

snake-nography Testing

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[Github Link](#)

Function	Description	Status	Example
--help function	Help function assists the user on how the program should be used	Passed	Example
Argument Sanatizing	Wrong arguments are ignore and bad arguments are prompted	Passed	Example
Error	An Error is displayed for wrong inputs	Passed	Example
Local files as input	Local files are accepted and processed	Passed	
Encryption	Before embedding the image you can encrypt them with a key	Passed	Example
Decryption	Same key can be used to decrypt the hidden image	Passed	Example
Library import	Libraries are imported properly	Passed	
Debug mode	debug mode is available	Passed	Example
PNG and BMP Support	Multiple image options can be selected and processed	Passed	Example
No obvious artifacts	the artifacts created by the program are not visible to the naked eye	Passed	Example
Small image prompt	If the cover image is too small, program will prompt an error	Passed	Example
--help			

```
PS C:\Users\d0ntblink\OneDrive\Projects\snake-nography\Code> python .\snake-nography.py -h
usage: snake-nography.py [-h] [-x <key>] [-d] (-c <secret image> <cover image> <output> | -r <target file> <output>)
```

This program hides images into other images in lossless format.

options:

```
-h, --help            show this help message and exit
-x <key>, --xcrypt <key>
                     Decrypts or encrypts image using a XOR formula
-d, --debug          Enables debug mode
-c <secret image> <cover image> <output>, --cloak <secret image> <cover image> <output>
                     Cloaks an image in another image
```

```
-r <target file> <output>, --reveal <target file> <output>
          Reveals an image hidden by this program. the output format
          must match the original hidden file format
```

Argument Sanitizing

```
PS C:\Users\d0ntblink\OneDrive\Projects\snake-nography\Code> python .\snake-
nography.py -g
usage: snake-nography.py [-h] [-x <key>] [-d] (-c <secret image> <cover image>
<output> | -r <target file> <output>)
snake-nography.py: error: one of the arguments -c/--cloak -r/--reveal is required
PS C:\Users\d0ntblink\OneDrive\Projects\snake-nography\Code> python .\snake-
nography.py -g -c 1 2 3
usage: snake-nography.py [-h] [-x <key>] [-d] (-c <secret image> <cover image>
<output> | -r <target file> <output>)
snake-nography.py: error: unrecognized arguments: -g
PS C:\Users\d0ntblink\OneDrive\Projects\snake-nography\Code> python .\snake-
nography.py -g -c 1 2
usage: snake-nography.py [-h] [-x <key>] [-d] (-c <secret image> <cover image>
<output> | -r <target file> <output>)
snake-nography.py: error: argument -c/--cloak: expected 3 **arguments**
```

