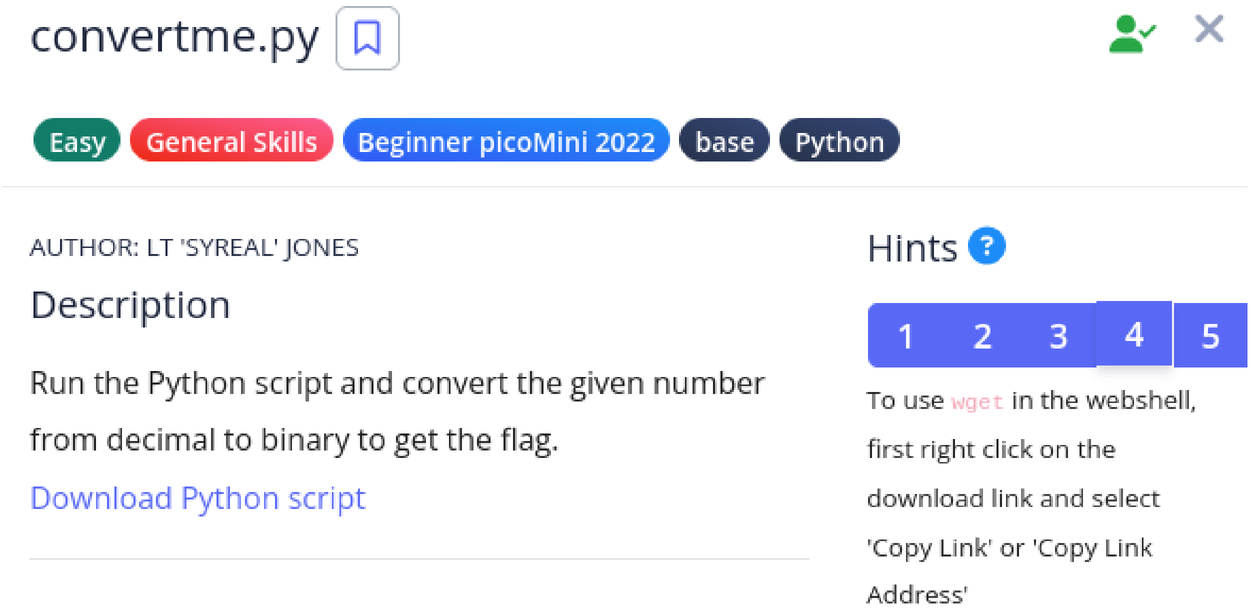
LinkedIn: Kelvin Kimotho



convertme.py

AUTHOR: LT 'SYREAL' JONES

Description

Run the Python script and convert the given number from decimal to binary to get the flag.

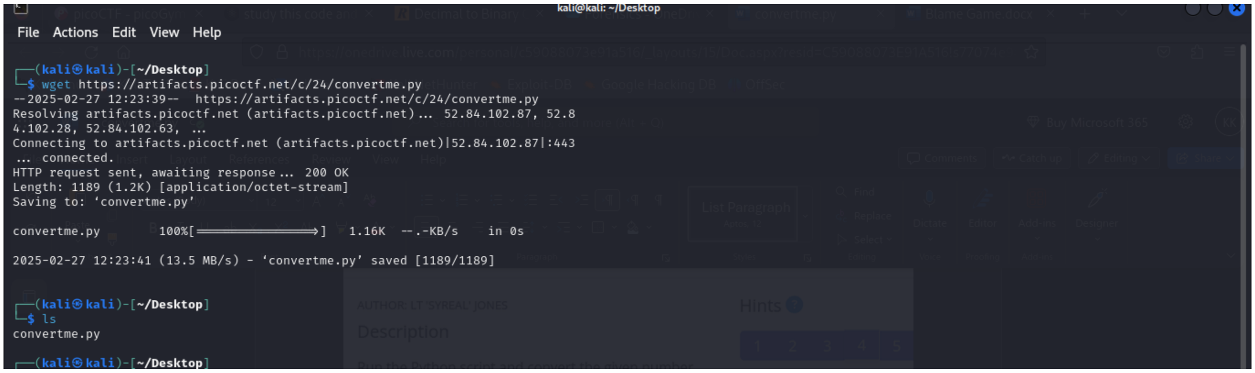
Download Python script

Hints

To use wget in the webshell, first right click on the download link and select 'Copy Link' or 'Copy Link Address'

