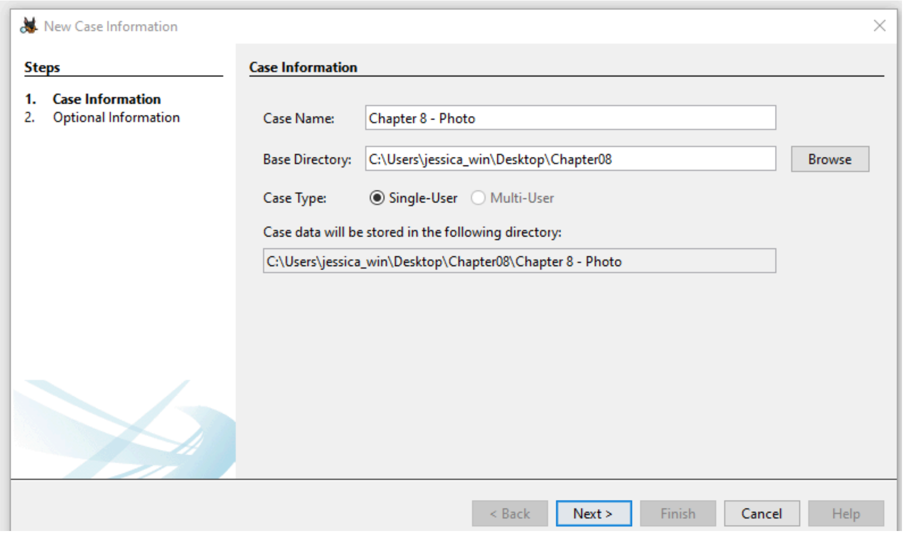
Task 1: Recover Digital Photo Evidence

Step 1: Create Case


New Case Information

Steps

1. Case Information
2. Optional Information

Case Information

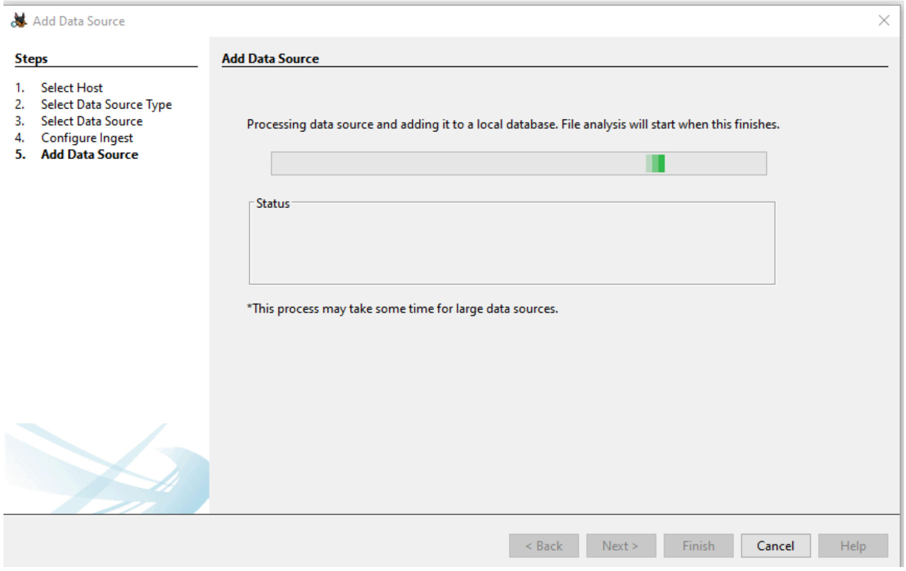
Case Name: Chapter 8 - Photo

Base Directory: C:\Users\jessica_win\Desktop\Chapter08

Case Type: ● Single-User ○ Multi-User

Case data will be stored in the following directory:

C:\Users\jessica_win\Desktop\Chapter08\Chapter 8 - Photo


Add Data Source

Steps

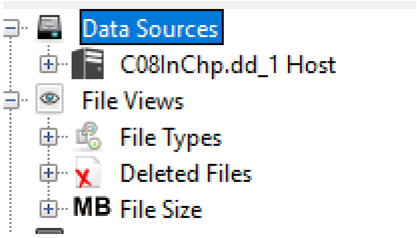
1. Select Host
2. Select Data Source Type
3. Select Data Source
4. Configure Ingest
5. Add Data Source

Add Data Source

Processing data source and adding it to a local database. File analysis will start when this finishes.