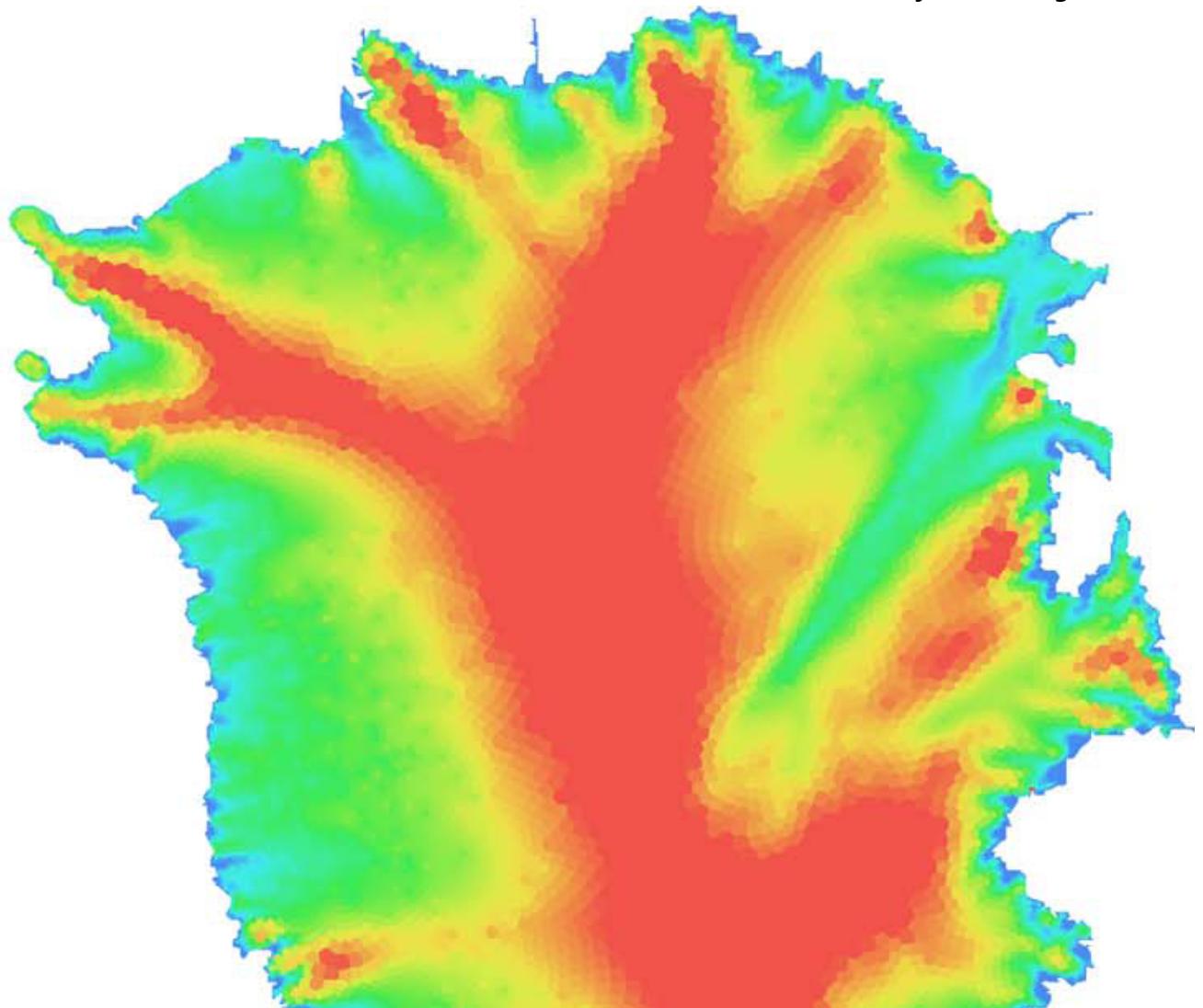
Encryption and Decryption

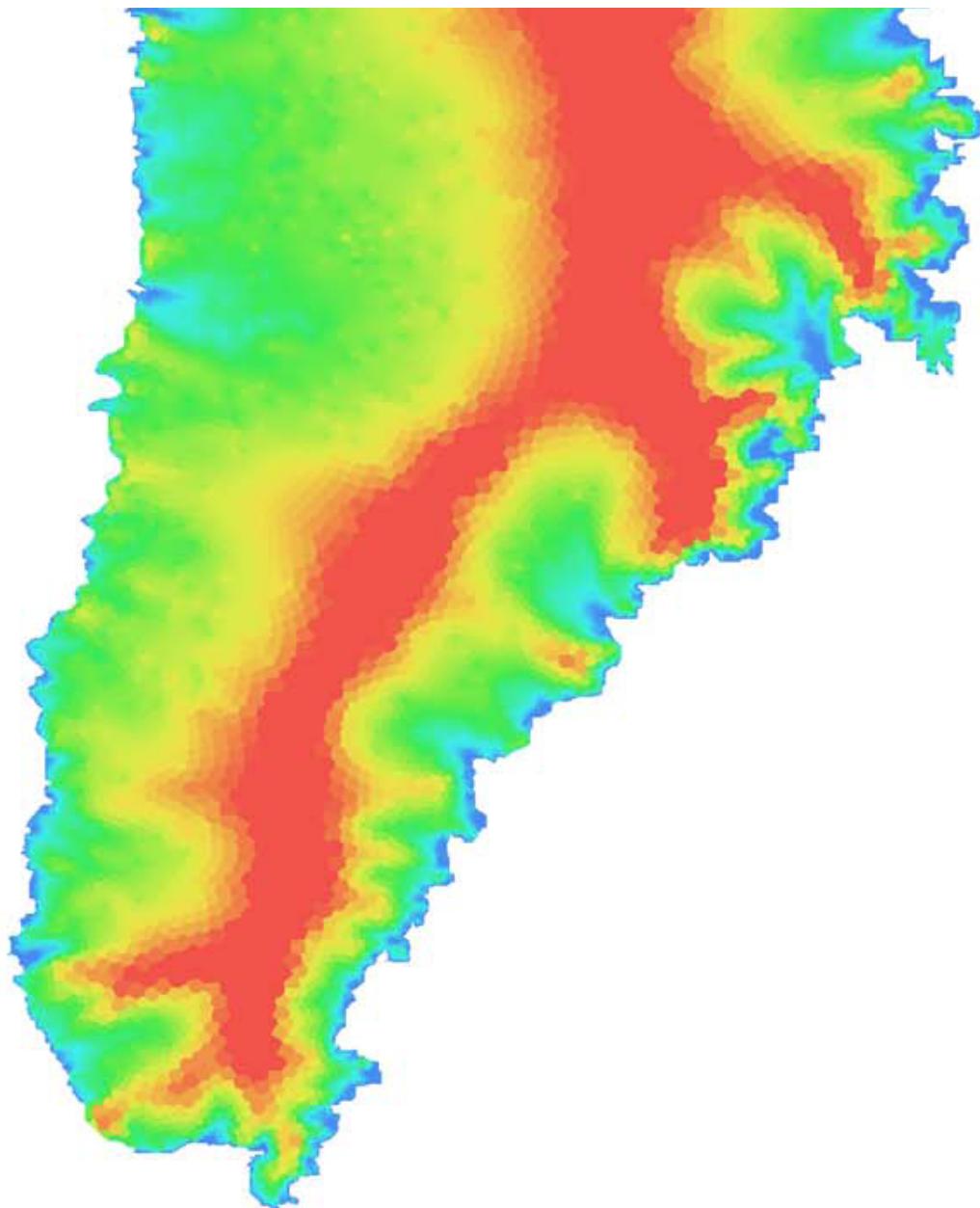
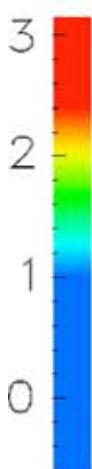
Step 1: Encrypting an image

