HGAME 2022 Week1 writeup by sasasas

CRYPTO

Easy RSA

1.百度"RSA"

2.记事本打开文件,发现38组数字

3.b站找求RSA工具

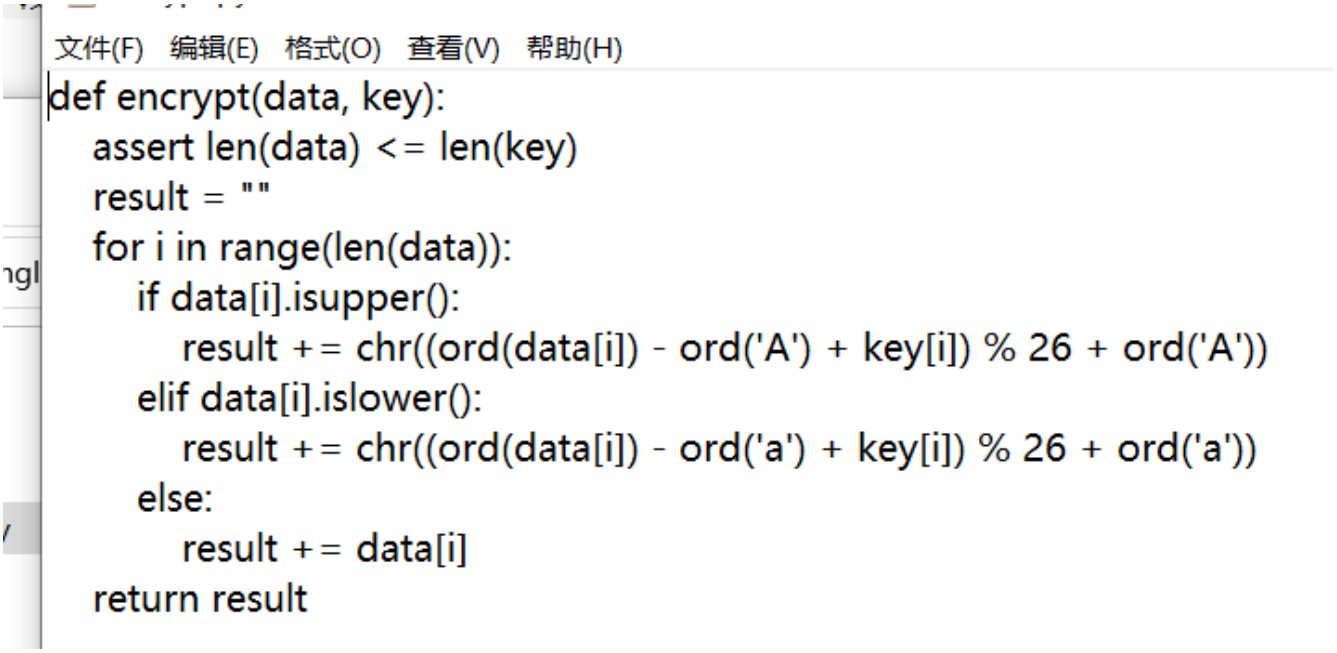
4.将38组数字解出来，转成字符，得flag

English Novel

1.下载得压缩包并解压

2.记事本打开flag.enc，发现一串密文

3.记事本打开encrypt.py,发现加密规则，但缺少密钥



```
文件(F)  编辑(E)  格式(O)  查看(V)  帮助(H)
def encrypt(data, key):
    assert len(data) <= len(key)
    result = ""
    for i in range(len(data)):
        if data[i].isupper():
            result += chr((ord(data[i]) - ord('A') + key[i]) % 26 + ord('A'))
        elif data[i].islower():
            result += chr((ord(data[i]) - ord('a') + key[i]) % 26 + ord('a'))
        else:
            result += data[i]
    return result
```

4.同时打开文件夹"original"和"encrypt",并将各自的.txt文件按"字节大小"排序

5.筛选一：寻找两个文件夹中字节大小相同的文件(最好该字节大小一个文件夹里唯一)

6.筛选二：打开文件看看空格和字符是否对的上

7.根据加密前后的文件，写程序暴力枚举每一位密钥

8.找到四五组文件后，凑齐能够解密flag的key[], 并解密得flag

IoT

饭卡的uno

1.ida 以“Intel Hex”打开文件

2.在hex窗口往下翻，发现flag

```
05 90 F4 91 E0 2D 09 94  F8 94 FF CF 00 00 00 00  ................
FF 00 5F 00 8C 00 4C 01  BD 00 9B 00 AF 00 68 67  .._...L.......hg
61 6D 65 7B 46 31 72 73  74 5F 35 74 65 70 5F 30  ame{F1rst_5tep_0
46 5F 49 4F 54 7D 00 0D  0A 00 ?? ?? ?? ?? ?? ??  F_IOT}....??????
?? ?? ?? ?? ?? ?? ?? ??  ?? ?? ?? ?? ?? ?? ?? ??  ????????????????
```