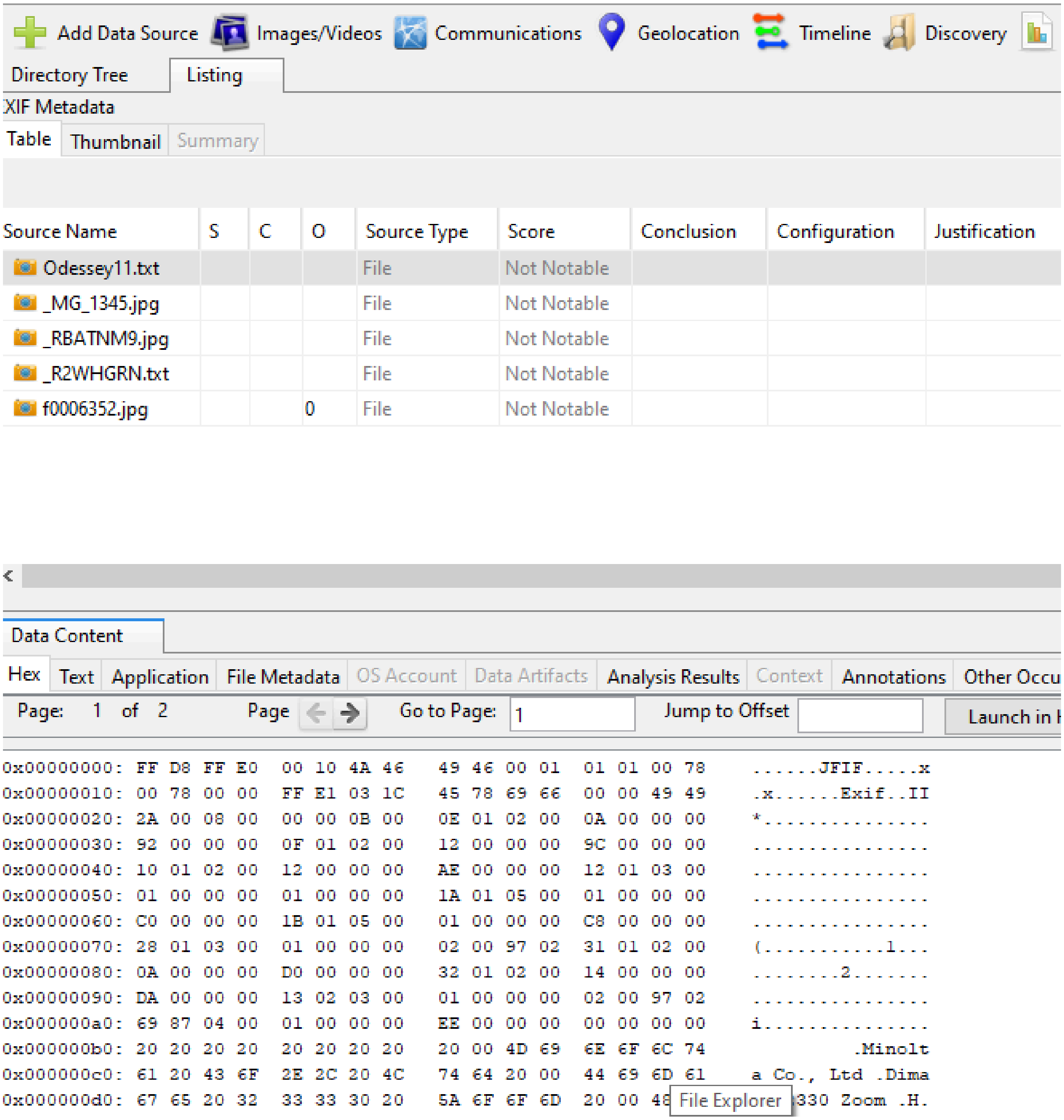
Status

*This process may take some time for large data sources.



Successfully added the data source and loaded it onto Autopsy.