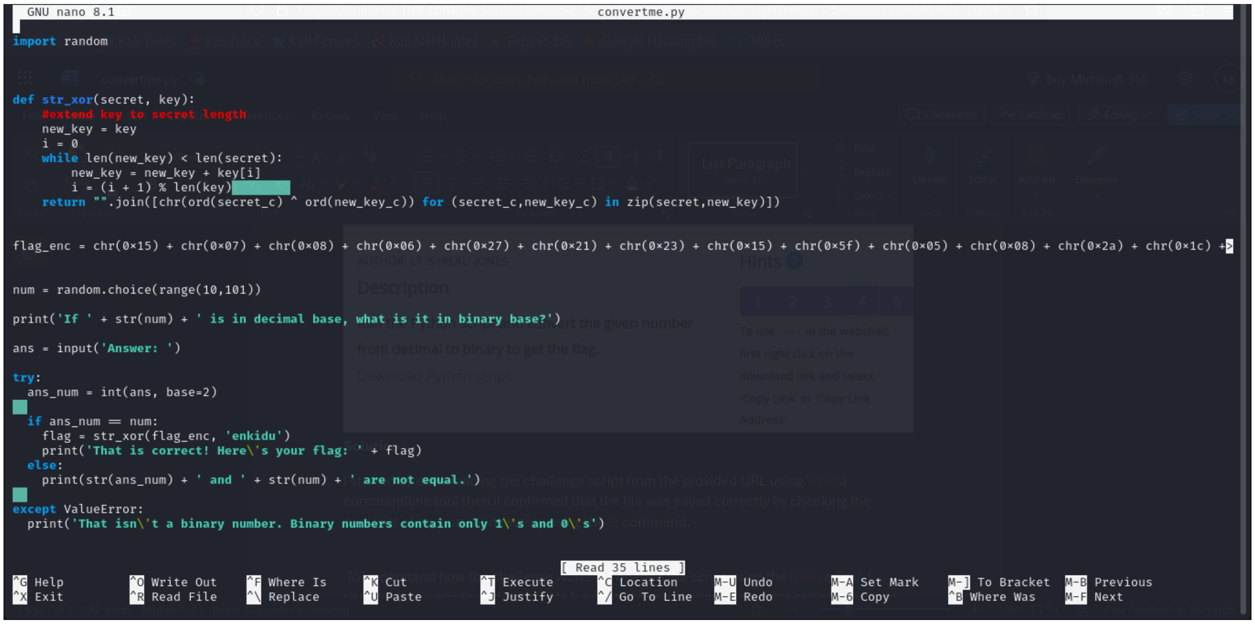
Solution

I started by downloading the challenge script from the provided URL using wget a commandline tool then iI confirmed that the file was saved correctly by checking the contents of my current directory using the ls command.



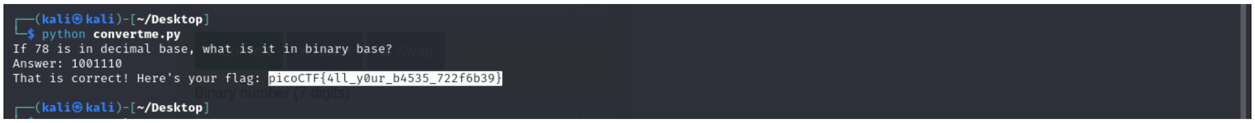
```
┌──(kali㉿kali)-[~/Desktop]
└─$ wget https://artifacts.picoctf.net/c/24/convertme.py
--2025-02-27 12:23:39--  https://artifacts.picoctf.net/c/24/convertme.py
Resolving artifacts.picoctf.net (artifacts.picoctf.net)... 52.84.102.87, 52.8
4.102.28, 52.84.102.63, ...
Connecting to artifacts.picoctf.net (artifacts.picoctf.net)|52.84.102.87|:443
... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1189 (1.2K) [application/octet-stream]
Saving to: ‘convertme.py’

convertme.py        100%[===================>]  1.16K  --.-KB/s    in 0s

2025-02-27 12:23:41 (13.5 MB/s) - ‘convertme.py’ saved [1189/1189]


┌──(kali㉿kali)-[~/Desktop]
└─$ ls
convertme.py

┌──(kali㉿kali)-[~/Desktop]
```