image I am trying to hide



my cover image





verysecretpassword as my password

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
  └─$ python3 ./Code/snake-nography.py -h
usage: snake-nography.py [-h] [-x <key>] [-d] (-c <secret image> <cover image>
<output> | -r <target file> <output>)
```

This program hides images into other images in lossless format.

optional arguments:

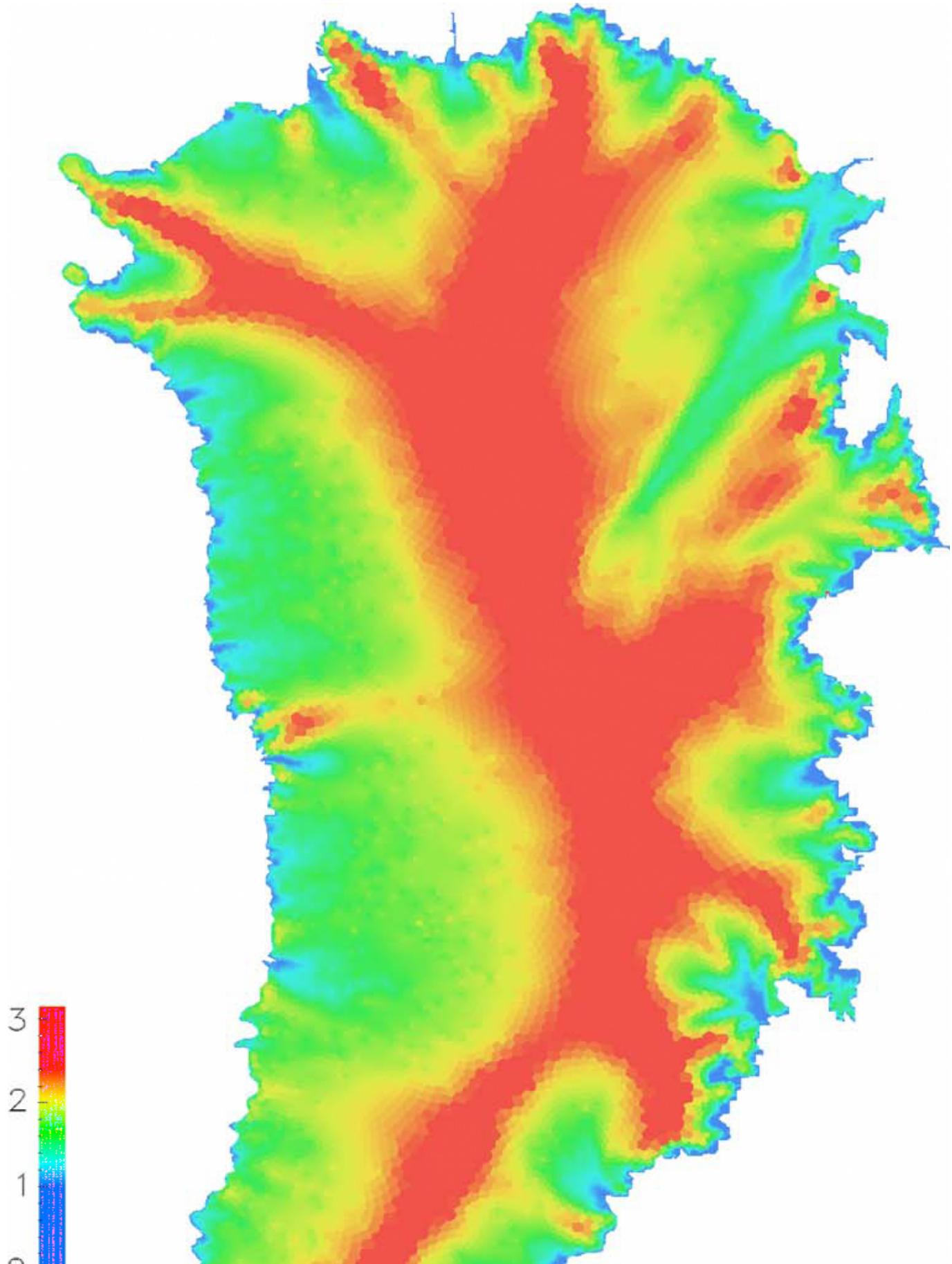
- h, --help show this help message and exit
- x <key>, --xcrypt <key> Decrypts or encrypts image using a XOR formula
- d, --debug Enables debug mode
- c <secret image> <cover image> <output>, --cloak <secret image> <cover image> <output> Cloaks an image in another image
- r <target file> <output>, --reveal <target file> <output> Reveals an image hidden by this program. the output format must match the orginal hidden file format

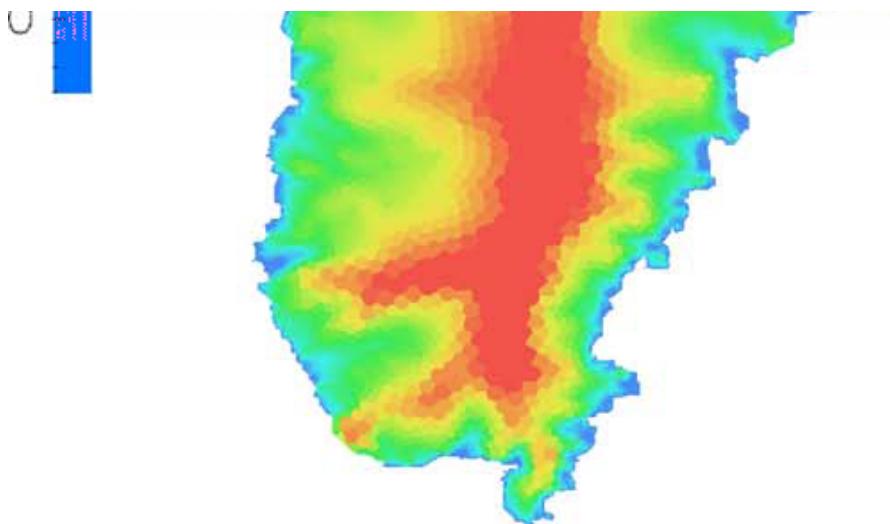
```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
```