MISC

欢迎欢迎

1.关注公众号

这个压缩包有点麻烦

1.winhex打开文件，末尾有提示"6位及以下纯数字"，用ARCHPR暴力破解第一个压缩包

2.用第一个压缩包里的txt作字典，ARCHPR破解第二个压缩包密码

3.发现满足明文破解条件，所以ARCHPR明文攻击第三个压缩包

4.将.jpg文件用winhex打开，搜索FFD9(jpg文件结尾)，发现后面还有504B(zip开头)。把压缩包从图片里拿出来

5.winhex打开压缩包，尝试伪密码，成功，得到flag

好康的流量

1.wireshark打开文件，多点几下，发现一些SMTP有很多字节，选择显示分组字节

2.尝试base64解码，看到"PNG"(这里运气好，挑到了第一个)

3.又发现蓝色字样"reassembled dat in frame 140"

4.到140发现有

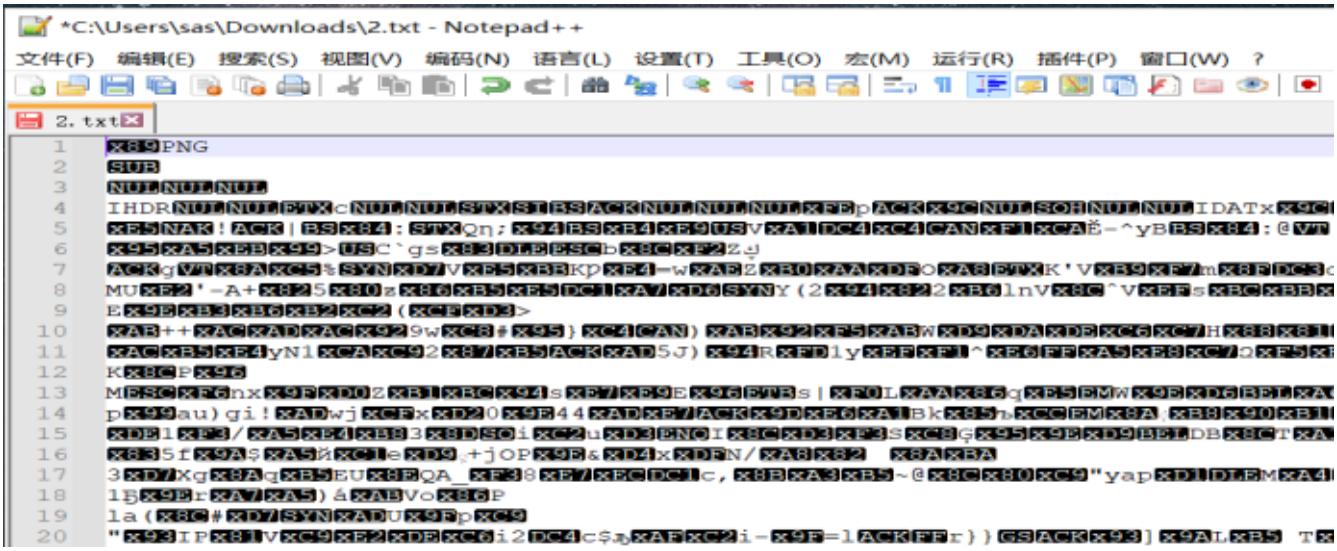
```
[Frame: 21, payload: 0-8191 (8192 bytes)]
[Frame: 23, payload: 8192-16383 (8192 bytes)]
[Frame: 25, payload: 16384-24575 (8192 bytes)]
[Frame: 27, payload: 24576-32767 (8192 bytes)]
[Frame: 29, payload: 32768-40959 (8192 bytes)]
[Frame: 31, payload: 40960-49151 (8192 bytes)]
[Frame: 33, payload: 49152-57343 (8192 bytes)]
[Frame: 35, payload: 57344-65535 (8192 bytes)]
[Frame: 37, payload: 65536-73727 (8192 bytes)]
[Frame: 38, payload: 73728-81919 (8192 bytes)]
```

