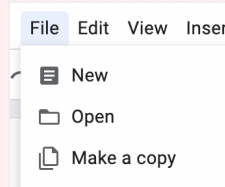


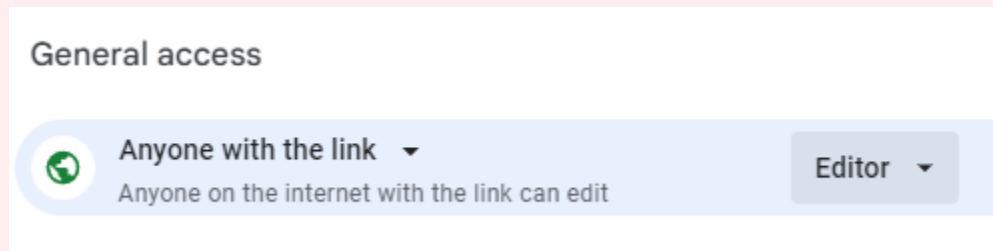
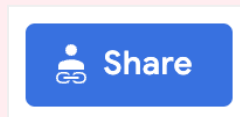
Instructions for Copying and Sharing this Document

 **DELETE THIS BOX BEFORE SUBMITTING!!**

Step 1: **Click** “File -> Make a Copy” to make a copy of this document that you can edit.




Step 2: **Change** the Share settings to “Anyone with Link -> Editor”. This will allow our graders to leave comments on your submission.



CYB101 Project 4

( [Instructions Page](#))

 Student Name: Jonathan Siegel

 Student Email: jsiegel0516@gmail.com

Reflection (Required)

🤔 **Reflection Question #1:** If I had to **explain “steganography” in 3 emojis**, they would be...
(Feel free to put other comments about your experience this unit here, too!)



📷 **Reflection Question #2:** What are the risks of taking images with lots of attached metadata? What are the benefits?

Metadata could possibly reveal very sensitive information like where the image was created. One benefit is that metadata could manage large collections of images via searching.

🎉 **Shoutouts:** Share appreciation for anyone who helped you out with this project or made your day a little better!

The creators of star wars.

Required Challenge Screenshots (Required)

NOTE: To complete this project, you will first need to follow the instructions to embed a hidden message (of your choice) in an image file!

Use the answer boxes below to paste in your screenshots from completing the project. Clarifying notes are optional. (If you only have one screenshot file, just put it in each of the boxes.)

Extracting a Hidden Message with Steghide

Screenshot #1: The output of the `steghide info` command's output, showing the hidden file

[Insert Screenshot Here]

File Actions Edit View Help

```
format: jpeg
capacity: 2.8 KB
Try to get information about embedded data ? (y/n) y
Enter passphrase:
steghide: could not extract any data with that passphrase!
```

```
(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpg -xf embeddedmessage.txt
Enter passphrase:
steghide: could not open the file "a.jpg".
```

```
(kali㉿kali)-[~/Documents]
$ steghide info a.jpeg
"a.jpeg":
format: jpeg
capacity: 2.8 KB
Try to get information about embedded data ? (y/n) y
Enter passphrase:
embedded file "message.txt":
size: 81.0 Byte
encrypted: rijndael-128, cbc
compressed: yes
```

```
(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpg -xf embeddedmessage.txt
Enter passphrase:
steghide: could not open the file "a.jpg".
```

Notes (Optional):

Screenshot #2: The output of the `steghide extract` command

[\[Insert Screenshot Here\]](#)

```
File  Actions  Edit  View  Help

embedded file "message.txt":
  size: 81.0 Byte
  encrypted: rijndael-128, cbc
  compressed: yes

(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpg -xf embeddedmessage.txt
Enter passphrase:
steghide: could not open the file "a.jpg".

(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpeg -xf embeddedmessage.txt
Enter passphrase:
wrote extracted data to "embeddedmessage.txt".

(kali㉿kali)-[~/Documents]
$ ls
a.jpeg  embeddedmessage.txt  message.txt  message.txt.save

(kali㉿kali)-[~/Documents]
$ cat embeddedmessage.txt
My wife asked me to put ketchup on the shopping list.

Now I can't read anything

(kali㉿kali)-[~/Documents]
$
```

Notes (Optional):

Screenshot #3: The output of the `cat` command, showing the contents of the extracted file

[\[Insert Screenshot Here\]](#)

```
File  Actions  Edit  View  Help

embedded file "message.txt":
  size: 81.0 Byte
  encrypted: rijndael-128, cbc
  compressed: yes

(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpg -xf embeddedmessage.txt
Enter passphrase:
steghide: could not open the file "a.jpg".

(kali㉿kali)-[~/Documents]
$ steghide extract -sf a.jpeg -xf embeddedmessage.txt
Enter passphrase:
wrote extracted data to "embeddedmessage.txt".

(kali㉿kali)-[~/Documents]
$ ls
a.jpeg  embeddedmessage.txt  message.txt  message.txt.save

(kali㉿kali)-[~/Documents]
$ cat embeddedmessage.txt
My wife asked me to put ketchup on the shopping list.

Now I can't read anything

(kali㉿kali)-[~/Documents]
$
```

Notes (Optional):

Stretch Challenge (Optional)

For this stretch challenge, you can include screenshots showing extracting data from a classmate's image file. You can do this 2 times for +2 points each.

Screenshot #1: Screenshot(s) showing extracting data from a classmate's image file

[Insert Screenshot Here]

Classmate who Created this File:

Notes (Optional):

Screenshot #2: Screenshot(s) showing extracting data from a classmate's image file

[Insert Screenshot Here]

Classmate who Created this File:

Notes (Optional):

Submission Checklist

👉 Check off each of the features you have completed. **You will only be graded on the features you check off.**

Reflection

- ☒ Reflection Question #1 answered above
- ☒ Reflection Question #2 answered above
- ☒ Shoutouts Completed

Required Challenge Screenshots

- ☒ Screenshot #1:
- ☒ Screenshot #2
- ☒ Screenshot #3

Stretch Challenge

- ☐ Screenshot #1
- ☐ Screenshot #2

Submit your work!

Step 1: **Click** the Share button at the top of your screen double check that anyone with the link can edit. (This allows our grading team to input your grade below!)

 Share

General access



Anyone with the link ▼

Anyone on the internet with the link can edit

Editor ▼

Step 2: **Copy** the link to this document.

 [Copy link](#)

Step 3: **Submit** the link on the portal.

Grader Comments

Once your project has been assessed, our graders will leave feedback for you in this space.
Please do not delete.

Grading Rubric

Reflection Questions	Total Received	Total Possible
Reflection Question #1 answered above	2	2
Reflection Question #2 answered above	2	2
PART A TOTAL	4	4
Required Challenge Screenshots	Total Received Points	Total Possible
Screenshot #1	5	5
Screenshot #2	6	6
Screenshot #3	5	5
PART B TOTAL	16	16
Stretch Challenge	Total Received Points	Total Possible
Screenshot #1	0	+2 bonus

Screenshot #2	0	+2 bonus
Total Possible Points (Part A + Part B)	0	20 (+4)
	20	

Grader Feedback