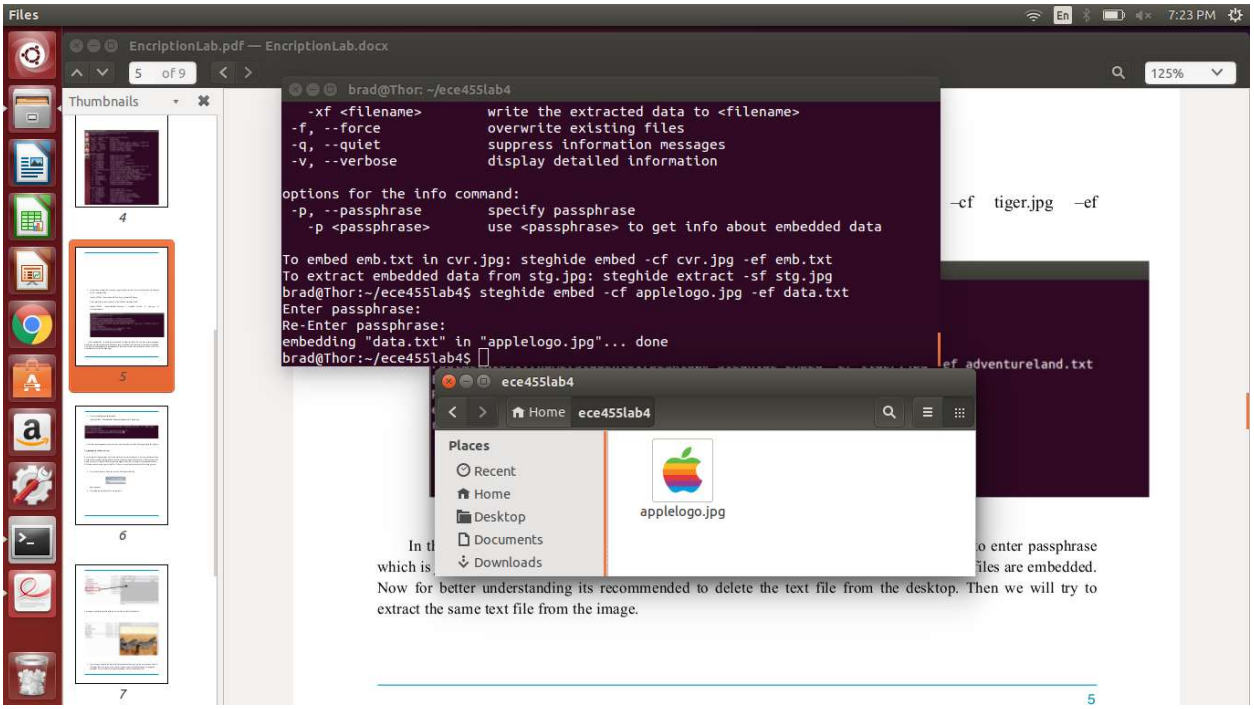
The first section of the lab we are encrypting a picture using a linux tool. The screenshots below show that I did that process. It makes it look like there is no other information with the picture, but there is a text file!



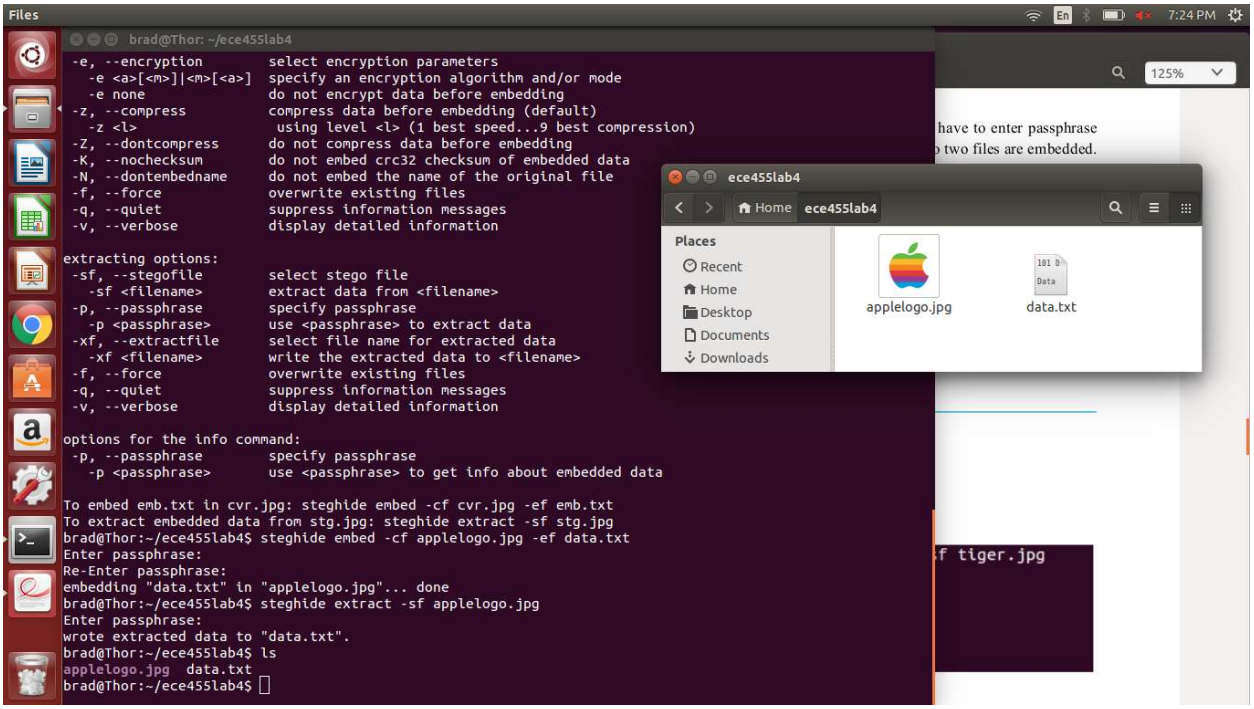
Here is where I downloaded it and I'm using the apple logo.jpg for my picture that I fuse the data.txt file with.



