

## 1] Write an ALP to calculate sum of multi digit numbers

### Program

```
exit equ 1                                len2 equ $ - msg2
read equ 3
write equ 4                               sumMsg db "THE SUM IS ",10
stdin equ 0                               sumLen equ $ - sumMsg
stdout equ 1
%macro writenumber 2                       newline db 10
    mov ecx, %1
    mov edx, %2
    mov ebx, stdout
    mov eax, write
    int 80h
%endmacro

%macro readnumber 2
    mov eax, read
    mov ebx, stdin
    mov ecx, %1
    mov edx, %2
    int 80h
%endmacro

section .bss
    sum resb 100
    number resb 100
    number2 resb 100
    nodig resb 2

section .text
    global _start
_start:
    writenumber msg,len
    readnumber nodig,2

    writenumber msg1,len1
    readnumber number,100

section .data
    msg db "Enter n", 10
    len equ $ - msg

    msg1 db "Enter 1st number", 10
    len1 equ $ - msg1

    msg2 db "Enter 2nd number",10

    writenumber msg2,len2
    readnumber number2,100

    movzx ecx,byte[nodig]
    sub ecx,'0'
    mov esi,ecx
    dec esi
```

	mov bl,[number2+esi]
call add	adc al,bl
writenumber sumMsg,sumLen	aaa
writenumber sum,100	pushf
writenumber newline,1	or al,30h
mov eax, exit	popf
xor ebx, ebx	
int 80h	mov[sum+esi],al
	dec esi
add:	loop add
mov al,[number+esi]	ret

## OUTPUT –

```

root@Atharv:/mnt/c/Users/Athar/OneDrive/Documents/college/SEM4/MPMC/Labs/exp7# ./1
Enter n
3
Enter 1st number
456
Enter 2nd number
234
THE SUM IS
690

```

## 2] Write an ALP to calculate difference of multi digit numbers

### INPUT –

```
exit equ 1
read equ 3
write equ 4
stdin equ 0
stdout equ 1
%macro writenumber 2
    mov ecx, %1
    mov edx, %2
    mov ebx, stdout
    mov eax, write
    int 80h
%endmacro
%macro readnumber 2
    mov eax, read
    mov ebx, stdin
    mov ecx, %1
    mov edx, %2
    int 80h
%endmacro
section .data
    msg db "Enter the size", 10
    len equ $ - msg

    msg1 db "Enter 1st number", 10
    len1 equ $ - msg1

    msg2 db "Enter 2nd number", 10
    len2 equ $ - msg2

section .bss
    subno resb 100
    number resb 100
    number2 resb 100
    nodig resb 2

section .text
    global _start
_start:
    writenumber msg, len
    readnumber nodig, 2
    writenumber msg1, len1
    readnumber number, 100
    writenumber msg2, len2
    readnumber number2, 100

    movzx ecx, byte[nodig]
    sub ecx, '0'
    mov esi, ecx
    dec esi

    call subb

    writenumber subno, 100
    mov eax, exit
    xor ebx, ebx
    int 80h
```

```

    clc

    call subb

writenumber subno,100

    mov eax, stdout

    xor ebx, ebx

    int 80h

subb:
    mov al,[number+esi]

    mov bl,[number2+esi]

    sbb al,bl

    aaa

    pushf

    or al,30h

    popf

    mov[subno+esi],al

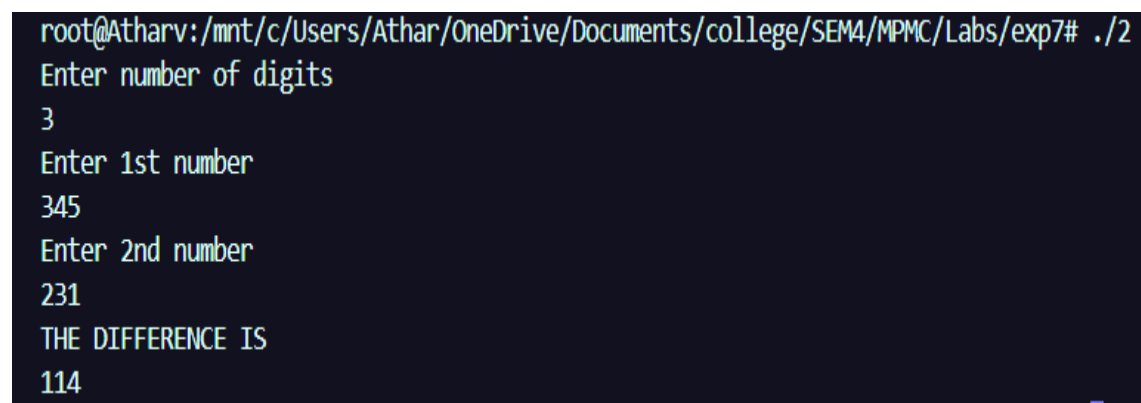
    dec esi

    loop subb

ret

```

## OUTPUT –



```

root@Atharv:/mnt/c/Users/Athar/OneDrive/Documents/college/SEM4/MPMC/Labs/exp7# ./.2
Enter number of digits
3
Enter 1st number
345
Enter 2nd number
231
THE DIFFERENCE IS
114

```

**CONCLUSION – THE SUM AND DIFFERENCE OF MULTI DIGIT NUMBERS WAS CALCULATED USING ALP**