5.跟踪TCP流

```
Content-Transfer-Encoding: base64
Content-Disposition: attachment;
 filename*=UTF-8''%E6%B6%A9%E5%9B%BE%2E%70%6E%67

iVBORw0KGgoAAAANSUhEUgAAA2MAAAIPCAYAAAD+cAacAAEAAElEQVR4nOz9eZBlWX7XCX7O
du99vseSkftamZVZWaWSVJtUqpJKIIEaAU0bIGiaMZuxXgzNYNPMwHTb9Fib0TYDA3RrpmEG
EKIQaGGQUCPQioS2kkpb7VVS7bkvkREZkRHh4dt7dzvnzB+/c++7z/25h7tHRGZkdvzSPCPC
33t3e/eec36/7/f3/apP/cGnoooAEDkDVv5uoma5KDh99xJLizkmanmhlT+69+0b+72v3fXv
o27nqNud8/4QIuOm5vL6NhvrE5roaXcC46pkc2tCXTeAosgdC4s5AONxRVU2xBZMY5jyDJc5
sNA0LdVOTdu0xBgPPi5AKYV1lnwxw40sSiloFEppDJYszyiKAlc4iIE61NQ7Jc2kIZpINBAb
iIByCuUVIQZ8CIQ6AlHOtzuUCLTpH1ahFMQY8crTli1eeUIIhDpACzrTWCwmNyilCDHSVp5W
tXjtiY28T6GwuWF1NOLMvStYNFtbE8aTmth0++uuw/TfMULrW8qyptqpCTrS1tuU5SWUuvZ9
FoG2e6GFrckOG5slW+MKlaXrmT4fQ2Bnc4MQG2KM8lrargoGZwuKxSUW11blu0vHt+Q9d65a
sKrfT6gDSydWufdtjxNjmP/9Hng/K0LtOfvC16gmY1SmUUBbK65u1WxWY6JXrCwWmFyxOa7Z
aRt8I2cdQ8C3DU1V4ictQSuCNYDGtoa15RGn1hZZKDKUgjK2bGSWjMuGVu9zvLuP+yY8b3Pj
evdzvdvdb/u7Y/d2rnUcx72+19rumzSs0SwWGUtFhlGwMy5Z39hke1ziv295bzcPoTTGWVyW
Y5yF9MwqBbkzrC0WZNawNa4YVw1FnrO2ssIoz9M+DasrK6ytrJISd8gjlX3EGCmrkvWrV9na
3sbHSIiB8WTCzqTEWc1i4agbz1bZ0viI0hoVI01TU453qKuSGEK/Za0U1mW40QiXFyhjUUQU
kdwZlkcZ1ihGBJYWRjz42JNorffOJQdFlOM3RrG4kHNidQljNJeubHHx0hZNG9DaQgQfIt57
fNviQ4AYUQqsteR5TjHKyTKHtQatNUoplFL9MXnv8V7mDKXox9S29bRtIMaIMRqtNcZonLMs
LeasLucsjBxGp/c3nq3tkitXJ5Rlszjk+TpnOLk64szpRfLcsrlVcfHSNpvbFSHs3YZKnykK
S4xQlg1NG/ZueJ/QWrG8lHPn6UWWF3N88EyqhnHlGVee1gemk+3gc0pROMvKUsHyosNZjUr3
2XWF6v93C0Y88J9v1jjoWezXFNcRSileeO0yL7xyjjvvugv/2nkee/wJ8iw72jgwZ7sfe/lV
/vnnvsKfevuD/MV3vO26tjeMmfXUIcOHyPZOzeX1MVs7dXp2jh4KcJlhdSlnaSGtd2rPeNIw
njQ0recGneahQmuF0YrMGYrcsriQsbSQkWcGrQ93jbSKEGVEnXkhhkgTPXWTBuy3UCilsGjy
zGJTwqEU6KgxuUY5BURJbqqAVkp+n6UJO0RCiH3CoYNMPPK5a0eMkagDMYRp0qIgEokxElTA
q5T0OIXRBh1kYgRQXt4//MpU/1/6d5QbVg3eMfMvpeS4M40OacJ10wVJjNPzU8jEopWe2QdE
QoxUoaWsGnlAlMGYg6+DUqC9xkSZrCFiFxYw5BzmCVKAJvTnkeHICoM1ZpokpdC5wWXZ3Lkr
ak9QnibUeN9OL6iCCYq6CjPXWGeKcbVFVY5RQV/zOOfsEWMsi6O1fkCMgMkieWFw0RBNpMHL
tTQ6PcgxZd6SsGuV7tm0oAO5H+umpW48wci2rda4wmBytfvxvh2343UJrWSSMlphjaHIHUWe
YY3ec0+mMhJSeIiIEIAv74VgXQqRpJYmzVp6DtvW0TbeYV4QQaJqGtp1THLtGKKWwxpK5DGPM
9HfWYowmpLHfGo3RaSyMEZRCa4M2ZlpQSicVI4Tgib4lxpDW0vL0tgEaH4ko6qioJhPG25uz
2zhUpCsXoW0DTdOilBQUM2emx4nqkysZQ+g/F9I1765797P7+nQ//SZnXpO5qPt9jLJN7wPe
p3mze7+WBE9rdfTcQpHGQ4U1SpK/fQa5iCwCmybg20C6pY4UIUR8Svs01hit0329Z+k03W+M
tCHQth7v4/UtDrvpW83O47dWxNm/vkUSMYn9r/n1LvqVUrTA3/7pn+ev/9C/4Ie/+BT/+t/+
DBfPn7/u7T77/Av80//l31FkGb/3zAucffXVG5I8dts/amgFzsna28yZAw4bEfA+sDNpWN8o
```

