每天10道Crypto Day3

原创

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分类专栏： BUUCTF Crypto 文章标签： 密码学

本文链接：https://blog.csdn.net/MikeCoke/article/details/107973533

1.救世捷径

2.坏蛋是雷宾

3.[ACTF新生赛2020]crypto-classic0

题目

```
hint.txt   :哼，压缩包的密码？这是小Z童鞋的生日吧==
cipher.txt: Ygvd mq[lYate[elghqvakl}

以及一个howtoencrypt.zip的加密压缩包
```

题目提示压缩包密码是生日，那么通过爆破 8位数的年月日。

打开加密文件得到代码

```
#include<stdio.h>

char flag[25] = ***

int main()
{
 int i;
 for(i=0;i<25;i++)
 {
  flag[i] -= 3;
  flag[i] ^= 0x7;      # ^表示异或
  printf("%c",flag[i]);
 }
 return 0;
}
```

解密python脚本

```
ciper = 'Ygvdmq[lYate[elghqvakl}'

for i in range(0,23):
    flag = ord(ciper[i])^0x7
    flag+=3
    print(chr(flag),end='')
```

flag{my_naive_encrytion}

4.[NPUCTF2020]这是什么觅

字母代表星期的首字母，其中 S 和 T 都出现两次，所以 S1 代表 SAT，S2 代表 SUN，每组最后一个数字即代表第几行，F1 W1 S22 S21 T12 S11 W1 S13对应得到 3 1 12 5 14 4 1 18，对照字母表 calendar。

flag{calendar}

5.[AFCTF2018]Single

直接词频分析爆破

Jmqrida rva Lfmz (JRL) eu m uqajemf seny xl enlxdomrexn uajiderc jxoqarerexnu. Rvada mda rvdaa jxooxn rcqau xl JRLu: Paxqmdyc, Mrrmjs-Yalanja mny oekay.

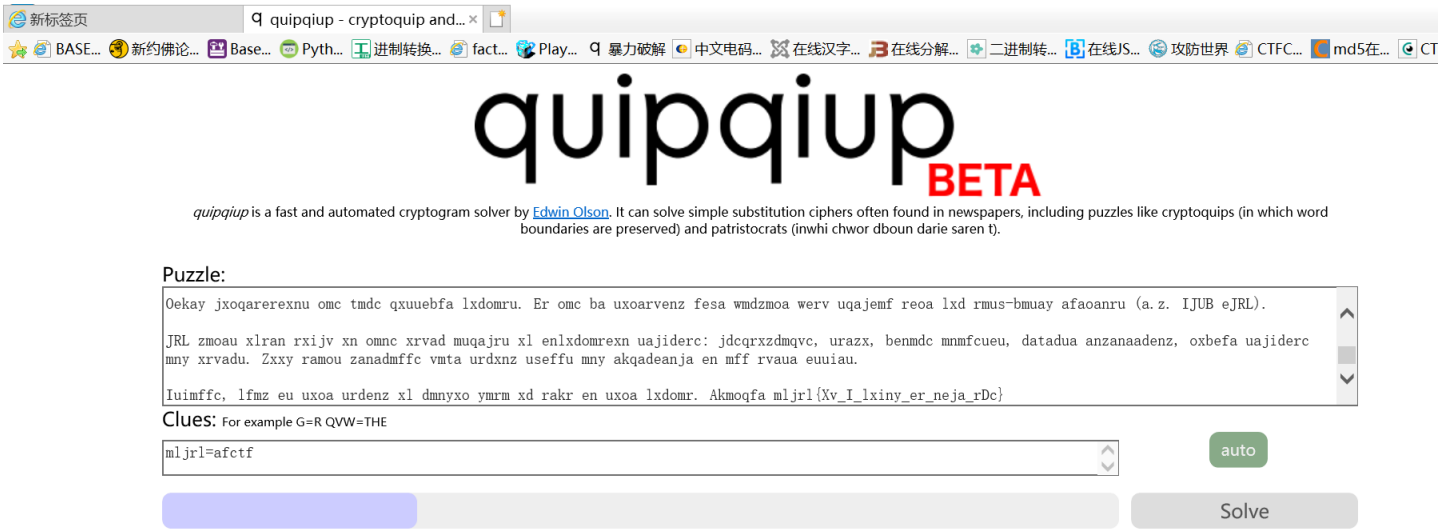
Paxqmdyc-urcfa JRLu vmu m jxiqfa xl giaurexnu (rmusu) en dmnza xl jmrazxdeau. Lxd akmoqfa, Wab, Lxdanuej, Jdcqrx, Benmdc xd uxoarvenz afua. Ramo jmn zmen uxoa qxenru lxd atadc uxftay rmus. Oxda qxenru lxd oxda jxoqfejmray rmusu iuimffc. Rva nakr rmus en jvmen jmn ba xqanay xnfc mlrad uxoa ramo uxfta qdatexiu rmus. Rvan rva zmoa reoa eu xtad uio xl qxenru uvxwu cxi m JRL wenad. Lmoxiu akmoqfa xl uijv JRL eu Yaljxn JRL gimfu.

