

राईकवाCTF

CHALLENGE NAME: [LOOKING FOR DUSHYANTA]

DEV: [AMRUTA PATIL]

CATEGORY: [STEGANOGRAPHY]

LEVEL: [EASY]



2024

Description:

I was always fascinated by how a certain Indian artist combined European realism with Indian sensibility. But this fascination wasn't enough help me remember the artist's name. Maybe you could give me a tip to score good in art history exams.

Files:

A .jpg image file

Solution:

Provided is a .jpg file. First instinct is to examine it with **exiftool**. We see that there's a parameter 'Comment' which gives us a hint for some passphrase.

```
amruta@kali: ~/Downloads
File Actions Edit View Help
(amruta@kali)-[~]
$ cd Downloads
(amruta@kali)-[~/Downloads]
$ ls
Ames16.ovpn      World.png      cacert.der      exploit.php      test.php
'Ground Theme.wav' abc.raw        catdog.jpeg     looking_for_Dushyanta.jpg xampp-linux-x64-8.0.30-0-installer.run
(amruta@kali)-[~/Downloads]
$ exiftool looking_for_Dushyanta.jpg
ExifTool Version Number      : 12.65
File Name                    : looking_for_Dushyanta.jpg
Directory                   : .
File Size                    : 171 kB
File Modification Date/Time  : 2023:12:17 21:38:37+05:30
File Access Date/Time       : 2024:01:28 20:47:51+05:30
File Inode Change Date/Time  : 2023:12:17 21:38:37+05:30
File Permissions             : -rw-r--r--
File Type                    : JPEG
File Type Extension          : jpeg
MIME Type                    : image/jpeg
JFIF Version                 : 1.01
Resolution Unit              : inches
X Resolution                  : 100
Y Resolution                  : 100
Comment                      : Passphrase:YearOfPainting
Image Width                  : 544
Image Height                  : 803
Encoding Process              : Baseline DCT, Huffman coding
Bits Per Sample              : 8
Color Components              : 3
Y Cb Cr Sub Sampling         : YCbCr4:2:2 (2 1)
Image Size                   : 544x803
Megapixels                   : 0.437
```

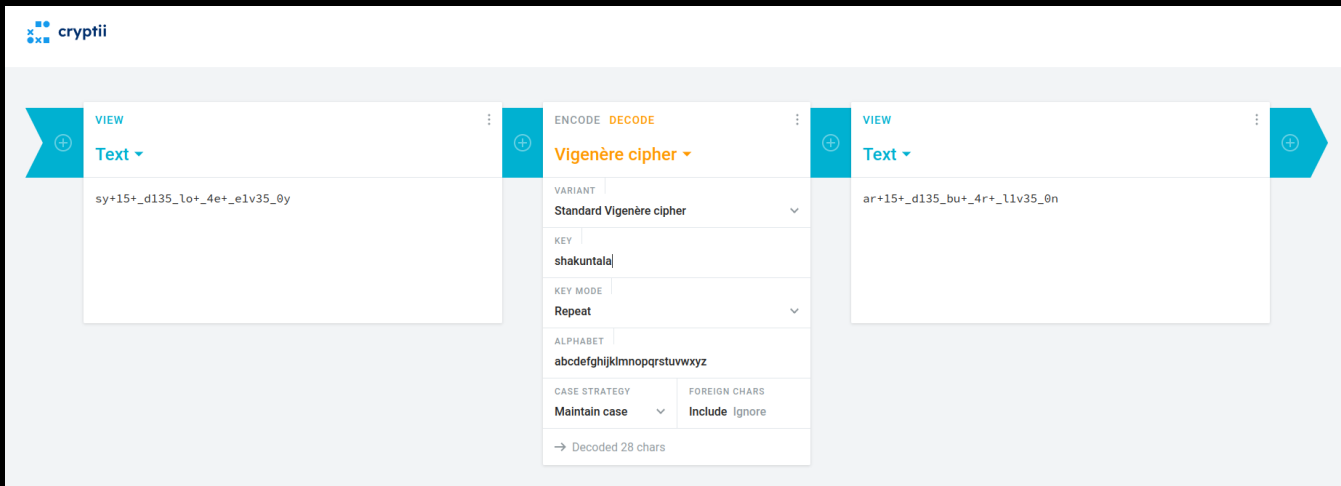
After researching about the Indian artist referred to in the description, we find out that the painting was painted in the year 1898.

Proceed to use **steghide** tool to extract any files that might be hidden inside the file. Use the passphrase that we obtained above.

```
(amruta@kali)-[~/Downloads]
$ steghide extract -sf looking_for_Dushyanta.jpg -xf extracted.txt
Enter passphrase:
wrote extracted data to "extracted.txt".
(amruta@kali)-[~/Downloads]
$ cat extracted.txt
sy+15+_d135_lo+_4e+_e1v35_0y

The KEY to scoring good in art history is to always know the name of your muse.
```

It seems we have obtained a .txt file. Opening it gives us the flag, however it seems to be encoded. Along with the flag string, we are given yet another hint required for decoding the string. The hint states it's the name of the painting's muse, i.e., **shakuntala**.



Given key is polyalphabetic, so we narrow down all possible ciphers used to Vigenère cipher. Using **cryptii** and the key, we get our final flag.

Flag:

VishwaCTF{ar+15+_d135_bu+_4r+_11v35_0n}