To understand how the challenge worked, I opened the script using the nano editor. I reviewed the code to understand its functionality, particularly how it generated a random number and required me to convert that number from decimal to binary.



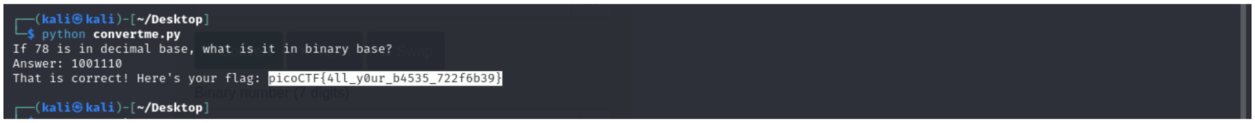
```
GNU nano 8.1                                          convertme.py
import random


def str_xor(secret, key):
    #extend key to secret length
    new_key = key
    i = 0
    while len(new_key) < len(secret):
        new_key = new_key + key[i]
        i = (i + 1) % len(key)
    return "".join([chr(ord(secret_c) ^ ord(new_key_c)) for (secret_c,new_key_c) in zip(secret,new_key)])


flag_enc = chr(0x15) + chr(0x07) + chr(0x08) + chr(0x06) + chr(0x27) + chr(0x21) + chr(0x23) + chr(0x15) + chr(0x5f) + chr(0x05) + chr(0x08) + chr(0x2a) + chr(0x1c) +>


num = random.choice(range(10,101))

print('If ' + str(num) + ' is in decimal base, what is it in binary base?')

ans = input('Answer: ')

try:
  ans_num = int(ans, base=2)

  if ans_num == num:
    flag = str_xor(flag_enc, 'enkidu')
    print('That is correct! Here\'s your flag: ' + flag)
  else:
    print(str(ans_num) + ' and ' + str(num) + ' are not equal.')

except ValueError:
  print('That isn\'t a binary number. Binary numbers contain only 1\'s and 0\'s')

                                  [ Read 35 lines ]
^G Help       ^O Write Out   ^F Where Is   ^K Cut      ^T Execute   ^C Location    M-U Undo   M-A Set Mark   M-] To Bracket  M-B Previous
^X Exit       ^R Read File   ^\ Replace    ^U Paste    ^J Justify   ^/ Go To Line  M-E Redo   M-6 Copy       ^B Where Was    M-F Next
```

I then executed the script to see the random number it generated. The output displayed a prompt asking me to convert a decimal number to binary.



```
┌──(kali㉿kali)-[~/Desktop]
└─$ python convertme.py
If 78 is in decimal base, what is it in binary base?
Answer: 1001110
That is correct! Here's your flag: picoCTF{4ll_y0ur_b4535_722f6b39}

┌──(kali㉿kali)-[~/Desktop]
```

I converted the decimal number (in this case, 78) to its binary representation using a free online convertor.



```
┌──(kali㉿kali)-[~/Desktop]
└─$ python convertme.py
If 78 is in decimal base, what is it in binary base?
Answer: 1001110
That is correct! Here's your flag: picoCTF{4ll_y0ur_b4535_722f6b39}

┌──(kali㉿kali)-[~/Desktop]
```

I then entered the binary representation and the script confirmed that my answer was correct and revealed the flag picoCTF{4ll_y0ur_b4535_722f6b39}.