```
└$ python3 ../Code/snake-nography.py -c lena.bmp greenland_grid_velo.bmp  
notsusimage.png -x "verysecretpassword"
```

```
└(d0ntblink@H0rn3d0wl)-[~/Projects/snake-nography/Data]  
└$ gio open notsusimage.png
```

outputimage





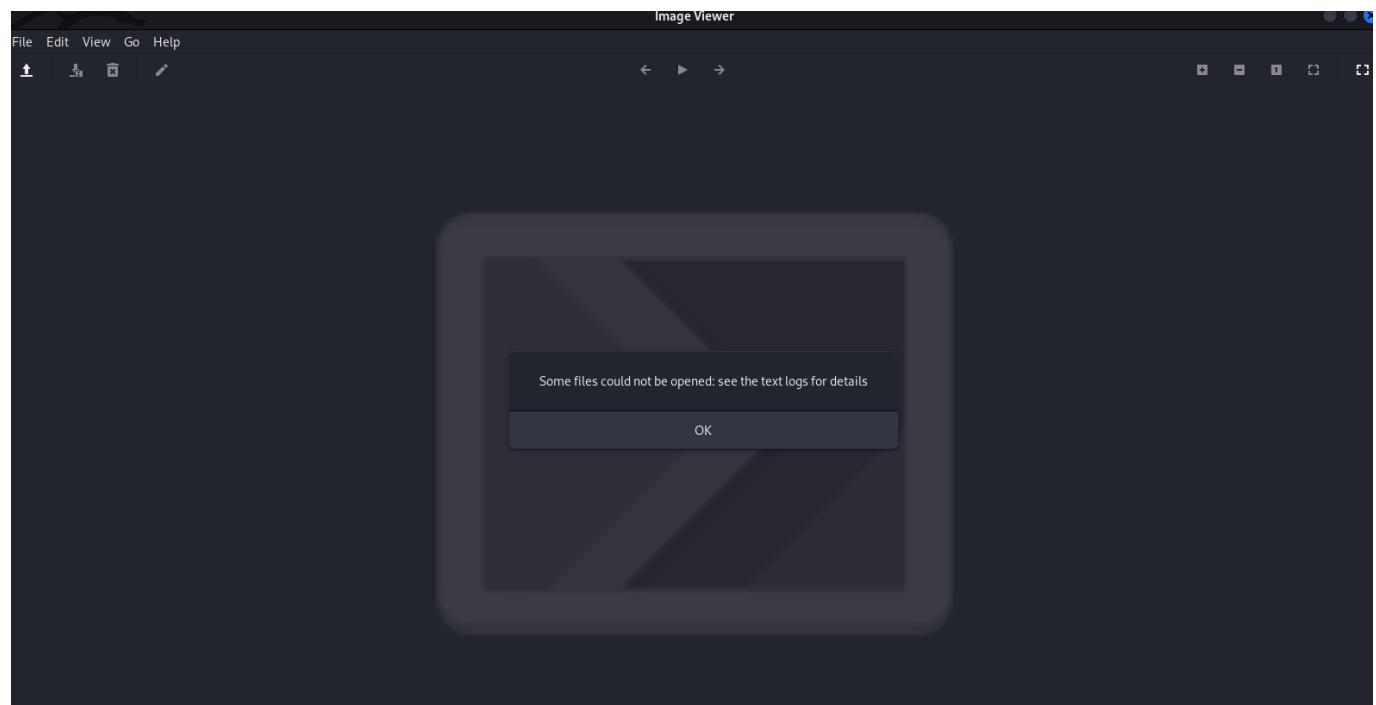
Step 2: Extracting the Image

extracting the image without password

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ python3 ../Code/snake-nography.py -r notsusimage.png nopassword.bmp

└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ gio open nopassword.bmp

└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ ** Message: 15:18:15.395: Could not open file
      'file:///home/d0ntblink/Projects/snake-nography/Data/nopassword.bmp': Unsupported
      mime type
```



