Assignment No : 9 Program

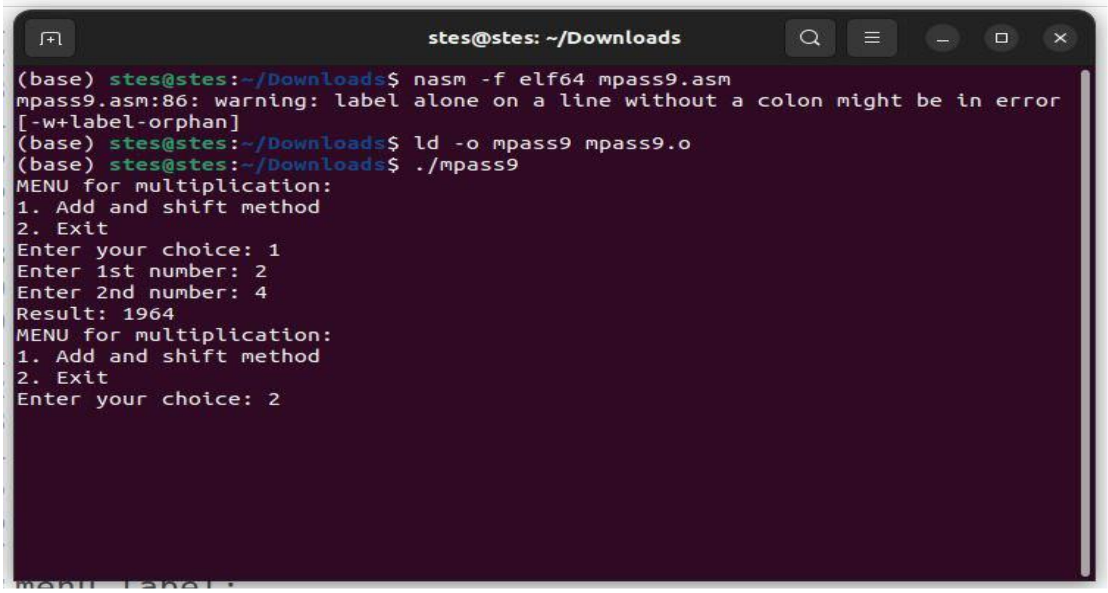
```
global _start
_start:
section .text
%macro accept 2
 mov rax,0
 mov rdi,0
 mov rsi,%1
 mov rdx,%2
 syscall
 %endmacro
 %macro disp 2
 mov rax,1
 mov rdi,1
 mov rsi,%1
 mov rdx,%2
 syscall
 %endmacro
menu_label:
 disp menu,menulen
 disp cho,lenc
accept choice,02
 mov al,byte[choice]
 cmp al,31h
 je successive_add
 cmp al,32h
 je add_shift
cmp al,33h
je exit
successive_add:
disp msg1,len1
accept num,03
```

```
call convert
mov [no1],al ;storing converted first no in variable
 disp msg2,len2
accept num,03
call convert
cmp al,00 ; multiplier=0 EX. 3*0
je m2 ;00 present in al i.e.lower bits of ax
mov [no2],al
 mov bx,0000h
mov [result],bx
mov bx,[no1]
m1:
add [result],bx
dec byte[no2]
jnz m1
disp res,lres ;Result:
m2:
mov ax,[result]
call display
disp msg,len ;new line
jmp menu_label
add_shift:
disp msg1,len1
accept num,03
call convert
mov [no1],al
disp msg2,len2
accept num,03
call convert
mov [no2],al
 disp res,lres
mov bx,0000h
mov [res],bx
mov ax,[no1]
mov bx,[no2]
as3:
shr bx,01
jnc as1
add [res],ax
as1:
shl ax,01
cmp ax,00
jz as2
cmp bx,00
jnz as3
as2:
mov ax,[res]
call display
disp msg,len
jmp menu_label
exit:
 mov rax,60
 mov rdi,0
 syscall
display
 mov rsi, disparr+03
mov rcx,04
l4:
 mov rdx,0
 mov rbx,10h
 div rbx
 cmp dl,09h
 jbe add30
add dl,07h
```

```
add30:
add dl,30h
 mov [rsi],dl
dec rsi
dec rcx
jnz l4
mov rax,1
mov rdx,1
mov rsi,disparr
mov rdx,04
syscall
ret
convert:
mov rsi,num
mov al,[rsi]
cmp al,39h
jle a1
sub al,07h
a1:
sub al,30h
rol al,04
mov bl,al
inc rsi
mov al,[rsi]
cmp al,39h ;to get the second number
jle a2
sub al,07h
a2:
sub al,30h
add al,bl
ret
section .data
```

```
menu: db "MENU for multiplication: ",10
 db "1. Add and shift method",10
 db "2. Exit",10
menulen: equ $-menu
cho: db "Enter your choice: "
lenc: equ $-cho
msg: db " ",10
len: equ $-msg
msg1: db "Enter 1st number: "
len1: equ $-msg1
msg2: db "Enter 2nd number: "
len2: equ $-msg2
res: db "Result: "
lres: equ $-res
section .bss
disparr resb 02
choice resb 02
num resb 03
no1 resb 02
no2 resb 02
result resb 04
```

OUTPUT :



```
(base) stes@stes:~/Downloads$ nasm -f elf64 mpass9.asm
mpass9.asm:86: warning: label alone on a line without a colon might be in error
[-w+label-orphan]
(base) stes@stes:~/Downloads$ ld -o mpass9 mpass9.o
(base) stes@stes:~/Downloads$ ./mpass9
MENU for multiplication:
1. Add and shift method
2. Exit
Enter your choice: 1
Enter 1st number: 2
Enter 2nd number: 4
Result: 1964
MENU for multiplication:
1. Add and shift method
2. Exit
Enter your choice: 2
```