(1) Mod26

Rot 13

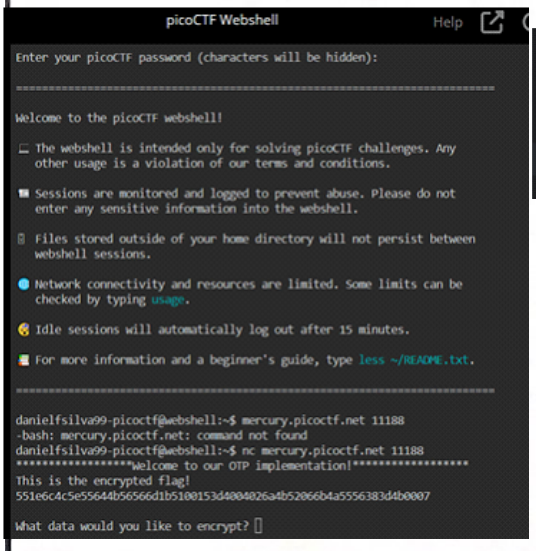
cvpbPGS{arkg_gvzr_V'yy-gel_2_ebhaqf_.....

Rot13

picoCTF{next_time_I'll_try_2_rounds_of_rot13_.....

We replace the letter with the 13th letter after in the alphabet

(2) Easy peasy




```
ef = 0x551e6c4c5e55644b56566d1b5100153d4004026a4b52066b4a5556383d4b0007
ea = 0x03463d1959523d1907513d190503163d1903543d1904573d1900003b3d190457
a = 0x6161616161616161616161616161616161616161616161616161616161616161
print("{:x}".format(ef^ea^a))
```

```
C:\Users\danie\PycharmProjects\pythonProject1\venv\Scripts\python.
373930346666383330663163356262613866373633373037323437626133653
1

Process finished with exit code 0
```

Hex to ASCII Text String Converter

Enter hex bytes with any prefix / postfix / delimiter and press the *Convert* button (e.g. 45 78 61 6d 70 6C 65 21):

From: Hexadecimal — To: Text

Open File

Paste hex numbers or drop file

```
373930346666383330663163356262613866373633373037323437626133653
31
```

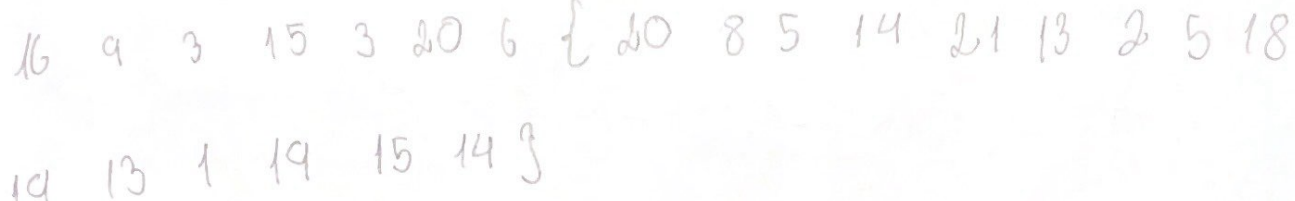
Character encoding: ASCII

Convert | Reset | Swap

```
7904ff830f1c5bba8f763707247ba3e1
```

③ The Numbers

For this problem we have an image with the code:



16 9 3 15 3 20 6 { 20 8 5 14 21 13 2 5 18

19 13 1 19 15 14 }

This code was encrypted with substition cipher.

16 -> P
9 -> I
3 -> C
15 -> O
3 -> C
20 -> T
6 -> F

{

20 -> T
8 -> H
5 -> E
14 -> N
21 -> U
13 -> M

2 -> B
5 -> E
18 -> R
19 -> S
13 -> M
1 -> A
19 -> S
15 -> O
14 -> N

}

So, the solution is:

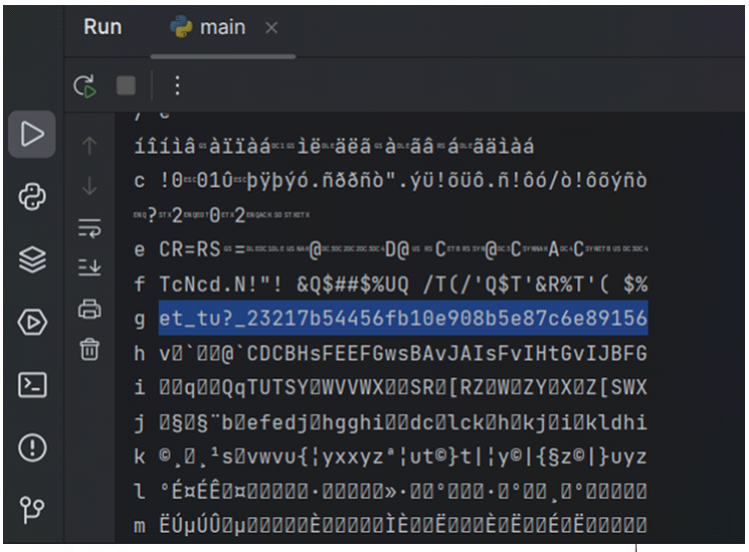
PICOCTF{THENUMBERSMASON}

④ New Caesar

In this problem, the solution was read the encode script and implement a new one with the decoding solution.

```python
def b16_encode(plain):
    enc = ""
    for c in plain:
        binary = "{0:08b}".format(ord(c))
        enc += ALPHABET[int(binary[:4], 2)]
        enc += ALPHABET[int(binary[4:], 2)]
    return enc

1 usage
def b16_decode(cipher):
    enc = ""
    for c in range(0, len(cipher), 2):
        binary = "{0:04b}".format(ALPHABET.index(cipher[c])) + "{0:04b}".format(ALPHABET.index(cipher[c + 1]))
        enc += chr(int(binary, 2))
    return enc
```



⑤ 13

At the same tha exercise 1, it's a Rot13 problem. So:

cvpbPGS{abg_gbb_onq_bs_n_ceboyrz}

is:

picoCTF{not_too_bad_of_a_problem}

We replece the letter with the 13th letter after in the alphabet.

⑥ Caesar

This flag was encrypted with Caesar, so I implemented a solution of decoding in python, using the inverse logic.

```python
encrypted_flag = "gvswwmrkxlivyfmgsrhnrisegl"
decrypted_flag = ""

for mov in range(26):
    decrypted_text = ""
    for char in encrypted_flag:
        if char.isalpha():
            shifted_char = chr(((ord(char) - mov - 97) % 26) + 97)
            decrypted_text += shifted_char
        else:
            decrypted_text += char
    decrypted_flag += f"Mov {mov}: {decrypted_text}\n"

print(decrypted_flag)
```

```
C:\Users\daniel\PycharmProjects\pyt
Mov 0: gvswwmrkxlivyfmgsrhnrisegl
Mov 1: furvvlqjwkhuxelfrqgmqhrdfk
Mov 2: etquukpivjgtwdkeqpflpgqcej
Mov 3: dspttjohuifsvcjdpoekofpbdi
Mov 4: crossingtherubicondjneoach
Mov 5: bqnrrhmfsgdqtahbnmcimdnzbg
Mov 6: apmqqglerfcpszgamlbhlcmyaf
Mov 7: zolppfkdqeboryfzlkagkblxze
Mov 8: ynkooejcpdanqxeykjzfjakwyd
Mov 9: xmjnndibeczmpwdxjiyeizjvxc
```

7 Easy!

For this problem, the flag was encrypted with

Vigenère cipher:

So, there are 2 steps for each letter.

We have:

key: SOLVECRYPTO

To help: UFJKXQZQUNB

1st step: Find the row of the first lett of the key

2nd step: Find the column in wich the letter to help is found.

For example, at first letter:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
B	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A
C	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
D	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
E	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
F	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
G	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
H	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
I	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
J	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
K	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
L	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
M	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
N	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
O	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
P	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Q	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
R	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
S	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
T	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
U	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
V	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
W	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
X	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Y	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Z	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

so, the flag is: CRYPTOISFUN

8 Spelling Quiz

In this example I used sub braker tool.

First, I broke the study guide, next I used the decode key and the flag, with the subbraker decode.

The Flag is: picoCTF{perhaps_the_dog_jumped_over_was_just_tired}