Day 3 Challenge 1

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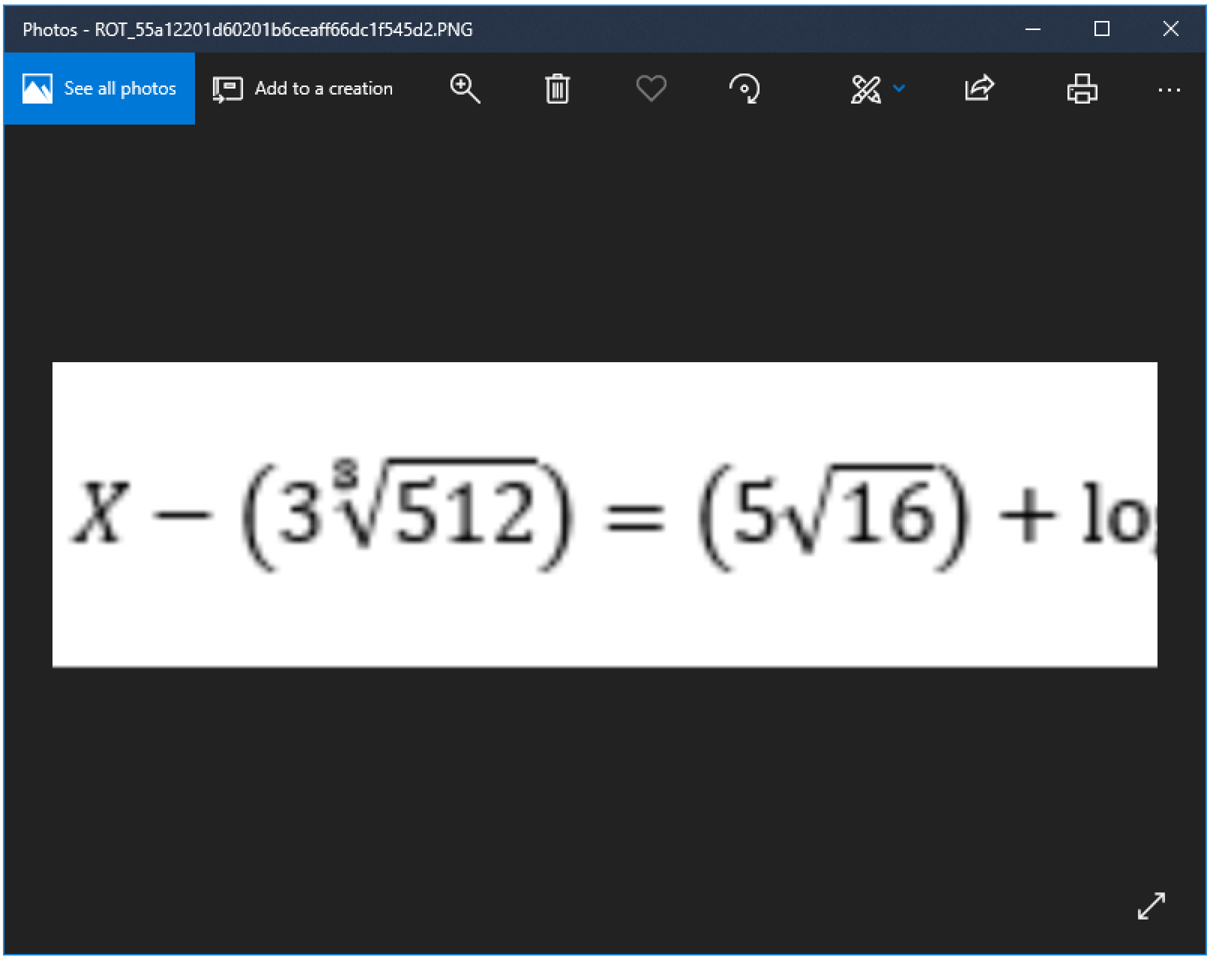
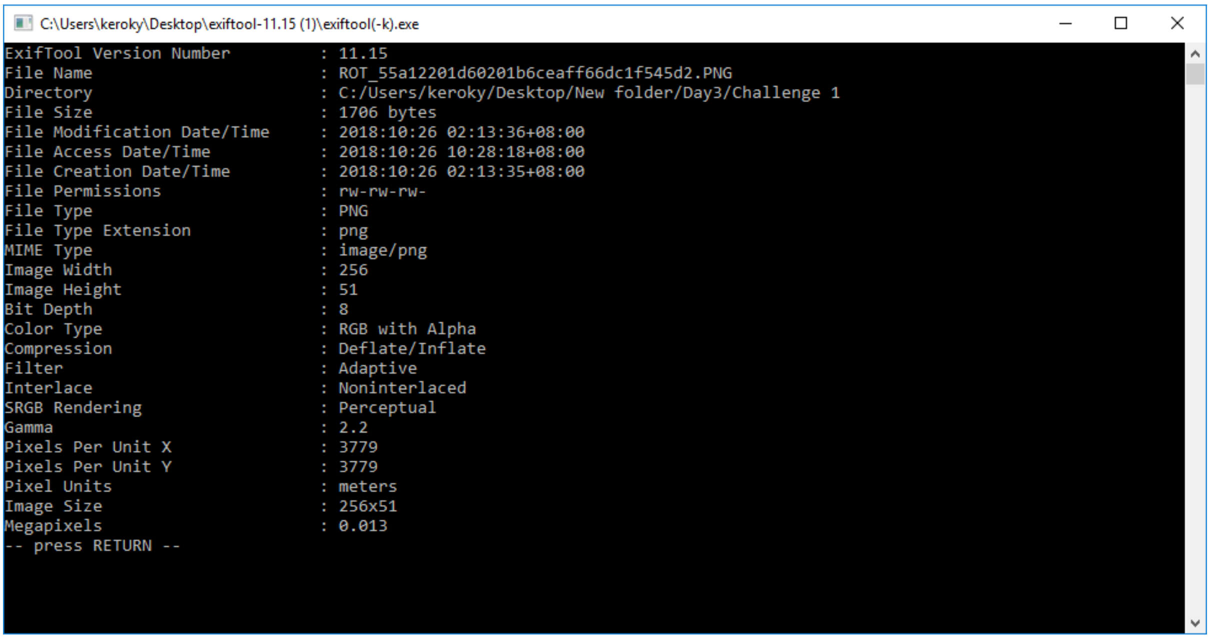
Step 1 :

