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Serpentine

Medium

General Skills

Beginner picoMini 2022

Python

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Description

Find the flag in the Python script!

[Download Python script](#)

Hints ?

1

2

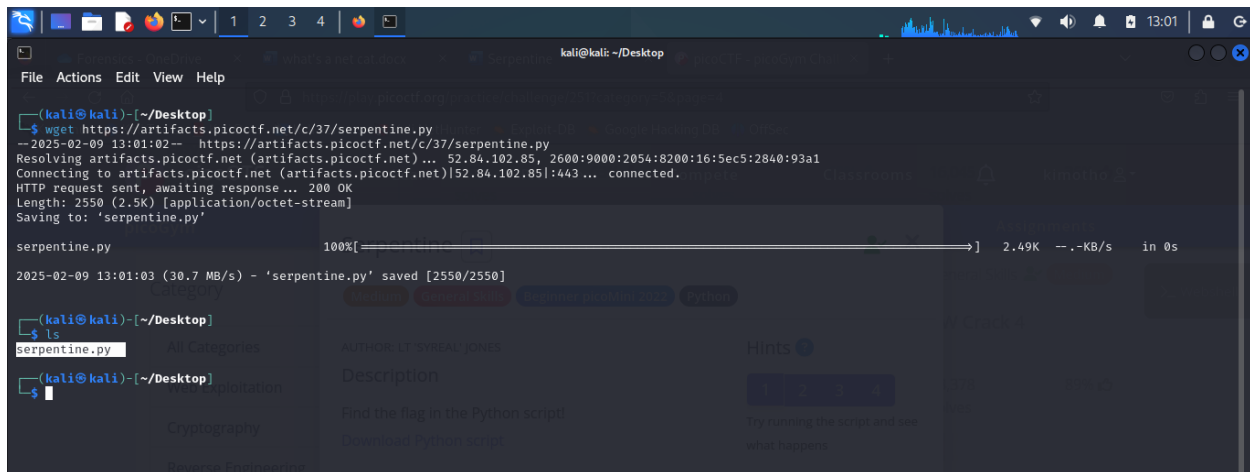
3

4

Try running the script and see what happens

Solution

I downloaded the given python script using **wget** tool.



```
kali@kali: ~/Desktop
File Actions Edit View Help

(kali@kali) ~/Desktop
$ wget https://artifacts.picoctf.net/c/37/serpentine.py
--2025-02-09 13:01:02-- https://artifacts.picoctf.net/c/37/serpentine.py
Resolving artifacts.picoctf.net (artifacts.picoctf.net)... 52.84.102.85, 2600:9000:2054:8200:16:5ec5:2840:93a1
Connecting to artifacts.picoctf.net (artifacts.picoctf.net)[52.84.102.85]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2550 (2.5K) [application/octet-stream]
Saving to: 'serpentine.py'

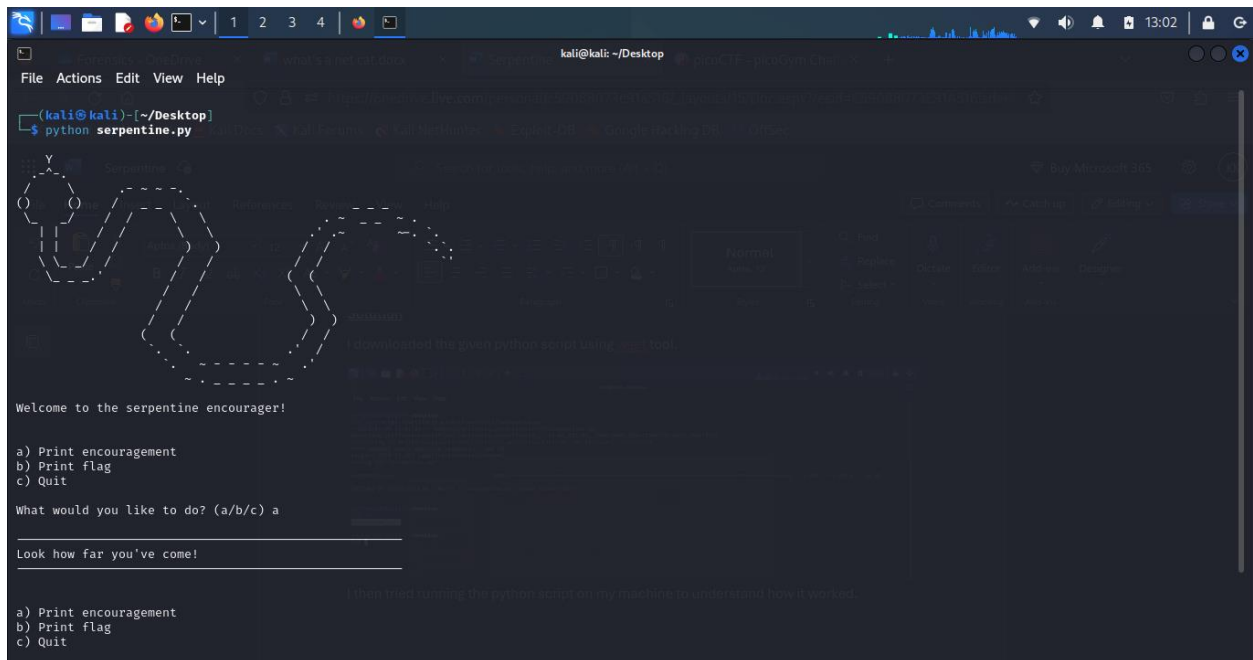
serpentine.py          100%[=====>] 2.49K  --KB/s  in 0s

2025-02-09 13:01:03 (30.7 MB/s) - 'serpentine.py' saved [2550/2550]

(kali@kali) ~/Desktop
$ ls
serpentine.py

(kali@kali) ~/Desktop
$
```