Waff, mrrmjs-yalanja eu mnxrvad enradaurenz seny xl jxoqarerexnu. Vada atadc ramo vmu xwn narwxds(xd xnfc xna vxur) werv tifnmdmbfa uadtejau. Cxid ramo vmu reoa lxd qmrjvenz cxid uadtejau mny yatafxqenz akqfxeru iuimffc. Ux, rvan xdzmnehadu jxnnajru qmdrejeqmnru xl jxoqarerexn mny rva wmdzmoa urmdru! Cxi uvxify qdxrajr xwn uadtejau lxd yalanja qxenru mny vmjs xqqxnanru lxd mrrmjs qxenru. Veurxdejmffc rveu eu m ledur rcqa xl JRLu, atadcbxyc snxwu mbxir YAL JXN JRL - uxoarvenz fesa m Wxdfy Jiq xl mff xrvad jxoqarerexnu.

Oekay jxoqarerexnu omc tmdc qxuuebfa lxdomru. Er omc ba uxoarvenz fesa wmdzmoa werv uqajemf reoa lxd rmus-bmuay afaoanru (a.z. IJUB eJRL).

JRL zmoau xlran rxijv xn omnc xrvad muqajru xl enlxdomrexn uajiderc: jdcqrxzdmqvc, urazx, benmdc mnmfcueu, datadua anzanaadenz, oxbefa uajiderc mny xrvadu. Zxxy ramou zanadmffc vmta urdxnz useffu mny akqadeanja en mff rvaua euuiau.

Iuimffc, lfmz eu uxoa urdenz xl dmnyxo ymrm xd rakr en uxoa lxdomr. Akmoqfa mljrl{Xv_I_lxiny_er_neja_rDc}