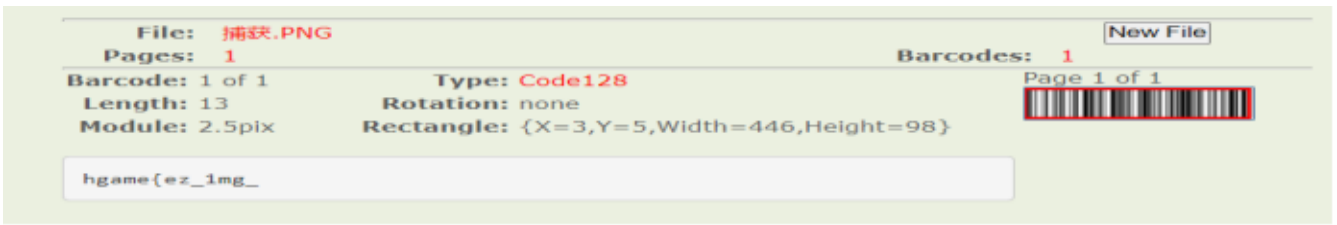
6.仅将加密文本保存，用Notepad++打开，并Base64解密



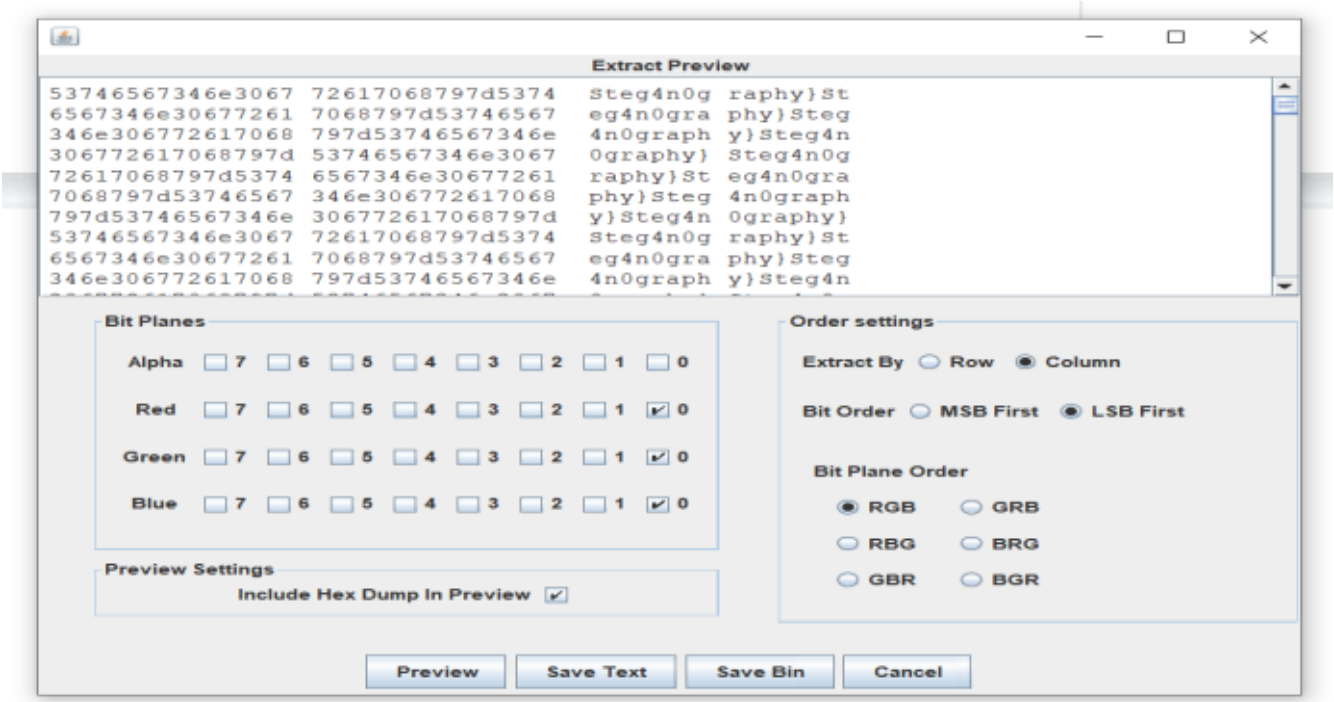
7.保存并修改后缀名为.png

8.用Stegsolve打开左右点一点看一看

9.条形码扫一扫(这一刻我是很绝望的)