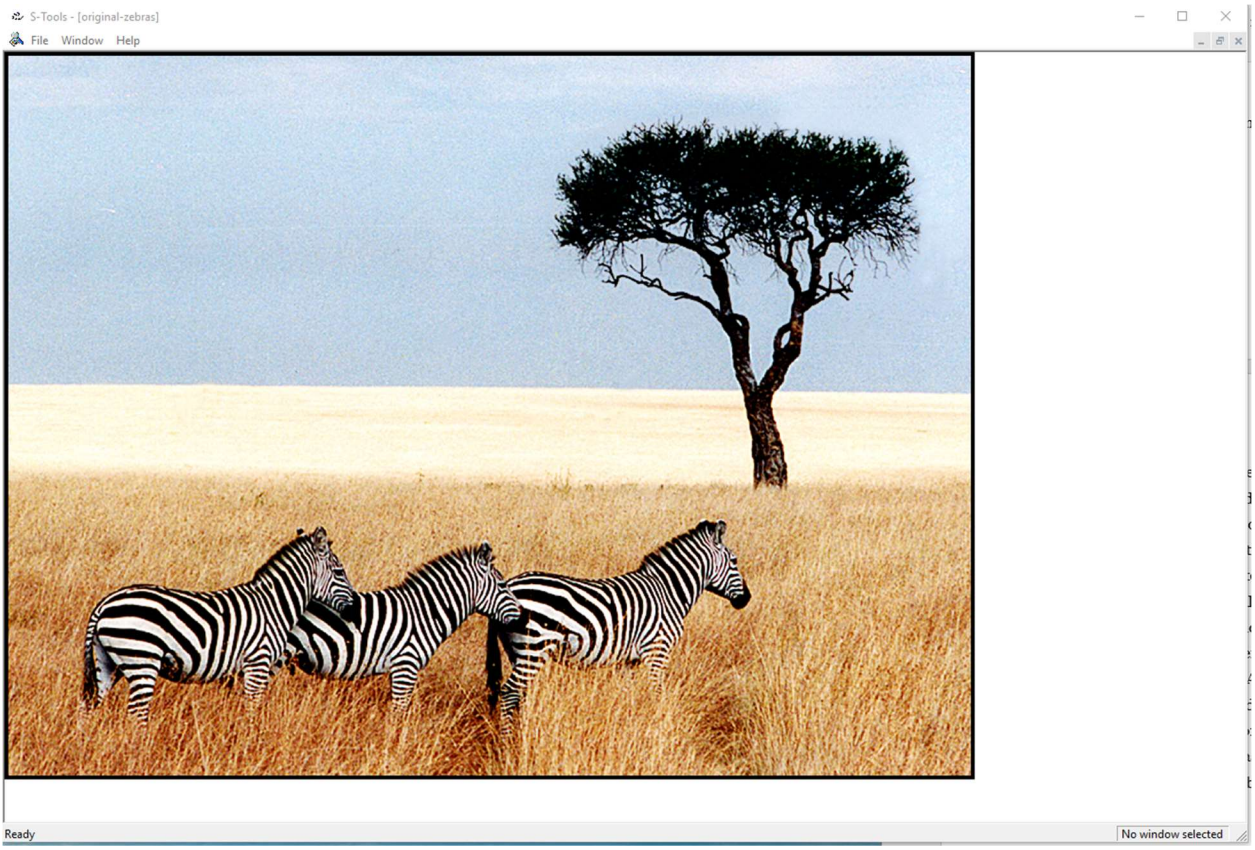
Here is an overall screenshot of the process in the terminal after it is done.