Step 2: Identify Image Files



Source Name	S	C	O	Source Type	Score	Conclusion	Configuration	Justification
Odessey11.txt				File	Not Notable			
_MG_1345.jpg				File	Not Notable			
_RBATNM9.jpg				File	Not Notable			
_R2WHGRN.txt				File	Not Notable			
f0006352.jpg			0	File	Not Notable			

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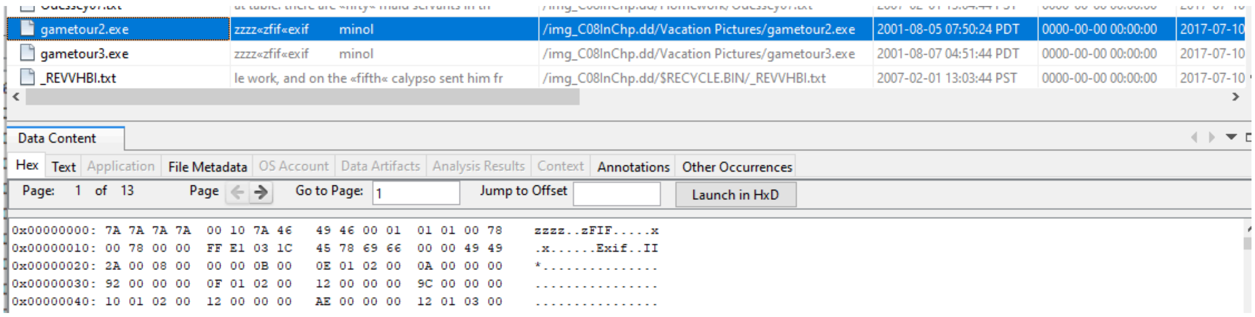
```
0x00000000: FF D8 FF E0  00 10 4A 46  49 46 00 01  01 01 00 78   ......JFIF.....x
0x00000010: 00 78 00 00  FF E1 03 1C  45 78 69 66  00 00 49 49   .x......Exif..II
0x00000020: 2A 00 08 00  00 00 0B 00  0E 01 02 00  0A 00 00 00   *...............
0x00000030: 92 00 00 00  0F 01 02 00  12 00 00 00  9C 00 00 00   ................
0x00000040: 10 01 02 00  12 00 00 00  AE 00 00 00  12 01 03 00   ................
0x00000050: 01 00 00 00  01 00 00 00  1A 01 05 00  01 00 00 00   ................
0x00000060: C0 00 00 00  1B 01 05 00  01 00 00 00  C8 00 00 00   ................
0x00000070: 28 01 03 00  01 00 00 00  02 00 97 02  31 01 02 00   (...........1...
0x00000080: 0A 00 00 00  D0 00 00 00  32 01 02 00  14 00 00 00   ........2.......
0x00000090: DA 00 00 00  13 02 03 00  01 00 00 00  02 00 97 02   ................
0x000000a0: 69 87 04 00  01 00 00 00  EE 00 00 00  00 00 00 00   i...............
0x000000b0: 20 20 20 20  20 20 20 20  20 00 4D 69  6E 6F 6C 74             .Minolt
0x000000c0: 61 20 43 6F  2E 2C 20 4C  74 64 20 00  44 69 6D 61   a Co., Ltd .Dima
0x000000d0: 67 65 20 32  33 33 30 20  5A 6F 6F 6D  20 00 48      330 Zoom .H.
```

Successfully analyzed suspicious txt file that actually has a different file extension.

Step 3: Find Manipulated File Types



gametour2.exe	zzzz«zfif«exif minol	/img_C08InChp.dd/Vacation Pictures/gametour2.exe	2001-08-05 07:50:24 PDT	0000-00-00 00:00:00	2017-07-10
gametour3.exe	zzzz«zfif«exif minol	/img_C08InChp.dd/Vacation Pictures/gametour3.exe	2001-08-07 04:51:44 PDT	0000-00-00 00:00:00	2017-07-10
_REVVHBI.txt	le work, and on the «fifth« calypso sent him fr	/img_C08InChp.dd/$RECYCLE.BIN/_REVVHBI.txt	2007-02-01 13:03:44 PST	0000-00-00 00:00:00	2017-07-10