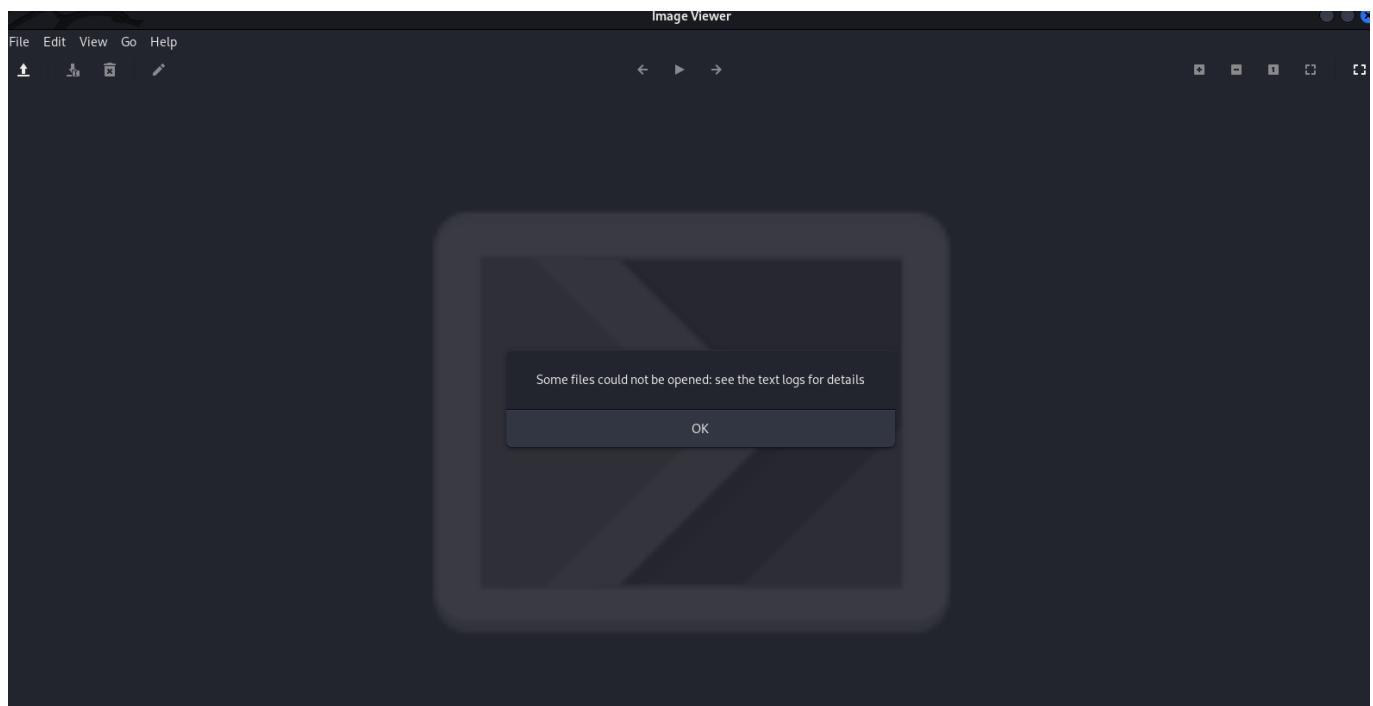
extracting the image with the wrong password

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ python3 ../Code/snake-nography.py -r notsusimage.png wrongpassword.bmp -x
```

```
"idkthepasswordbro"
```

```
└─(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ gio open wrongpassword.bmp

