**QUESTION 1**

1. \*You will use the HW11\_Lab\_Instructions file to answer the questions in this assignment.

Lab Step 4: Convert the binary value of 10010110 to a decimal integer.  Answer this question by providing the decimal integer as well as showing your work.  Repeat, you must show your work in the blackboard answer to receive credit.

**QUESTION 2**

1. Lab Step 6: which stego tool was used to embed a covert file into file3?

|  |  |  |
| --- | --- | --- |
|  |  | jsteg |
|  |  | jphide |
|  |  | outguess |
|  |  | invisible |

**10 points**

**QUESTION 3**

1. Lab Step 8:  Provide the MD5 hash for each of the two files:

File1:

File2:

**5 points**

**QUESTION 4**

1. Lab Step 13:  What difference did you find between the two files, which file likely has the stego, and where in that file is the covert data likely stored? **10 points**

**QUESTION 5**

1. Lab Step 16:

Provide one single command to perform hiding using steghide with all of the following parameters:

Carrier: carrier.wav (file is inside the steghide folder)

Text to be hidden: text.txt (file is inside the steghide folder)

Password: homework11

Output filename: output.wav

Use No encryption

Use best compression

Use Quiet mode

Do not embed the name of original file

|  |
| --- |
|  |

**10 points**

**QUESTION 6**

1. Lab Step 17: Provide one single command to perform extraction using steghide with all of the following parameters:

Extract the stego file from the output.wav file

Extracted filename: out.txt

Display detailed information

(Reminder, the password is homework11) **5 points**

**QUESTION 7**

1. Lab Step 24:  Provide the screenshot of the popup report window showing the number of differences in WinHex.
   1. Attach File

**5 points**

**QUESTION 8**

1. Lab Step 28:  What is the command to list the files in the directory along with the ADS entries? **5 points**

**QUESTION 9**

1. Lab Step 32:  What is the command to see the contents of b.txt? **5 points**

**QUESTION 10**

1. Lab Step 33: - Extra Credit Question 1:  ((My former TA Girithar created this extra credit question)

Under the JPEG folder, there are two JPEG files, Find which one has stego data in it and decrypt the data. Provide the filename, the hidden data, and explain your process to get five extra credit points.  To get the last three points, decode the password and provide the decoded text. **8 points (Extra Credit)**

**QUESTION 11**

1. Lab Step 34: Extra Credit 2:  (My former TA Girithar created this extra credit question)

Go to http://mypages.iit.edu/~ganthays/stego/

Copy the string aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

and paste it in the “Stego text output” box and click decode. Note down your observations.

Click "Reset" and then copy the string аааaaаааааaаaaааaaаaаааaaаааааaааааaааaаaаaааaаaаaааaаaaaааaаaa

and paste it in the “Stego text output” box and click decode. Again note down your observations.

Answer the following three questions:

Is there any hidden data?

If so, what was it?

Explain in detail (at least a paragraph or two) how the steganographic technique on this webpage works for hiding the data.   **10 points (Extra Credit)**

**QUESTION 12**

1. Lab Step 50:  Upload a word or pdf document that contains your iptables rule from step 41 as well as screenshots of step 42, step 46 (both Windows and Kali), and step 49. Make sure the shell prompt is showing in each of the Linux screenshots.

(This is not an extra credit question.)