

ML Assignment

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Batch: S4 Comp

Assignment 9:

Code:

```
%macro display 2
    mov rax, 1
    mov rdi, 1
    mov rsi, %1
    mov rdx, %2
    syscall
%endmacro

%macro input 2
    mov rax, 0
    mov rdi, 0
    mov rsi, %1
    mov rdx, %2
    syscall
%endmacro

global _start
section .data
    arr      db 11h, 22h, 33h, 44h, 55h, 66h
    msg      db 10, 13, "source array is:"
    msg_len  equ $-msg
    msg1     db 10, 13, "destination array is:"
    msg1_len equ $-msg1
    msg2     db 10, 13, "how many overlap:"
    msg2_len equ $-msg2

section .bss
    arr1     resb 16H
    ov       resb 2
    arr_ascii resb 14h
    arr1_ascii resb 28h

section .text
_start:
    display msg, msg_len
    mov rsi, arr
    mov rdi, arr_ascii
    mov ch, 03
```

```
call print
display arr_ascii, 14h
display msg2, msg2_len
input ov, 2
sub byte [ov], 30h
mov rax, 00
mov al, [ov]
```

```
mov rsi, arr
mov rdi, 00
add rsi, 3
dec rsi
add rdi, rsi
add rdi, 3
sub rdi, rax
mov rcx, 03
STD
repz movsb
display msg1, msg1_len
mov rsi, arr
mov rdi, arr1_ascii
mov ch, 6
sub ch, [ov]
call print
display arr1_ascii, 28h
mov rax, 60
mov rdi, 0
syscall
```

print:

up2:

```
mov al, [rsi]
mov cl, 02
```

up1:

```
rol al, 4
mov bl, al
and al, 0fh
cmp al, 09
ja add37
add al, 30h
jmp dn2
```

add37:

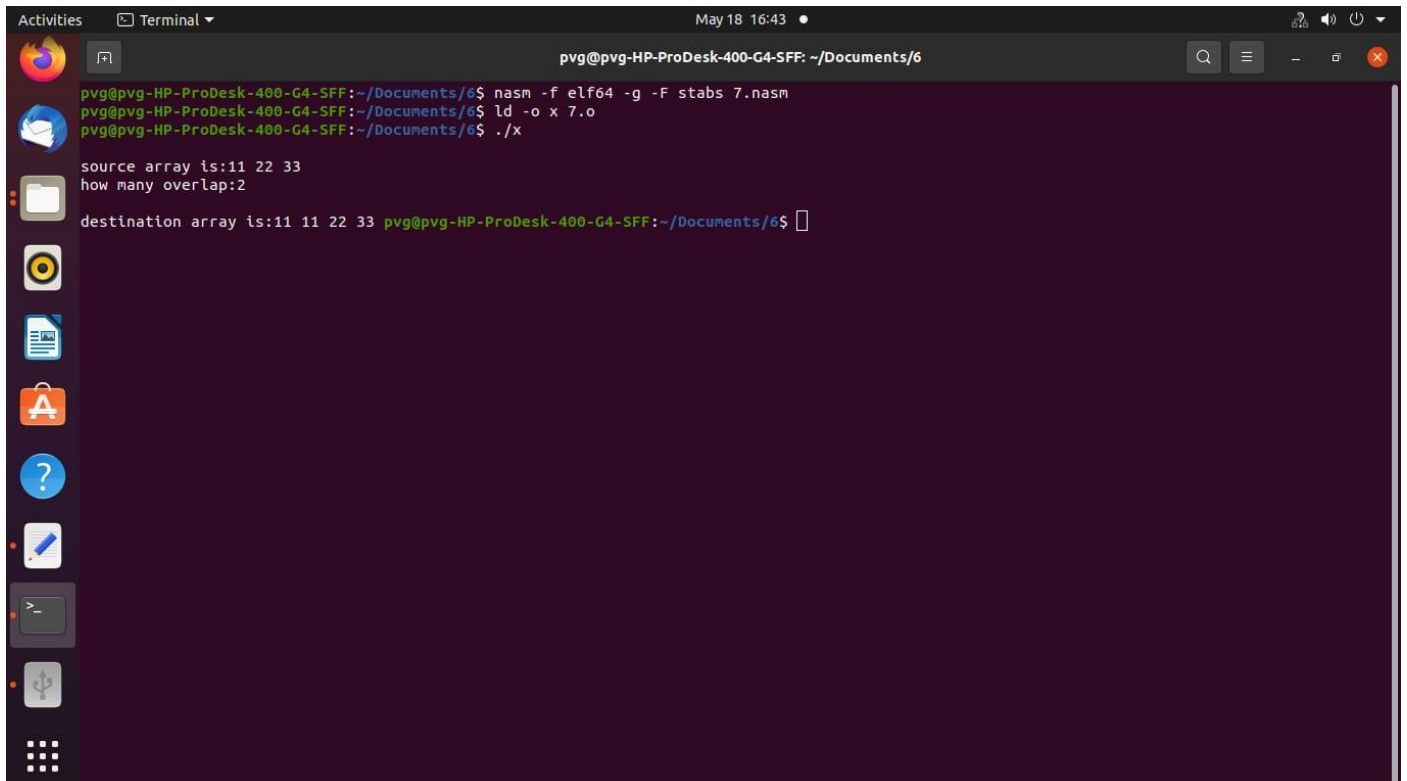
```
add al, 37h
```

dn2:

```
mov [rdi], al
inc rdi
mov al, bl
dec cl
```

```
jnz up1
mov [rdi], byte ''
inc rdi
inc rsi
dec ch
jnz up2
ret
```

Output:



A terminal window titled "Terminal" with a dark background. The window shows the compilation and execution of an assembly program. The user is at the prompt "pvg@pvg-HP-ProDesk-400-G4-SFF: ~/Documents/6". The commands entered are: `nasm -f elf64 -g -F stabs 7.nasm`, `ld -o x 7.o`, and `./x`. The output of the program is: `source array is:11 22 33` and `how many overlap:2`. The prompt then shows the destination array: `destination array is:11 11 22 33`.

```
pvg@pvg-HP-ProDesk-400-G4-SFF: ~/Documents/6
pvg@pvg-HP-ProDesk-400-G4-SFF:~/Documents/6$ nasm -f elf64 -g -F stabs 7.nasm
pvg@pvg-HP-ProDesk-400-G4-SFF:~/Documents/6$ ld -o x 7.o
pvg@pvg-HP-ProDesk-400-G4-SFF:~/Documents/6$ ./x
source array is:11 22 33
how many overlap:2
destination array is:11 11 22 33 pvg@pvg-HP-ProDesk-400-G4-SFF:~/Documents/6$
```