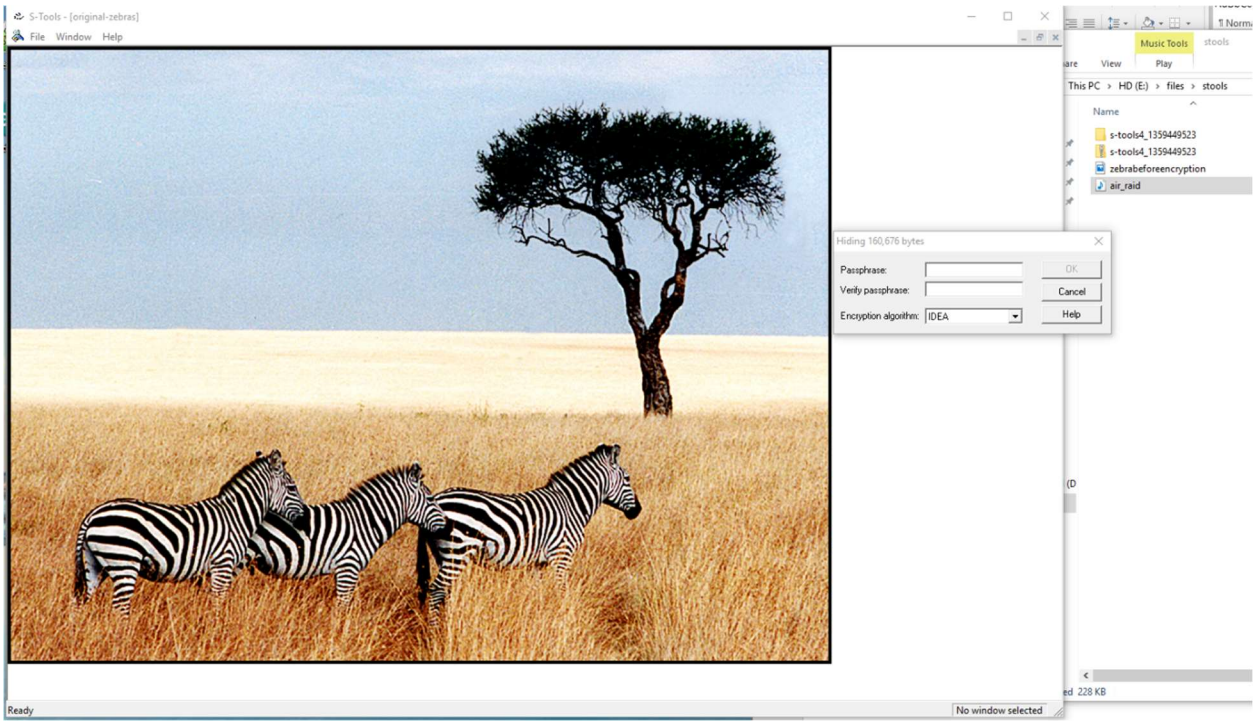
Here is proof of me deleting the text file so now there is just the encrypted applelogo.



