**Title:-**Multiplication

**Assignment Name: -** Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. Accept input from the user.

section .data

%macro print 2

mov rax,1

mov rdi,1

mov rsi,%1

mov rdx,%2

syscall

%endmacro

%macro accept 2

mov rax,0

mov rdi,0

mov rsi,%1

mov rdx,%2

syscall

%endmacro

msg1 db 10,13,"Program to Multiply two nos. using successive addition !",13

len1 equ $-msg1

msg2 db 10,13,"MENU",13,"1.Perform Addition",13,"Exit"

len2 equ $-msg2

msg3 db 10,"Enter the 2-Digit Multiplicand (HexaDecimal No.) : "

len3 equ $-msg3

msg4 db 10,"Enter the 2-Digit Multiplier (HexaDecimal No.) : "

len4 equ $-msg4

msg5 db 10,"The Multiplication of the 2 nos. is :"

len5 equ $-msg5

msg6 db 10,13,"Exiting from the Program...............",13

len6 equ $-msg6

newline db 10," "

nline equ $-newline

section .bss

mcand resb 02

mplier resb 02

choice resb 02

numascii resb 04

dispbuff resb 02

section .text

global \_start

\_start:

print msg1,len1

print msg2,len2

accept choice,02

cmp byte[choice],"1"

je add

cmp byte[choice],32

je exit

add:

print msg3,len3

accept numascii,03

call ascii2num

mov [mcand],bl

print msg4,len4

accept numascii,03

call ascii2num

mov [mplier],bl

print msg5,len5

mov rax,0

cmp byte[mplier],0

jz l15

l11:

add rax,[mcand]

dec byte[mplier]

jnz l11

l15:

call display

exit:

print msg6,len6

mov rax, 60

mov rdi, 0

syscall

ascii2num:

mov bl,0

mov rcx,02

mov rsi,numascii

up1:

rol bl,04

mov al,[rsi]

cmp al,39h

jbe skip1

sub al,07h

skip1:

sub al,30h

add bl,al

inc rsi

loop up1

ret

display:

mov rdi,dispbuff

mov rcx,02

up2:

rol al,04

mov dl,al

and dl,0fh

add dl,30h

cmp dl,39h

jbe dispskip1

add dl,07h

dispskip1:

mov [rdi],dl

inc rdi

loop up2

print dispbuff,2

ret

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*OUTPUT\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

saurabh@saurabh-VirtualBox:~$ nasm -f elf64 success.asm

saurabh@saurabh-VirtualBox:~$ ld -s -o l success.o

saurabh@saurabh-VirtualBox:~$ ./l

Program to Multiply two nos. using successive addition !

Exitrform Addition

Enter the 2-Digit Multiplicand (HexaDecimal No.) : 12

Enter the 2-Digit Multiplier (HexaDecimal No.) : 9

The Multiplication of the 2 nos. is :74