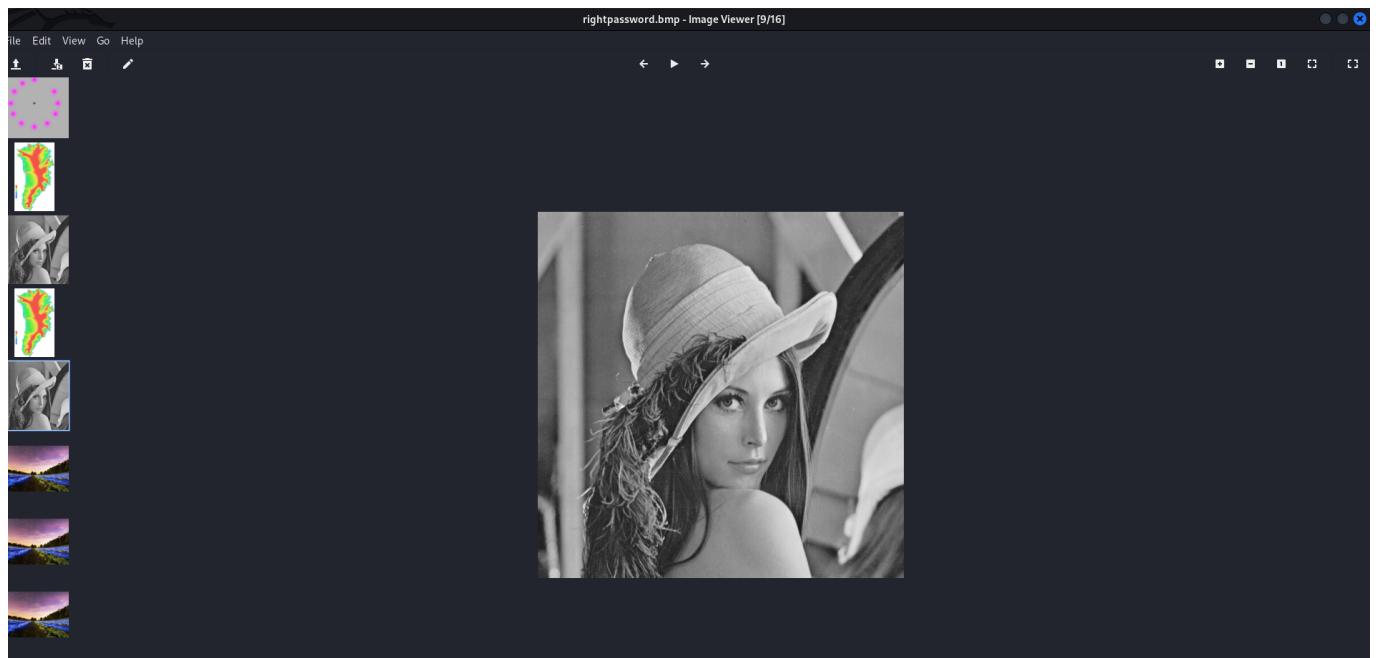
└─(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ ** Message: 15:20:27.653: Could not open file
'file:///home/d0ntblink/Projects/snake-nography/Data/wrongpassword.bmp': 
Unsupported mime type
^C
```



extracting with the right password

```
└─(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ python3 ../Code/snake-nography.py -r notsusimage.png rightpassword.bmp -x
verysecretpassword

└─(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ gio rightpassword.bmp
```



No Artifacts

Right image is image containing another image

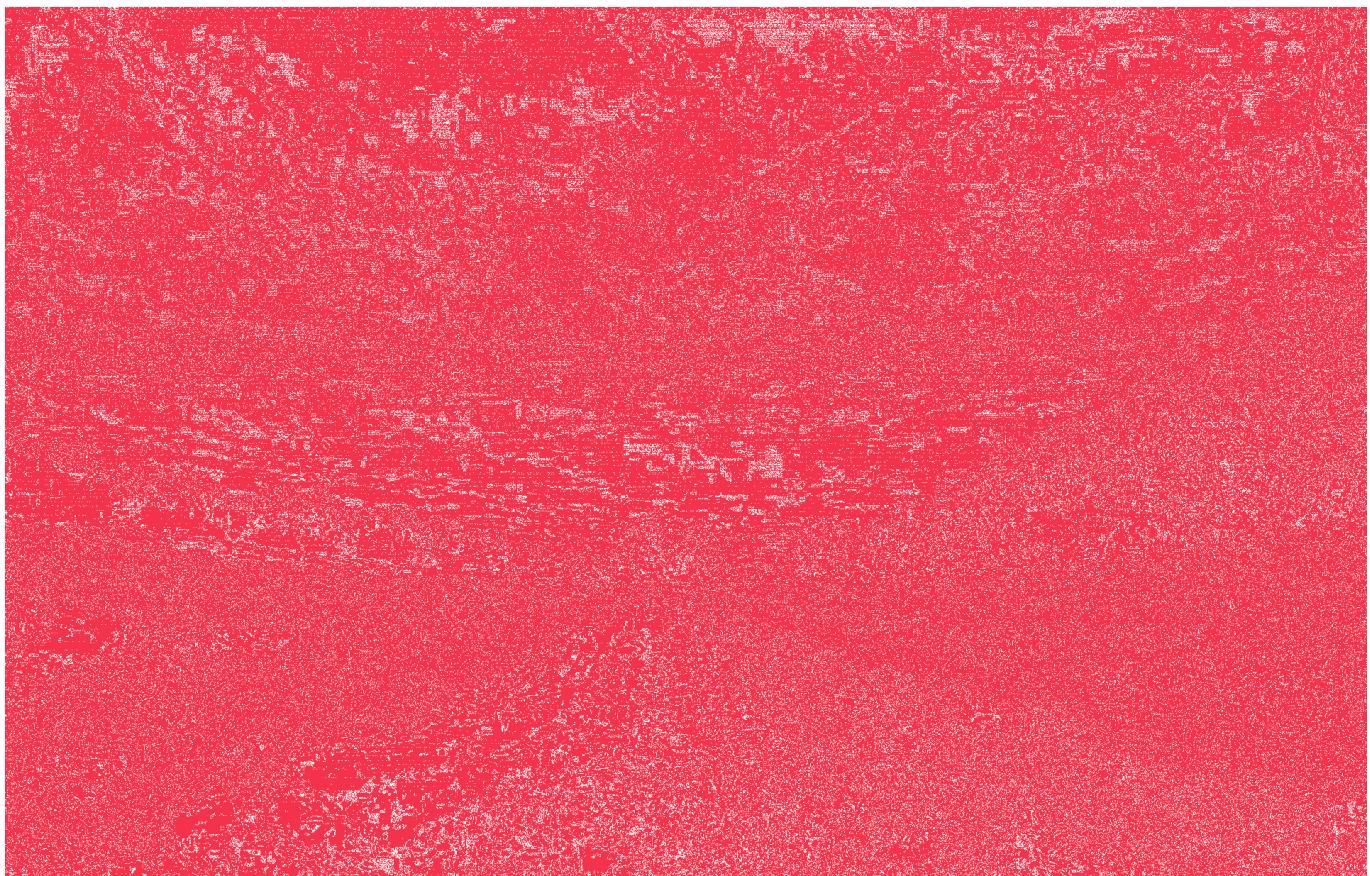
Last image is the hidden image

Case 1:

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ python3 ../Code/snake-nography.py -c blackbuck.bmp sample_19201280.bmp
        newsample_19201280.bmp

└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ compare sample_19201280.png newsample_19201280.bmp -compose src diff.png

└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
    └─$ python3 ../Code/snake-nography.py -r newsample_19201280.bmp case1hidden.bmp
```