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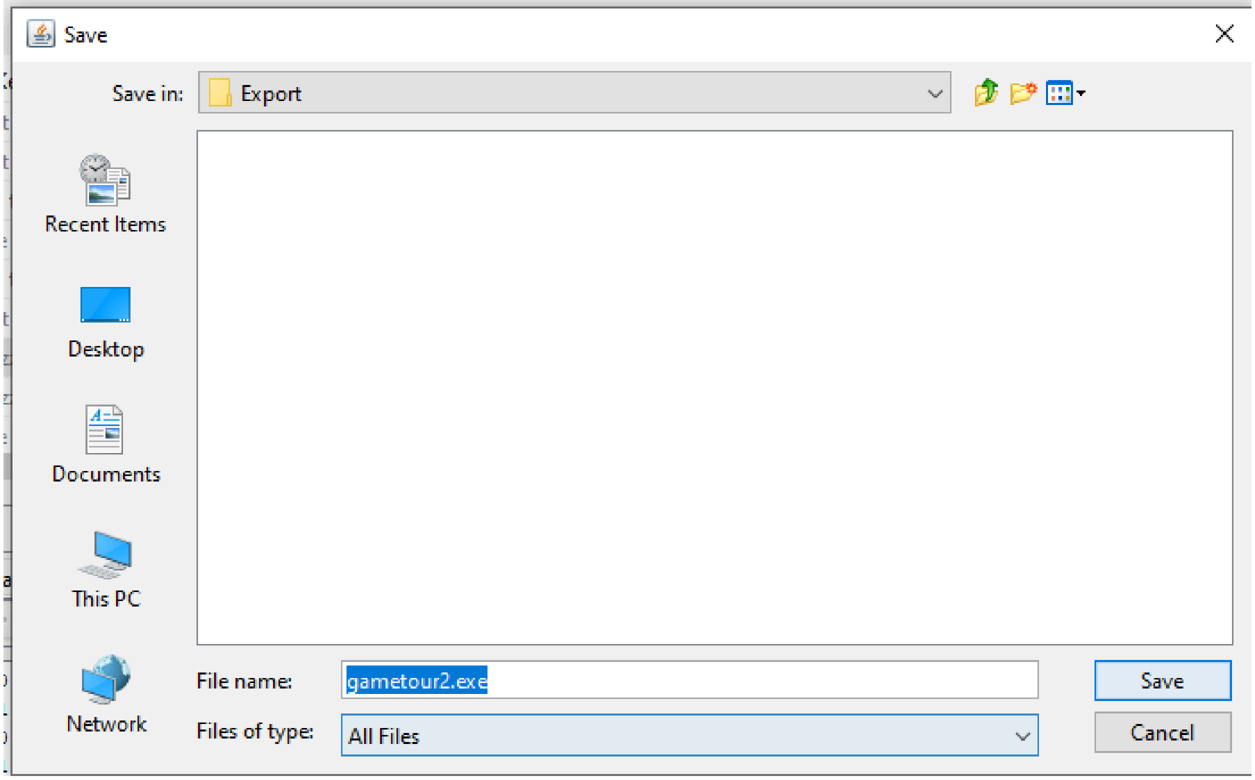
Jump to Offset

```
0x00000000: 7A 7A 7A 7A  00 10 7A 46   49 46 00 01  01 01 00 78    zzzz..zFIF.....x
0x00000010: 00 78 00 00  FF E1 03 1C   45 78 69 66  00 00 49 49    .x......Exif..II
0x00000020: 2A 00 08 00  00 00 0B 00   0E 01 02 00  0A 00 00 00    *...............
0x00000030: 92 00 00 00  0F 01 02 00   12 00 00 00  9C 00 00 00    ................
0x00000040: 10 01 02 00  12 00 00 00   AE 00 00 00  12 01 03 00    ................
```