As per usual, the first step we do is actually looking at the picture and zooming in to see anything hidden in plain sight.


Photos - ROT_55a12201d60201b6ceaff66dc1f545d2.PNG
See all photos
Add to a creation
$X-(3\sqrt[3]{512})=(5\sqrt{16})+\mathrm{lo}$

Step 2 :

If that fails time to do some analysis first because this is a png file, it’s harder than usual .jpg challenges. We used exiftool to first check for anything.

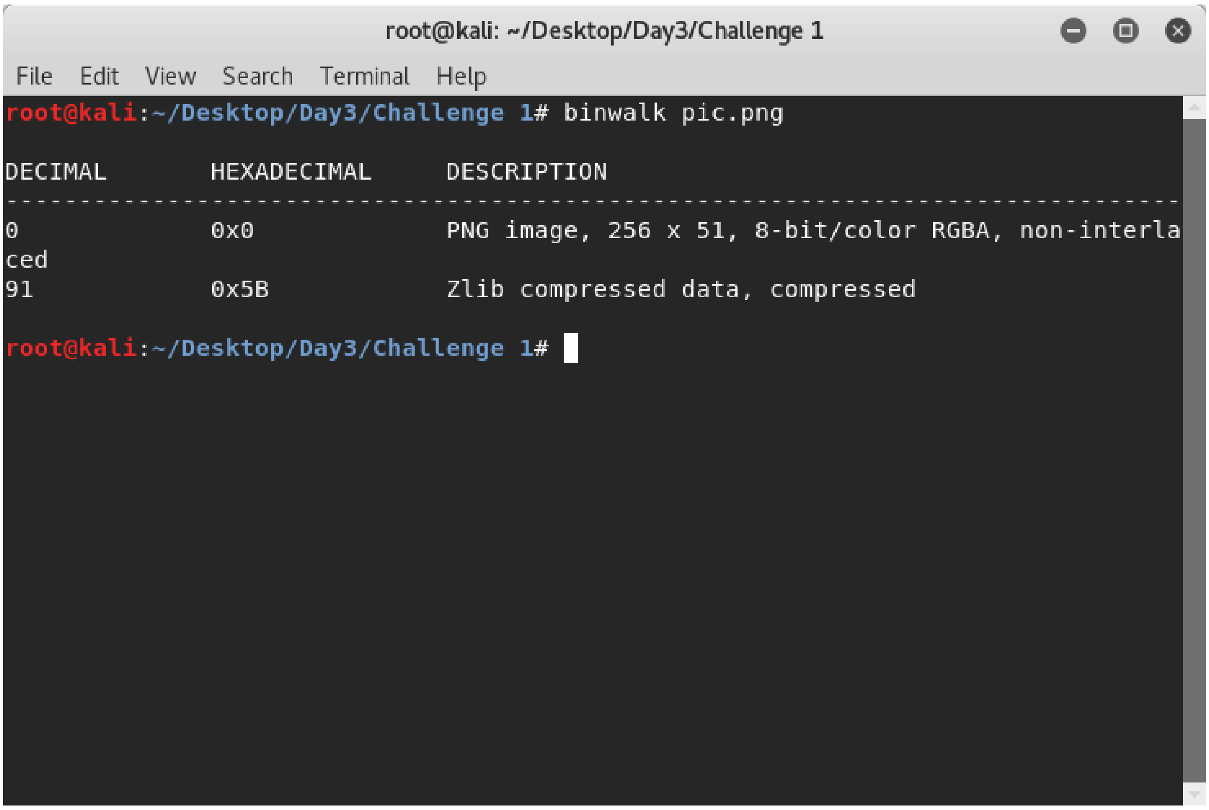


```
ExifTool Version Number         : 11.15
File Name                       : ROT_55a12201d60201b6ceaff66dc1f545d2.PNG
Directory                       : C:/Users/keroky/Desktop/New folder/Day3/Challenge 1
File Size                       : 1706 bytes
File Modification Date/Time     : 2018:10:26 02:13:36+08:00
File Access Date/Time           : 2018:10:26 10:28:18+08:00
File Creation Date/Time         : 2018:10:26 02:13:35+08:00
File Permissions                : rw-rw-rw-
File Type                       : PNG
File Type Extension             : png
MIME Type                       : image/png
Image Width                     : 256
Image Height                    : 51
Bit Depth                       : 8
Color Type                      : RGB with Alpha
Compression                     : Deflate/Inflate
Filter                          : Adaptive
Interlace                       : Noninterlaced
SRGB Rendering                  : Perceptual
Gamma                           : 2.2
Pixels Per Unit X               : 3779
Pixels Per Unit Y               : 3779
Pixel Units                     : meters
Image Size                      : 256x51
Megapixels                      : 0.013
-- press RETURN --
```

Doesn’t seem to say much.

