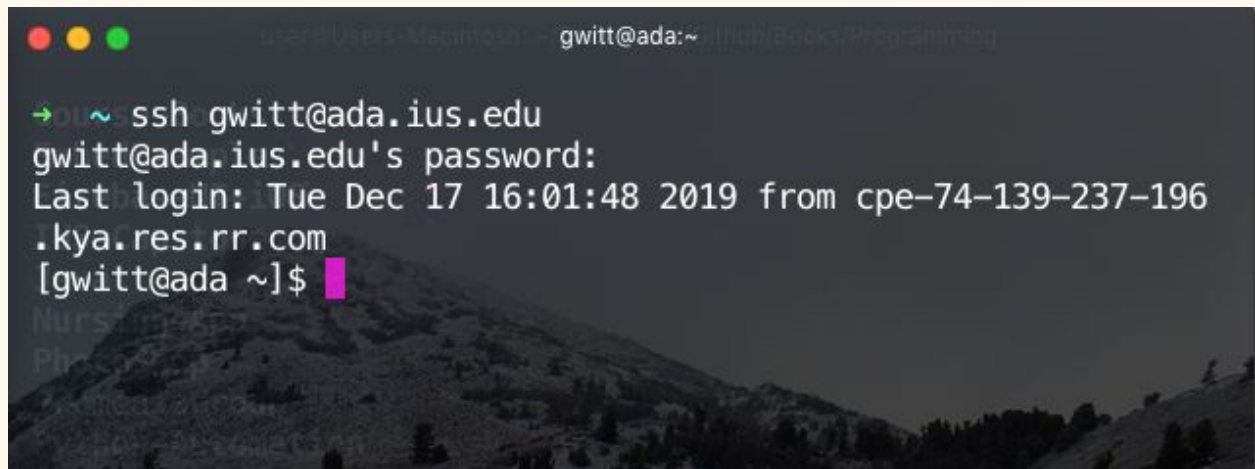


P-08

Login to ADA Via SSH

A terminal window with a dark background and a mountain landscape wallpaper. The window title bar shows three colored dots (red, yellow, green) and the text 'Users-Macintosh - gwitt@ada:~ /github/Books/Programming'. The terminal text shows the command 'ssh gwitt@ada.ius.edu', the password prompt 'gwitt@ada.ius.edu's password:', the login message 'Last login: Tue Dec 17 16:01:48 2019 from cpe-74-139-237-196.kya.res.rr.com', and the prompt '[gwitt@ada ~]\$' with a red cursor.

```
Users-Macintosh - gwitt@ada:~ /github/Books/Programming  
→ ssh gwitt@ada.ius.edu  
gwitt@ada.ius.edu's password:  
Last login: Tue Dec 17 16:01:48 2019 from cpe-74-139-237-196  
.kya.res.rr.com  
[gwitt@ada ~]$
```

Code Execution With VIM

```
gwitt@ada:~/P08
extern printf, atoi

SECTION .data
fmt1: db "Your total is: %d", 10,0
fmt2: db "Expression Causes an Overflow", 10,0

SECTION .bss
value1 resd 1
value2 resd 1
sum resd 1

global main
SECTION .text
main:

    ;prepare program for operation:
    mov rax, 0
    mov rdi, 1
    mov esi, value1
    mov rdx, 40
    syscall

    mov edi, value1 ;use c function atoi in edi register
    call atoi
    mov r14d, eax

    mov rax, 0
    mov rdi, 1
    mov esi, value2
    mov rdx, 40
    syscall

    mov edi, value2
    call atoi
    mov r15d, eax

    add r14d, r15d
    mov [sum], r14d
    jo overflow

nooverflow:
    mov rdi, fmt1 ;set the appropriate message
    mov rsi, [sum]
    mov rax, 0
```

```

[gwitt@ada P08]$ cat p08.asm
mov rsi, P08[sum]
mov rax, 0
call printf
jmp end

;logic for if the overflow occurs:
overflow:

mov rdi, fmt2
mov rsi, [sum]
mov rax, 0
call printf ;display message for overflow for user

end:
mov rax, 60
xor rdi, rdi ;clear registers
syscall ;end program
~
~
~
~
~
~

```

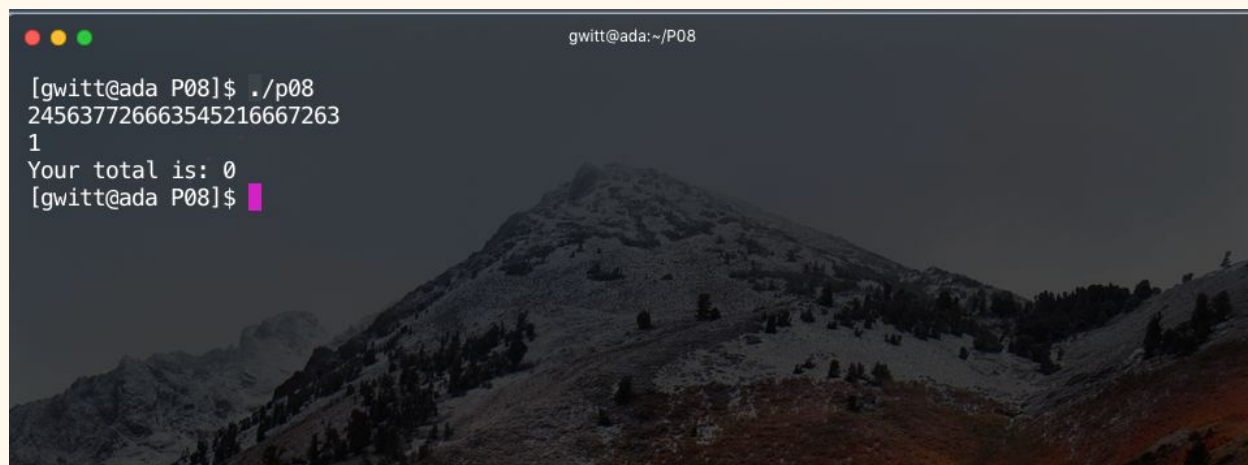
Results for Not Overflow :

```

[gwitt@ada P08]$ ls
p08  p08.asm  p08.o
[gwitt@ada P08]$ ./p08
12
24
Your total is: 36
[gwitt@ada P08]$

```

Results for Overflowing:



```
gwitt@ada:~/P08
[gwitt@ada P08]$ ./p08
245637726663545216667263
1
Your total is: 0
[gwitt@ada P08]$
```

The image shows a terminal window with a dark background and a mountain landscape wallpaper. The terminal displays the execution of a program named 'p08'. The output consists of a large integer, a small integer, and a message indicating a total value of zero. The prompt indicates the user is 'gwitt' on a machine named 'ada' in the directory '~/P08'.