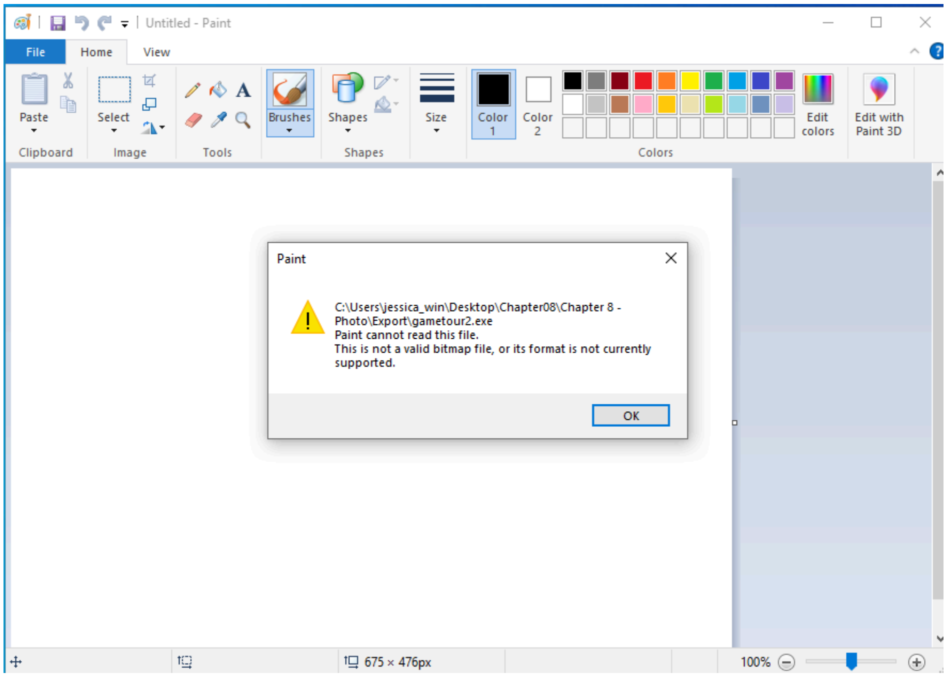
Save in: Export

File name: gametour2.exe

Files of type: All Files

Successfully found more suspicious files and extracted them into the export folder of the case.

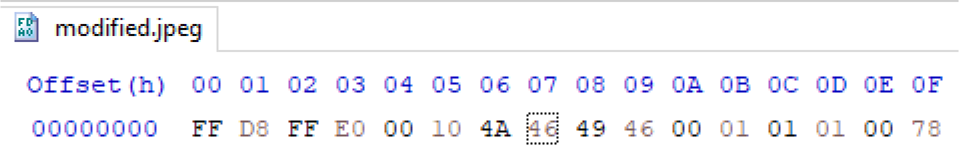
Step 4: Repair File Header



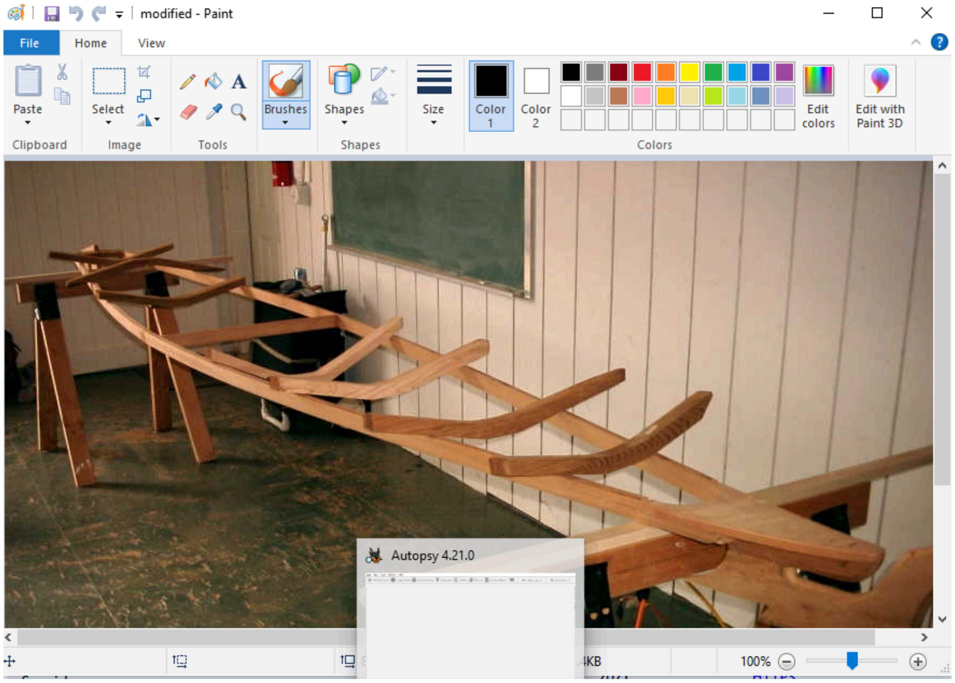
Paint

C:\Users\jessica_win\Desktop\Chapter08\Chapter 8 - Photo\Export\gametour2.exe
Paint cannot read this file.
This is not a valid bitmap file, or its format is not currently supported.