I then tried running the python script on my machine to understand how it worked. Option one printed out an encouragement statement.



```
(kali@kali)-[~/Desktop]
$ python serpentine.py

Welcome to the serpentine encourager!

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) a

Look how far you've come!

a) Print encouragement
b) Print flag
c) Quit

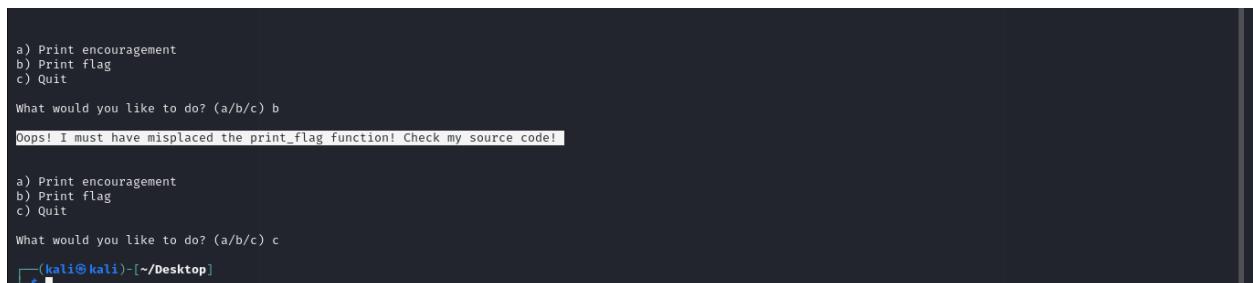
What would you like to do? (a/b/c) b

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) c

(kali@kali)-[~/Desktop]
$
```