flag{Oh_U_found_it_nice_tRy}

6.[WUSTCTF2020]B@se

看的师傅的博客

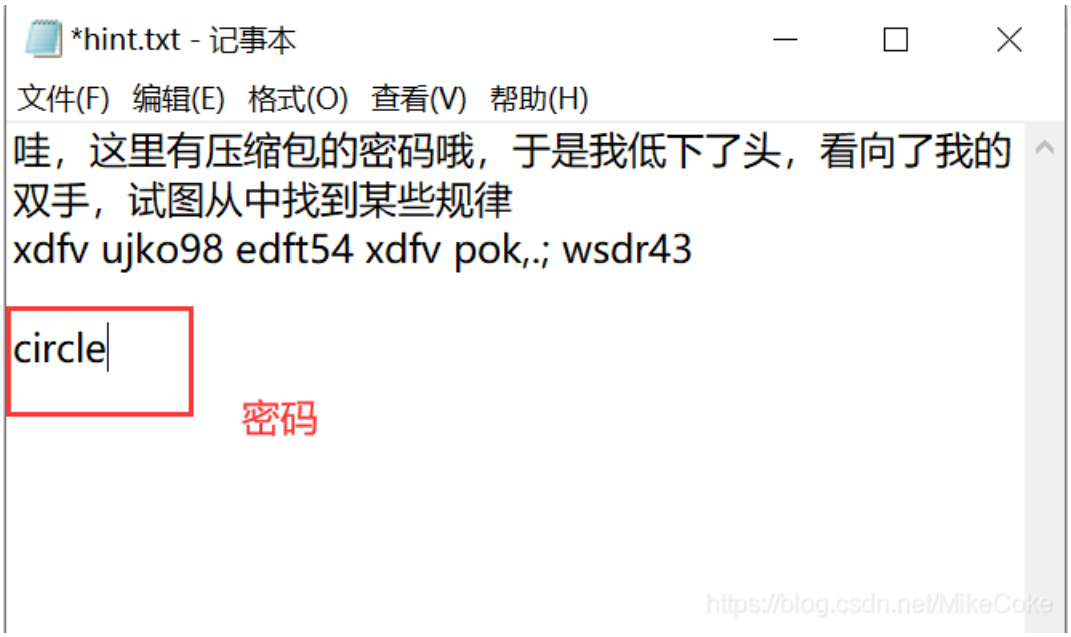
```
class base64:
    def __init__(self,alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/"):
        self.alphabet = alphabet
    def _EnInsideManage(self,strlist):
        strflag = ""
        temp = ord(strlist[0]) >> 2
        strflag += self.alphabet[temp]
        temp = ((ord(strlist[0])&3)<<4)|(ord(strlist[1])>>4)
        strflag += self.alphabet[temp]
        temp = ((ord(strlist[1])&15)<<2)|(ord(strlist[2])>>6)
        strflag += self.alphabet[temp]
        temp = (ord(strlist[2])&63)
        strflag += self.alphabet[temp]
        return strflag

    def enbase64(self,charString):
        encode = ""
        for i in range(len(charString)//3):
            encode += self._EnInsideManage(charString[i*3:i*3+3])
        if len(charString)%3!=0:
            if len(charString)%3 == 1:
                encode += self._EnInsideManage(charString[-1:]+chr(0)+chr(0))[:2]+"=="
            if len(charString)%3 == 2:
                encode += self._EnInsideManage(charString[-2:]+chr(0))[:3]+'='
        return encode

    def TenToBin(self,tenum):
        binstr = ""
        for i in range(5,-1,-1):
            if 1 == (tenum//(2**i)):
                binstr += '1'
                tenum = tenum%(2**i)
            else:
                binstr += '0'
        return binstr

    def BinToStr(self,strbin):
        "Turn the binary string to a ASCII string"
        strten = ""
        for i in range(len(strbin)//8):
            num = 0
            test = strbin[i*8:i*8+8]
            for j in range(8):
                num += int(test[j])*(2**(7-j))
            strten += chr(num)
        return strten

    def debase64(self,base64string):
        binstr = ""
        for i in base64string:
            binstr += self.TenToBin(self.alphabet.find(i))
        return self.BinToStr(binstr)

from itertools import combinations, permutations
```

```
from itertools import combinations, permutations
for i in list(permutations(['3','4','j','u'], 4)):
    try:
        password  = 'JASGBWcQPRXEFLbCDIlmnHUVKTYZdMovwipatNOefghq56rs{}kxyz012789+/'.format(''.join(i))
        print(password)
        newobj = base64(alphabet=password)
        print(newobj.debase64("MyLkTaP3FaA7KOWjTmKkVjWjVzKjdeNvTnAjoH9iZOIvTeHbvD=="))
    except:
        pass
```