OK



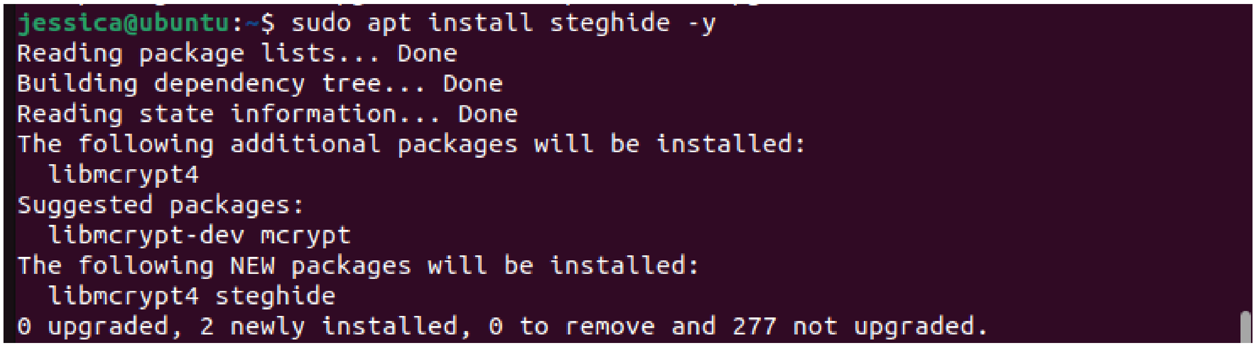
```
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
00000000  FF D8 FF E0 00 10 4A 46 49 46 00 01 01 01 00 78
```



Successfully repaired header of partially lost file and viewed image.

Task 2: Hide a Message

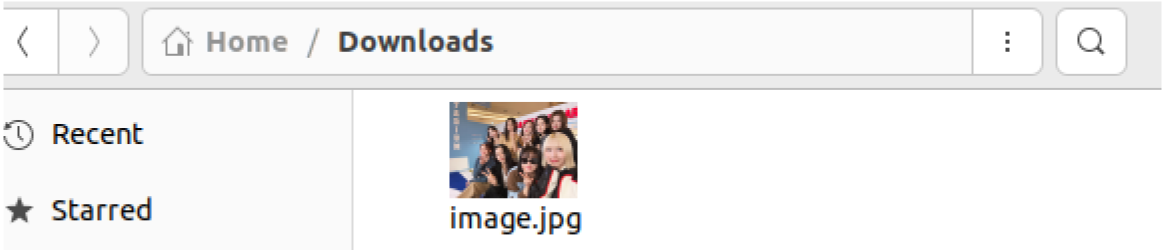
Step 1: Install Steghide



```
jessica@ubuntu:~$ sudo apt install steghide -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libmcrypt4
Suggested packages:
  libmcrypt-dev mcrypt
The following NEW packages will be installed:
  libmcrypt4 steghide
0 upgraded, 2 newly installed, 0 to remove and 277 not upgraded.
```

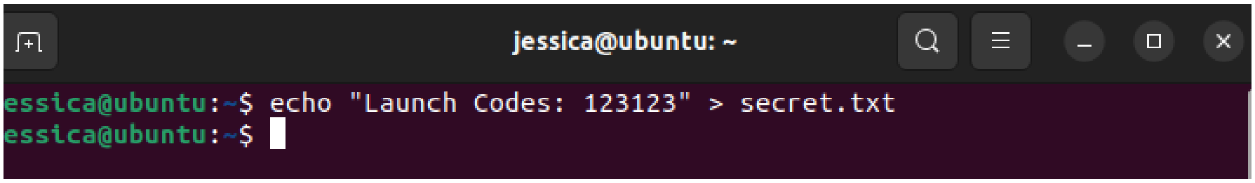
Successfully installed Steghide.

Step 2: Obtain a JPG



Downloaded an image from the internet.

