7A] Write an assembly language program to perform addition of multi-digit numbers.

**Program:**

%macro write\_string\_number 2

mov eax, 4

mov ebx, 1

mov ecx, %1

mov edx, %2

int 80h

%endmacro

%macro read\_number\_string 1

mov eax, 3

mov ebx, 2

mov ecx, %1

mov edx, 9

int 80h

%endmacro

section .data

read db "Enter a number: "

readlen equ $-read

msg db "The Sum: "

len equ $-msg

section .bss

num1 resb 9

num2 resb 9

sum resb 9

section .text

global \_start

\_start:

write\_string\_number read, readlen

read\_number\_string num1 ; READ NUMBER 1

read\_number\_string num2 ; READ NUMBER 2

mov esi, 1

mov ecx, 3

clc ;sets the carry flag to zero

add\_loop:

mov al, [num1 + esi]

adc al, [num2 + esi]

aaa

pushf

or al, 30h

popf

mov [sum + esi], al

dec esi

loop add\_loop

; print the sum

write\_string\_number msg, len

write\_string\_number sum, 9

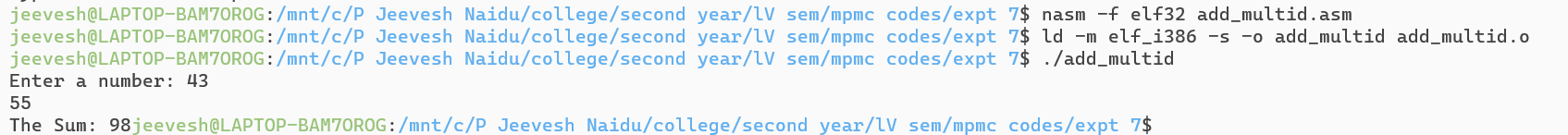
; exits

mov eax, 1

mov ebx, 0

int 80h

**Output:**



7B] Write an assembly language program to perform subtraction of multi-digit numbers.

**Program:**

%macro write 2

mov eax,4

mov ebx,1

mov ecx,%1

mov edx, %2

int 80h

%endmacro

%macro read 2

mov eax,3

mov ebx,2

mov ecx,%1

mov edx,%2

int 80h

%endmacro

section .data

input db 'Enter the number - '

i\_len equ $-input

text1 db 'Difference of 2 numbers - '

len1 equ $-text1

section .bss

num1 resb 5

num2 resb 5

diff resb 5

section .text

global \_start

\_start:

write input,i\_len

read num1,5

write input,i\_len

read num2,5

mov esi,1

mov ecx,3

clc

sub\_loop:

mov al,[num1+esi]

sbb al,[num2+esi]

aas

pushf

or al,30h

popf

mov[diff +esi],al

dec esi

loop sub\_loop

write text1,len1

write diff,5

mov eax,1

mov ebx,0

int 80h

**Output:**