{base64_1s_v3ry_e@sy_and_fuN}

7.[ACTF新生赛2020]crypto-classic1

键盘加密 和 维吉尼亚密码



获取的维吉尼亚密文

```
SRLU{LZPL_S_UASHKXUPD_NXYTFTJT}
```

通过爆破获取 密钥key ,我们可以猜到 SRLU的明文是ACTF
所以

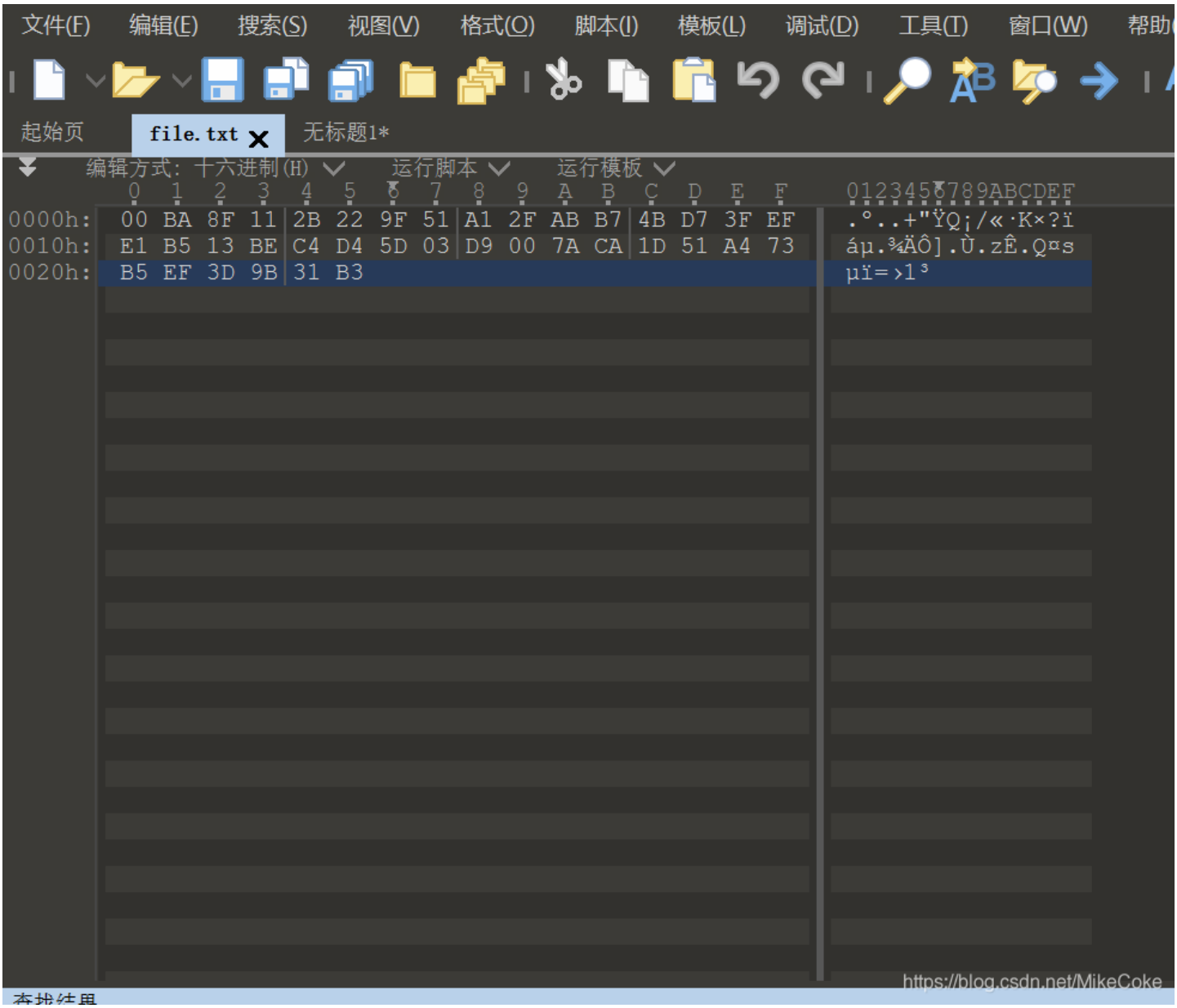
```
#破解key   python3
s='ABCDEFGHIJKLMNOPQRSTUVWXYZ'
s1='ACTF'
s2='SRLU'
key =''
for i in range(len(s1)):
    key+=s[(s.find(s2[i])-s.find(s1[i]))%26]
print(key)
```