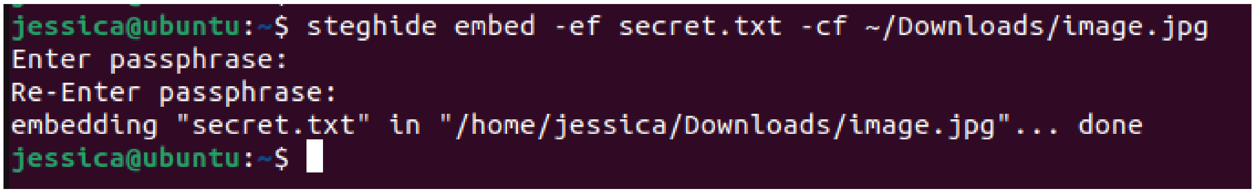
Step 3: Create a Secret Message



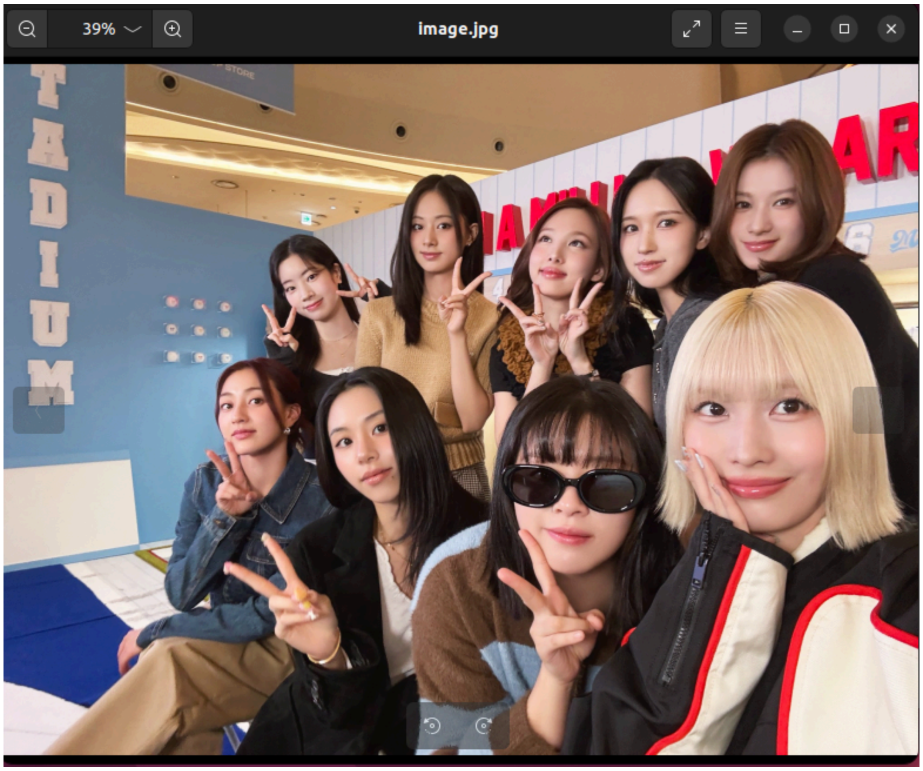
```
essica@ubuntu:~$ echo "Launch Codes: 123123" > secret.txt
essica@ubuntu:~$ 
```

Created a secret message and piped it into a txt file.

Step 4: Hide the Message

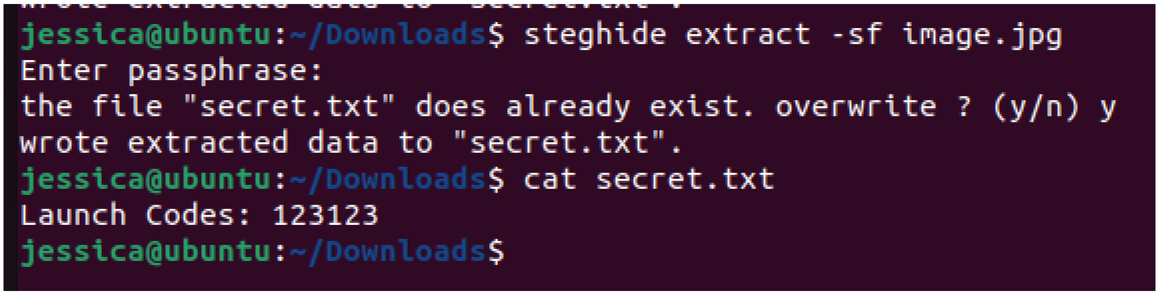


```
jessica@ubuntu:~$ steghide embed -ef secret.txt -cf ~/Downloads/image.jpg
Enter passphrase:
Re-Enter passphrase:
embedding "secret.txt" in "/home/jessica/Downloads/image.jpg"... done
jessica@ubuntu:~$
```



Hid the message in the jpg image.

Step 5: Extract the Secret



```
jessica@ubuntu:~/Downloads$ steghide extract -sf image.jpg
Enter passphrase:
the file "secret.txt" does already exist. overwrite ? (y/n) y
wrote extracted data to "secret.txt".
jessica@ubuntu:~/Downloads$ cat secret.txt
Launch Codes: 123123
jessica@ubuntu:~/Downloads$
```

Successfully extracted secret message from image file.