10.图片LSB隐写看一下，发现另一半flag(右边在循环的内容)

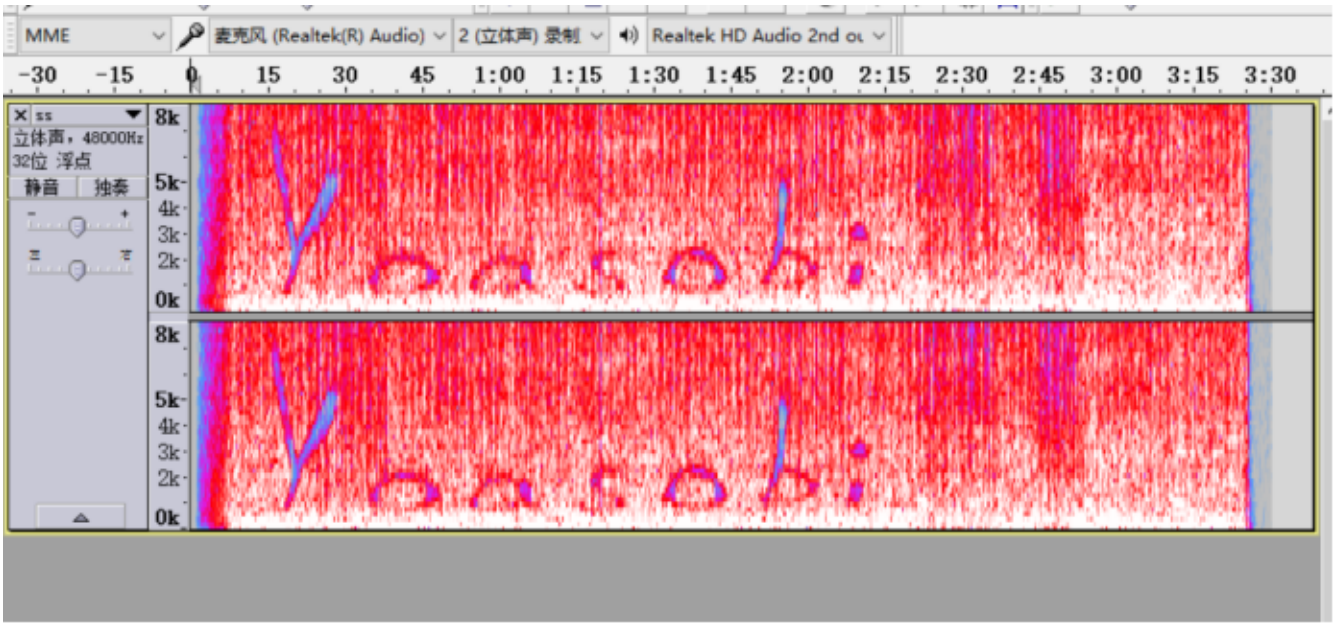


群青(其实是幽灵东京)