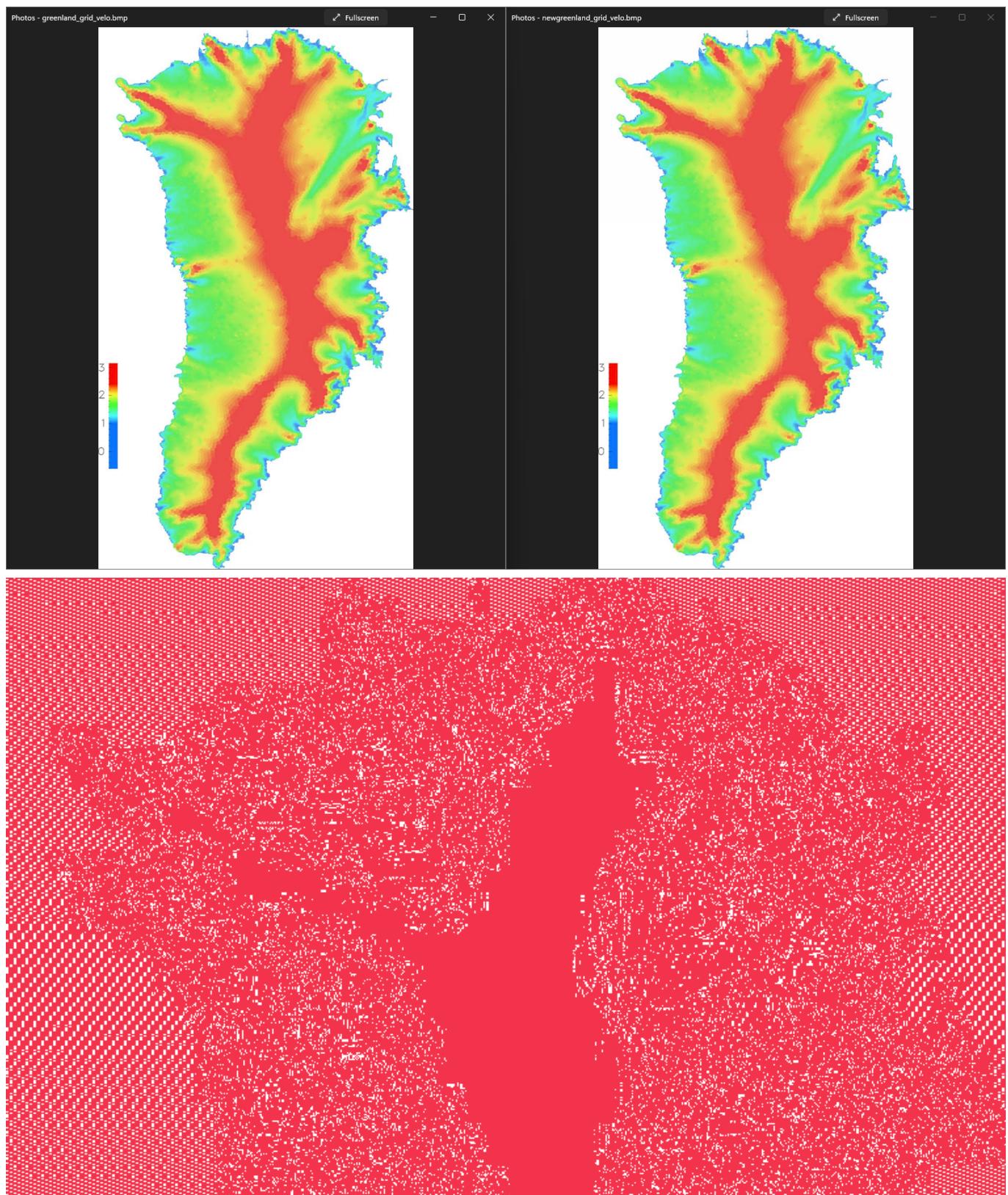
```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ compare -verbose -metric PSNR newsample_19201280.bmp sample_19201280.bmp
/dev/null
newsample_19201280.bmp BMP3 1920x1280 1920x1280+0+0 8-bit sRGB 7.0313MiB 0.070u
0:00.166
sample_19201280.bmp BMP 1920x1280 1920x1280+0+0 8-bit sRGB 7.03138MiB 0.080u
0:00.190
Image: newsample_19201280.bmp
Channel distortion: PSNR
    red: 37.1459
    green: 32.7486
    blue: 21.5741
    all: 25.9156
newsample_19201280.bmp=>/dev/null BMP3 1920x1280 1920x1280+0+0 8-bit sRGB 0.480u
0:00.086
```