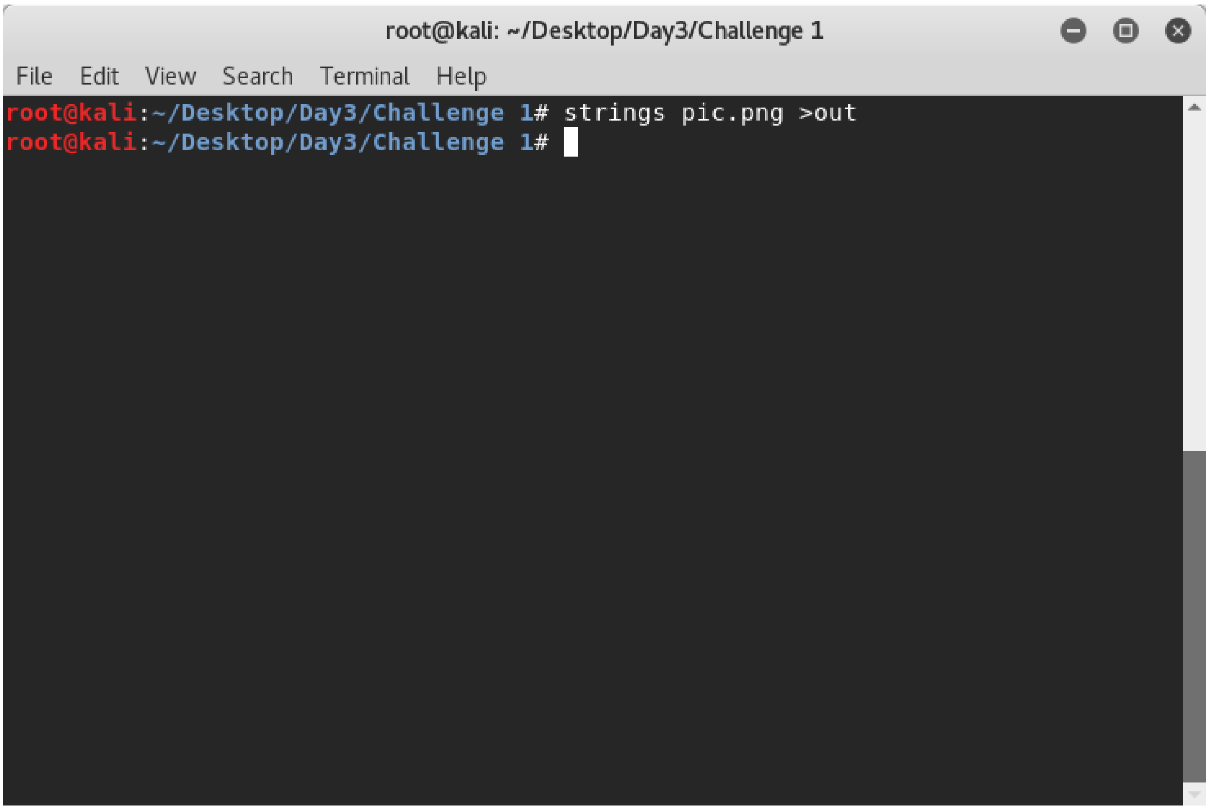
Step 3 :

More analysis tools.