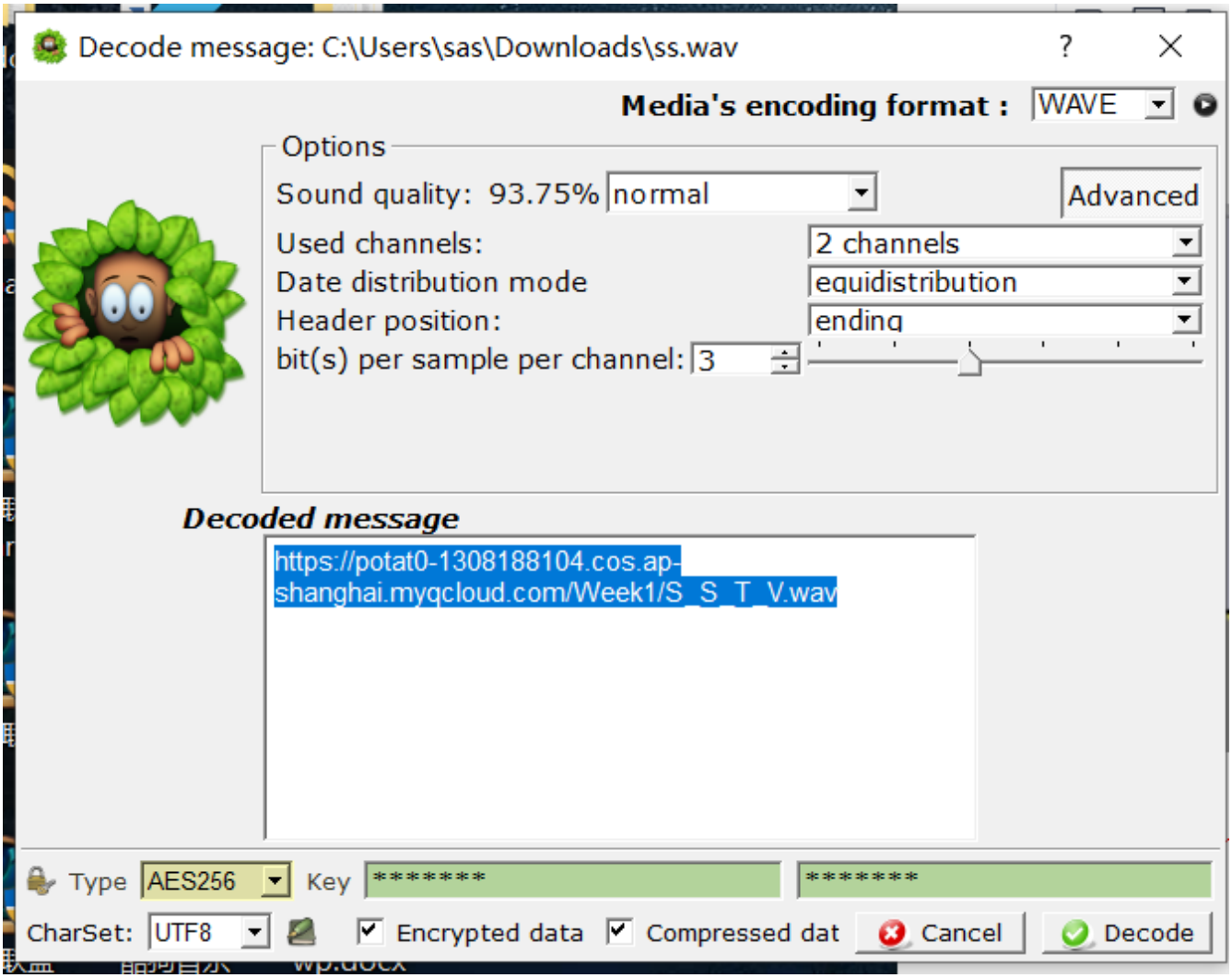
1.winhex打开文件，有提示(silenteye)

```
77 68 79 20 6E 6F 74 20   74 72 79 20 74 72 79 20  why not try try
53 69 6C 65 6E 74 45 79   65 00 69 64 33 20 2E 00  SilentEye id3 .
00 00 49 44 33 03 00 00   00 00 00 24 54 50 45 31    ID3       $TPE1
00 00 00 1A 00 00 00 77   68 79 20 6E 6F 74 20 74          why not t
72 79 20 74 72 79 20 53   69 6C 65 6E 74 45 79 65  ry try SilentEye
```

2.audacity打开文件，频谱图查看（所谓多感官感受）有两个Yoasobi



3.silenteye打开文件解密　key是，Yoasobi　Yoasobi



4.进入网址下载第二个S_S_T_V.wav文件，听一下发现是一串滴滴答答的声音

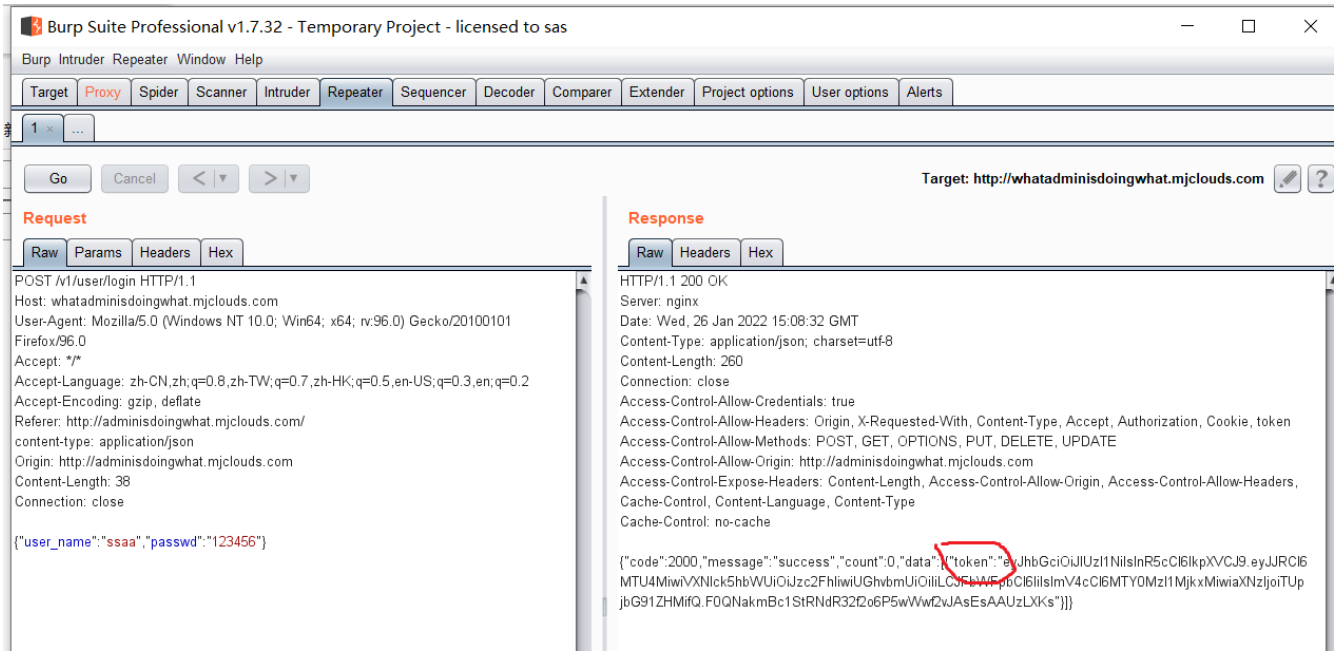
5.(很久之后) 尝试百度sstv，发现"声音传图"！！！！下载robot36，放音频,得到图片