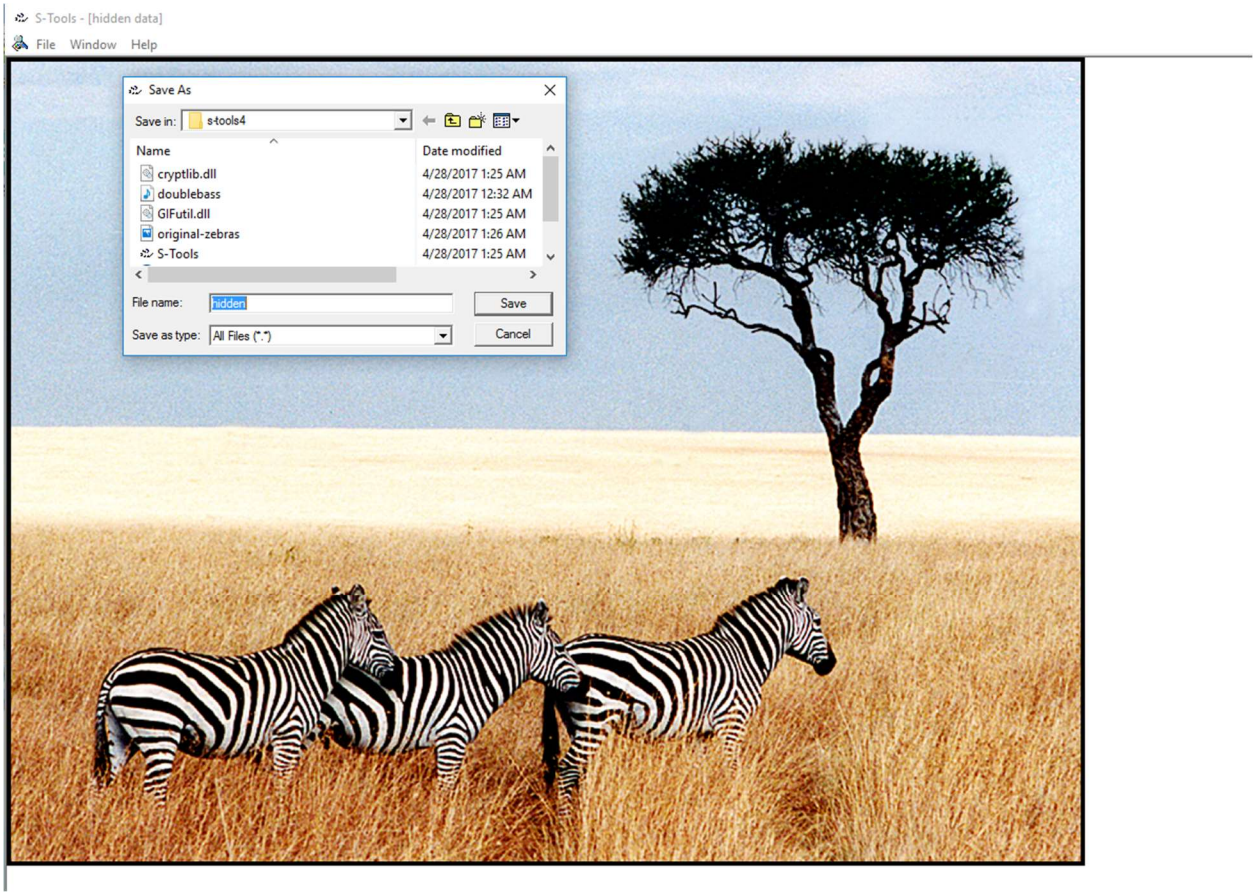
This is proof of me extracting the data from the .jpg and restoring it. There was no data lost in this process.



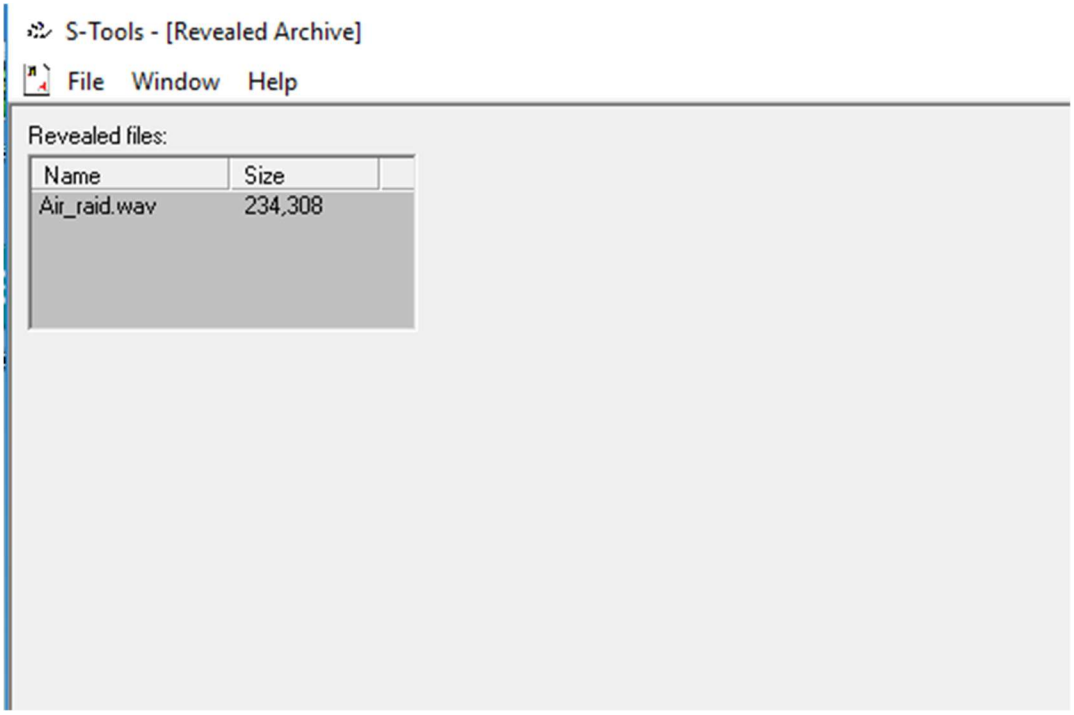
This is the windows process I did. Here you can see I dragged the picture to the program.



Here I dragged the audio file I wish to encrypt to it.



The encrypted data is then saved as a new file I named my hidden because it has hidden information.



Lastly this is the revealed files from the picture when I went to reveal and reverse the process.