得到 key = sp

flag{what_a_classical_vigenere}

8.EasyProgram

参考文章

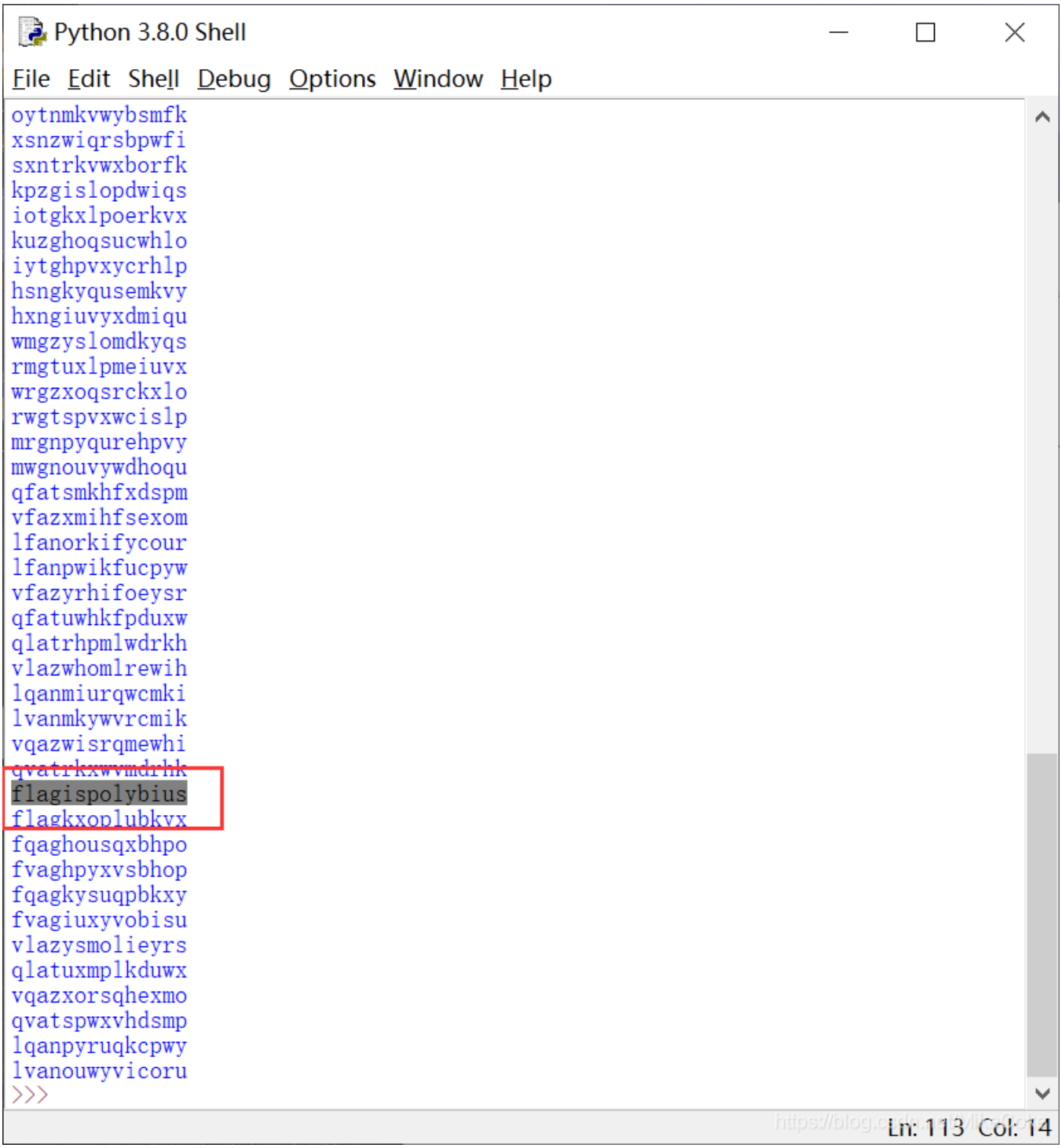

文件(F) 编辑(E) 搜索(S) 视图(V) 格式(O) 脚本(I) 模板(L) 调试(D) 工具(T) 窗口(W) 帮助
起始页
file.txt
无标题1*
编辑方式：十六进制(H)
运行脚本
运行模板
0 1 2 3 4 5 6 7 8 9 A B C D E F
0123456789ABCDEF
0000h: 00 BA 8F 11 2B 22 9F 51 A1 2F AB B7 4B D7 3F EF
0010h: E1 B5 13 BE C4 D4 5D 03 D9 00 7A CA 1D 51 A4 73
0020h: B5 EF 3D 9B 31 B3
https://blog.csdn.net/MikeCoke

```
key = 'whoami'
s = []
t = []
j = 0

for i in range(256):
    s.append(i)
for i in range(256):
    t.append(key[i % len(key)])

for i in range(256):
    j=(j+s[i]+ord(t[i])) % 256
    s[i],s[j]=s[j],s[i]


i=0
j=0
f = [0x00,0xBA,0x8F,0x11,0x2B,0x22,0x9F,0x51,0xA1,0x2F,0xAB,0xB7,0x4B,0xD7,0x3F,0xEF,0xE1,0xB5,0x13,0xBE,0xC4,0xD4,0x5D,0x03,0xD9,0x00,0x7A,0xCA,0x1D,0x51,0xA4,0x73,0xB5,0xEF,0x3D,0x9B,0x31,0xB3]
flag = ''

for m in range(38):
    i = (i + 1)% 256
    j = (j + s[i])% 256
    s[i],s[j]=s[j],s[i]

    x = (s[i]+(s[j] % 256)) % 256

    flag += chr(f[m] ^ s[x])

print(flag)
```

flag{f238yu28323uf28u2yef2ud8uf289euf}

9.[BJDCTF2020]Polybius

参考文章 (波利比奥斯方阵密码)



得到 **flag{flagispolybius}**

10.[WUSTCTF2020]大数计算

关于宇宙终极问题的答案 x,y,z

$$42 = (-80538738812075974)^3 + 80435758145817515^3 + 12602123297335631^3$$

```
P1 = 1
for i in range(1,2021):
    P1 *=i
'''
P2 = (520**1314 + 2333**666)
P3 = 80538738812075974 + 80435758145817515 + 12602123297335631
P4 = (22**2+36)*1314

print(P1)
print('-----------------')
print(P2)
print('--------------')
print(P3)
print('------------------')
print(P4)
'''

a =38609695
b =67358675
c =17357662
d =683280

print(hex(a)[2:]+'-'+hex(b)[2:]+'-'+hex(c)[2:]+'-'+hex(d)[2:])
```

flag{24d231f-403cfd3-108db5e-a6d10}