hackerearth

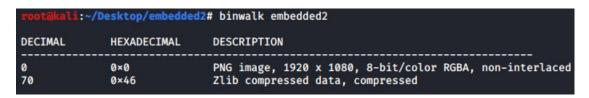**Penetration Testing Report**

For

"Embedded2"
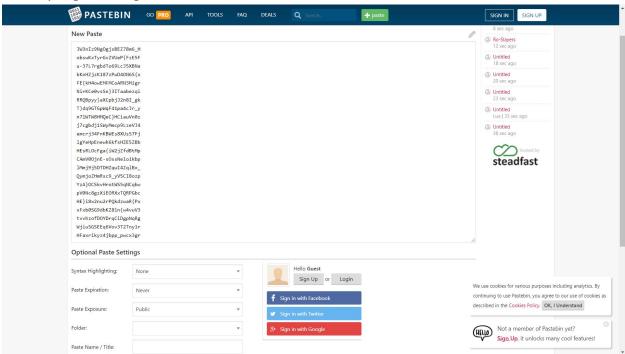
S.NO.	Title	#
1.	Challenge Category	Cryptography
2.	Challenge Related Files	embedded2
3.	File Link / Target IP	N/A

PROCEDURE

1. Identifying the filetype.

```
root@kali:~/Desktop/embedded2# binwalk embedded2

DECIMAL       HEXADECIMAL     DESCRIPTION
--------------------------------------------------------------------------------
0             0x0             PNG image, 1920 x 1080, 8-bit/color RGBA, non-interlaced
70            0x46            Zlib compressed data, compressed
```

2. Analyzing the image.

```
JW3nIz9NgOgjsBEZ78m6_H
obswKxTyrGvZVUeP{FzE5F
u-37L7rgbdTo69LcJ5XBNa
kKnHZjzK187zPwD4ON6S{x
FE{kH4owEMFMCoARN3Migr
NirKCe0vsSn}3ITaabezqi
RRQBpyy}aXCpbj32n8I_gk
T}dq9GTGpWqF41pa4cJr_y
n71WTW8HMQeC}HCiauVn0z
j7cgbdj1SWyMmcp9LzeVJ4
emcrj34FnKBWEs8XUsS7Fj
lgYeHpEnewh6kfsHZE5ZBb
HEsRLOcFga{iW2jZfdBtMp
CAmV0OjnE-sOssNelo1kbp
lMmj9j5DTDHZqwI4ZqlBx_
QymjoZHmRsc9_yV5CI8ozp
YzA}OCSkvHrotWS5qNCqbw
pV0Nc8gzXiEORXxTQRPGbc
HE}i8x2nu2rPQkdzwaR{Px
xFxb0SG9dbKZ8ln{w4vuV3
tvvhzofDOYDrqCiDgpNqRg
WjiuSGSEEq6Vov3T2Tny1r
HFaxrikyz4jbpp_pwcx3gr
```
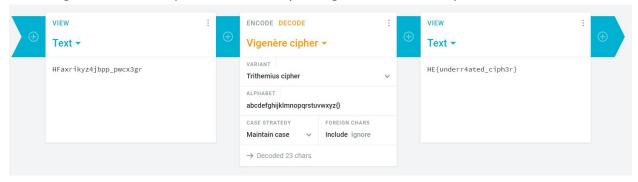
3. Spotting that the last character of every line & the last line is same.
   a)   HFaxrikyz4jbpp_pwcx3gr

4. Adding braces to the alphabet set & deciphering the Trithemius Cipher .

VIEW	⋮	ENCODE DECODE	⋮	VIEW	⋮
Text ▾		**Vigenère cipher ▾**		**Text ▾**	

HFaxrikyz4jbpp_pwcx3gr

VARIANT
Trithemius cipher ⌄

ALPHABET
abcdefghijklmnopqrstuvwxyz{}

CASE STRATEGY   FOREIGN CHARS
Maintain case ⌄   Include Ignore

→ Decoded 23 chars

HE{underr4ated_ciph3r}

Flags:

S.No.	Flag - No.	Flag
1.	Flag 1	HE{underr4ated_ciph3r}