6.扫码得flag

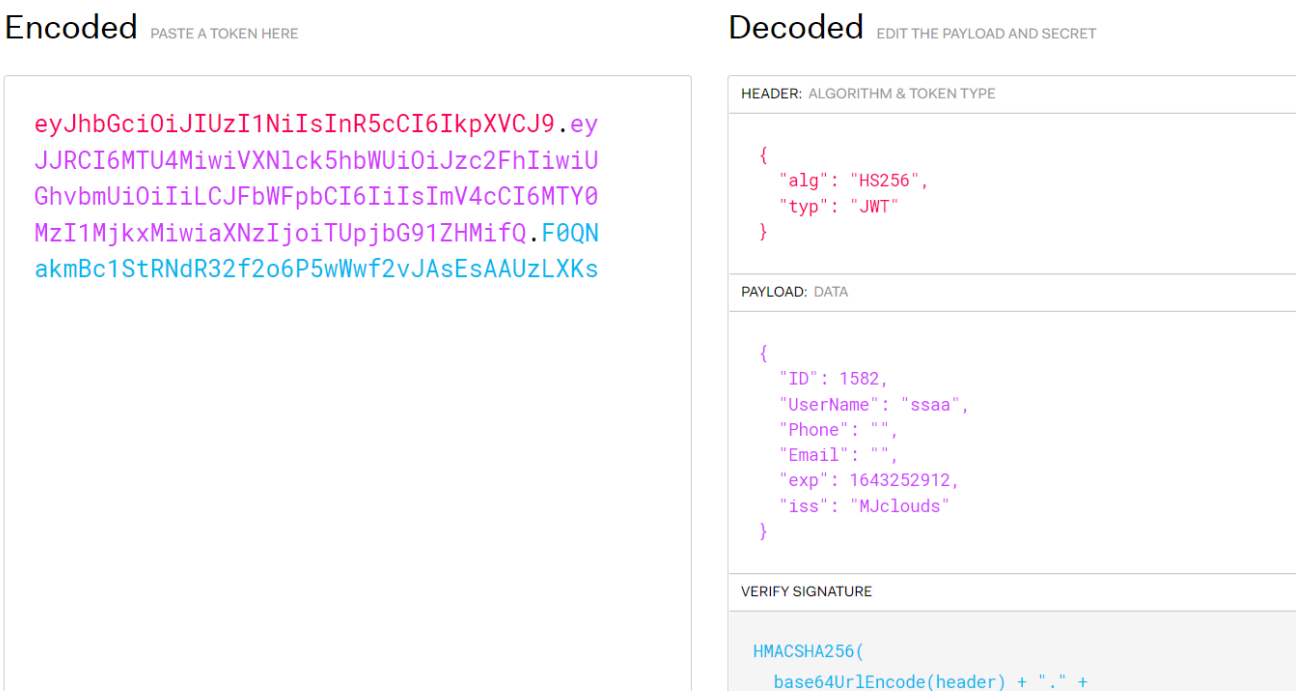
Web

easy_auth

1.进入网站，注册，登录，同时用BurpSuite分析

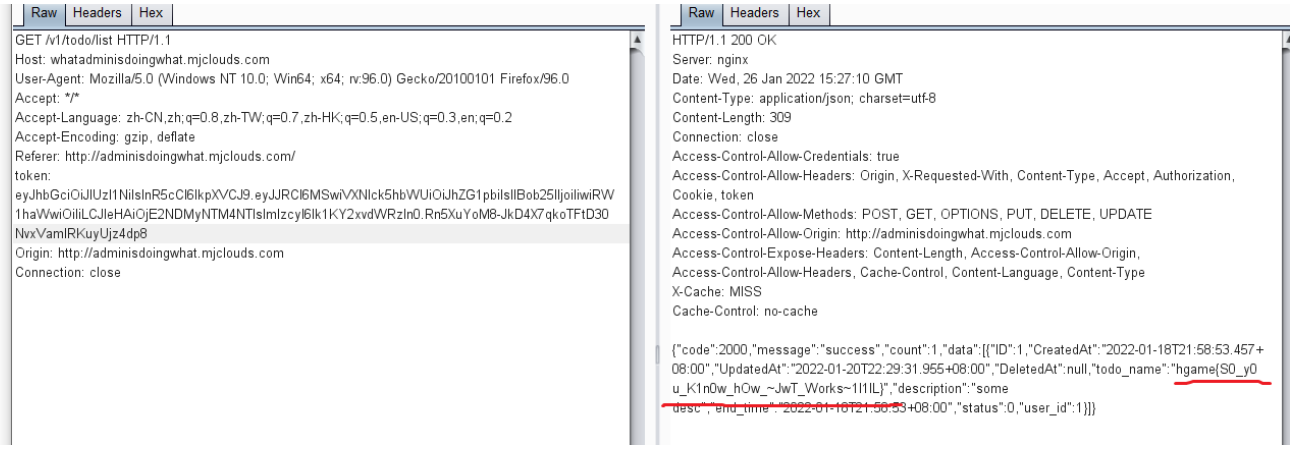


2.百度"token"，发现JWT，百度"JWT解密"



3.发现密钥为空，将ID改为1，username改为admin 得到token

4.登录后刷新并抓包，修改token,得到flag



Tetris plus

1.游戏得到3000分，出现弹窗"flag 被藏起来了"

2.F12打开开发者工具，发现checking.js

3.发现base64加密字符串（无用，解出来是弹窗内容）； 发现被注释的"[+]++"字符串

4.百度，发现JSFuck加密，解密得flag

蛛蛛

1.打开开发者工具，发现很简洁，只有一个按钮有链接

2.根据代码点下一关，101关时提示"找到了"。开发者工具，网络，响应头找到flag

REVERSE

easyasm

1.ida打开文件，发现操作1（16位数据，前8位后8位交换，^17h）

2.dseg发现hgame{fill_in_your}（没什么用的样子）；seg001发现一串数据，前几位是hgame执行操作1

3.将seg001数据对操作1反向解密，得flag

Flag Checker

1.安装，打开，界面有一个文本框，一个click按钮

2.ida打开.apk文件看看（我看不懂）

3.AndroidKiller打开文件看看(看不懂*2)

4.flagchecker.apk解压缩，得classes.dex

5.用dex2jar把classes.dex转成classes-dex2jar.jar

6.用jd-gui打开classes-dex2jar.jar,看到java代码

```
public class MainActivity extends AppCompatActivity {
  public static byte[] encrypt(String paramString1, String paramString2) throws Exception {
    SecretKeySpec secretKeySpec = new SecretKeySpec(paramString2.getBytes(), 0, paramString2.length(), "RC4");
    Cipher cipher = Cipher.getInstance("RC4");
    cipher.init(1, secretKeySpec);