The print flag option didn't print the flag as i expected but the exit option worked just like the first option.



```
(kali@kali)-[~/Desktop]
$ python serpentine.py

Welcome to the serpentine encourager!

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) b

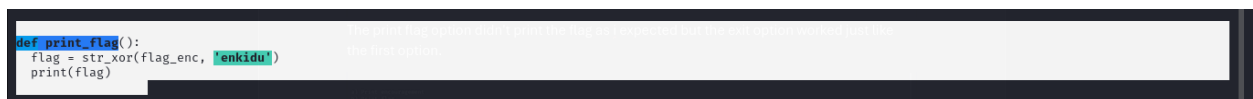
Oops! I must have misplaced the print_flag function! Check my source code!

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) c

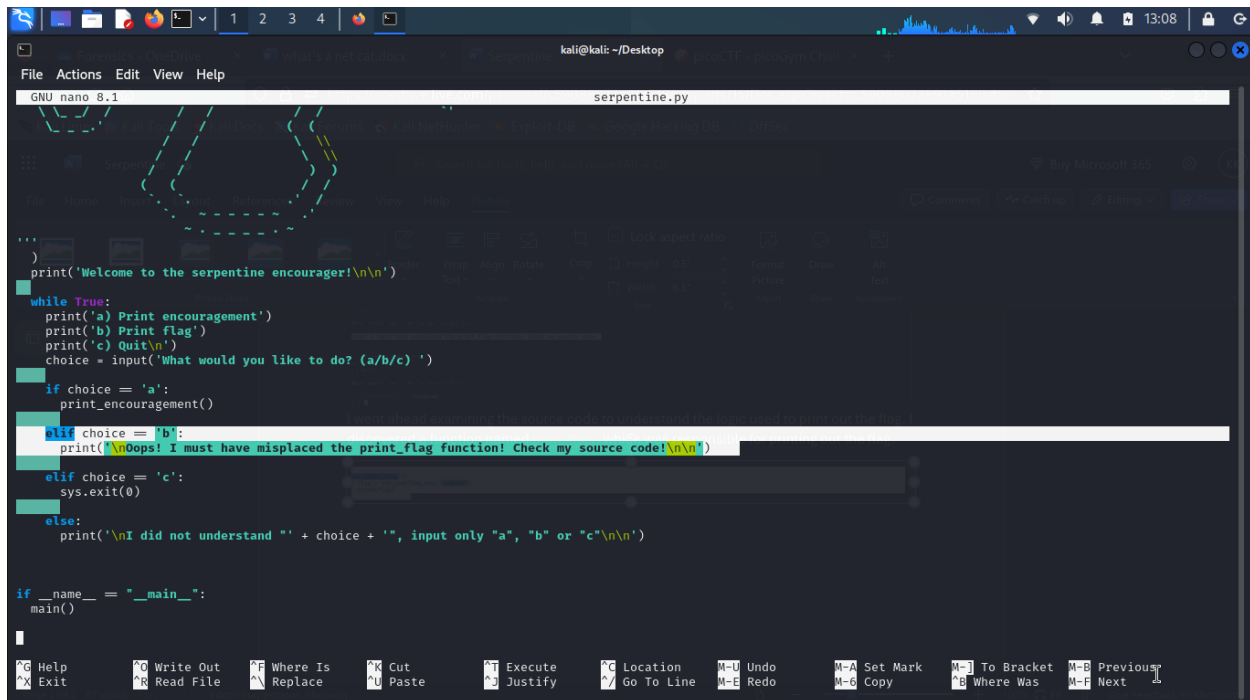
(kali@kali)-[~/Desktop]
$
```

I went ahead examining the source code to understand the logic used to print out the flag. I discovered a function named `print_flag()` which was responsible for printing out the flag.



```
def print_flag():
    flag = str_xor(flag_enc, 'enkidu')
    print(flag)
```

The only problem was that the `print_flag()` function was never called and thats why the flag was not being printed as expected.



```
GNU nano 8.1 serpentine.py
...
print('Welcome to the serpentine encourager!\n\n')
while True:
    print('a) Print encouragement')
    print('b) Print flag')
    print('c) Quit\n')
    choice = input('What would you like to do? (a/b/c) ')
    if choice == 'a':
        print_encouragement()
    elif choice == 'b':
        print('\nOops! I must have misplaced the print_flag function! Check my source code!\n\n\')
    elif choice == 'c':
        sys.exit(0)
    else:
        print('\nI did not understand "' + choice + '", input only "a", "b" or "c"\n\n')

if __name__ == "__main__":
    main()