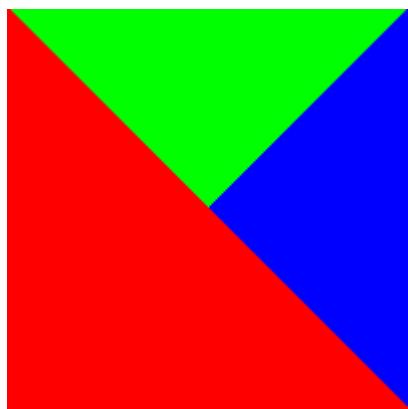
Case 2:

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ python3 ../Code/snake-nography.py -c bmp_24.bmp greenland_grid_velo.bmp
newgreenland_grid_velo.bmp

└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ compare greenland_grid_velo.bmp newgreenland_grid_velo.bmp -compose src
diff.png
```

```
└──(d0ntblink@H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ python3 ../Code/snake-nography.py -r newgreenland_grid_velo.bmp
case2hidden.bmp
```





```
└─(d0ntblink@H0rn3d0wl)-[~/Projects/snake-nography/Data]
└─$ compare -verbose -metric PSNR newgreenland_grid_velo.bmp
greenland_grid_velo.bmp /dev/null
newgreenland_grid_velo.bmp BMP3 762x1309 762x1309+0+0 8-bit sRGB 2.8563MiB 0.030u
0:00.079
greenland_grid_velo.bmp BMP3 762x1309 762x1309+0+0 8-bit sRGB 2.8563MiB 0.040u
0:00.077
Image: newgreenland_grid_velo.bmp
Channel distortion: PSNR
  red: 55.112
  green: 55.2927
  blue: 54.993
    all: 55.1308
```

```
newgreenland_grid_velo.bmp=>/dev/null BMP3 762x1309 762x1309+0+0 8-bit sRGB 0.280u  
0:00.044
```

PNG BMP

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]  
└─$ python3 ../Code/snake-nography.py -c bmp_24.bmp greenland_grid_velo.bmp  
pngout.png  
  
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]  
└─$ python3 ../Code/snake-nography.py -c bmp_24.bmp greenland_grid_velo.bmp  
bmpout.bmp
```

Debug Mode

```
PS C:\Users\d0ntblink\OneDrive\Projects\snake-nography\Code> python .\snake-nography.py -c ..\Data\blackbuck.bmp ..\Data\bmp_08.bmp test.png -d
```

```
2022-04-11 15:26:51,831 : secret image info:  
color depth: 3  
width: 512  
height: 512
```

```
2022-04-11 15:26:51,832 : need at least 2359458 pixels on the cover image
```

```
2022-04-11 15:26:51,832 : cover image info:  
color depth: 3  
width: 255  
height: 255
```

```
2022-04-11 15:26:51,832 : row count is 9253
```

```
2022-04-11 15:26:51,833 : current row is: 0  
0 bytes have passed
```

Image Too Small

```
└──(d0ntblink㉿H0rn3d0wl)-[~/Projects/snake-nography/Data]  
└─$ python3 ../Code/snake-nography.py -c bmp_24.bmp bmp_08.bmp newimage.png  
your cover image is not big enough
```

Live Presentation Commands

```
## go to the files location
cd /home/d0ntblink/Projects/snake-nography/Extras/livetest

ls -lah

## extract

python3 sg.py -h

python3 sg.py -c hide1.bmp cover1.bmp output1.png -x "hellothisisalivetest"

gio open output1.png

## extract with right password

python3 sg.py -h

python3 sg.py -r output1.png rightpassword.bmp -x "hellothisisalivetest"

gio open rightpassword.bmp

## extract with wrong password

python3 sg.py -r output1.png wrongpassword.bmp -x "wrongpass"

gio open wrongpassword.bmp

### show difference

compare cover1.bmp output1.png -compose src diff1.png

gio open diff1.png
```