root@kali: ~/Desktop/Day3/Challenge 1
File Edit View Search Terminal Help

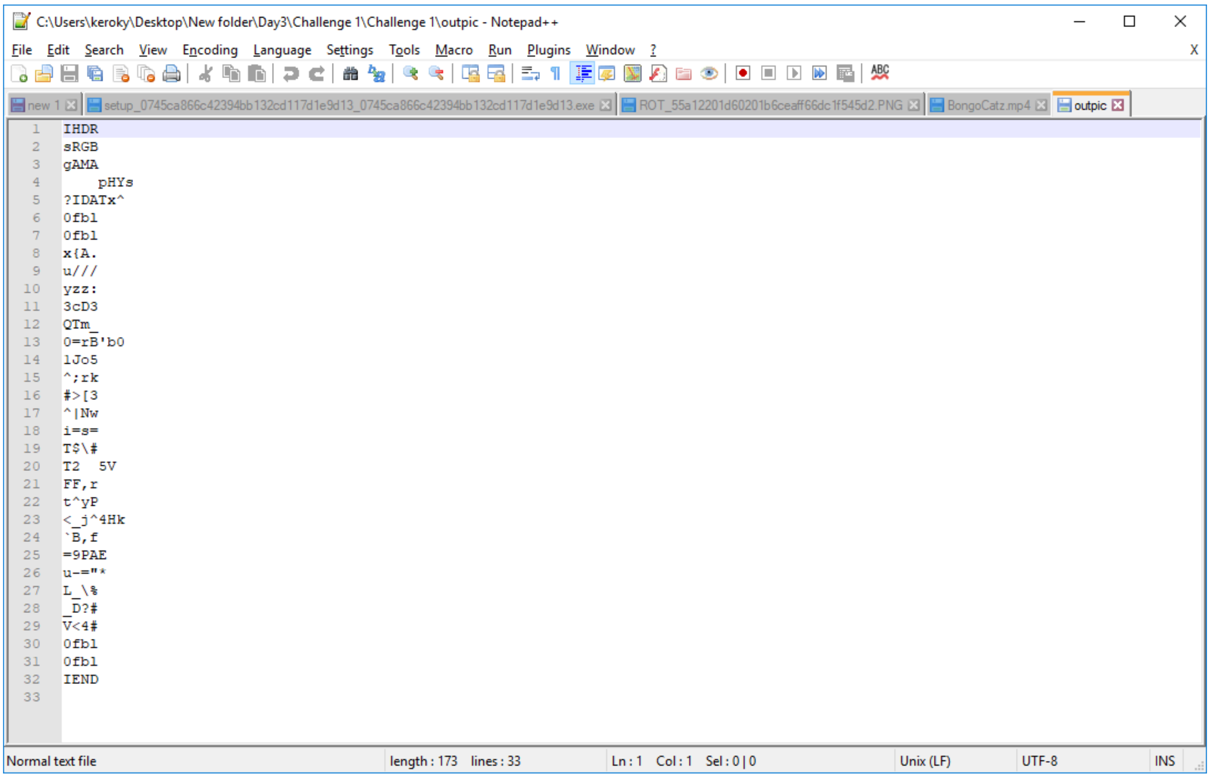
```
root@kali:~/Desktop/Day3/Challenge 1# binwalk pic.png

DECIMAL       HEXADECIMAL     DESCRIPTION
--------------------------------------------------------------------------------
0             0x0             PNG image, 256 x 51, 8-bit/color RGBA, non-interla
ced
91            0x5B            Zlib compressed data, compressed

root@kali:~/Desktop/Day3/Challenge 1#
```

Running binwalk on the image doesn’t provide anything much. Seems to be standard png file.


root@kali: ~/Desktop/Day3/Challenge 1
File Edit View Search Terminal Help

```
root@kali:~/Desktop/Day3/Challenge 1# strings pic.png >out
root@kali:~/Desktop/Day3/Challenge 1# 
```

Pull out the strings of hex file from the png.

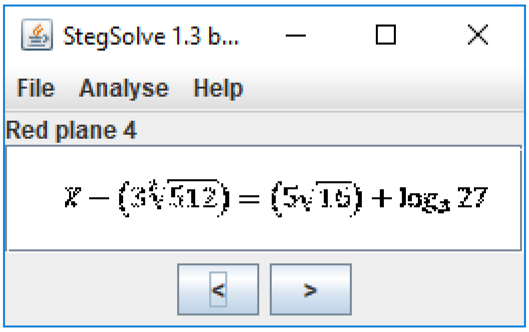

C:\Users\keroky\Desktop\New folder\Day3\Challenge 1\Challenge 1\outpic - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
new 1
setup_0745ca866c42394bb132cd117d1e9d13_0745ca866c42394bb132cd117d1e9d13.exe
ROT_55a12201d60201b6ceaff66dc1f545d2.PNG
BongoCatz.mp4
outpic
Normal text file
length : 173 lines : 33
Ln : 1 Col : 1 Sel : 0 | 0
Unix (LF)
UTF-8
INS

```
IHDR
sRGB
gAMA
    pHYs
?IDATx^
0fbl
0fbl
x{A.
u///
yzz:
3cD3
QTm_
0=rB'b0
1Jo5
^;rk
#>[3
^|Nw
i=s=
T$\#
T2  5V
FF,r
t^yP
<_j^4Hk
`B,f
=9PAE
u-="*
L_\%
_D?#
V<4#
0fbl
0fbl
IEND
```

There doesn’t seem to be anything rather peculiar aswell in the hex.

Step 4 :

We used a tool called Stegsolve to try to analyse the pic.



$$X - (3\sqrt[3]{512}) = (5\sqrt{16}) + \log_3 27$$

Doesn’t show us anything much aswell.

Unfortunately we couldn’t solve this problem. Png files have always been our weak point and its something we hope to improve on.