```

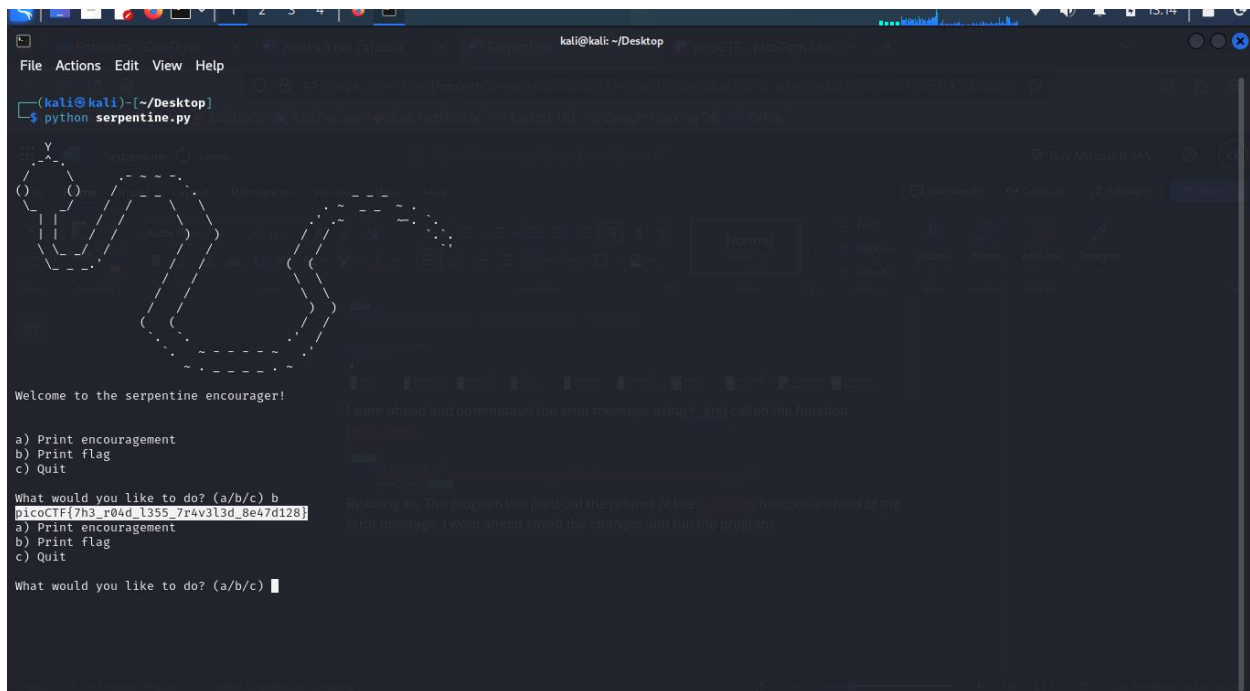
I went ahead and commented the error message using # and called the function `print_flag()`.



```
elif choice == 'b':
    #print('\nOops! I must have misplaced the print_flag function! Check my source code!\n\n\')
    print_flag()

```

By doing so, The program will print out the returns of the `print_flag` function instead of the error message. I went ahead saved the changes and run the program.



```
File Actions Edit View Help
(kali@kali)-[~/Desktop]
$ python serpentine.py

Welcome to the serpentine encourager!

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) b
picoCTF{7h3_r04d_l355_7r4v3l3d_8e47d128}

a) Print encouragement
b) Print flag
c) Quit

What would you like to do? (a/b/c) 
```

```
serpentine.py
#!/usr/bin/env python3
import sys
import random

def main():
    print("Welcome to the serpentine encourager!")
    while True:
        print("a) Print encouragement")
        print("b) Print flag")
        print("c) Quit")
        choice = input("What would you like to do? (a/b/c) ")
        if choice == 'a':
            print("You are doing great!")
        elif choice == 'b':
            print(picoCTF{7h3_r04d_l355_7r4v3l3d_8e47d128})
        elif choice == 'c':
            sys.exit(0)
        else:
            print("Invalid choice. Please try again.")

if __name__ == '__main__':
    main()
```

And that's how i captured the flag `picoCTF{7h3_r04d_l355_7r4v3l3d_8e47d128}`.