    return cipher.doFinal(paramString1.getBytes());
  }

  protected void onCreate(Bundle paramBundle) {
    super.onCreate(paramBundle);
    setContentView(2131296284);
    ((Button)findViewById(2131165218)).setOnClickListener(new View.OnClickListener() {
          public void onClick(View param1View) {
            String str = ((EditText)MainActivity.this.findViewById(2131165238)).getText().toString();
            byte[] arrayOfByte = new byte[0];
            try {
              byte[] arrayOfByte1 = MainActivity.encrypt(str, "carol");
              arrayOfByte = arrayOfByte1;
            } catch (Exception exception) {
              exception.printStackTrace();
            }
            if (Base64.encodeToString(arrayOfByte, 0).replace("\n", "").equals("mg6CITV6GEaFDTYnObFmENOAVjKcQmGncF90WhqvCFyhhsyqq1s=")) {
              Toast.makeText((Context)MainActivity.this, "Congratulations!!!", 1)
            } else {
              Toast.makeText((Context)MainActivity.this, "Fail,try again.", 1).show();
            }
```

7.可以猜测, flag经过以"carol"为密钥的"RC4"加密，又经过base64加密，得到密文

8.密文"mg6CITV6GEaFDTYnObFmENOAVjKcQmGncF90WhqvCFyhhsyqq1s="解密得flag